# 661 Bear Valley Parkway

## Environmental Impact Report

SCH #2016111060

City Project #SUB 15-0002

*Volume I*

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# Contents

## Volume I –Environmental Impact Report


PART I INTRODUCTION TO THE FINAL EIR ..... I-1

PART II MITIGATION MONITORING PROGRAM ..... II-1

PART III COMMENTS RECEIVED ON THE DRAFT EIR AND RESPONSES ..... III-1

PART IV REVISED DRAFT EIR ..... ES-1

ES-1. Executive Summary ..... ES-1

ES-2. Project Description ..... ES-1

ES-3. Project Objectives ..... ES-2

ES-4. Impact Summary ..... ES-3

ES-5. Areas of Known Controversy ..... ES-4

ES-6. Alternatives to the Proposed Project ..... ES-5

ES-7. Issues to be Resolved by the Decision-Making Body ..... ES-6

Chapter 1. Introduction ..... 1-1

1.1 Intended Use and Purpose of the EIR ..... 1-1

1.2 Scope of the EIR ..... 1-1

1.3 Lead, Responsible, and Trustee Agencies ..... 1-2

1.4 Environmental Review Process ..... 1-3

1.4.1 Draft EIR ..... 1-3

1.4.2 Final EIR ..... 1-3

1.5 Document Organization ..... 1-4

1.5.1 Volume I ..... 1-4

1.5.2 Volume II ..... 1-4

Chapter 2. Project Description ..... 2-1

2.1 Introduction ..... 2-1

2.2 Project Location and Environmental Setting ..... 2-1

2.2.1 Residential Development Site ..... 2-1

2.2.2 Bear Valley Parkway SAP Improvements ..... 2-2

2.3 Project Site History ..... 2-9

2.4 Statement of Project Objectives ..... 2-9

2.5 Project Components ..... 2-10

2.5.1 Residential Development ..... 2-13

2.5.2 Bear Valley Parkway Specific Alignment Plan ..... 2-31

2.5.3 Project Design Features ..... 2-41

2.6 Discretionary Actions ..... 2-42
Chapter 3. Environmental Analysis ..... 3-1
3.1 Aesthetics ..... 3.1-1
3.1.1 Existing Conditions ..... 3.1-1
3.1.2 Regulatory Framework ..... 3.1-15
3.1.3 Thresholds of Significance ..... 3.1-18
3.1.4 Analysis of Project Impacts and Determination of Significance ..... 3.1-18
3.1.5 Cumulative Impacts ..... 3.1-23
3.1.6 Significance of Impacts prior to Mitigation ..... 3.1-23
3.1.7 Mitigation Measures ..... 3.1-24
3.1.8 Conclusion ..... 3.1-24
3.2 Agricultural Resources ..... 3.2-1
3.2.1 Existing Conditions ..... 3.2-1
3.2.2 Regulatory Framework ..... 3.2-8
3.2.3 Thresholds of Significance ..... 3.2-12
3.2.4 Project Impacts ..... 3.2-12
3.2.5 Cumulative Impacts ..... 3.2-16
3.2.6 Significance of Impacts prior to Mitigation ..... 3.2-17
3.2.7 Mitigation Measures ..... 3.2-17
3.2.8 Conclusion ..... 3.2-17
3.3 Biological Resources ..... 3.3-1
3.3.1 Existing Conditions ..... 3.3-1
3.3.2 Regulatory Framework ..... 3.3-17
3.3.3 Thresholds of Significance ..... 3.3-24
3.3.4 Project Impacts ..... 3.3-25
3.3.5 Cumulative Impacts ..... 3.3-44
3.3.6 Significance of Impacts prior to Mitigation ..... 3.3-48
3.3.7 Mitigation Measures ..... 3.3-50
3.3.8 Conclusion ..... 3.3-57
3.4 Cultural Resources ..... 3.4-1
3.4.1 Existing Conditions ..... 3.4-1
3.4.2 Regulatory Framework ..... 3.4-13
3.4.3 Thresholds of Significance ..... 3.4-24
3.4.4 Project Impacts ..... 3.4-25
3.4.5 Cumulative Impacts ..... 3.4-27

3.4.6 Significance of Impacts prior to Mitigation ..... 3.4-30
3.4.7 Mitigation Measures ..... 3.4-30
3.4.8 Conclusion ..... 3.4-34
3.5 Geology and Soils ..... 3.5-1
3.5.1 Existing Conditions ..... 3.5-1
3.5.2 Regulatory Framework ..... 3.5-3
3.5.3 Thresholds of Significance ..... 3.5-4
3.5.4 Project Impacts ..... 3.5-5
3.5.5 Cumulative Impacts ..... 3.5-6
3.5.6 Significance of Impacts prior to Mitigation ..... 3.5-7
3.5.7 Mitigation Measures ..... 3.5-7
3.5.8 Conclusion ..... 3.5-8
3.6 Hazards and Hazardous Materials ..... 3.6-1
3.6.1 Existing Conditions ..... 3.6-1
3.6.2 Regulatory Framework ..... 3.6-5
3.6.3 Thresholds of Significance ..... 3.6-13
3.6.4 Project Impacts ..... 3.6-14
3.6.5 Cumulative Impacts ..... 3.6-18
3.6.6 Significance of Impacts prior to Mitigation ..... 3.6-20
3.6.7 Mitigation Measures ..... 3.6-21
3.6.8 Conclusion ..... 3.6-22
3.7 Land Use and Planning ..... 3.7-1
3.7.1 Existing Conditions ..... 3.7-1
3.7.2 Regulatory Framework ..... 3.7-3
3.7.3 Thresholds of Significance ..... 3.7-11
3.7.4 Project Impacts ..... 3.7-11
3.7.5 Cumulative Impacts ..... 3.7-16
3.7.6 Significance of Impacts prior to Mitigation ..... 3.7-16
3.7.7 Mitigation Measures ..... 3.7-16
3.7.8 Conclusion ..... 3.7-16
3.8 Noise 3.8-1
3.8.1 Existing Conditions ..... 3.8-1
3.8.2 Regulatory Framework ..... 3.8-5
3.8.3 Thresholds of Significance ..... 3.8-11
3.8.4 Project Impacts ..... 3.8-11

3.8.5 Cumulative Impacts ..... 3.8-19
3.8.6 Significance of Impacts prior to Mitigation ..... 3.8-21
3.8.7 Mitigation Measures ..... 3.8-23
3.8.8 Conclusion ..... 3.8-29
3.9 Transportation and Traffic ..... 3.9-1
3.9.1 Existing Conditions ..... 3.9-1
3.9.2 Regulatory Framework ..... 3.9-8
3.9.3 Thresholds of Significance ..... 3.9-12
3.9.4 Project Impacts ..... 3.9-13
3.9.5 Cumulative Impacts ..... 3.9-21
3.9.6 Significance of Impacts prior to Mitigation ..... 3.9-22
3.9.7 Mitigation Measures ..... 3.9-25
3.9.8 Conclusion ..... 3.9-26
Chapter 4. Other CEQA Considerations ..... 4-1
4.1 Growth-Inducing Impacts ..... 4-1
4.1.1 Direct Population Growth ..... 4-2
4.1.2 Economic Growth ..... 4-2
4.1.3 Removing Obstacles to Growth ..... 4-2
4.2 Effects Found Not to be Significant ..... 4-3
4.3 Significant Irreversible Changes ..... 4-3
4.4 Significant Unavoidable Impacts ..... 4-4
Chapter 5. Alternatives ..... 5-1
5.1 Project Objectives ..... 5-1
5.2 Alternatives Considered but Rejected ..... 5-4
5.3 Alternatives Analyzed ..... 5-5
5.3.1 No Project Alternative ..... 5-5
5.3.2 Reduced Project Alternative ..... 5-9
5.4 Environmentally Superior Alternative ..... 5-16
Chapter 6. References ..... 6-1
Chapter 7. Preparers ..... 7-1

# Tables

Table RTC-1 Summary of Public Comments on the Draft EIR ..... III-2
Table ES-1 Direct and Cumulative Environmental Impacts and Mitigation Measures of the Proposed Project and Project Alternatives ..... ES-7
Table 3.2-1 Farmland Mapping and Monitoring Program Categories on the Residential Development Site ..... 3.2-3
Table 3.2-2 Agricultural Soils on the Residential Development Site ..... 3.2-5
Table 3.2-3 Farmland Mapping and Monitoring Program Categories in Surrounding Land ..... 3.2-7
Table 3.2-4 Agricultural Soils in Surrounding Land ..... 3.2-7
Table 3.3-1. Vegetation Communities on the Proposed Project Site ..... 3.3-2
Table 3.3-2 Jurisdictional Aquatic Resources on the Proposed Residential Development Site 3.3-4
Table 3.3-3. Jurisdictional Aquatic Resources on the Proposed SAP Improvements Site ..... 3.3-5
Table 3.3-4. Special-Status Wildlife with a Moderate to High Potential to Occur on the Proposed Project Site ..... 3.3-12
Table 3.3-5. Direct Impacts on Sensitive Habitats on the Proposed Residential Development Site ..... 3.3-33
Table 3.3-6. Impacts on Jurisdictional Aquatic Resources on the Proposed Residential Development Site ..... 3.3-35
Table 3.3-7. Summary of Direct Impacts on Trees on Proposed Residential Development Site ..... 3.3-38
Table 3.3-8. Summary of Indirect Impacts on Trees on Proposed Residential Development Site ..... 3.3-40
Table 3.3-9. Summary of Direct Impacts on Trees on Proposed SAP Improvements Site ..... 3.3-43
Table 3.3-10. Required On-Site Mitigation for Impacts on Sensitive Habitats in the Proposed Residential Development Area ..... 3.3-51
Table 3.3-11. Required Mitigation for Aquatic Resources in the Proposed Residential Development Area ..... 3.3-52
Table 3.3-12. Landscape Tree Replacement Calculation for the Proposed Residential Development ..... 3.3-55
Table 3.3-13. Recommended Landscape Planting Quantities for the Proposed Residential Development ..... 3.3-55
Table 3.3-14. Landscape Tree Replacement Calculation for the Proposed SAP Improvements ..... 3.3-56
Table 3.3-15. Recommended Landscape Planting Quantities for the Proposed SAP Improvements ..... 3.3-57
Table 3.8-1. Typical A-Weighted Decibel Noise Levels ..... 3.8-2

Table 3.8-2. Human Response to Different Levels of Ground-Borne Vibration ..... 3.8-4
Table 3.8-3. Measured Ambient Sound Levels ..... 3.8-5
Table 3.8-4. Land Use Compatibility Standards ..... 3.8-7
Table 3.8-5. City of Escondido Exterior Sound Limit Levels ..... 3.8-8
Table 3.8-6. Existing and Existing-Plus-Project Traffic Noise Levels and Increases ..... 3.8-17
Table 3.8-7. Near-Term and Near-Term-Plus-Project Traffic Noise Impacts ..... 3.8-17
Table 3.8-8. Cumulative Traffic Noise Impacts ..... 3.8-21
Table 3.9-1 Existing Conditions – Roadway Segments ..... 3.9-3
Table 3.9-2 Existing Conditions – Intersections ..... 3.9-7
Table 3.9-3 City of Escondido Traffic Impact Significance Thresholds ..... 3.9-13
Table 3.9-4 Existing and Existing-Plus-Project Conditions – Roadway Segments ..... 3.9-14
Table 3.9-5 Existing and Existing-Plus-Project Conditions – Intersections ..... 3.9-15
Table 3.9-6 Near-Term and Near-Term-Plus-Project Conditions – Roadway Segments ..... 3.9-16
Table 3.9-7 Near-Term and Near-Term-Plus-Project Conditions – Intersections ..... 3.9-16
Table 3.9-8 Buildout and Buildout-Plus-Project Conditions – Roadway Segments ..... 3.9-17
Table 3.9-9 Near-Term Conditions with Residential Development and Near-Term Conditions with Residential Development Plus Specific Alignment Plan – Roadway Segments ..... 3.9-18
Table 3.9-10 Near-Term Conditions with Residential Development and Near-Term Conditions with Residential Development Plus Specific Alignment Plan – Intersections ..... 3.9-19
Table 3.9-11 Post-Mitigation Intersection Operations ..... 3.9-26
Table 5-1 Comparison of Alternatives – Environmental Impacts ..... 5-2
Table 5-2 Comparison of Alternatives – Proposed Project Objectives ..... 5-3
Table 5-3 Reduced Project Alternative Intersection Operation ..... 5-15

# Figures

Response to Comment O7 Exhibit 1 – Site Sections Locations ..... III-3
Response to Comment O7 Exhibit 2 – Site Sections H-H' & I-I' ..... III-5
Figure 2-1 – Regional Location ..... 2-3
Figure 2-2 – Project Vicinity ..... 2-5
Figure 2-3 – Topographic Map ..... 2-7
Figure 2-4 – Site Plan ..... 2-11
Figure 2-5a – Bear Valley Parkway Improvements ..... 2-17
Figure 2-5b – Bear Valley Parkway Improvements ..... 2-19
Figure 2-5c – Bear Valley Parkway Improvements ..... 2-21
Figure 2-5d – Bear Valley Parkway Improvements ..... 2-23
Figure 2-6 – Landscape Plan ..... 2-27
Figure 2-7 – Grading Exemptions ..... 2-29
Figure 2-8a – Bear Valley Parkway Full-Width SAP Improvements ..... 2-33
Figure 2-8b– Bear Valley Parkway Full-Width SAP Improvements ..... 2-35
Figure 2-8c – Bear Valley Parkway Full-Width SAP Improvements ..... 2-37
Figure 2-8d – Bear Valley Parkway Full-Width SAP Improvements ..... 2-39
Figure 3.1-1 – Key View Locations ..... 3.1-7
Figure 3.1-2 – Key View 1: Bear Valley Parkway Northbound ..... 3.1-9
Figure 3.1-3 – Key View 2: Bear Valley Parkway Southbound ..... 3.1-11
Figure 3.1-4 – Key View 3: Choya Canyon Road Southwest ..... 3.1-13
Figure 3.3-1 – Vegetation Communities on Proposed Residential Development Site ..... 3.3-7
Figure 3.3-2 – Bio Resources on Proposed SAP Improvements Site ..... 3.3-9
Figure 3.3-3 – Biological Impact Areas on Proposed Residential Development Site ..... 3.3-31
Figure 3.3-4 Tree Impacts on Proposed Residential Development Site ..... 3.3-41
Figure 3.3-5 – Tree Impacts on Proposed SAP Improvements Site ..... 3.3-45
Figure 3.8-1 – Noise Wall Mitigation ..... 3.8-25
Figure 3.9-1 – Existing Roadway Network ..... 3.9-5
Figure 3.9-2 – Roadway Network with Project Contributions ..... 3.9-29
Figure 5-1 – Reduced Project Alternative ..... 5-11

## Volume II –Appendices

Appendices included on separate flash drive or CD

| | |
|---|---|
| Appendix A | Notice of Preparation and Responses |
| Appendix B | Biological Resources Technical Report for Bear Valley Parkway Project (May 2017) |
| Appendix C | Bear Valley Parkway Specific Alignment Plan Biological Resources Technical Report (October 2016) |
| Appendix D | Arborist Report – Bear Valley Parkway (March 2016) |
| Appendix E | Arborist Report – Bear Valley Parkway Widening Project, Escondido (May 2017) |
| Appendix F | Cultural Resources Survey and Evaluation of Built Environment for the Bear Valley Parkway Development (April 2016) |
| Appendix G | Cultural Resources Evaluation of Prehistoric Archaeological Site CA-SDI-21808 for the Bear Valley Parkway Development (June 2016) |
| Appendix H | Additional Cultural Resources Survey for the Bear Valley Parkway Development (September 2016) |
| Appendix I-1 | Geotechnical Investigation (April 2013) |
| Appendix I-2 | Geotechnical Update Report (December 2014) |
| Appendix J | Geotechnical Investigation Proposed Road Improvements (September 2016) |
| Appendix K | Bear Valley Parkway Fire Protection Plan (July 2015) |
| Appendix L-1 | Phase I Environmental Site Assessment (ESA) (February 2013) |
| Appendix L-2 | Phase I ESA Addendum (March 2016) |
| Appendix L-3 | Additional Phase I ESA (April 2016) |
| Appendix M-1 | Limited Phase II ESA (May 2013) |
| Appendix M-2 | Limited Phase II ESA Addendum (March 2016) |
| Appendix N | Report of Soil Removal Action (July 2015) |
| Appendix O | Acoustical Site Assessment (April 2016) |
| Appendix P | Noise Impacts from the Bear Valley Parkway Specific Alignment Plan (September 2016) |
| Appendix Q | Construction Vibration Assessment (May 2016) |
| Appendix R | Traffic Impact Analysis (January 2017) |
| Appendix S | Specific Alignment Plan Capacity Analysis – Traffic Analysis Memorandum (January 2017) |
| Appendix T | "No Cumulative Impact" Project Alternative – Traffic Analysis Memorandum (May 2016) |

## Acronyms

| | |
|---|---|
| AB | Assembly Bill |
| AHSC | Affordable Housing and Sustainability Program |
| AMSL | above mean sea level |
| APCD | Air Pollution Control Board |
| APE | area of potential effects |
| APN | Assessor's Parcel Number |
| AST | aboveground storage tanks |
| ASTM | American Society for Testing and Materials |
| bgs | below ground surface |
| BMPs | Best Management Practices |
| CalEMA | California Emergency Management Agency |
| CalEPA | California Environmental Protection Agency |
| CAL FIRE | California Department of Forestry and Fire Protection |
| Caltrans | California Department of Transportation |
| CBSC | California Building Standards Code |
| CCR | California Code of Regulations |
| CDFW | California Department of Fish and Wildlife |
| CEQA | California Environmental Quality Act |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CESA | California Endangered Species Act |
| CFR | Code of Federal Regulations |
| CHHSLs | California Human Health Screening Levels |
| CHRIS | California Historical Resources Information System |
| City | City of Escondido |
| CWA | Clean Water Act |
| cm | centimeters |
| CMP | Congestion Management Program |
| CNEL | community noise equivalent level |
| County | San Diego County |
| CRHR | California Register of Historic Places |
| dB | decibels |
| dBA | A-weighted decibels |
| DBH | diameter at breast height |
| DEH | Department of Environmental Health |
| DTSC | Department of Toxic Substances Control |
| EIR | Environmental Impact Report |
| ESA | Environmental Site Assessment |
| Federal ESA | Federal Endangered Species Act |

| | |
|---|---|
| FHSZ | Fire Hazard Severity Zone |
| FMMP | California Department of Conservation Farmland Mapping and Monitoring Program |
| FPA | Focused Planning Area |
| FPPA | Farmland Protection Policy Act |
| FRPP | Farm and Ranch Lands Protection Program |
| FTA | Federal Transit Administration |
| General Plan | 2012 City of Escondido General Plan |
| General Plan EIR | Escondido General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report |
| GHG | greenhouse gas |
| HAPs | Hazardous Air Pollutants |
| HARRF | Hale Avenue Resource Recovery Facility |
| HCM 2000 | Highway Capacity Manual 2000 |
| HCPs | habitat conservation plans |
| HMBP | Hazardous Materials Business Plan |
| HMMD | Hazardous Materials Management Division |
| HOA | homeowner's association |
| HRO | Hillside and Ridgeline Overlay |
| I-15 | Interstate 15 |
| IFC | International Fire Code |
| in/sec | inch per second |
| KSHB | Kuroshio Shot Hole Borer |
| $L_{dn}$ | day-night average noise level |
| $L_{eq}$ | equivalent energy level |
| $L_{eq-h}$ | hourly average sound level |
| LESA | Land Evaluation Site Assessment |
| LOS | level of service |
| MBTA | Migratory Bird Treaty Act |
| mg/kg | milligrams per kilogram |
| MHCP | Multiple Habitat Conservation Plan |
| mph | miles per hours |
| MSCP | Multiple Species Conservation Plan |
| NAHC | Native American Heritage Commission |
| NCCP | Natural Community Conservation Planning |
| NCTD | North County Transit District |
| NESHAP | National Emissions Standards for Hazardous Air Pollutants |
| NHPA | National Historic Preservation Act |
| NRCS | Natural Resources Conservation Service |
| NRHP | National Register of Historic Places |

| | |
|---|---|
| OAEP | Operational Area Emergency Plan |
| OCPs | organochlorine pesticides |
| OPR | Office of Planning and Research |
| OSHA | Occupational Health and Safety Administration |
| OWSC | one-way, stop-controlled intersection |
| P-D | Proposed Development |
| PPV | peak particle velocity |
| PRC | Public Resources Code |
| PSHB | Polyphagous Shot Hole Borer |
| RCRA | Resource Conservation and Recovery Act |
| RE | Residential Estates |
| ROW | right-of-way |
| RTIP | Regional Transportation Improvement Plan |
| RTP | Regional Transportation Plan |
| RWQCB | Regional Water Quality Control Board |
| SAM | Site Assessment and Mitigation |
| SANDAG | San Diego Association of Governments |
| SAP | Specific Alignment Plan |
| SARA | Superfund Amendments and Reauthorization Act |
| SB | Senate Bill |
| SCIC | South Coastal Information Center |
| SCS | Sustainable Communities Strategy |
| sf | square foot |
| SOI | Secretary of the Interior |
| SR | State Route |
| SSC | Species of Special Concern |
| SSURGO | Soil Survey Geographic Database |
| STPs | standard test pits |
| Subarea Plan | Public Review Draft Escondido Subarea Plan |
| TCA Tribe | tribe that is traditionally and culturally affiliated with the project location |
| ug/kg | micrograms per kilogram |
| USACE | United States Army Corps of Engineers |
| USC | United States Code |
| USDA | United States Department of Agriculture |
| USEPA | United States Environmental Protection Agency |
| USFWS | United States Fish and Wildlife Service |
| V/C | volume to capacity |

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# PART I INTRODUCTION TO THE FINAL EIR

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, the Draft EIR was prepared by the City of Escondido (City) on the proposed project. The Draft EIR was submitted to the California Office of Planning and Research (State Clearinghouse) and circulated for public review beginning on March 27, 2017 and ending on May 12, 2017 (SCH No. 2016111060). During that time, the document was reviewed by various state and local agencies, as well as by interested individuals and organizations. A total of 15 comment letters were received by the City. All written comments received by the City have been fully addressed in written responses. The public review comments are contained in Part III of the Final EIR.

This Final EIR includes the following items as required in Section 15132 of the State CEQA Guidelines:

- Revisions and clarifications to the Draft EIR
- Comments and recommendations received on the Draft EIR
- A list of persons, organizations, and public agencies commenting on the Draft EIR
- Responses of the Lead Agency to significant environmental points raised in the review
- Any other information added by the Lead Agency

**Report Organization**

This report is organized in four parts: the first part of this document is the Introduction, the second part is the Mitigation Monitoring and Reporting Program, the third part contains the Comments and Responses, and the fourth part is the Revised Draft EIR. Each of these parts has its own purpose and serves to aid the reader in fully understanding the project and its implications. A brief description of each part follows.

The Introduction the Final EIR serves to explain the purpose of the Final EIR and familiarize the reader with the preparation and public review processes as well as to explain how the document can be used to understand the project and its consequences. The Introduction also includes a section which summarizes revisions or clarifications to the Draft EIR.

A Mitigation Monitoring and Reporting Program (MMRP), included as Part II of the Final EIR, has been prepared in accordance with Section 15097 of the CEQA Guidelines. The State CEQA Guidelines require that a mitigation monitoring and reporting program be adopted upon certification of an Environmental Impact Report (EIR) to ensure mitigation measures identified in the EIR are implemented.

The Comments and Responses section (Part III of the Final EIR) includes the letters received during the public review period along with the City's responses to each comment. The comments are reproduced with the responses in a side-by-side format. Numbered brackets are added to highlight each specific comment and its corresponding response.

The full text of the revised Draft EIR and its appendices are included as the last section in this Final EIR. The revised Draft EIR is presented herein as Part IV of the Final EIR, as it was circulated for public review, with revisions incorporated as identified in the Revisions or Clarifications to the Draft EIR section below.

**Revisions or Clarifications to the Draft EIR**

Based on City review and in response to comments received, some text published in the Draft EIR has been revised. Changes to the wording of impacts or mitigation statements and information added or deleted to the impact analyses and discussions are presented below with changes shown in underline and strikeout or in a descriptive form, so that the original and revised text may be compared. Changes presented here are by section, in their order within the revised Draft EIR. Those sections where no content changes were made are not included. Minor editorial changes have also been made to the Revised Draft EIR to improve readability, correct typographical errors, etc. which are not summarized here.

Executive Summary

An Executive Summary has been added in the Final EIR in accordance with CEQA Guidelines Section 15123. This Summary was unintentionally omitted from the Draft EIR that was circulated for public review. However, as it merely summarizes information found elsewhere in the document and does not contain significant new information, it does not trigger the requirements for recirculation of the Draft EIR as defined in CEQA Guidelines Section 15088.8. As the Executive Summary and Table ES-1 is all new text it is not presented in redline format.

Project Description

The following text was added to Project Description Section 2.5.1.6, Utilities, to explain that the potential environmental impacts from proposed utility line relocation were analyzed in the EIR.

> San Diego Gas & Electric provides energy service to the project area under existing conditions and would serve the residential development. As part of the Bear Valley Parkway frontage improvements described in Section 2.5.1.4, existing power poles on the east side of Bear Valley Parkway would be relocated further east in an easement outside of the roadway ROW, but within San Diego Gas & Electric ROW, to accommodate the additional travel lane, bike lane, curb, and sidewalk. The potential impacts from utility relocation were considered in this EIR.

Each Section of Chapter 3

A statement regarding the significance of the utility line relocation was added to each section in Chapter 3.

Biological Resources

*Protected Birds*

Text was modified in Mitigation Measure BIO-1 regarding protections for nesting and breeding birds.

**BIO-1:** If construction activity occurs during the breeding season for raptors and other birds (typically ~~February~~January 1 through September 15), a one-time biological survey for nesting bird species shall be conducted within the proposed impact area and a 300-foot buffer within 72 hours prior to construction. This survey is necessary to ensure avoidance of impacts on nesting raptors (e.g., Cooper's hawk and red-tailed hawk) and/or birds protected by the federal MBTA. If any active nests are detected, the area shall be flagged and mapped on the construction plans along with a minimum of a ~~25~~300-foot buffer and up to a maximum of ~~300~~500 feet for raptors, as determined by the project biologist, and shall be avoided until the nesting cycle is complete. The project biologist may reduce the avoidance buffer if a reduced buffer maintains protection of the nesting cycle of the avian species.

*Conceptual Mitigation Plan*

Text was added to Mitigation Measure BIO-2 to clarify the contents and management of the Conceptual Mitigation Plan.

**BIO-2:** To mitigate impacts on sensitive habitats from the proposed residential development, the project applicant shall establish or enhance at least 2.01 acres (a 3:1 ratio) of southern coast live oak riparian forest with establishment of 0.67 acre within an on-site mitigation area and enhancement of 1.34 acre within the open space area in general, including enhancing the 0.13 acre area of non-native riparian and enhancing the balance within the area mapped as southern coast live oak riparian forest that contains non-native and invasive species (Table 3.3-10). The mitigation shall occur within the open space lot (Lot H) totaling 8.0 acres. The mitigation area occurs along the ephemeral drainage that runs along the southern boundary of the proposed residential development site, as shown in Figure 3.3-3. A Conceptual ~~Wetland~~ Mitigation Plan shall be prepared as part of the permit application process (i.e., CWA Section 401/404 permit) described in mitigation measure BIO-5 by persons with expertise in southern California ecosystems and native plant revegetation techniques. The Conceptual Mitigation Plan shall include, at a minimum (a) the location of the mitigation site; (b) the plant species to be used, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.

*Long-term Management Plan*

Text was added to Mitigation Measure BIO-5 to clarify the contents of the long-term management plan to address the risk of shot hole borer (SHB) spread from the residential development.

**BIO-5:** To comply with the state and federal regulations for impacts on jurisdictional aquatic resources, the following agency permits are required, or verification that they are not required shall be obtained:

- A CWA, Section 401/404 permit issued by the RWQCB and the USACE for all project-related disturbances of non-wetland waters of the United States and/or associated wetlands.
- A Section 1602 Streambed Alteration Agreement issued by CDFW for all project-related disturbances of any streambed and associated riparian habitat. Permits are required to be obtained by the applicant prior to the impact on the resources.

As noted in mitigation measures BIO-2 and BIO-4, a Conceptual Mitigation Plan is required to provide compensatory mitigation for impacts. The on-site wetland preservation area and the proposed wetland mitigation area (Open Space, Lot H) shall be protected under a covenant of easement~~.~~ or conservation easement. A long-term management plan for the area shall be prepared and will include maintenance of the wetland functions and values of the existing and restored habitat in perpetuity by the Home Owners Association, underlying land owner, or an approved land manager.

The land manager shall be an entity approved by CDFW and USFWS according to a long-term management plan approved by these agencies. The responsible party shall deter access to the Open Space through the use of signage and/or barriers, which will also be placed along the proposed trail within the Open Space. The tasks in the long-term management plan shall provide for long-term monitoring; documentation of site conditions; and tasks such as removal of trash, repair of any vandalism, and control of invasive species. The long-term management plan shall also provide BMPs that help reduce the spread of Polyphagous and Kuroshio shot hole borers (SHBs). BMPs may include on-site worker education, reporting of infestations, equipment disinfection, pruning infected limbs, avoidance of transport of infected host tree materials, chipping potential infected material to less than one inch in size and solarizing prior to removal or composting, and solarizing or burning of cut material that is potentially infected.

The condition of the Open Space shall be documented annually by preparation of an annual report submitted to the City and resource agencies. The responsible party shall also be responsible for implementation of any remedial measures (e.g., planting native wetland plants) to repair damage or loss due to any of the above-mentioned factors. The long-term management plan shall be funded by a non-wasting endowment for which the amount can be determined via preparation of a Property Analysis Record or similar method.

*Polyphagous and Kuroshio Shot Hole Borers*

The Biological Technical Report and Arborist Technical Report were modified to include discussion of the risk of spread of SHBs. A description of SHBs and the risk of their spread was added to Section 3.3.1.5, Protected Trees. A discussion regarding the potential for the proposed project to contribute to the spread of SHBs was added to Sections 3.3.4.5 and 3.3.6.5, Local Policies and Ordinances. Mitigation Measure BIO-9 was added to address the risk of SHB spreading from the Specific Alignment Plan.

**BIO-9:** The following measures shall be implemented prior to, during, and following site activities to minimize Polyphagous Shot Hole Borer (PSHB) and Kuroshio Shot Hole Borer (KSHB) spread.

1. Provide education of on-site workers regarding shot hole borers and its spread (provided by the biological monitor)
2. Report sign of shot hole borer infestation to the CDFW and University of California Riverside's Eskalen Lab
3. Disinfect hand tools and machinery used to cut trees, chip trees, and process trees
4. If infection is observed, remove infested/infected limbs to the extent feasible. If warranted, entire trees may require removal and would be coordinated with the City and or CDFW, as appropriate
5. Avoid and minimize transportation of potential host tree materials
6. Following tree felling for known host tree species within the disturbance area, the trees will be ground to less than one-inch diameter and solarized, prior to spreading on-site or delivering to a landfill
7. Cut logs of known host species that are too large to be chipped/ground will be solarized before being removed from the site
8. If acceptable, known host species material will be burned in lieu of other protective measures if determined to be preferred to chipping and solarization
9. Post project landscapes will be maintained in good horticultural condition and trees will be provided necessary maintenance for establishment and growth

Cultural Resources

*Pre-excavation Agreement*

A new mitigation measure was added to describe the Tribal Cultural Resource Treatment and Monitoring Agreement (also known as a pre-excavation agreement) that the City would recommend the applicant to enter into with the TCA Tribe.

**CR-1:** The City of Escondido Planning Division recommends the applicant enter into a Tribal Cultural Resource Treatment and Monitoring Agreement (also known as a pre-excavation agreement) with a tribe that is traditionally and culturally affiliated with the project location (TCA Tribe) prior to issuance of a grading permit. The purposes of the agreement are (1) to

provide the applicant with clear expectations regarding tribal cultural resources; and (2) to formalize protocols and procedures between the applicant and the TCA Tribe for the protection and treatment of, including but not limited to, Native American human remains; funerary objects; cultural and religious landscapes; ceremonial items; traditional gathering areas; and cultural items located and/or discovered through a monitoring program in conjunction with the construction of the proposed project, including additional archaeological surveys and/or studies, excavations, geotechnical investigations, grading, and all other ground disturbing activities.

*Imported Fill Materials*

The text of Mitigation Measure CR-4 was modified as follows:

**CR-~~3~~4:** During the initial grubbing, site grading, excavation, or disturbance of the ground surface, the qualified archaeologist and the Native American monitor shall be onsite full-time. If imported fill materials, or fill used from other areas of the project site, are to be incorporated at the project site, those fill materials shall be absent of any tribal cultural resources. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of tribal cultural resources as defined in PRC Section 21074. Archaeological and Native American monitoring will be discontinued when the depth of grading and soil conditions no longer have the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor, shall be responsible for determining the duration and frequency of monitoring.

*Curation or Repatriation of Artifacts*

The text of Mitigation Measure CR-6 was modified as follows:

**CR-~~5~~6:** If a potentially significant tribal cultural resource is discovered, the archaeologist shall notify the City of said discovery~~.~~ and shall conduct consultation with TCA tribes to determine the most appropriate mitigation. The qualified archaeologist, in consultation with the City, the TCA Tribe, and the Native American monitor, shall determine the significance of the discovered resource. A recommendation for treatment and disposition of the tribal cultural resource shall be made by the qualified archaeologist in consultation with the TCA Tribe and the Native American monitor, and shall be submitted to the City for review and approval.

The text of Mitigation Measure CR-8 was modified as follows:

~~**CR-7: –**~~**CR-8:** In accordance with CEQA, all tribal cultural resources shall be treated with culturally appropriate dignity. If the qualified archaeologist elects to collect any tribal cultural resources, the Native American monitor must be present during ~~any testing or~~the collection and cataloging of those resources. Moreover, if the qualified archaeologist does not collect the tribal cultural resources that are unearthed during the ground-disturbing activities, the Native American monitor may, at their discretion, collect said resources and provide them to the TCA

Tribe for respectful and dignified treatment in accordance with the tribe's cultural and spiritual traditions. ~~=~~

~~Any tribal cultural resources collected by the qualified archaeologist shall be repatriated to the TCA Tribe. Should the TCA Tribe or other traditionally and culturally affiliated tribe decline the collection, the collection shall be curated at the San Diego Archaeological Center. All other resources determined by the qualified archaeologist, in consultation with the Native American monitor, to not be tribal cultural resources shall be curated at the San Diego Archaeological Center.~~

The project archaeologists shall document evidence that all cultural materials have been repatriated and/or curated as follows:

(1) It is the preference of the City that all tribal cultural resources be repatriated to the TCA Tribe, as such preference would be the most culturally sensitive, appropriate, and dignified. Therefore, any tribal cultural resources collected by the qualified archaeologist shall be provided to the TCA Tribe. Evidence that all cultural materials collected have been repatriated shall be in the form of a letter from the TCA Tribe to whom the tribal cultural resources have been repatriated identifying that the archaeological materials have been received.

OR

(2) Any tribal cultural resources collected by the qualified archaeologist shall be curated with its associated records at a San Diego curation facility or a culturally-affiliated Tribal curation facility that meets federal standards per 36 CFR Part 79, and, therefore, would be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records, including title, shall be transferred to the San Diego curation facility or culturally affiliated Tribal curation facility and shall be accompanied by payment of the fees necessary for permanent curation. Evidence that all cultural materials collected have been curated shall be in the form of a letter from the curation facility stating that the prehistoric archaeological materials have been received and that all fees have been paid.

*Treatment of Potential Human Remains*

A new mitigation measure was added to describe the procedure for handling potentially discovered human remains.

**CR-10** As specified by California Health and Safety Code Section 7050.5, if human remains are found on the project site during construction or during archaeological work, the person responsible for the excavation, or his or her authorized representative, shall immediately notify the San Diego County Coroner's office. Determination of whether the remains are human shall be conducted onsite and in situ where they were discovered by a forensic anthropologist,

unless the forensic anthropologist and the Native American monitor agree to remove the remains to an offsite location for examination. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the Coroner has made the necessary findings as to origin and disposition. A temporary construction exclusion zone shall be established surrounding the area of the discovery so that the area would be protected, and consultation and treatment could occur as prescribed by law. In the event that the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the Native American Heritage Commission, shall be contacted in order to determine proper treatment and disposition of the remains in accordance with California Public Resources Code section 5097.98. The Native American remains shall be kept in situ, or in a secure location in close proximity to where they were found, and the analysis of the remains shall only occur onsite in the presence of a Native American monitor.

# PART II MITIGATION MONITORING PROGRAM

PROJECT NAME: 661 Bear Valley Parkway Residential Development
PROJECT LOCATION: 661 Bear Valley Parkway
PROJECT DESCRIPTION: New Residential Development and Specific Alignment Plan
PROJECT NUMBER: City Project #SUB 15-0002
APPROVAL BODY/DATE: City Council / August 2017
CONTACT: Ann Dolmage, Associate Planner
PHONE NUMBER: (760)839-4548

| Impact | Mitigation Measure | Project Component | Responsible Party | Timing of Verification | Certified Completion | Comments |
|---|---|---|---|---|---|---|
| Biological Resources | | | | | | |
| **Impact BIO-1**: Construction-related activities could impact raptors and other nesting birds | **Mitigation BIO-1**: If construction activity occurs during the breeding season for raptors and other birds (typically January 1 through September 15), a one-time biological survey for nesting bird species shall be conducted within the proposed impact area and a 300-foot buffer within 72 hours prior to construction. This survey is necessary to ensure avoidance of impacts on nesting raptors (e.g., Cooper's hawk and red-tailed hawk) and/or birds protected by the federal MBTA. If any active nests are detected, the area shall be flagged and mapped on the construction plans along with a minimum of a 300-foot buffer and up to a maximum of 500 feet for raptors, as determined by the project biologist, and shall be avoided until the nesting cycle is complete. The project biologist may reduce the avoidance buffer if a reduced buffer maintains protection of the nesting cycle of the avian species. | Residential Development / SAP Improvements | Applicant / SAP Developer | Within 72 hours prior to initiating construction | | |

| Impact | Mitigation Measure | Project Component | Responsible Party | Timing of Verification | Certified Completion | Comments |
|---|---|---|---|---|---|---|
| **Impact BIO-2**: Direct impacts on sensitive habitat (southern coast live oak riparian forest) from project construction | **Mitigation BIO-2**: To mitigate impacts on sensitive habitats from the proposed residential development, the project applicant shall establish or enhance at least 2.01 acres (a 3:1 ratio) of southern coast live oak riparian forest with establishment of 0.67 acre within an on-site mitigation area and enhancement of 1.34 acre within the open space area in general, including enhancing the 0.13 acre area of non-native riparian and enhancing the balance within the area mapped as southern coast live oak riparian forest that contains non-native and invasive species (Table 3.3-10). The mitigation shall occur within the open space lot (Lot H) totaling 8.0 acres. The mitigation area occurs along the ephemeral drainage that runs along the southern boundary of the proposed residential development site, as shown in Figure 3.3-3. A Conceptual Mitigation Plan shall be prepared as part of the permit application process (i.e., CWA Section 401/404 permit) described in mitigation measure BIO-5 by persons with expertise in southern California ecosystems and native plant revegetation techniques. The Conceptual Mitigation Plan shall include, at a minimum (a) the location of the mitigation site; (b) the plant species to be used, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity. | Residential Development | Applicant | During the permit application process | | |

| Impact | Mitigation Measure | Project Component | Responsible Party | Timing of Verification | Certified Completion | Comments |
|---|---|---|---|---|---|---|
| **Impact BIO-2 (continued)** | **Mitigation BIO-3**: To mitigate impacts on sensitive habitats in the proposed SAP improvements area, the SAP improvements applicant shall establish/enhance southern coast live oak riparian forest (or similar vegetation community) at a suitable location at a 1:1 to 3:1 mitigation ratio. If establishment or enhancement is unavailable or not practical, the SAP improvements applicant shall secure mitigation credits at an approved mitigation bank at a 1:1 to 3:1 mitigation ratio. Details will be finalized as part of the permit application process (i.e., CDFW Section 1602 Streambed Alteration Agreement) described in mitigation measure BIO-6. | SAP Improvements | SAP Developer | During the permit application process | | |
| **Impact BIO-3**: Direct impacts on jurisdictional habitat (southern coast live oak riparian forest and unvegetated stream channel) | **Mitigation BIO-2 (see above)**<br>**Mitigation BIO-4**: To mitigate impacts on jurisdictional habitat in the proposed residential development, the project applicant shall establish or enhance approximately 0.03 (1:1 mitigation ratio) acre of unvegetated stream channel (Table 3.3-11). The mitigation area occurs along the ephemeral drainage that runs along the southeastern boundary, as shown in Figure 3.3-3. The 0.03 acre plus the 2.01 acre from mitigation measure BIO-2 will result in establishment of 2.04 acres within the mitigation area. Details shall be provided in a Conceptual Mitigation Plan, which shall be prepared as part of the permit process (i.e., CWA Section 401/404 permit) described in mitigation measure BIO-5. | Residential Development | Applicant | During the permit application process | | |

| Impact | Mitigation Measure | Project Component | Responsible Party | Timing of Verification | Certified Completion | Comments |
|---|---|---|---|---|---|---|
| **Impact BIO-3 (continued)** | **Mitigation BIO-5**: To comply with the state and federal regulations for impacts on jurisdictional aquatic resources, the following agency permits are required, or verification that they are not required shall be obtained:<br>• A CWA, Section 401/404 permit issued by the RWQCB and the USACE for all project-related disturbances of non-wetland waters of the United States and/or associated wetlands.<br>• A Section 1602 Streambed Alteration Agreement issued by CDFW for all project-related disturbances of any streambed and associated riparian habitat. Permits are required to be obtained by the applicant prior to the impact on the resources.<br><br>As noted in mitigation measures BIO-2 and BIO-4, a Conceptual Mitigation Plan is required to provide compensatory mitigation for impacts. The on-site wetland preservation area and the proposed wetland mitigation area (Open Space, Lot H) shall be protected under a covenant of easement or conservation easement. A long-term management plan for the area shall be prepared and will include maintenance of the wetland functions and values of the existing and restored habitat in perpetuity by the Home Owners Association, underlying land owner, or an approved land manager.<br><br>The land manager shall be an entity approved by CDFW and USFWS according to a long-term management plan approved by these agencies. The responsible party shall deter access to the Open Space through the use of signage and/or barriers, which will also be placed along the proposed trail within the Open Space. The tasks in the long-term management plan shall provide for long-term monitoring; documentation of site conditions; and tasks such as removal of trash, repair of any vandalism, and control of invasive species. The long- | Residential Development | Applicant | Prior to construction | | |

| Impact | Mitigation Measure | Project Component | Responsible Party | Timing of Verification | Certified Completion | Comments |
|---|---|---|---|---|---|---|
| | term management plan shall also provide BMPs that help reduce the spread of Polyphagous and Kuroshio shot hole borers (SHBs). BMPs may include on-site worker education, reporting of infestations, equipment disinfection, pruning infected limbs, avoidance of transport of infected host tree materials, chipping potential infected material to less than one inch in size and solarizing prior to removal or composting, and solarizing or burning of cut material that is potentially infected.<br><br>The condition of the Open Space shall be documented annually by preparation of an annual report submitted to the City and resource agencies. The responsible party shall also be responsible for implementation of any remedial measures (e.g., planting native wetland plants) to repair damage or loss due to any of the above-mentioned factors. The long-term management plan shall be funded by a non-wasting endowment for which the amount can be determined via preparation of a Property Analysis Record or similar method. | | | | | |
| **Impact BIO-3 (continued)** | **Mitigation BIO-3 (see above)**<br>**Mitigation BIO-6**: To comply with the state and federal regulations for impacts on jurisdictional aquatic resources, the following agency permit is required, or verification that it is not required shall be obtained:<br>• A Section 1602 Streambed Alteration Agreement issued by CDFW for all project-related disturbances of any streambed and associated riparian habitat. Permits are required to be obtained by the applicant prior to the impact on the resources. | SAP Improvements | SAP Developer | Prior to construction | | |

| Impact | Mitigation Measure | Project Component | Responsible Party | Timing of Verification | Certified Completion | Comments |
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| **Impact BIO-4:** Removal and encroachment upon mature and/or protect trees | **Mitigation BIO-7**: Prior to the issuance of grading permits, the residential development applicant shall submit a Tree Mitigation Program to the City Community Development Department for review and approval. The Tree Mitigation Program shall focus on preservation, restoration, and enhancement of preserved oak trees/stands through sustainable tree plantings and native tree planting in the transition area between open space and development areas throughout the project site. Table 3.3-12 identifies the total number of plantings required to meet the intent of the City's tree protection and replacement requirements. A minimum of 195 trees (including coast live oak and other suitable native or ornamental species) shall be planted within the residential development landscape areas. The Tree Mitigation Program shall ensure that a minimum of 773 landscape trees are planted on the residential development site, as shown in Table 3.3-13. | Residential Development | Applicant | Prior to issuance of permits / during landscaping phase | | |
| | **Mitigation BIO-8**: To meet the City's mitigation planting requirements for the removal and encroachment of trees, 60 trees shall be planted along Bear Valley Parkway following completion of the proposed SAP improvements. Table 3.3-14 identifies the total number of plantings required to meet the intent of the City's tree protection and replacement requirements. A minimum of 60 trees (including coast live oak and other suitable native or ornamental species) shall be planted in areas along Bear Valley Parkway. Table 3.3-15 provides a list of species that are not invasive, are acceptable to fire agencies, and are anticipated to perform well along Bear Valley Parkway. | SAP Improvements | SAP Developer | Prior to issuance of permits / during landscaping phase | | |
| **Impact BIO-5:** Polyphagous Shot Hole Borer (PSHB) and Kuroshio Shot Hole Borer (KSHB) spread | **Mitigation BIO-5** (see above) | Residential Development | Applicant | Prior to construction | | |

| Impact | Mitigation Measure | Project Component | Responsible Party | Timing of Verification | Certified Completion | Comments |
|---|---|---|---|---|---|---|
| **Impact BIO-5 (continued)** | **Mitigation BIO-9:** The following measures shall be implemented prior to, during, and following site activities to minimize Polyphagous Shot Hole Borer (PSHB) and Kuroshio Shot Hole Borer (KSHB) spread.<br>1. Provide education of on-site workers regarding shot hole borers and its spread (provided by the biological monitor)<br>2. Report sign of shot hole borer infestation to the CDFW and University of California Riverside's Eskalen Lab<br>3. Disinfect hand tools and machinery used to cut trees, chip trees, and process trees.<br>4. If infection is observed, remove infested/infected limbs to the extent feasible. If warranted, entire trees may require removal and would be coordinated with the City and or CDFW, as appropriate.<br>5. Avoid and minimize transportation of potential host tree materials.<br>6. Following tree felling for known host tree species within the disturbance area, the trees will be ground to less than one-inch diameter and solarized, prior to spreading on-site or delivering to a landfill.<br>7. Cut logs of known host species that are too large to be chipped/ground will be solarized before being removed from the site.<br>8. If acceptable, known host species material will be burned in lieu of other protective measures if determined to be preferred to chipping and solarization.<br>9. Post project landscapes will be maintained in good horticultural condition and trees will be provided necessary maintenance for establishment and growth. | SAP Improvements | SAP Developer | Prior to, during, and following construction | | |

| Impact | Mitigation Measure | Project Component | Responsible Party | Timing of Verification | Certified Completion | Comments |
|---|---|---|---|---|---|---|
| Cultural Resources | | | | | | |
| **Impact CR-1**: Potential impacts on unidentified and unknown subsurface archaeological and tribal cultural resources | **Mitigation CR-1**: The City of Escondido Planning Division recommends the applicant enter into a Tribal Cultural Resource Treatment and Monitoring Agreement (also known as a pre-excavation agreement) with a tribe that is traditionally and culturally affiliated with the project location (TCA Tribe) prior to issuance of a grading permit. The purposes of the agreement are (1) to provide the applicant with clear expectations regarding tribal cultural resources; and (2) to formalize protocols and procedures between the applicant and the TCA Tribe for the protection and treatment of, including but not limited to, Native American human remains; funerary objects; cultural and religious landscapes; ceremonial items; traditional gathering areas; and cultural items located and/or discovered through a monitoring program in conjunction with the construction of the proposed project, including additional archaeological surveys and/or studies, excavations, geotechnical investigations, grading, and all other ground disturbing activities. | Residential Development / SAP Improvements | Applicant / SAP Developer | Prior to issuance of a grading permit | | |
| | **Mitigation CR-2**: Prior to issuance of a grading permit, the applicant shall provide written verification to the City that a qualified archaeologist and a Native American monitor associated with a TCA Tribe have been retained to implement the monitoring program. The archaeologist shall be responsible for coordinating with the Native American monitor. This verification shall be presented to the City in a letter from the project archaeologist confirming that the selected Native American monitor is associated with a TCA Tribe. Prior to any pre-construction meeting, the City shall approve all persons involved in the monitoring program. | Residential Development / SAP Improvements | Applicant / SAP Developer | Prior to issuance of a grading permit | | |
| | **Mitigation CR-3**: The qualified archaeologist and a Native American monitor shall attend the pre-grading meeting with the grading contractors to explain and coordinate the requirements of the monitoring program. | Residential Development / SAP Improvements | Applicant / SAP Developer | During pre-grading meeting | | |

| Impact | Mitigation Measure | Project Component | Responsible Party | Timing of Verification | Certified Completion | Comments |
|---|---|---|---|---|---|---|
| **Impact CR-1 (continued)** | **Mitigation CR-4**: During the initial grubbing, site grading, excavation, or disturbance of the ground surface, the qualified archaeologist and the Native American monitor shall be onsite full-time. If imported fill materials, or fill used from other areas of the project site, are to be incorporated at the project site, those fill materials shall be absent of any tribal cultural resources. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of tribal cultural resources as defined in PRC Section 21074. Archaeological and Native American monitoring will be discontinued when the depth of grading and soil conditions no longer have the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor, shall be responsible for determining the duration and frequency of monitoring. | Residential Development / SAP Improvements | Applicant / SAP Developer | During grading activities | | |
| | **Mitigation CR-5**: In the event that previously unidentified tribal cultural resources are discovered, the qualified archaeologist and the Native American monitor shall have the authority to temporarily divert or temporarily halt ground disturbance operations in the area of discovery to allow for evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so that the monitored grading can proceed. | Residential Development / SAP Improvements | Applicant / SAP Developer | During grading activities | | |

| Impact | Mitigation Measure | Project Component | Responsible Party | Timing of Verification | Certified Completion | Comments |
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| **Impact CR-1 (continued)** | **Mitigation CR-6**: If a potentially significant tribal cultural resource is discovered, the archaeologist shall notify the City of said discovery and shall conduct consultation with TCA tribes to determine the most appropriate mitigation. The qualified archaeologist, in consultation with the City, the TCA Tribe, and the Native American monitor, shall determine the significance of the discovered resource. A recommendation for treatment and disposition of the tribal cultural resource shall be made by the qualified archaeologist in consultation with the TCA Tribe and the Native American monitor, and shall be submitted to the City for review and approval. | Residential Development / SAP Improvements | Applicant / SAP Developer | Prior to construction activities resuming | | |
| | **Mitigation CR-7**: The avoidance and/or preservation of the significant tribal cultural resource and/or unique archaeological resource must first be considered and evaluated under CEQA. Where any significant tribal cultural resources and/or unique archaeological resources have been discovered and avoidance and/or preservation measures are deemed to be infeasible by the City, a research design and data recovery program to mitigate impacts shall be prepared by the qualified archaeologist (using professional archaeological methods), in consultation with the TCA Tribe and the Native American monitor, and shall be subject to approval by the City. The qualified archaeologist, in consultation with the Native American monitor, shall determine the amount of material to be recovered for an adequate artifact sample for analysis. Before construction activities are allowed to resume in the affected area, the research design and data recovery program activities must be concluded to the satisfaction of the City. | Residential Development / SAP Improvements | Applicant / SAP Developer | Prior to construction activities resuming | | |

| Impact | Mitigation Measure | Project Component | Responsible Party | Timing of Verification | Certified Completion | Comments |
|---|---|---|---|---|---|---|
| **Impact CR-1 (continued)** | **Mitigation CR-8**: In accordance with CEQA, all tribal cultural resources shall be treated with culturally appropriate dignity. If the qualified archaeologist elects to collect any tribal cultural resources, the Native American monitor must be present during the collection and cataloging of those resources. Moreover, if the qualified archaeologist does not collect the tribal cultural resources that are unearthed during the ground-disturbing activities, the Native American monitor may, at their discretion, collect said resources and provide them to the TCA Tribe for respectful and dignified treatment in accordance with the tribe's cultural and spiritual traditions.<br><br>The project archaeologists shall document evidence that all cultural materials have been curated and/or repatriated as follows:<br><br>1) It is the preference of the City that all tribal cultural resources be repatriated to the TCA Tribe, as such preference would be the most culturally sensitive, appropriate, and dignified. Therefore, any tribal cultural resources collected by the qualified archaeologist shall be provided to the TCA Tribe. Evidence that all cultural materials collected have been repatriated shall be in the form of a letter from the TCA Tribe to whom the tribal cultural resources have been repatriated identifying that the archaeological materials have been received.<br><br>OR<br>(2) Any tribal cultural resources collected by the qualified archaeologist shall be curated with its associated records at a San Diego curation facility or a culturally-affiliated Tribal curation facility that meets federal standards per 36 CFR Part 79, and, therefore, would be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records, including title, shall be transferred to the San Diego curation facility or culturally affiliated Tribal curation facility and | Residential Development / SAP Improvements | Applicant / SAP Developer | Prior to project approval | | |

| Impact | Mitigation Measure | Project Component | Responsible Party | Timing of Verification | Certified Completion | Comments |
|---|---|---|---|---|---|---|
| **Impact CR-1 (continued)** | shall be accompanied by payment of the fees necessary for permanent curation. Evidence that all cultural materials collected have been curated shall be in the form of a letter from the curation facility stating that the prehistoric archaeological materials have been received and that all fees have been paid. | | | | | |
| | **Mitigation CR-9**: Prior to the release of the grading bond, a monitoring report and/or evaluation report, if appropriate, that describes the results, analysis, and conclusion of the archaeological monitoring program and any data recovery program on the project site shall be submitted by the qualified archaeologist to the City. The Native American monitor shall be responsible for providing any notes or comments to the qualified archaeologist in a timely manner, to be submitted with the report. The report will include California Department of Parks and Recreation Primary and Archaeological Site Forms for any newly discovered resources. | Residential Development / SAP Improvements | Applicant / SAP Developer | Prior to issuance of any building permits | | |

| Impact | Mitigation Measure | Project Component | Responsible Party | Timing of Verification | Certified Completion | Comments |
|---|---|---|---|---|---|---|
| **Impact CR-1 (continued)** | **Mitigation CR-10:** As specified by California Health and Safety Code Section 7050.5, if human remains are found on the project site during construction or during archaeological work, the person responsible for the excavation, or his or her authorized representative, shall immediately notify the San Diego County Coroner's office. Determination of whether the remains are human shall be conducted onsite and in situ where they were discovered by a forensic anthropologist, unless the forensic anthropologist and the Native American monitor agree to remove the remains to an offsite location for examination. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the Coroner has made the necessary findings as to origin and disposition. A temporary construction exclusion zone shall be established surrounding the area of the discovery so that the area would be protected, and consultation and treatment could occur as prescribed by law. In the event that the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the Native American Heritage Commission, shall be contacted in order to determine proper treatment and disposition of the remains in accordance with California Public Resources Code section 5097.98. The Native American remains shall be kept in situ, or in a secure location in close proximity to where they were found, and the analysis of the remains shall only occur onsite in the presence of a Native American monitor. | Residential Development / SAP Improvements | Applicant / SAP Developer | Prior to construction activities resuming | | |

| Impact | Mitigation Measure | Project Component | Responsible Party | Timing of Verification | Certified Completion | Comments |
|---|---|---|---|---|---|---|
| Geology & Soils | | | | | | |
| **Impact GEO-1**: Unstable soils that are unsuitable to support new compact fills, embankments, transition walls or structures and other improvements | **Mitigation GEO-1**: To reduce impacts related to soil stability and expansive soils on the proposed residential development site, the tentative map grading plan shall include the recommendations contained in the Geotechnical Investigation (Appendix I-1) and the Geotechnical Update Report (Appendix I-2), or equivalent measures identified in a Final Geotechnical Report, prior to the issuance of grading permits. The recommendations regarding expansive soils and the existing known mine excavations are listed below.<br>a. Potentially expansive clayey soils, where encountered, shall be thoroughly mixed with an abundance of sandy granular soils available from the project site bedrock excavations to manufacture a very low expansive mixture. Alternatively, expansive clayey soils shall be selectively buried within deeper site fills and away from the finish fill slope faces, with the upper pad grades and embankment surfaces capped with good quality sandy soils, as recommended in the Geotechnical Investigation (Appendix I-1).<br>b. Mine-related excavations with 10 feet minimum of competent bedrock overburden are determined not to be susceptible to future collapse (as inspected and approved by the project geotechnical consultant) and will be sealed and capped. The following procedures will be applied to the four known former mining shafts:<br>1. Test Pit 4: Due to the shallow nature of the excavation, the mine tunnel shall be exposed in both directions with a large track hoe or suitable excavating equipment. The northern portion of the mine tunnel shall be exposed to its end and backfilled with 90% compacted soil. Should the north end of the mine excavation extend beyond the property line (and possibly | Residential Development | Applicant | Prior to issuance of grading permits | | |

| Impact | Mitigation Measure | Project Component | Responsible Party | Timing of Verification | Certified Completion | Comments |
|---|---|---|---|---|---|---|
| | beneath Bear Valley Parkway), the tunnel shall be exposed and backfilled with 90% compacted soil to the extent necessary or equivalent measure to provide soils stability on the residential development site and for proposed Bear Valley Parkway Frontage Improvements, as determined by a qualified geotechnical engineer in consultation with the City of Escondido engineering department. The south portion of the mine tunnel shall be continuously exposed to its end or until a minimum of 10 feet of competent bedrock is exposed. The open mine excavation, if exposed with a minimum of 10 feet of competent bedrock, will be capped as outlined in the Geotechnical Investigation (Appendix I-1).<br>2. Test Pit 7: The nearly horizontal mine shaft and associated secondary mine excavations exposed at this location are located within a planned deep cut area and are expected to be completely removed as part of the cut grading operation. If the shaft continues below finish grade, it shall be completely excavated and backfilled with 90% compacted soil, as approved by the geotechnical engineer.<br>3. Test Pit 9: The well-developed horizontal mine tunnel (adit) at this location is in a planned fill slope area. The entrance to this mine excavation shall be exposed and the overburden removed until there is a minimum of 10 feet of competent bedrock above the mine excavation. The opening shall then be sealed as outlined in the Geotechnical Investigation (Appendix I-1).<br>4. Test Pit 15: The mine excavation exposed at this location is in a planned deep fill area. The entrance to this mine excavation shall be exposed and the overburden removed until | | | | | |

| Impact | Mitigation Measure | Project Component | Responsible Party | Timing of Verification | Certified Completion | Comments |
|---|---|---|---|---|---|---|
| | there is a minimum of 10 feet of competent bedrock above the mine excavation. The excavation shall then be sealed as outlined in the Geotechnical Investigation (Appendix I-1). | | | | | |
| **Impact GEO-1 (continued)** | **Mitigation GEO-2**: To reduce project impacts related to soil stability and expansive soils on the proposed SAP improvements site, the tentative map grading plan shall include the recommendations contained in the Geotechnical Investigation for Proposed Roadway Improvements (Appendix J), or equivalent measures identified in a Final Geotechnical Report, prior to the issuance of grading permits. The recommendations include the following:<br>1. Over-excavation to suitable materials or ground stabilization shall be used.<br>2. Over-excavation for treatment of bearing soil under the proposed wall foundations shall be extended to well-compacted fills or dense native ground and placed back as a properly compacted fill.<br>3. To address surface drainage and storm water control, drainage swales shall be constructed along the top of all graded slopes and surface run-off shall be collected and directed to a selected location in a controlled manner. | SAP Improvements | SAP Developer | Prior to the issuance of grading permits | | |

| Impact | Mitigation Measure | Project Component | Responsible Party | Timing of Verification | Certified Completion | Comments |
|---|---|---|---|---|---|---|
| Hazardous Materials | | | | | | |
| **Impact HAZ-1**: Demolition of potential asbestos and/or lead-containing structures | **Mitigation HAZ-1**: At least 10 days prior to demolition or removal of existing on-site structures, the project applicant shall submit an Asbestos Demolition or Renovation Operational Plan (Notice of Intention) to the City Community Development Department. This plan shall be prepared by an asbestos consultant licensed with the California State Licensing Board and certified by Cal OSHA to conduct an asbestos inspection in compliance with Asbestos NESHAP requirements. The Asbestos NESHAP, as specified under Rule 40, CFR 61, Subpart M, (enforced locally by the San Diego APCD, under authority, per Regulation XI, Subpart M - Rule 361.145), requires the owner of an establishment set for demolition to submit an Asbestos Demolition or Renovation Operational Plan at least 10 working days before any asbestos stripping or removal work begins (such as site preparation that would break up, dislodge or similarly disturb asbestos-containing material.)<br><br>Removal of all asbestos-containing material or potential asbestos-containing material on the project site shall be monitored by the certified asbestos consultant and shall be performed in accordance with all applicable laws, including Title 8 CCR Section 1529, Asbestos; OSHA standards; and the San Diego County APCD Rule 361.145, Standard for Demolition and Renovation. | Residential Development | Applicant | Prior to issuance of building permit for demolition | | |
| | **Mitigation HAZ-2**: Demolition or removal of existing on-site structures constructed pre-1979 shall be performed by a Certified Lead Inspector/Assessor, as defined in Title 17, CCR Section 35005, and in accordance with all applicable laws pertaining to the handling and disposal of lead-based paint. Lead-based materials exposure is regulated by Cal OSHA. Title 8 CCR Section 1532.1 requires testing, monitoring, containment, and disposal of lead-based materials such that exposure levels do not exceed Cal OSHA standard. | Residential Development | Applicant | Prior to issuance of grading and building permits | | |

| Impact | Mitigation Measure | Project Component | Responsible Party | Timing of Verification | Certified Completion | Comments |
|---|---|---|---|---|---|---|
| Noise | | | | | | |
| **Impact NOI-1**: Excessive noise levels on the residential development site | **Mitigation NOI-1**: Prior to approval of final project designs, the residential development applicant shall incorporate a perimeter block noise wall, or similar noise-attenuating structure, that fronts proposed lots 1–5 into the residential development design. The noise wall shall be approximately 552 feet in length and 5 feet high in front of lots 1–4 and 6 feet high in front of lot 5. Refer to Figure 3.8-1 for the location and heights of the noise wall. | Residential Development | Applicant | Prior to approval of final project designs | | |
| | **Mitigation NOI-2**: Prior to construction, a qualified acoustical consultant shall review final site plans, building elevations, and floor plans to calculate expected interior noise levels, as required by state noise regulations. Project-specific acoustical analyses are required by Title 24 to confirm that the design results in interior noise levels reduced to 45 dBA or lower. The specific determination of what noise insulation treatments are necessary shall be completed on a unit-by-unit basis. Results of the analysis, including the description of the necessary noise control treatments, shall be submitted to the City along with the building plans, and shall be approved prior to issuance of a building permit.<br><br>Building sound insulation requirements may include the provision of forced-air mechanical ventilation for residential units as recommended by the qualified acoustical consultant, so that windows can be kept closed at the occupant's discretion to control noise.<br><br>Special building techniques (e.g., sound-rated windows and building façade treatments) shall be implemented as recommended by the qualified acoustical consultant to maintain interior noise levels at or below acceptable levels. These treatments may include, but are not limited to, sound-rated windows and doors, sound-rated wall constructions, acoustical caulking, and protected ventilation openings. | Residential Development | Applicant | Prior to construction | | |

| Impact | Mitigation Measure | Project Component | Responsible Party | Timing of Verification | Certified Completion | Comments |
|---|---|---|---|---|---|---|
| **Impact NOI-2**: Temporary ground-borne vibration impacts from construction activities near residences | **Mitigation NOI-3**: At least 3 weeks prior to the start of construction activities, the construction contractor shall provide written notification to all residences located within 75 feet of the proposed construction activities informing them of the estimated start date and duration of daytime vibration-generating construction activities. This notification shall include information about the potential for nuisance vibration. The City shall provide a phone number for the affected residences to call if they have concerns about construction-related vibration. If additional houses are built within 75 feet of the proposed development site prior to completion of proposed construction, written notification shall be provided to these residences as well. | Residential Development / SAP Improvements | Applicant & City / SAP Developer & City | At least 3 weeks prior to construction activities | | |
| | **Mitigation NOI-4**: For construction activities within 75 feet of residences on Bear Valley Parkway, the construction contractor shall implement the following measures during construction:<br>1. Stationary sources, such as temporary generators, shall be located as far from nearby vibration-sensitive receptors as possible.<br>2. Trucks shall be prohibited from idling along streets serving the construction site where vibration-sensitive receptors are located.<br>3. Demolition, earthmoving, and ground-disturbing operations shall be phased so as not to occur in the same time period.<br>If additional houses are built within 75 feet of the proposed development site prior to completion of proposed construction, the measures shall be implemented for these residences as well. | Residential Development / SAP Improvements | Applicant / SAP Developer | During construction | | |

| Impact | Mitigation Measure | Project Component | Responsible Party | Timing of Verification | Certified Completion | Comments |
|---|---|---|---|---|---|---|
| **Impact NOI-3**: Temporary noise impacts from construction activities near residences | In addition to **NOI-3** and **NOI-4**,<br>**Mitigation NOI-5**: Prior to grading activities, the construction contractor shall implement and monitor the noise reduction measures described below to the extent necessary to reduce construction noise levels to below an hourly average noise level of 75 dBA at any residential property line. Noise reduction measures are required for all construction within 145 feet of a residence. Any one or a combination of measures can be used as necessary. Typical measures that may be implemented include the following, as necessary, to achieve compliance with the City's noise ordinance:<br>• Use "quiet" gasoline-powered compressors or other electric-powered compressors, and use electric-powered rather than gasoline- or diesel-powered forklifts for small lifting.<br>• Locate stationary noise sources, such as temporary generators, as far from nearby receptors as possible.<br>• Use the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) for construction equipment and trucks.<br>• Muffle and enclose stationary noise sources within temporary sheds or incorporate insulation barriers.<br>• Limit simultaneous operation of construction equipment or limit construction time within an hour to reduce hourly average noise level.<br>• Implement temporary noise barriers, such as sound blankets, of a sufficient height and thickness around the perimeter of the construction area to minimize construction noise to 75 dBA as measured at the applicable property lines of the adjacent uses. | Residential Development / SAP Improvements | Applicant / SAP Developer | Prior to grading activities | | |

| Impact | Mitigation Measure | Project Component | Responsible Party | Timing of Verification | Certified Completion | Comments |
|---|---|---|---|---|---|---|
| **Impact NOI-3 (continued)** | To ensure compliance with the City's Noise Ordinance, noise monitoring shall be conducted on the first day of typical construction. A 1-hour noise measurement shall be conducted in accordance with Section 17-228 of the City's Noise Ordinance at 50 feet from the most intensive construction activity. If it is determined that construction would have the potential to exceed the hourly construction noise level limit at any residential property, additional noise control measures shall be implemented as necessary and an additional noise measurement will be conducted to confirm compliance. | | | | | |
| Transportation and Traffic | | | | | | |
| **Impact TR-1:** Cumulative impact on the level-of-service operations at the intersection at Bear Valley Parkway and Encino Drive | **Mitigation TR-1**: To address operating deficiencies, a fair-share contribution will be made to realignment and signalization of the unsignalized intersection. It is proposed that the intersection be realigned such that Encino Drive is simplified to include one approach lane and one departure lane. Also, the median separating the approach and departure lanes is proposed to be reduced as Encino Drive is realigned to intersect with Bear Valley Parkway at a 90-degree angle. These proposed improvements are consistent with the designs shown in the SAP. | Residential Development | Applicant | Prior to recordation of the Final Map | | |

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# PART III COMMENTS RECEIVED ON THE DRAFT EIR AND RESPONSES

During the public review period (March 27, 2017 to May 12, 2017) for the Draft EIR for the proposed project, the City of Escondido (City) received 15 comment letters. These letters, and the City's responses to them, are attached. The responses to comments are based on the California Environmental Quality Act (CEQA) Guidelines, Section 15088 – Evaluation of and Response to Comments, sub-section (c) which states:

> "The written response shall describe the disposition of significant environmental issues raised (e.g., revisions to the proposed project to mitigate anticipated impacts or objections). In particular, the major environmental issues raised when the Lead Agency's position is at variance with recommendations and objections raised in the comments must be addressed in detail giving reasons why specific comments and suggestions were not accepted. There must be good faith, reasoned analysis in response. Conclusory statements unsupported by factual information will not suffice."

The following letters of comment were received from agencies, organizations, and individuals during the Public Review period (March 27, 2017 to May 12, 2017) of the Draft EIR. A copy of each comment letter along with corresponding staff responses is included here.
All comments and responses to comments have been organized and coded for tracking purposes. Identification letters and number (refer to Table RTC-1) have been assigned, as follows:

- F refers to comments from Federal Agencies;
- S refers to comments from State Agencies;
- L refers to comments from Local Agencies; and
- O refers to comments from Organizations or Individuals.

The comment letters and responses have been reproduced together on a single sheet of paper, with the comment letter on the left side of the page and the corresponding responses on the right side of the page. Each document was divided into individual comments with each comment containing a single theme, issue, or concern.

**Table RTC-1 Summary of Public Comments on the Draft EIR**

| No. | Commenter | Date |
|---|---|---|
| *Federal Agencies – no comments* | | |
| *State Agencies* | | |
| S1 | California Department of Fish and Wildlife (CDFW) | May 4, 2017 |
| S2 | State Clearinghouse and Planning Unit | May 9, 2017 |
| *Local Agencies* | | |
| L1 | North County Transit District (NCTD) | March 30, 2017 |
| L2 | San Diego County Archaeological Society, Inc. | April 11, 2017 |
| L3 | San Diego Gas & Electric (SDG&E) | May 5, 2017 |
| L4 | County of San Diego | May 16, 2017 |
| *Organizations or Individuals* | | |
| O1 | Ryan and Tabita Kubiak, Valley Grove Lane Residents | April 4, 2017 |
| O2 | Zlatibor Estate Ranch Home Owners Association | May 2, 2017 |
| O3 | San Pasqual Economic Development Agency | May 5, 2017 |
| O4 | Cate and Steve Slebioda, Choya Canyon Road Residents | May 7, 2017 |
| O5 | Joe Gelormini, Bear Valley Parkway Resident | May 9, 2017 |
| O6 | Joe Gelormini, Bear Valley Parkway Resident | May 10, 2017 |
| O7 | William J. Cox, Choya Canyon Road Resident | May 11, 2017 |
| O8 | Mary M. Gilbert, Choya Canyon Road Resident | May 11, 2017 |
| O9 | Rincon Band of Luiseño Indians | May 12, 2017 |

Any additions to the Draft EIR included in the response to comments are indicated as underlined text (e.g., <u>underlined text</u>), and deletions are indicated as strikethrough text (e.g., ~~strikethrough text~~). In the revised Draft EIR, changes resulting from the comments received are also indicated as underlined and/or as strikethrough text, with a vertical line in the outside margin of the page. Please note that the revisions do not affect the conclusions of the document.

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
www.wildlife.ca.gov

*EDMUND G. BROWN JR., Governor*
*CHARLTON H. BONHAM, Director*

Ann Dolmage
Associate Planner
City of Escondido Planning Division
201 North Broadway
Escondido, CA 92025
(760) 839-4548
adolmage@escondido.org

**Subject: Comments on the Draft Environmental Impact Report for the Bear Valley Parkway Residential Development Project SUB 15-0002 SCH#2016111060**

Dear Ms. Dolmage:

The California Department of Fish and Wildlife (CDFW) has reviewed the above-referenced Draft Environmental Impact Report (DEIR) for the Bear Valley Parkway Residential Development Project.

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

S1-1

**CDFW ROLE**

CDFW is California's Trustee Agency for fish and wildlife resources, and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; California Environmental Quality Act [CEQA] Guidelines § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802.) Similarly for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also a Responsible Agency under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.) CDFW may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), related authorization as provided by the Fish and Game Code will be required.



S1-1 These are introductory paragraphs that do not address the adequacy or accuracy of information in the Draft EIR. Therefore, no response is necessary.

CDFW also administers the Natural Community Conservation Planning (NCCP) program.

**Project Location:**
The proposed project would consist of the residential development project site and the Bear Valley Parkway Specific Alignment Plan area. Both of these project areas are located in the eastern part of the City of Escondido (City). The 40.62-acre residential development site is located at 661 Bear Valley Parkway. The development site is generally bound by Bear Valley Parkway, single-family residential uses, and vacant parcels to the north; single-family residential uses, and vacant land to the east; single-family residential uses and vacant parcels to the south; and Bear Valley Parkway, single-family residential uses, and a church to the west.

S1-1 Cont.

**Project Description/Objective:**
The proposed project would include a single-family residential subdivision as well as the Bear Valley Parkway Alignment improvements. The proposed development would entitle a new single-family residential subdivision consisting of 55 single-family residential lots, seven open space lots, one recreation lot, and two private street lots. In addition, the residential development would include supporting infrastructure improvements, including Bear Valley Parkway frontage improvements. The Bear Valley Parkway Alignment improvements would widen existing Bear Valley Parkway between Sunset Drive and the City boundary to four lanes along the frontage of the residential project as part of the residential development and include a proposed retrofit of 262 linear feet of an off-site portion of northbound Bear Valley Parkway immediately to the south of the residential development site.

**COMMENTS AND RECOMMENDATIONS**

CDFW offers the following comments and recommendations to assist the City in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources.

S1-2

S1-3

S1-4

1. As noted in section 3.3.2.3 of the DEIR, the Project site is located outside of any Focused Planning Area (FPA) as designated in the draft Escondido Subarea Plan (SAP). CDFW recommends that all mitigation obligations be filled inside the City's FPA, or in order of preference as outlined in section 5.2.1, and utilize ratios according to Table 5-2 of the draft SAP. The proposed mitigation within the open space lot (Lot H) would create habitat that is unlikely to effectively contribute to the City's preserve under the draft SAP due to its location outside of the Biological Core and Linkage Area in Figure 3-2 of the draft SAP as noted in section 3.3.2.3 of the DEIR. Any off-site mitigation credit purchase should be from a habitat bank approved by CDFW. In addition, the final EIR should include analysis of how the Project design and any restoration activities on Lot H would conform to section 5.2.2 of the draft SAP for Narrow Endemic Standards for the cactus wren (*Campylorhynchus brunneicapillus sandiegensis*), a California Species of Special Concern, given the nearby observation noted in sections 3.3.1.3 and 3.3.4.1of the DEIR.

S1-5

5. CDFW recommends that mitigation measure BIO-1 include contingency for raptor nesting as early as January 1 and that the minimum disturbance buffer be initially established at 300 feet for nesting birds and 500 feet for raptors. Project personnel, including all contractors working on site, should be instructed on the sensitivity of the area. Reductions in the nest buffer distance should be determined by the CDFW-approved project monitoring biologist.

S1-2 CDFW recommends mitigation occur within the Focused Planning Area (FPA) or as outlined in Section 5.2.1 of the draft Escondido Subarea Plan. The applicant owns property adjacent to the proposed project, which includes almost 3 acres of southern coast live oak woodland that would be preserved. This area is also considered a "Constrained Lands (Wetlands) Outside the FPA" and permanent conservation would ensure future protection of this resource. The proposed mitigation is consistent with Section 5.2.1 of the draft Escondido Subarea Plan. Proposed impacts requiring mitigation are to 0.67 acre of southern coast live oak riparian forest. Table 5-2 of the draft Escondido Subarea Plan states that mitigation should be "no net loss goal [replacement ratio between 1:1 and 3:1]." The proposed mitigation in Mitigation Measure BIO-2 is to establish (i.e., replace) 0.67 acre (1:1 ratio), as well as provide enhancement of 1.34 acres (2:1 ratio) within the open space, including enhancement of the 0.13-acre non-native riparian areas among the southern coast live oak woodland. Therefore, the mitigation totals 3:1 of mitigation to impacts, including 1:1 mitigation ratio of establishment and is consistent with Section 5.2.1 and Table 5-2 of the draft Escondido Subarea Plan.

S1-3 CDFW states that the open space would not effectively contribute to the City's preserve because it is outside of the Biological Core and Linkage Area (BCLA) and recommends off-site mitigation. While the open space is not within a BCLA, it is a contiguous parcel that includes nearly 3 acres of southern coast live oak woodland. As such, it provides a riparian habitat for a variety of wildlife, such as birds and mammals, as well as a tributary to the Lake Hodges-San Dieguito River, which eventually flows into the Pacific Ocean. This riparian corridor also connects to native habitat within Kit Carson Park. Enhancement of the other portions of the proposed open space to native habitat would create habitat and refuge for local wildlife and plant species. Therefore, the proposed open space would effectively contribute to the City's preserve by providing "stepping stone" habitat that connects to other undeveloped land in Escondido.

S1-4 CDFW recommends the restoration activities conform to Section 5.2.2 of the draft Escondido Subarea Plan with regards to cactus wren habitat. There are no impacts to the cactus wren habitat (disturbed southern cactus scrub); therefore, no additional mitigation is required.

S1-5 CDFW recommends altering the language in Mitigation Measure BIO-1 for protections for nesting birds. Mitigation Measure BIO-1 has been revised per CDFW's recommendation to consider the onset of nesting for raptors as early as January 1 and to include avoidance buffers of 500 feet for raptors and 300 feet for all other birds protected under the MBTA.

S1-6

6. CDFW recommends that mitigation measure BIO-5 specify that the preservation area would be managed by an entity approved by CDFW and USFWS according to a long-term management plan approved by those agencies and would be placed under a permanent conservation easement to ensure preservation in perpetuity.

S1-7

7. The Conceptual Mitigation Plan for restoration and revegetation noted in BIO-5 should be prepared by persons with expertise in southern California ecosystems and native plant revegetation techniques. Each plan should include, at a minimum: (a) the location of the mitigation site; (b) the plant species to be used, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.

S1-8

8. The Polyphagous and Kuroshio Shot Hole Borers (SHBs) are invasive ambrosia beetles that introduce fungi and other pathogens into host trees. The adult female (1.8-2.5 mm long) tunnels galleries into the cambium of a wide variety of host trees, where it lays its eggs and propagates the *Fusarium* fungi species for the express purpose of feeding its young. These fungi cause *Fusarium* dieback disease, which interrupts the transport of water and nutrients in at least 43 reproductive host tree species, with impacts to other host tree species as well. With documented occurrences throughout Southern California, the spread of SHBs could have significant impacts in local ecosystems. Therefore, with regard to SHBs, we recommend the final EIR include the following:

   a. a thorough discussion of the direct, indirect, and cumulative impacts that could occur from the potential spread of SHBs as a result of proposed activities in the final EIR;

   b. an analysis of the likelihood of the spread of SHBs as a result of the invasive species' proximity to above referenced activities;

   c. figures that depict potentially sensitive or susceptible vegetation communities within the project area, the known occurrences of SHB within the project area (if any), and SHB's proximity to above referenced activities; and

   d. a mitigation measure or measure(s) within the final EIR that describe Best Management Practices (BMPs) that bring impacts of the project on the spread of SHB below a level of significance. Examples of such BMPs include:

      i. education of on-site workers regarding SHB and its spread;
      ii. reporting sign of SHB infestation, including sugary exudate ("weeping") on trunks or branches and SHB entry/exit-holes (about the size of the tip of a ballpoint pen), to the Department and UCR's Eskalen Lab;
      iii. equipment disinfection;
      iv. pruning infected limbs in infested areas where project activities may occur;
      v. avoidance and minimization of transport of potential host tree materials;
      vi. chipping potential host materials to less than 1 inch and solarization, prior to delivering to a landfill;

S1-6 CDFW recommends that Mitigation Measure BIO-5 specify that the preservation area would be managed by a CDFW- and USFW-approved entity under an approved long-term plan and a permanent conservation easement. Mitigation Measure BIO-5 has been revised per CDFW's recommendation to include language specifying the land manager must be approved by CDFW and USFWS.

S1-7 This comment has recommendations for what the Conceptual Mitigation Plan, specified in Mitigation Measure BIO-5, should include. Mitigation Measure BIO-5 has been revised per CDFW's recommendation to include specific requirements and criteria for the Conceptual Mitigation Plan.

S1-8 This comment recommends adding an analysis for impacts related to Polyphagous and Kuroshio shot hole borers (SHBs) to the EIR. This comment also provides specific BMPs to help stop the spread of the SHBs. Mitigation measure BIO-5 has been revised to include a requirement for the long-term management plan to address SHBs. Additional information has been included in the arborist's report, biological resources technical report and in Section 3.3 of the Final EIR.

S1-8 Cont.

vii. chipping potential host materials to less than 1 inch, and solarization, prior to composting on-site;
viii. solarization of cut logs; and/or
ix. burning of potential host tree materials.

Please refer to UCR's Eskalen lab website for more information regarding SHBs: http://eskalenlab.ucr.edu/pshb.html.

**CONCLUSION**

CDFW appreciates the opportunity to comment on the DEIR to assist the City in identifying and mitigating Project impacts on biological resources.

Questions regarding this letter or further coordination should be directed to Eric Hollenbeck, Senior Environmental Scientist at (858) 467-2720 or Eric.Hollenbeck@wildlife.ca.gov.

Sincerely,

Gail K. Sevrens
Environmental Program Manager

ec: Office of Planning and Research, State Clearinghouse, Sacramento
Janet Stuckrath, USFWS

STATE OF CALIFORNIA

# GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

May 9, 2017

Ann Dolmage
City of Escondido
201 North Broadway
Escondido, CA 92025

Subject: 661 Bear Valley Parkway Residential Development (Project No. SUB 15-0002)
SCH#: 2016111060

Dear Ann Dolmage:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on May 8, 2017, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

S2-1

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

S2-1 This comment serves as a notification that the project has complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to CEQA. It says that the Draft EIR was submitted to select state agencies for review and their comments are being forwarded to the City for use in preparing the Final EIR.

## Document Details Report
## State Clearinghouse Data Base

**SCH#** 2016111060
**Project Title** 661 Bear Valley Parkway Residential Development (Project No. SUB 15-0002)
**Lead Agency** Escondido, City of

**Type** EIR Draft EIR

**Description** The residential development would entitle a new single-family residential subdivision consisting of 55 residential lots ranging from approx. 10,000 sq. ft. to 24,500 sq. ft. The residential development also includes eight open space lots (Open Space Lots "A" to "H") that total 20.02 acres. The residential development would provide half-width frontage improvements on the eastern side of Bear Valley Parkway which would include adding a north-bound travel lane for approx. 2,600 feet as well as a curb, gutter, sidewalk, parkway, and bike lane. The specific Alignment Plan (SAP) identifies full-width improvements for improvements for Bear Valley Parkway from Sunset Drive to the City boundary.

### Lead Agency Contact

**Name** Ann Dolmage
**Agency** City of Escondido
**Phone** 760-839-4548 **Fax**
**email**
**Address** 201 North Broadway
**City** Escondido **State** CA **Zip** 92025

### Project Location

**County** San Diego
**City** Escondido
**Region**
**Lat / Long** 33° 05' 52" N / 117° 03' 27" W
**Cross Streets** Bear Valley Parkway and Encino Drive
**Parcel No.** 237-131-01 and 237-131-02
**Township** **Range** **Section** **Base**

### Proximity to:

**Highways** 78 I-15
**Airports**
**Railways**
**Waterways** Tributaries to san Dieguito River
**Schools** Juniper ES
**Land Use** PLU = Disturbed vacant lot; Zoning = RE-20 (proposed PD-R); General Plan Designation = Estate II

**Project Issues** Agricultural Land; Biological Resources; Geologic/Seismic; Noise; Soil Erosion/Compaction/Grading; Toxic/Hazardous; Traffic/Circulation; Landuse

**Reviewing Agencies** Resources Agency; Department of Fish and Wildlife, Region 5; Department of Parks and Recreation; Department of Water Resources; California Highway Patrol; Caltrans, District 11; Regional Water Quality Control Board, Region 9; State Water Resources Control Board, Division of Drinking Water, District 14; Native American Heritage Commission

**Date Received** 03/24/2017 **Start of Review** 03/24/2017 **End of Review** 05/08/2017

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

Ann Dolmage
Associate Planner
City of Escondido Planning Division
201 North Broadway
Escondido, CA 92025
(760) 839-4548
adolmage@escondido.org

Governor's Office of Planning & Research
MAY 04 2017
STATE CLEARINGHOUSE

Dear
5/8/17

**Subject: Comments on the Draft Environmental Impact Report for the Bear Valley Parkway Residential Development Project SUB 15-0002 SCH#2016111060**

Dear Ms. Dolmage:

The California Department of Fish and Wildlife (CDFW) has reviewed the above-referenced Draft Environmental Impact Report (DEIR) for the Bear Valley Parkway Residential Development Project.

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

S2-2

**CDFW ROLE**

CDFW is California's Trustee Agency for fish and wildlife resources, and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; California Environmental Quality Act [CEQA] Guidelines § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802.) Similarly for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also a Responsible Agency under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.) CDFW may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), related authorization as provided by the Fish and Game Code will be required.



S2-2 This attachment is a copy of Comment Letter S1. See Responses to Comment Letter S1.

CDFW also administers the Natural Community Conservation Planning (NCCP) program.

**Project Location:**
The proposed project would consist of the residential development project site and the Bear Valley Parkway Specific Alignment Plan area. Both of these project areas are located in the eastern part of the City of Escondido (City). The 40.62-acre residential development site is located at 661 Bear Valley Parkway. The development site is generally bound by Bear Valley Parkway, single-family residential uses, and vacant parcels to the north; single-family residential uses, and vacant land to the east; single-family residential uses and vacant parcels to the south; and Bear Valley Parkway, single-family residential uses, and a church to the west.

**Project Description/Objective:**
The proposed project would include a single-family residential subdivision as well as the Bear Valley Parkway Alignment improvements. The proposed development would entitle a new single-family residential subdivision consisting of 55 single-family residential lots, seven open space lots, one recreation lot, and two private street lots. In addition, the residential development would include supporting infrastructure improvements, including Bear Valley Parkway frontage improvements. The Bear Valley Parkway Alignment improvements would widen existing Bear Valley Parkway between Sunset Drive and the City boundary to four lanes along the frontage of the residential project as part of the residential development and include a proposed retrofit of 262 linear feet of an off-site portion of northbound Bear Valley Parkway immediately to the south of the residential development site.

S2-2
cont.

**COMMENTS AND RECOMMENDATIONS**

CDFW offers the following comments and recommendations to assist the City in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources.

1. As noted in section 3.3.2.3 of the DEIR, the Project site is located outside of any Focused Planning Area (FPA) as designated in the draft Escondido Subarea Plan (SAP). CDFW recommends that all mitigation obligations be filled inside the City's FPA, or in order of preference as outlined in section 5.2.1, and utilize ratios according to Table 5-2 of the draft SAP. The proposed mitigation within the open space lot (Lot H) would create habitat that is unlikely to effectively contribute to the City's preserve under the draft SAP due to its location outside of the Biological Core and Linkage Area in Figure 3-2 of the draft SAP as noted in section 3.3.2.3 of the DEIR. Any off-site mitigation credit purchase should be from a habitat bank approved by CDFW. In addition, the final EIR should include analysis of how the Project design and any restoration activities on Lot H would conform to section 5.2.2 of the draft SAP for Narrow Endemic Standards for the cactus wren (*Campylorhynchus brunneicapillus sandiegensis*), a California Species of Special Concern, given the nearby observation noted in sections 3.3.1.3 and 3.3.4.1of the DEIR.

5. CDFW recommends that mitigation measure BIO-1 include contingency for raptor nesting as early as January 1 and that the minimum disturbance buffer be initially established at 300 feet for nesting birds and 500 feet for raptors. Project personnel, including all contractors working on site, should be instructed on the sensitivity of the area. Reductions in the nest buffer distance should be determined by the CDFW-approved project monitoring biologist.

6. CDFW recommends that mitigation measure BIO-5 specify that the preservation area would be managed by an entity approved by CDFW and USFWS according to a long-term management plan approved by those agencies and would be placed under a permanent conservation easement to ensure preservation in perpetuity.

7. The Conceptual Mitigation Plan for restoration and revegetation noted in BIO-5 should be prepared by persons with expertise in southern California ecosystems and native plant revegetation techniques. Each plan should include, at a minimum: (a) the location of the mitigation site; (b) the plant species to be used, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.

8. The Polyphagous and Kuroshio Shot Hole Borers (SHBs) are invasive ambrosia beetles that introduce fungi and other pathogens into host trees. The adult female (1.8-2.5 mm long) tunnels galleries into the cambium of a wide variety of host trees, where it lays its eggs and propagates the *Fusarium* fungi species for the express purpose of feeding its young. These fungi cause *Fusarium* dieback disease, which interrupts the transport of water and nutrients in at least 43 reproductive host tree species, with impacts to other host tree species as well. With documented occurrences throughout Southern California, the spread of SHBs could have significant impacts in local ecosystems. Therefore, with regard to SHBs, we recommend the final EIR include the following:

S2-2 cont.

   a. a thorough discussion of the direct, indirect, and cumulative impacts that could occur from the potential spread of SHBs as a result of proposed activities in the final EIR;

   b. an analysis of the likelihood of the spread of SHBs as a result of the invasive species' proximity to above referenced activities;

   c. figures that depict potentially sensitive or susceptible vegetation communities within the project area, the known occurrences of SHB within the project area (if any), and SHB's proximity to above referenced activities; and

   d. a mitigation measure or measure(s) within the final EIR that describe Best Management Practices (BMPs) that bring impacts of the project on the spread of SHB below a level of significance. Examples of such BMPs include:

      i. education of on-site workers regarding SHB and its spread;
      ii. reporting sign of SHB infestation, including sugary exudate ("weeping") on trunks or branches and SHB entry/exit-holes (about the size of the tip of a ballpoint pen), to the Department and UCR's Eskalen Lab;
      iii. equipment disinfection;
      iv. pruning infected limbs in infested areas where project activities may occur;
      v. avoidance and minimization of transport of potential host tree materials;
      vi. chipping potential host materials to less than 1 inch and solarization, prior to delivering to a landfill;

vii. chipping potential host materials to less than 1 inch, and solarization, prior to composting on-site;
viii. solarization of cut logs; and/or
ix. burning of potential host tree materials.

Please refer to UCR's Eskalen lab website for more information regarding SHBs: http://eskalenlab.ucr.edu/pshb.html.

S2-2 cont.

**CONCLUSION**

CDFW appreciates the opportunity to comment on the DEIR to assist the City in identifying and mitigating Project impacts on biological resources.

Questions regarding this letter or further coordination should be directed to Eric Hollenbeck, Senior Environmental Scientist at (858) 467-2720 or Eric.Hollenbeck@wildlife.ca.gov.

Sincerely,

Gail K. Sevrens
Environmental Program Manager

ec: Office of Planning and Research, State Clearinghouse, Sacramento
Janet Stuckrath, USFWS

**NORTH COUNTY TRANSIT DISTRICT**

RECEIVED
MAR 30 2017
PLANNING DIVISION

810 Mission Avenue
Oceanside, CA 92054
(760) 966-6500
(760) 967-2001 (fax)
www.GoNCTD.com

March 29, 2017

Attn: Ann Dolmage
City of Escondido – Planning
201 North Broadway
Escondido, CA 92025

RE: 661 Bear Valley Parkway, Escondido

Dear Ms. Dolmage:

Thank you for the opportunity to review and comment on the proposed subdivision on 661 Bear Valley Parkway in Escondido. Upon review of the preliminary site plans received by North County Transit District (NCTD) on March 28, 2017, NCTD finds the design as proposed appears to be consistent with NCTD standards and does not appear to impact bus stops in the City of Escondido. L1-1

Thank you again for allowing NCTD to review and comment on this project. Should you have any questions related to this review, feel free to contact me at (760) 966-6708 or via email at dblythe@nctd.org.

Sincerely,

Damon Blythe
Deputy Chief of Transit Operations, Planning

cc: Ronald Kilcoyne, COO – Transit Planning & Bus Operations, NCTD

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**EXECUTIVE DIRECTOR**
Matthew O. Tucker

**GENERAL COUNSEL**
Lori A. Winfree

L1-1 This comment states that the proposed project is consistent with NCTD standards and does not appear to impact bus stops in the City. This comment does not critique the adequacy or accuracy of the Draft EIR. Accordingly, no revisions have been made in the Final EIR in regards to public transportation.

# San Diego County Archaeological Society, Inc.

Environmental Review Committee

10 April 2017

RECEIVED
APR 11 2017
PLANNING DIVISION

To: Ms. Ann Dolmage, Associate Planner
Planning Division
City of Escondido
201 North Broadway
Escondido, California 92025

Subject: Draft Environmental Impact Report
661 Bear Valley Parkway
ENV 15-0001

Dear Ms. Dolmage:

I have reviewed the cultural resources aspects of the subject DEIR on behalf of this committee of the San Diego County Archaeological Society.

Based on the information contained in the DEIR and its Appendices F, G and H, we have the following comments:

L2-1 1. We concur with the determinations that no significant cultural resources, archaeological o nor built environment, exist on the project area.

L2-2 2. Regarding the mitigation measures in the DEIR, we note that CR-7 does not comply with the Final EIR for the City's General Plan Update. FEIR mitigation measure CUL-3, in Section 4.5.6, states that "Any significant artifacts recovered during excavation, other than cultural material subject to repatriation, shall be curated with its associated records at a curation facility approved by the City." The term "repatriation" in the FEIR refers to the treatment of human remains and associated burial items (see page 4.5.42, in Section 4.5.3.4 of the FEIR). Therefore, CR-7 must be revised.

L2-3 3. We note that curation facilities meeting the standards of 36CFR79 and State standards and serving this area include the tribal-operated facility at Pechanga as well as the San Diego Archaeological Center.

Thank you for including SDCAS in the public review of this project's environmental documents.

Sincerely,

James W. Royle, Jr., Chairperson
Environmental Review Committee

P.O. Box 81106 San Diego, CA 92138-1106 (858) 538-0935

L2-1 This comment states that the Draft EIR appropriately determined that no significant cultural, archaeological, or built-environment resources exist on the project area. This comment does not critique the adequacy or accuracy of the Draft EIR. Therefore, no revisions have been made in the Final EIR regarding the presence of significant cultural, archaeological, or built-environment resources.

L2-2 This comment states that curation is required by the City's General Plan EIR and specifies that material subject to repatriation is human remains and associated burial goods and not the entire collection. The City will abide by its General Plan policies with respect to repatriation of collections.

Mitigation Measure CR-8 has been revised as follows:

**CR-~~7~~8:** In accordance with CEQA, all tribal cultural resources shall be treated with culturally appropriate dignity. If the qualified archaeologist elects to collect any tribal cultural resources, the Native American monitor must be present during ~~any testing~~the collection ~~or~~and cataloging of those resources. Moreover, if the qualified archaeologist does not collect the tribal cultural resources that are unearthed during the ground-disturbing activities, the Native American monitor may, at their discretion, collect said resources and provide them to the TCA Tribe for respectful and dignified treatment in accordance with the tribe's cultural and spiritual traditions.

The project archaeologists shall document evidence that all cultural materials have been repatriated and/or curated as follows:

(1) It is the preference of the City that all tribal cultural resources be repatriated to the TCA Tribe, as such preference would be the most culturally sensitive, appropriate, and dignified. Therefore, any tribal cultural resources collected by the qualified archaeologist shall be provided to the TCA Tribe. Evidence that all cultural materials collected have been repatriated shall be in the form of a letter from the TCA Tribe to whom the tribal cultural resources have been repatriated identifying that the archaeological materials have been received.

OR

(2) Any tribal cultural resources collected by the qualified archaeologist shall be curated with its associated records at a San Diego curation facility or a culturally-affiliated Tribal curation facility that meets federal standards per 36 CFR Part 79, and, therefore, would be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records, including title, shall be transferred to the San Diego curation facility or culturally affiliated Tribal curation facility and shall be accompanied by payment of the fees necessary for permanent curation. Evidence that all cultural materials collected have been curated shall be in the form of a letter from the curation facility stating that the prehistoric archaeological materials have been received and that all fees have been paid. ~~shall be repatriated to the TCA Tribe. Should the TCA Tribe or other traditionally and culturally affiliated tribe decline~~

cc: ASM Affiliates
SDCAS President
File



~~the collection, the collection shall be curated at the San Diego Archaeological Center. All other resources determined by the qualified archaeologist, in consultation with the Native American monitor, to not be tribal cultural resources shall be curated at the San Diego Archaeological Center.~~

L2-3 This comment provides information about the location of curation facilities serving the proposed project area that meet State and Federal standards. This comment does not critique the adequacy or accuracy of the Draft EIR and no change has been made.

SDGE

A Sempra Energy utility®

May 5th, 2017

Ann Dolmage
Associate Planner
City of Escondido
201 North Broadway
Escondido, CA 92025

Subject: Comments on the 661 Bear Valley Parkway-ENV 15-0001 (SCH #2016111060) Draft Environmental Impact Report

Dear Ms. Dolmage:

L3-1 San Diego Gas & Electric Company (SDG&E) appreciates the opportunity to comment on the above-referenced Draft Environmental Impact Report (EIR). SDG&E wants to ensure that the Final EIR adequately addresses the public utility implications of the Proposed Project. The 661 Bear Valley Parkway Project (Proposed Project) would allow for the construction of 55 single-family units, parks, open space, and associated infrastructure, including roadway improvements to Bear Valley Parkway.

L3-2 Per the Draft Initial Study Checklist Supplemental Comments (Supplemental Comments) (November 2016), the Utilities and Service Systems section of Appendix G of the *California Environmental Quality Act (CEQA) Guidelines* was scoped out of the Draft EIR review for the Proposed Project. The Supplemental Comments do not include a discussion of the location of any existing gas or electric facilities within the Proposed Project vicinity or whether these facilities would require replacement or expansion as a result of the Proposed Project. The only discussion of gas and electric utilities is provided on page 15 of the document, and discusses the ability of existing gas and electric supplies to meet the demands associated with the Proposed Project.

L3-3 However, the Draft EIR does discuss that as part of the Bear Valley Parkway frontage improvements associated with the Proposed Project, existing power poles on the east side of existing Bear Valley Parkway would be relocated further east in an easement outside of the right-of-way (ROW) to accommodate the additional travel lane, bike lane, curb, and sidewalk. SDG&E would like to request clarification in the Final EIR as to whether this is considered outside of existing roadway ROW or outside of existing SDG&E ROW. If the power poles are planned for relocation outside of SDG&E ROW, SDG&E would appreciate the opportunity to coordinate with the City of Escondido (City) on this relocation to avoid the need to relocate the power poles outside of SDG&E ROW if possible to avoid the potential need to prepare a permit to construct (PTC) to accommodate this relocation per California Public Utility Commission (CPUC) requirements, which could result in additional time and permitting costs. Please refer to the attached *Guidelines for Private Developer and Agency Initiated Utility Projects that Require CEQA Environmental Documents* for additional information regarding the CPUC process for reviewing environmental impacts pursuant to CEQA as a result of utility relocations associated with a development project.

L3-4 SDG&E facilities are not discussed anywhere else in the Draft EIR. In the Final EIR, SDG&E requests that the Proposed Project discuss electric or gas utility infrastructure, including trenching, conduits, pipes and

L3-1 This paragraph serves as an introduction that does not address the adequacy or accuracy of information in the Draft EIR. Therefore, no response is necessary.

L3-2 This comment states that the Initial Study Checklist Supplemental omitted a discussion of the location of existing gas and electric facilities in the vicinity of the proposed project, and whether the proposed project would necessitate replacement or expansion of those facilities.

The proposed project would require relocation of existing power poles to accommodate the road improvements along Bear Valley Parkway. Potential impacts from utility relocation were considered in the EIR analysis. A brief description of the utility relocation can be found in the Project Description at page 2-25, Section 2.5.1.6 Utilities.

L3-3 This comment requests that the Final EIR clarify whether the proposed relocation of existing power poles to accommodate the proposed project would be outside of existing roadway rights-of-way (ROW) or outside of existing SDG&E ROW. Further, this comment requests that if the proposed power pole relocations are planned outside of SDG&E ROW, that the City coordinate with SDG&E on this relocation to avoid the need to relocate the power poles outside of SDG&E ROW.

It is anticipated that the proposed power pole relocations would be outside of roadway ROW, but within SDG&E ROW. The City will coordinate with SDG&E to confirm the location of the relocated power poles.

Further, pursuant to Section III.B.1.f of the California Public Utilities Commission General Order 131-D, which states:

> "1. Compliance with Section IX.B is not required for: f. power lines or substations to be relocated or constructed which have undergone environmental review pursuant to CEQA as part of a larger project, and for which the final CEQA document (EIR or ND) finds no significant unavoidable environmental impacts caused by the proposed line or substation."

The proposed project is exempt from California Public Utilities Commission General Order 131-D as the relocation is required as part of the half-width road improvements associated with the proposed residential development project. Text clarifying this exemption has been included in the Final EIR.

L3-4 This comment requests that the Final EIR discuss electric and gas utility infrastructure required to support the proposed development.

Potential impacts from utility relocation were considered in the EIR analysis. A brief discussion has been added to each resource section (Sections 3.1.6, 3.2.6, 3.3.6, 3.4.6, 3.5-.6, 3.6.6, 3.7.6, 3.8.6, and 3.9.6) confirming that utility relocation was considered in the analysis. None of the impact conclusions were changed based on this added clarification.

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associated equipment, required to support the proposed development, as this information was not discussed in the Supplemental Comments or the Draft EIR.

The following information is provided for your consideration as well:

- Any changes in grade shall not direct drainage in a manner that increases the potential for erosion around SDG&E facilities.
- Project grades shall be coordinated to assure clearances as required by California Public Utilities Commission General Order 95.
- Any temporary or permanent relocation of facilities or placement of facilities underground and/or associated temporary outages shall be completed at the cost of the project developer.
- If proposed, SDG&E will not authorize use of its ROW for trail purposes by Home Owner's Associations (HOAs) or private individuals. In the event the City will have ownership of trails, SDG&E will enter into a Consent to Use Land Agreement, which will require indemnification of SDG&E by the City.
- Landscaping, revegetation and/or habitat enhancement plans for the project shall not inhibit SDG&E's access to facilities for purposes including, but not limited to, construction, upgrading, repair, operation or maintenance.
- Access roads and project grading must comply with SDG&E guidelines for any encroachment to, and into, ROW. Furthermore, any grading to be performed within SDG&E ROW would require a "permission to grade letter".

L3-5

SDG&E appreciates the opportunity to comment on this Draft EIR. If you have any questions, feel free to contact me at 858-654-1239 or hhaskell@semprautilities.com.

Sincerely,

Hilary Haskell

Hilary Haskell
Environmental Specialist-Land Planning

Cc: Edalia Olivo-Gomez, Team Lead-Land Planning

L3-5 This comment provides additional information for consideration by the City. This comment does not address the adequacy or accuracy of information in the Draft EIR, nor does it raise issues with environmental consequences. These comments have been noted and the City will consider them as conditions of approval from a referral agency.

# Guidelines for
# Private Developer and Agency Initiated Utility Projects
# That Require CEQA Environmental Documents

**General**

These guidelines are provided to assist Developers and Local Agencies preparing discussions of electric utility removal and/or construction or relocation activities in CEQA environmental documents (EIR, MND, ND, Certified Regulatory Programs) addressing the "whole of the action" for their larger projects.

SDG&E recommends including an adequate discussion of construction and relocation activities involving SDG&E facilities, and any impacts those activities may or may not cause, in Developer or Agency prepared and certified CEQA documents or CEQA equivalent documents for Developer or Agency projects. Including such a discussion can support SDG&E's claim of exemption from the permitting requirements of the California Public Utilities Commission (CPUC), General Order 131-D (GO 131-D). An exemption from CPUC permitting could save time and costs of installing utility facilities that are part of a Developer's or Agency's larger project. If SDG&E cannot claim an exemption, the use of a certified CEQA document or CEQA equivalent document prepared by a Developer or Agency as the environmental document for CPUC permitting, could reduce the permitting timeframe.

These guidelines are not intended to provide legal advice or counsel to Developers or Agencies regarding compliance with CEQA. Developers and Agencies should consult with their lead agency for advice on compliance with CEQA.

**Goal:**

To provide a project description and impact analysis for electric utility removal and/or construction or relocation activities in CEQA documents for larger Developer or Agency projects that meet the conditions of permit exemptions found in GO 131-D.

**Objectives:**

Provide guidelines to assist Developers and Agencies in:

- Preparing complete descriptions of the electrical and gas utility removal and/or construction or relocation activities in their CEQA documents

- Assessing the potential impacts of, and mitigation for, those utility removal and/or construction or relocation activities as a part of their larger project or "whole of the action" in their CEQA documents.

**Guidelines**

**Project Description**

The overall description for the larger project should discuss the proposed utility removal and/or construction or relocation as a part of the Developer's or Agency's larger project.

A separate description of the proposed electric utility removal and/or construction or relocation should include:

- An exhibit that shows the existing location of electric facilities.
- The need for the electric construction or relocation.
- The length (transmission line) or size (substation) and voltage of the electric facility to be constructed or relocated.*
- The number, types and size of equipment that will be installed.*
- The location of permanent access roads required for initial construction and long-term maintenance.*
- Identification and description of any temporary areas required for the removal and/or construction or relocation such as work area around structures, pulling and tensioning sites, material staging areas and temporary access roads.*
- A separate exhibit that clearly shows the preferred transmission line routing or the preferred location of the substation enclosure with pad and equipment.
- A diagram of a typical transmission structure, or a site layout plan for the substation.*
- A discussion of any alternative routes or locations for the construction or relocation of the transmission line or substation, and an analysis of why those alternative routes or locations were not selected over the preferred transmission routing or the preferred substation location. Also included should be a "no project" alternative discussing how the larger project would be implemented without the electric utility removal and/or relocation or construction.

- The types and numbers of construction equipment, and number of personnel that will be required to remove and/or construct or relocate the electric facility (transmission line or substation)*.

- The anticipated construction schedule including hours per day, daily start and stop times, and total duration for the removal and/or construction or relocation of the electric facility.

Note: Items above marked with an asterisk* denote information that can be provided by SDG&E to the Developer or Agency.

**Project Setting**

The existing environmental conditions, natural or man-made, within the area of the proposed electric facility removal and/or construction or relocation should be thoroughly described in the Developer's or Agency's environmental document. The location of existing electric facilities should be indicated on a map or diagram showing existing environmental features (habitat, wetlands and cultural resources).

**Impacts**

The location of the proposed electric facility removal and/or construction or relocation should be indicated on a map or diagram showing existing environmental features (habitat, wetlands, cultural resources etc.) in the project area, **including any off-site work** needed to accommodate the removal and/or construction or relocation.

The potential environmental impacts of the proposed electrical facility removal and/or construction or relocation should be analyzed including but not limited to:

- Land Use: As part of the larger project, will the removal and/or construction or relocation of the electric facility be compatible or incompatible with the adjacent, proposed or existing, land uses (e.g. schools )? Describe.

- Water Quality: As part of the larger project, will the removal and/or construction or relocation of the electric facility change drainage or runoff patterns or otherwise adversely affect water quality? Describe how. The water quality impact analysis for the larger project should include electric facility removal, construction or relocation related water impacts in support of a finding of non-significance.

- Air Quality: As part of the larger project, will the removal and/or construction or relocation of the electric facility contribute to exceeding or impacting any air quality standards? The type, number and duration of equipment used for electric facility removal and/or construction or relocation shall be included in the short-term air quality discussion and calculations. The air quality analysis for the larger project should include electric facility removal and/or construction or relocation related air quality impacts in support of a finding of non-significance.

- Biological Resources: As part of the larger project, will the removal and/or construction or relocation of the electric facility impact threatened or endangered species or their habitats? Describe the locations, type (such as coastal sage scrub, chaparral, wetlands, riparian, grassland etc.) and amounts of impacts. An exhibit should show the location of the electric facility, including any temporary work areas or permanent access roads, with relation to known sensitive habitats and endangered species sightings. The biological impact analysis for the larger project should include electric facility removal, construction or relocation related biological impacts in support of a finding of non-significance.

- Aesthetics: As part of the larger project, will the removal and/or construction or relocation of the electric facility create substantial light or glare, or have a negative aesthetic effect? Describe and depict in drawings, cross sections or visual simulations as necessary to support. The visual impact analysis for the larger project should include electric facility removal, construction or relocation related cultural impacts in support of a finding of non-significance.

- Cultural resources: As part of the larger project, will the removal and/or construction or relocation of the electric facility have the potential to disturb or physically change any known archaeological, paleontological or historical resources? An exhibit should show the location of the electric facility with relation to known cultural resource locations. The cultural resource impact analysis for the larger project should include electric facility removal, construction or relocation related cultural impacts in support of a finding of non-significance.

- Noise: As part of the larger project, could the removal and/or construction or relocation of the electric facility have the potential to substantially increase noise levels to sensitive receptors? The noise study for the larger project should include electric facility removal, construction or relocation related noise impacts in support of a finding of non-significance. SDG&E can provide informational support to the Developer or Agency in the preparation of noise studies for the electrical facility construction or relocation.

**Findings**

A finding in the Developer's or Agency's CEQA document that the project as a whole does not have a significant effect on the environment is not adequate for SDG&E to make a claim of exemption from the permitting requirements of GO 131-D. For SDG&E to claim an exemption, the Developer's or Agency's environmental document **must make a separate finding** that the proposed removal and /or construction or relocation of SDG&E's electric facilities as a part of the larger project does not have the potential for a significant effect on the environment.

A separate finding that the proposed electric facility removal and/or construction or relocation as part of a larger project will not have a significant effect on the environment may require that the Developer or Agency provide and implement mitigation measures. If mitigation measures are required for the electric facility construction or relocation, the Developer or Agency will pay all costs associated with implementing those measures. Mitigation costs would be paid by the Developer or Agency if either SDG&E can claim exemption under GO 131-D, or if SDG&E needs to obtain a Permit to Construct (PTC) or a Certificate of Public Convenience and Necessity (CPCN) from the CPUC for the removal and/or construction or relocation as a part of the Developer's or Agency's larger project action. Mitigation measures provided, implemented and paid for by the Developer or Agency may include, but are not limited to:

- biological and/or cultural resource surveys and related analysis
- environmental monitoring during construction (air, water, biology, cultural etc.)
- environmental mitigation such as re-vegetation, habitat restoration, purchase of mitigation land, and curation or protection of cultural or historical resources
- post-project monitoring and maintenance of re-vegetation and/or habitat restoration areas

**Process**

The Developer or Agency should use the above guidelines in preparing CEQA environmental documents for larger projects to assure that the CEQA documents contain a complete discussion of the proposed electric utility removal and/or construction or relocation and its potential environmental impacts. Upon the lead agency's certification of the environmental document, the Developer or Agency will provide SDG&E a copy of the resolution, ordinance or other acknowledgement prepared by the lead agency certifying the CEQA document.

Upon receiving lead agency certification of the CEQA document from the Developer or Agency, SDG&E will do one of the following:

- Prepare and file an Advice Letter for the removal and/or construction or relocation of its electric facilities for the Developer or Agency projects claiming exemption under GO 131-D.
- Submit the certified CEQA document to the CPUC along with an application for a Permit to Construct (PTC) or an application for a Certificate of Public Convenience and Necessity (CPCN).
- Retain the Developer's, or Agency's CEQA document in the project file in support of a claim of exemption from GO 131-D.

**Permits**

With the exception of any CPUC issued permits (PTC or CPCN), the Developer or Agency is solely responsible for obtaining all permits and approvals, and providing any mitigation required by those permits, for the removal and/or construction or relocation of SDG&E electrical facilities that are a component part of their larger project action. The Developer or Agency is solely responsible for obtaining all permits and approvals, whether SDG&E claims an exemption from GO 131-D for the electric construction or relocation as part of a larger project, or whether SDG&E is required to obtain a PTC or CPCN for the electric construction or relocation. These permits and approvals may include but are not limited to:

- RWQCB Section 401 Water Quality Waiver or Certification
- ACOE 404
- CDFG 1601/1603 Streambed Alteration Permit
- NPDES Storm Water Pollution and Prevention Plan (SWPPP)
- CalTrans highway crossing permits
- USFWS Section 7 or 10 ESA Consultation
- Local agency traffic control plans, encroachment permits or excavation permits

# County of San Diego

**MARK WARDLAW**
DIRECTOR
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PLANNING & DEVELOPMENT SERVICES
5510 OVERLAND AVENUE, SUITE 310, SAN DIEGO, CA 92123
www.sdcounty.ca.gov/pds

May 16, 2017

Ann Dolmage
Associate Planner
Community Development Department
Planning Division
201 North Broadway
Escondido, CA 92025

Via email to: adolmage@escondido.org

**COMMENTS ON THE NOTICE OF AVAILABILITY OF A DRAFT ENVIRONMENTAL IMPACT REPORT (DEIR) – 661 BEAR VALLEY PARKWAY (PROJECT) – CITY OF ESCONDIDO (CITY)**

Dear Ms. Dolmage,

The County of San Diego (County) reviewed the City of Escondido's (City) 661 Bear Valley Parkway DEIR (Project). The County appreciates the opportunity to comment on the proposed project, and provides the following comments for your consideration.

**LAND & WATER QUALITY**

L4-1 1. Records for the parcels that fall within the cut slope are incomplete. However, if septic systems are in use, there is the potential for impacts to them and the required reserve septic area from grading to properties adjacent to APN's 237-142-26, 28, 29, and 30; and 237-141-01.

L4-2 2. Cut slopes shall maintain a 5:1 (horizontal to vertical) setback to any existing septic systems or reserve areas. In addition, the existing structure to be demolished may also be served by a septic system. If so, the septic system must be properly abandoned prior to grading.

L4-3 3. There may also be water wells associated with the existing structure to be demolished or other areas impacted by grading activities. All wells must be identified on the parcel map with the designated use. Any wells proposed to be destroyed shall be done under permit and inspection by the Department of Environmental Health (DEH) prior to grading.

4. Please contact Eric Klein, Land Use Supervisor at 858-694-2551 or via e-mail at eric.klein@sdcounty.ca.gov for more information.

L4-1 This comment concerns potential impacts to septic systems for parcels with incomplete records that fall within the cut slope. Records for existing septic systems for APN's 237-142-26, 28, 29 and 30 as well as 237-141-01 were researched through the County Department of Environmental Health (DEH). The records obtained provided information relative to the existing septic systems and reserve areas for each of those parcels, with the exception of APN 237-142-26. The owner of that parcel, Mr. William Cox, was contacted on June 15, 2017 and noted that existing septic lines and fields are located easterly of the existing residence. All of the data obtained for the adjoining parcels were used to ensure that the necessary cut slope setbacks were maintained in accordance with County standards. No revisions have been made in the Final EIR.

L4-2 In this comment, the County provides information regarding setback requirements from existing septic systems. Based on the data provided by the County DEH, the cut slopes proposed on the Tentative Map maintain the 5:1 setback to existing septic systems. The existing structure onsite would be demolished as part of the project along with any septic system that may be serving that particular structure. Any existing septic systems onsite would be abandoned properly prior to grading. No revisions have been made in the Final EIR.

L4-3 This comment states that certain permitting and inspection requirements would apply to existing water wells proposed to be destroyed. Requirements have been acknowledged and will be placed as a condition of approval on projects proposing grading in areas containing existing water wells. No revisions have been made in the Final EIR.

**TRANSPORTATION/TRAFFIC**

L4-4 1. The Traffic Impact Assessment (TIA) should note that portions of Bear Valley Parkway (e.g. - directly adjacent the northern project boundary) are within the County's jurisdiction and are also designated on the County's General Plan Mobility Element as a 4-lane Major Road (4.1A). Improvements to Bear Valley Parkway should be designed and constructed in coordination with County of San Diego Transportation staff.

L4-5 2. The County supports the full width improvements identified in the Bear Valley Parkway Specific Alignment Plan (SAP).

L4-6 3. While the EIR states that (pg. 2-32) the "Specific Alignment Plan does not obligate the City, the residential development applicant, or another party to implement the identified improvements", however also states "improvements are expected to be completed by 2035". The EIR should clarify who is implementing the improvements, and that this area of Bear Valley Parkway area is maintained by the City of Escondido.

The County looks forward to receiving future documents and/or notices related to this project and providing additional assistance at your request. If you have any questions regarding these comments, please contact Timothy Vertino, Land Use / Environmental Planner at (858) 495-5468, or via e-mail at timothy.vertino@sdcounty.ca.gov

Sincerely,

Joe Farace, Group Program Manager
Advance Planning Division
Planning & Development Services

Email cc:

Jason Paguio, Policy Advisor, Board of Supervisors, District 3
Vincent Kattoula, CAO Staff Officer, LUEG
Erin Jensen, Administrative Analyst, DEH
Nick Ortiz, Project Manager, PDS
Everett Hauser, Transportation Specialist, PDS

L4-4 This comment recommends that the Traffic Impact Analysis be revised and that improvements to Bear Valley Parkway be designed and constructed in coordination with County of San Diego Transportation staff. The portion of the road outside of the limits of the SAP, and outside of the project footprint, is in the County of San Diego's jurisdiction and is designated in the County General Plan Mobility Element as a 4-lane Major Road (4.1A). This has been clarified in the Traffic Impact Analysis. The project applicant and the City of Escondido are not proposing improvements or right of way dedications within the County of San Diego's jurisdiction. The full-width SAP reflects the project improvement limits and municipal boundary. However, it is anticipated that the County will be informed of project status throughout the future design and construction phases. This comment does not critique the adequacy or accuracy of the Draft EIR. Accordingly, no revisions have been made in the Final EIR.

L4-5 This comment states that the County supports the proposed full-width SAP. This comment does not critique the adequacy or accuracy of the Draft EIR. Accordingly, no revisions have been made in the Final EIR.

L4-6 This comment recommends the EIR clarify who is implementing the SAP improvements, and that this segments of Bear Valley Parkway is maintained by the City. Currently, it is not known which entity will implement the full-width SAP improvements. It is not a funded project within the City of Escondido. However, as the comment suggests, the segment of Bear Valley Parkway proposed for full-width SAP improvements is within the jurisdiction of the City of Escondido. No revisions have been made in the Final EIR.

**From:** Tabita Kubiak [mailto:tkub89@gmail.com]
**Sent:** Tuesday, April 04, 2017 11:47 AM
**To:** Ann F. Dolmage <adolmage@escondido.org>
**Subject:** Case file no.: ENV 15-0001 661 Bear Valley Parkway

O1-1 We don't really have a comment about the new development yet but we do have a question. Will our cul-de-sac road be opened up and connected with the new development? We are on Valley Grove Lane.

Thank you,

Ryan and Tabita Kubiak

**From:** Ann F. Dolmage
**Sent:** Tuesday, April 04, 2017 12:09 PM
**To:** 'Tabita Kubiak' <tkub89@gmail.com>
**Subject:** RE: Case file no.: ENV 15-0001 661 Bear Valley Parkway

Hello,

Thank you for contacting us with your question. All access to the new residential development would be from Bear Valley Parkway (the main access road would be roughly across from Zlatibor Ranch Road, and there would also be an emergency access road a little northeast of the Encino/Bear Valley intersection). The development would not connect to Valley Grove Lane and no changes to your street are proposed.

I've copied and pasted a site plan from the EIR below (below my signature), which shows the general layout of the development, including the two access points on Bear Valley Parkway- hopefully it's clear.

If you have any other questions, please feel free to let me know.

Thank you,

**Ann Dolmage**
Associate Planner
City of Escondido
201 North Broadway
Escondido, CA 92025
(760) 839-4548 (phone)
(760) 839-4313 (fax)
adolmage@escondido.org

O1-1 The comment letter asks a question regarding whether the proposed project would alter access to Valley Grove Lane. As stated by Ann Dolmage via email on April 4th, "All access to the new residential development would be from Bear Valley Parkway (the main access road would be roughly across from Zlatibor Ranch Road, and there would also be an emergency access road a little northeast of the Encino/Bear Valley intersection). The development would not connect to Valley Grove Lane and no changes to [Valley Grove Lane] are proposed." The site plan (Draft EIR Figure 2-4) shows the general layout of the proposed residential development, including the two access points on Bear Valley Parkway.

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O.S. LOT "A"
CITRUS CANYON RD
ST. 'B'
O.S. LOT "B"
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ST. 'C'
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-----Original Message-----
From: Richard Kolb [mailto:kolbrh.rk@gmail.com]
Sent: Tuesday, May 02, 2017 8:25 AM
To: Ann F. Dolmage <adolmage@escondido.org>; Homi Namdari <hnamdari@escondido.org>
Cc: Sam & Alia Mansour <chargermom619@yahoo.com>; Ralph & Ann Tan <rdigitan@gmail.com>; Ernel & Virginia Toledo <kinia18@cox.net>; Ron & Ning Cooper <ronsealone@cox.net>; Ted & Rosanne Reguly <treguly@SempraGlobal.com>; Andy & LInda Bera <andybera@aol.com>; Brendan Kelly <brendan.kelly@av.abbott.com>; Dan & Denise Ehret <dehr8@yahoo.com>; Stan & Hana Haladus <shstan3@gmail.com>; Chuck Aeling <caeling@aol.com>; Ishmael Rasool <irasool5@hotmail.com>
Subject: Comments on DRAFT EIR 661 Bear Valley Parkway ENV 15-0001(SCH #2016111060) Residential Project

Good Morning,

As the President of the Zlatibor Estate Ranch HOA I am forwarding these comments to you as per our previous meeting . These comments represent the opinions of our HOA, who are all copied on this email. Thank you,

Richard Kolb

The following are comments specifically related to the Traffic Impact Analysis Report, Appendix R

O2-1 a. Para. 2.3- Single access entry/exit for 55 housing units is not sufficient. Zlatibor Estate Ranch has two entry/exit points for 14 housing units. Other gated developments in Escondido also have multiple entry/exit points.

O2-2 b. Table 6.2 does not describe the choke-point on BVP from San Pasqual Valley Rd. south to Eldorado Dr., which is also a two-lane collector. When you add this choke-point to Table 6-2 you have approximately 1.4 miles of choke-point down to 2 lanes all the way to Las Palmas Dr. This is where all the problems occur.

The whole history of BVP widening is a condition that should never have been allowed to occur.This road is only one of two available roads that can be used as a major thoroughfare from east Escondido/south Valley Center to Interstate 15; the other available thoroughfare being El Norte Parkway. BVP is used by Casino buses, heavy trucks, and more traffic than it was even meant to carry as a two-lane road. It is time that the County of San Diego and the City of Escondido “bite the bullet” and finished the widening of BVP from Las Palmas to San Pasqual Valley Rd. Widening 2600’ for this development accomplishes nothing as far as relieving the daily congestion on this roadway. The daily early morning and late afternoon traffic is horrendous, especially from the Zlatibor Estate Ranch exit onto BVP down to Las Palmas in the morning, and from Mary Lane to San Pasqual Valley Rd. in the afternoon due to the presence of four schools( 1 Charter, 1 Elementary, 1 Middle, and 1 High School) all between Mary Lane and Las Palmas. The schools all start and end at approximately the same times as the morning and afternoon rush hours begin. Many of the school parents coming from the north attempt to bypass most of BVP by using Sunset Dr. but this only creates heavier traffic on these residential streets. This bottleneck needs to go away soon.

O2-1 This comment states that the single access road for the proposed project would be insufficient. The traffic impact study evaluates the proposed single access with the enhanced traffic signal control as proposed, and concludes acceptable Level of Service (LOS) C or better peak hour operations with the proposed project and cumulative project traffic. As such, the traffic impact study finds that no additional access points are required.

O2-2 This comment states that the EIR does not adequately analyze traffic congestion on Bear Valley Parkway from San Pasqual Valley Road south to Eldorado Drive, then south to Las Palmas Drive. It asserts that the interim frontage improvements proposed would not improve operations. It goes on to comment on traffic flows elsewhere on Bear Valley Parkway.

All development must provide right-of-way and half-width improvements to fronting Circulation Element roadways that are not yet built to their full width. Given the proposed project’s lengthy frontage, it is reasonable to provide the additional northbound lane in the interim condition as a usable lane, as opposed to constructing the lane but not allowing traffic to use it, as can be seen elsewhere along Bear Valley Parkway.

Additionally, although not required by or included within the proposed residential development project activity, the EIR analyzes the broader City Circulation Element major roadway design of a portion of Bear Valley Parkway adjacent to and extending beyond the limits of the residential development site. This 4-lane plan is referenced in the EIR document as the Full Width Specific Alignment Plan. The purpose of this plan is to expedite the future build out design and implementation of the portion of the Circulation Element Roadway that will not be undertaken by the proposed residential project.

The following comments are general in nature but are provided since we are sure they would be important to both Zlatibor Estate Ranch and the new BVP development as well.

a. Bear Valley Electric Transmission and Distribution lines

O2-3 As part of the City of Escondido and the San Diego County Underground Conversion efforts, the Overhead Electric Transmission and Distribution lines going down Bear Valley should be converted from Overhead to underground.

b. Bear Valley and Zlatibor Ranch Road Intersection

O2-4 With the addition of the new development the intersection of Zlatibor Ranch Road and Bear Valley Parkway will become more dangerous and the City should take appropriate steps to insure safety. Entering Bear Valley Parkway from Zlatibor Ranch Road will become more dangerous due to the change in Bear Valley Parkway lanes. The safe ease of access should not be impaired due to the addition of the development.

O2-3 This comment suggests converting the overhead electrical lines on Bear Valley Parkway to underground. This comment does not critique the adequacy or accuracy of the Draft EIR. Accordingly, no revisions have been made in the Final EIR.

O2-4 This comment states that the Zlatibor Ranch Road / Bear Valley Parkway intersection will become more dangerous as a result of the proposed project. The project proposes to install a traffic signal at the subject intersection. This would provide improved overall operations for both vehicular and pedestrian traffic. This improvement would also specifically improve the ability for vehicles to turn to/from the minor streets (i.e., Zlatibor Ranch Road and the project driveway).

SPEDA

San Pasqual Economic Development Agency

*Honoring the Past • Embracing the Present • Leading the Future*

RECEIVED
MAY 05 2017
PLANNING DIVISION

May 1, 2017

O3-1 This letter is a response by the San Pasqual Economic Development Agency (SPEDA) on the Bear Valley Parkway Draft Environmental Report (DEIR) submitted by ASM Affiliates. (SPEDA) an affiliate of the San Pasqual Diegueño Indians regards the location of the project to be within the Territory of Diegueño Indians, and within San Pasqual's specific area of historic interest.

O3-2 SPEDA has reviewed the (DEIR) and has no comments on the report at this time. And, is not opposed to the Bear Valley Parkway project. SPEDA's primary concerns stem from the Project's possible impacts on Native American cultural resources. SPEDA as an affiliate of the San Pasqual Diegueño Indians is concerned about both the protection of unique and irreplaceable cultural resources, along with the possible discovery of human remains. Our continued involvement and request to provide Native American monitors in this project is to insure the proper and lawful treatment of our cultural items, including sacred items and Native American human remains that may be discovered during any ground disturbing activity associated with the development of this project.

If you have any questions regarding our request for continued involvement in the Bear Valley Parkway project, please contact me by phone at (760) 751-0012 or by email at wquisquis@sanpasqualtribe.org.

Sincerely,

Hellyaachwehay Quisquis
President

P.O. Box 10 - 28000 Via Viso Road
Valley Center - California - 92082

O3-1 This paragraph serves as an introduction. It notes that the commenting organization is affiliated with the San Pasqual Diegueño Indians. It does not address the adequacy or accuracy of information in the Draft EIR. Therefore, no response is necessary.

O3-2 This comment expresses concern for the protection of Native American cultural resources and human remains. It requests to provide Native American monitors during development of the proposed project to ensure the proper treatment of Native American sacred items and human remains.

Mitigation Measures CR-1, CR-2, CR-3, CR-4 and CR-9 ensure that a Native American monitor associated with a tribe that is traditionally and culturally affiliated with the project location be involved in implementing the monitoring program. Protection of potential cultural resources and human remains is required through Mitigation Measures CR-5, CR-6, CR-7, CR-8, CR-9, and CR-10. Implementation of these Mitigation Measures would reduce potential impacts on tribal cultural resources to a less-than-significant level.

**From:** Cate Slebioda [mailto:tcbycate@gmail.com]
**Sent:** Sunday, May 07, 2017 5:44 PM
**To:** Ann F. Dolmage <adolmage@escondido.org>
**Subject:** Proposed New Homes at 661 Bear Valley Pkwy Case File # ENV 15-0001

Dear Ann,

I'm writing to you on behalf of the Choya Canyon Residents with a major concern of how this project will affect us on Choya Canyon Road.

Our biggest concern is that the proposal does not seem to address how the additional homes and traffic will impact egress and ingress to the residents on Choya Canyon.

Getting on or off Bear Valley is already somewhat dangerous from our street. Its a very tight turn in when traveling North bound and one must slow down to make the turn safely. We often have cars going around us etc. When leaving Choya Canyon and entering onto Bear Valley we need to pick up speed rapidly to go with the flow of traffic. At certain times during the day, it is very difficult to exit Choya Canyon and head south.

O4-1

Every year the traffic gets heavier. The widening of Bear Valley to the north has made it worse and this proposal includes more widening now from the south. Once there is a new lane, I don't see us ever getting a sufficient break in traffic flow so we can enter or exit safely.

The Residents of Choya Canyon would like to be considered in your proposal and make sure we can also exit onto Bear Valley Parkway safely.

We think the best possible solution is to have the development allow Choya Canyon to drive through to the new proposed light at Zlatibor Ranch and Bear Valley and safely exit as the new home residents are allowed to do.

Thank you,

Cate Slebioda
and Steve Slebioda
2138 Choya Canyon Road
Escondido, CA 92025
C) 760-470-2460
S) 760-390-3365

O4-1 This comment concerns the safety of the intersection of Choya Canyon Road and Bear Valley Parkway, and how the proposed project may influence egress/ingress for residents on Choya Canyon Road.

The proposed project's traffic distribution to the north of the driveway (affecting Choya Canyon Road) is 22%. This would result in 121 additional trips over 24 hours, with a maximum peak hour contribution of 12 trips (PM peak, southbound). In the AM, when Choya Canyon Road traffic is turning left onto Bear Valley Parkway, the northbound contribution of project-related traffic would be 5 trips over the hour. This would not adversely affect the existing operations of the Choya Canyon Road intersection.

Furthermore, the project proposes to install a traffic signal at the Zlatibor Ranch/project driveway intersection, south of Choya Canyon Road. This would create gaps in existing northbound traffic that would benefit Choya Canyon Road traffic turning onto southbound Bear Valley Parkway.

The project does not propose access to Choya Canyon Road. Therefore, no improvements to Choya Canyon Road are proposed. The project would be developed such that corner sight distance at Choya Canyon Road is maintained to standards.

To: Ann Domage, Planner, City of Escondido

From: Joe Gelormini, Resident,

516 Bear Valley Parkway, Escondido CA 92025.

Re: 661 Bear Valley Parkway Project

05-09-17

Dear Ann,

I am writing to formally submit a concern/complaint dealing with the impact that the proposed project for 661 Bear Valley Parkway will have on the access to, and thus the value of, my property.

As it stands, the proposed project would cause Bear Valley Parkway to be widened in front of my home, and a median to be added in the center of the Parkway in front of my home that would block access for myself (and all residents adjacent to me) from our houses as we travel northbound on Bear Valley Parkway each night coming home from work.

O5-1

As I'm sure you are aware, according to the traffic study done for the project, (p18 #4), traffic is heavy travelling south in the AM, and north in the PM. A median in front of our home would make it impossible for my wife, family and I (as well as our neighbors in both directions) to access our driveways coming northbound on Bear Valley Parkway. During peak traffic hours, this is a major concern. This, in addition to the fact that the traffic study also does not deem a traffic signal necessary at the Encino/Bear Valley intersection, means that we have no chance to make a legal U-Turn, in order to travel back to our houses that the median would force us to drive past, for a number of miles either.

Not only does this proposed median deny me access to my property, it, in turn, will have a negative effect on my property value as a result. I am surprised that our city would allow the developer to add this median without considering these effects on the many residents of Bear Valley Parkway. I would like this median eliminated or altered from the existing plant to allow the aforementioned access.

Sincerely,

Joseph V. Gelormini

O5-1 This comment concerns the ability to access residences on the west side of Bear Valley Parkway from the northbound travel lane after the addition of the median associated with the proposed SAP. The City of Escondido's General Plan identifies Bear Valley Parkway as a Major Road in the project area. The City envisions an ultimate road configuration that includes four lanes and a raised median for capacity and safety. The applicant has provided a full-width SAP for the benefit of the City to design and plan the roadway section the City requires; however, the applicant will not be responsible for constructing all of the full-width improvements. The applicant will be responsible only for half-width improvements on the east side of the road (between Sunset Drive and Choya Canyon Road), to include a second northbound lane, curb, gutter, sidewalk, overhead power line relocation, parkway, and bike lane improvements. At this time, the City has no immediate plans for completion of the full-width SAP improvements (including the median).

When the median is in place, access to private residences will not be precluded; left-turns in/out will be restricted as is common for properties located along major roads with raised medians. U-turns for the displaced left-turns will be accommodated at the existing signalized intersection at Sunset Drive, and at the proposed signalized intersection at Zlatibor Ranch Road/ project driveway.

To: Ann Domage,

Planner, City of Escondido

From: Joe Gelormini,

Resident 516 Bear Valley Parkway, Escondido 92025

RE: 661 Bear Valley Parkway Project

O6-1

In addition to the concerns listed in my previous letter, I must add the following. The limited access to my property created by the placement of a median in the center of Bear Valley Parkway in from of my home threatens the well-being of my family.

Emergency services, especially fire and paramedic services, would not have access to our home from the south, which is where the fire department that serves our area is located. My wife, who has a pacemaker/defibrillator and is continually monitored by her physicians, may, at some point, need emergency services (her defibrillator has gone off twice in the past, immediately alerting emergency services), who, as stated, would not be able to reach her efficiently or in a timely manner.

The lack of access to my property and the adjacent properties creates a safety issue for all residents of the area, eliminating the opportunity for police, fire, or emergency vehicles to easily access our residences, or to access them at all heading north on Bear Valley parkway.

Sincerely,

Joseph V Gelormini

O6-1 This comment concerns the ability for emergency vehicles to access residences on the west side of Bear Valley Parkway from the south after the addition of a median to Bear Valley Parkway.

The full-width SAP would add a median to Bear Valley Parkway between Sunset Drive and Choya Canyon Road. The commenter, a resident at 516 Bear Valley Parkway, accesses his property from Bear Valley Parkway just north of Sunset Drive.

As explained in the Initial Study (Appendix A of the EIR), the proposed project area is serviced though the Escondido Fire District Service Area District 4, with the nearest fire station (Fire Station 4) located approximately 1.25 miles to the south at 3301 Bear Valley Parkway. This location has one paramedic fire engine and one brush engine (City 2016).

Applicable performance objectives for fire protection services are identified in the General Plan (City 2012a) Quality of Life Standard #3, as follows: In urbanized areas of the city, an initial response time of seven and one-half minutes for all structure fire and emergency Advanced Life Support (ALS) calls and a maximum response time of ten minutes for supporting companies shall be maintained. As identified in the Fire Protection Plan for the proposed project (Dudek 2015), four fire stations in the district would respond to the site within seven minutes and the nearest fire station would respond within 4.2 minutes.

Furthermore, the City's General Plan EIR (City 2012b) identifies a need for two additional fire stations under General Plan buildout conditions which would be located at: 1) the North Broadway area and the southeastern portion of the city; and 2) the area along Highway 78, east of Bear Valley Parkway. The proposed project area is located near the second proposed fire station location.

As such, the area surrounding the commenter's residence is well serviced by emergency responders. The proposed median is not expected to impede emergency vehicles or result in a substantial increase in response times for emergency vehicles over the existing 4.2 minutes.

05-11-17

To: City of Escondido Planning Division

Attn: Ann Doimage

This morning I talked to you about the proposed development at the corner of Choya Canyon Rd And Bear Valley Parkway- reference Sub 15-0002, ( address 661 Bear Valley Parkway ) I originally inquired about how the drainage from Choya Canyon Rd was being handled.

I own the property at 724 Chaparral Lane. This is the 3.9 acres that borders Chaparral Lane and Choya Canyon Rd. On the N/W corner of the lot there is a drainage pipe that handle a lot of rain runoff that drains onto the proposed development. During our discussion when we looked at the proposed landscaping plan to see what was proposed for the drainage I was shocked to see the following;

O7-1

1-All along the development's east border the landscaping plans call for the planting of large trees.

2- That the growth of these trees would block the view from my lot.

3- From the artist rendering it looks like the rooflines of the homes may be above my lot's elevations.

I originally attended the meeting on 05-25-16. This meeting was held at the Bear Valley Middle school to inform the neighborhood's surrounding properties as to what was being proposed. During this meeting the presenter, Mr. Jack Henthorn, explained details about the development. I specifically asked him would anything block my view from my property. Mr. Smith explained that my view would not be blocked, indicating that all roof lines would be below the elevation of my lot and that my views would not be blocked in any way. Therefore, I did not object to the plan.

In the near future I intend to build a home on the vacant two acres of my property which borders Choya Canyon Rd. This lot has great southern and westerly views. As a Real Estate Broker of approx. 30 plus years, I know that the value of the lot- home will be greatly diminished by the westerly views being blocked by the large trees proposed to be planted. Also I want to insure that the proposed homes rooflines will not block my views.

O7-2

Therefore, I strongly object to these proposed plans. I would like to be informed and contacted as to it's contents and change it's plans to accommodate the taking of my properties view and future value. If I am not mistaken a bordering property owner may not deliberately take away the adjoining property owner's enjoyment of a view without due compensation.

Please keep me informed as to your decision so I can object to what would be a negative effect on my property rights. If approved I would like to be informed as to my next step in this process, for possible preventative -legal action.

Thanks for your consideration and response in this matter.

William J. Cox

760-294-3220

O7-1 This comment expresses concern regarding the potential impact on views from an existing residence on adjacent property located at 724 Chaparral Lane, in unincorporated San Diego County.

Under CEQA Guidelines §21002.1, an EIR must identify "the significant effects on the environment of a proposed project. "Environment" means physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, and "objects of aesthetic significance." (CEQA Guidelines §15360). The City, acting as lead agency, has discretion as to what qualifies as a "significant" impact, based on the nature of the affected area; and must make a policy decision in distinguishing between substantial and insubstantial impacts. Private views in the City of Escondido are not subject to local regulation. The City of Escondido has determined that any impact on private views is not a "significant" environmental effect that requires analysis in the EIR. The EIR concludes that the policy standards of the General Plan and Escondido Municipal Code protect some public views, but not private views. City staff encourages applicants to be sensitive to existing topographic conditions and adjacent properties when development applications are received. However, private view impacts are not considered as environmental impacts by the City of Escondido.

The proposed residential development has taken existing topography into consideration and employed context-sensitive grading designs reflective of the on-site conditions. The existing high point on the site is proximate to the proposed high point with grades falling off to the west, east and south.

Although private view impacts are beyond the purview of CEQA and City regulation, cross sections provided for informational purposes are presented in exhibits 1 and 2, sections H-H' and I-I'. All roof peak elevations in the western view-shed would be below the existing pad elevation of 694' at 724 Chaparral Lane.

O7-2 The comment concerns the impact of landscaping adjacent to Choya Canyon Road on views from the existing residence and on hypothetical future additional development on the property located at 724 Chaparral Lane. (See response O7-1 regarding impacts on private views). As noted in response O7-1, private view impacts are beyond the purview of CEQA and City regulation. The following analysis is for informational purposes.

The 724 Chaparral Lane property slopes toward the west and north from the existing pad elevation of 694' to an approximate elevation ranging from 660' southerly along the Choya Canyon Road frontage to an elevation of approximately 680' at Chaparral Lane and Choya Canyon Road (exhibit 2).

A 5 foot tall tube steel fence is proposed at the project boundary for the purpose of providing a defined edge for vehicle traffic. The plant material adjacent to the proposed fence will function as a privacy screen and partial barrier to dust and exhaust generated by traffic on Choya Canyon Road.

The concept landscaping plan for the area adjacent to Choya Canyon Road shows California Live Oak (*Quercus agrifolia*) and Blue Elderberry (*Sambucus cerulean*). The slow-growing California Live Oaks would likely achieve a height of over 35 feet at maturity. In an attempt to address the

commenters concern, the proposed California Live Oaks have been relocated in the landscape concept plan and the northeastern portion of the landscape plan has been revised to incorporate a more shrub like species consistent with the Blue Elderberry. The revised landscape plan (EIR Figure 2-6) provides for plants that would achieve a maximum height of approximately 15 feet at maturity and would not interfere with views to the west on the 724 Chaparral Lane property above elevation 675'.

The comment letter also expresses concern regarding possible blockage of southern and western views from a hypothetical future development pad located on the same legal parcel as the existing residence at 724 Chaparral Lane. There is no record of a lot split or other development application having been filed with the County of San Diego. However, the property owner has verbally provided general information related to his ideas regarding future lot configuration and pad location.

For informational purposes, cross sections have been prepared based on the existing pad elevation and on a hypothetical future development pad located at the 686'elevation. The hypothetical future pad would be below and to the west of the existing pad/residence. The resulting cross sections are shown in exhibits 1 and 2 as sections H-H' (west) and I-I' (southwest).

The proposed immediately adjacent roof peaks to the west would not exceed approximately 670.5' and would be approximately 15 feet below the hypothetical future pad elevation and 23 feet below the existing pad elevation based on the City's maximum single family residential height limit of 35'.

Proposed landscaping material on the down slopes along Choya Canyon Road is not expected to exceed 15' at maturity and would likely be planted a few feet below Choya Canyon Road elevation to allow for growth. This is expected to result in the mature plant being at elevation 686'. This would be below the existing pad elevation of 694' and at the same elevation as the hypothetical future pad elevation of 686'.

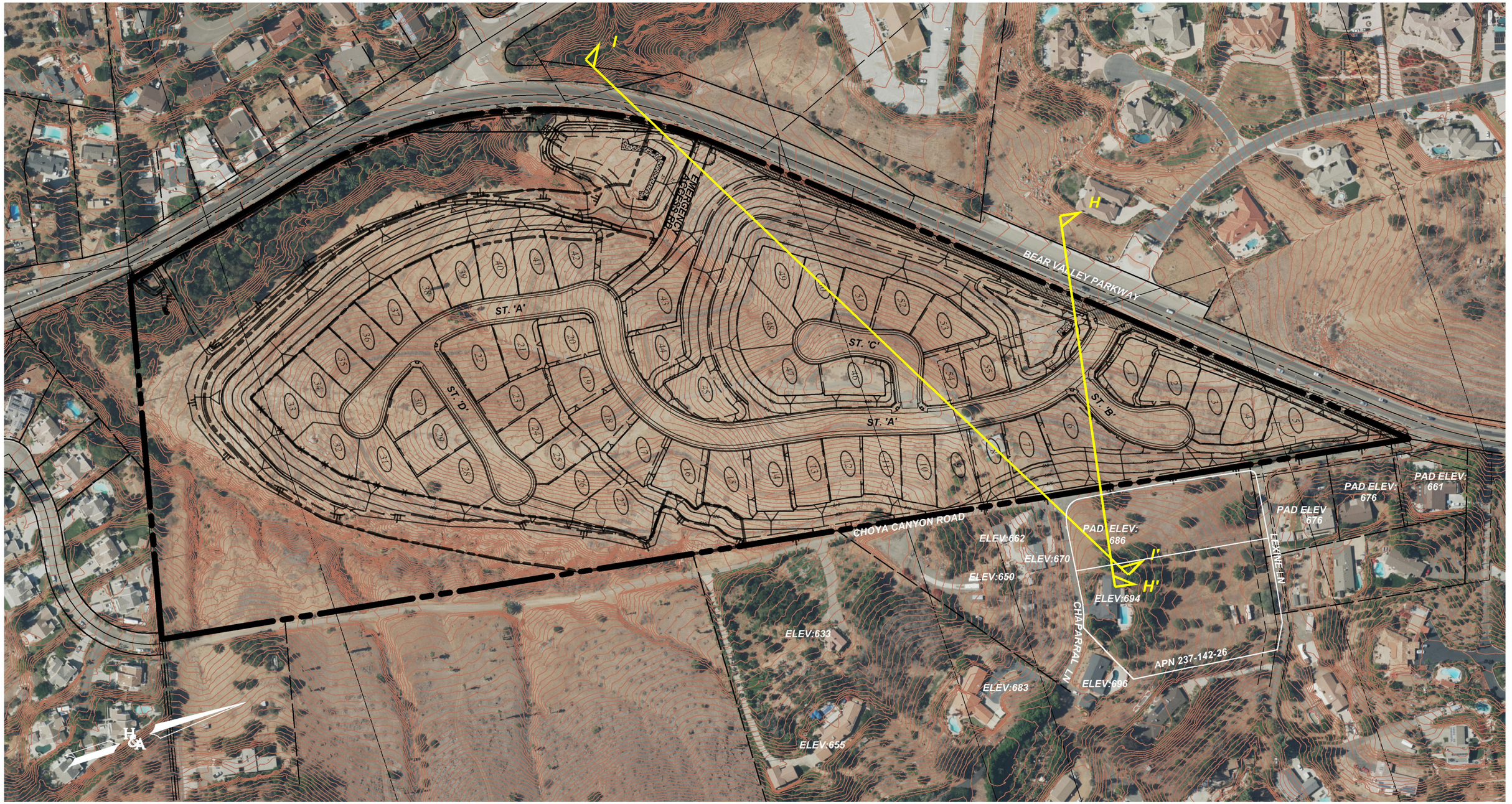
The southwest view section (I-I') shows the proposed adjacent roof peak elevation at 678.5'. The elevation of Choya Canyon Road increases to 679' at the intersection of Choya Canyon Road and Chaparral Lane. The landscaping in this area at maturity could reach an elevation of 694', which would be approximately 8 feet above the hypothetical future pad elevation and at approximately the same elevation as the existing pad.

Views from the pad elevation of the existing residence at 724 Chaparral Lane would not be blocked by the proposed development. Further, the views to the west of the hypothetical future pad location would be unaffected by the adjacent proposed development. Views to the southwest from the hypothetical future pad location would be potentially interrupted by landscaping shrubs. The proposed plant pallete has been modified to minimize the interruption. Second-story views to the southwest would likely be unaffected. No alternative hypothetical future pad locations were evaluated in this analysis.

As noted above, the City of Escondido does not regulate private views, nor consider private view impacts to be environmental effects subject to CEQA. However, when subdivisions are proposed, the City encourages applicants to be sensitive to existing topographic conditions and adjacent

communities. As previously noted, the analysis presented in this response is provided solely for informational purposes.

The proposed 661 Bear Valley Parkway residential development has considered these comments and employed grading designs taking the existing landform into consideration along with potential impacts to existing, adjacent communities. The relocation of proposed California Live Oak trees by the applicant further demonstrates the applicant's commitment to minimizing perceived impacts on surrounding properties.




SCALE 1"=200'

06-21-17

PREPARED BY:

HUNSAKER & ASSOCIATES SAN DIEGO, INC.

PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH(858)558-4500 · FX(858)558-1414

# SITE SECTIONS LOCATIONS
# 661 BEAR VALLEY PKWY.
ESCONDIDO, CALIFORNIA

SHEET 1 OF 1

W.O. 2510-08

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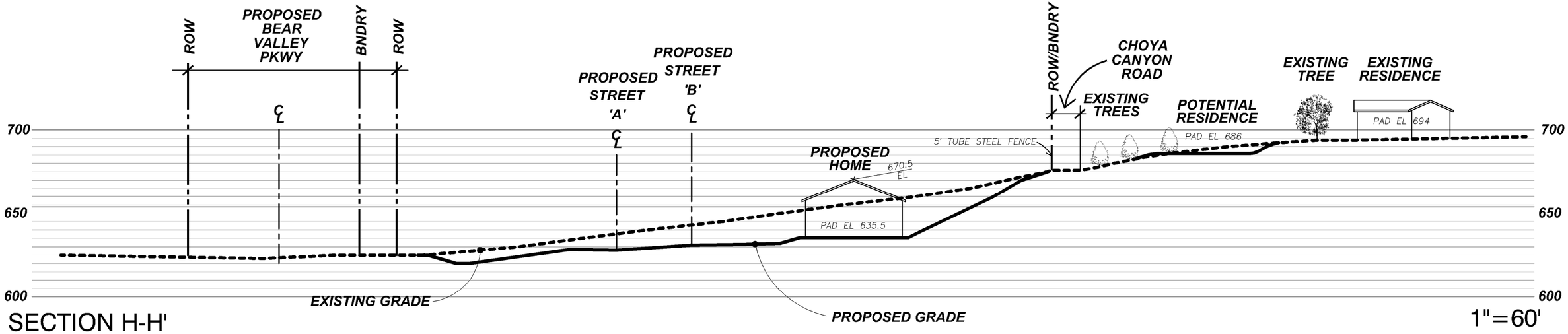
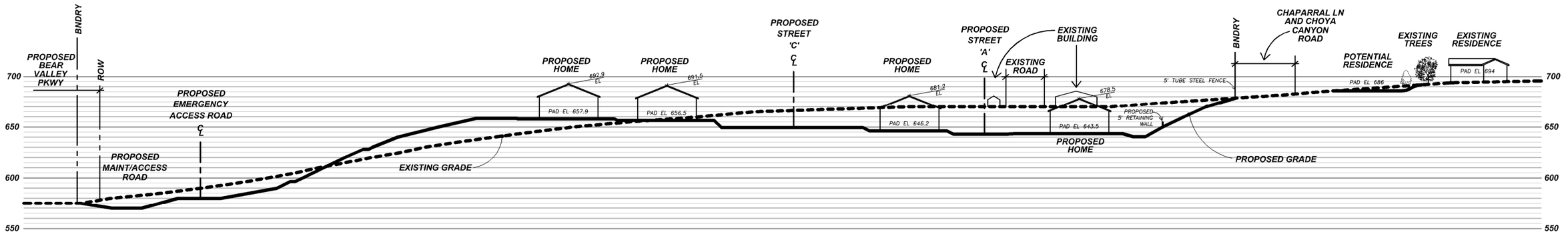



SECTION H-H'

1"=60'




SECTION I-I'

1"=100'

06-21-17

PREPARED BY:

HUNSAKER & ASSOCIATES SAN DIEGO, INC

PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
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# SITE SECTIONS H-H' & I-I'

## 661 BEAR VALLEY PKWY.

ESCONDIDO, CALIFORNIA

SHEET 1 OF 1

W.O. 2510-08

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**From:** Mare Gilbert [mailto:marigoldfarms@hotmail.com]
**Sent:** Thursday, May 11, 2017 3:05 PM
**To:** Ann F. Dolmage <adolmage@escondido.org>
**Subject:** New Proposed Project at Bear Valley Pkwy. & Zlatibor Ranch Rd.

O8-1 I guess I always knew it would happen. Twenty years ago when my husband and I bought our house on Choya Canyon Road, Bear Valley Pkwy. was busy but nothing like it is today. The growth of Valley Center and the addition of three casinos have made it a crazy, dangerous road. We always had the positive that, eventually, Bear Valley Pkwy. would be enlarged and the center divide and intersections would be controlled a little better. Our street, in the county but bordering the city of Escondido, has just that exit. We are nineteen modest houses, with a private, self-maintained road, dealing with an ever growing traffic problem on Bear Valley. There are times of the traffic day that we must turn right in order to exit our road. This then requires a left turn onto El Dorado (a scary "sit in the middle of Bear Valley awaiting a traffic break" exercise) in order to either U-turn at Zlatibor Ranch & El Dorado or left turn onto Encino and make the right turn at the curve on Bear Valley. All are scary situations! Waiting 5 minutes to safely exit our street is not uncommon.

O8-2 Now, a 55 dwelling subdivision is proposed next-door, with absolutely no consideration for our situation. The traffic proposal totally ignores our existence. It will put more cars onto the road with no mitigation for that extra traffic. Our entrance may even be made smaller and thus more dangerous by the subdivision's use of the corner of the property. The turn onto our street is very sharp and dangerous as it is. Putting a fence and a yard in that corner will not make it any easier nor safer.

I did not design my street. I did not approve my street. I did not deem that my street would be in the county instead of the adjacent city. I cannot help these things. Please do not allow this subdivision to be built, walling off our neighborhood, with not consideration for our quality of life. Perhaps an entry to utilize their roads in order to use the proposed signal at Zlatibor Ranch? Or perhaps a second exit elsewhere which we could use. Or maybe a signal at El Dorado timed with the proposed one at Zlatibor Ranch that would allow us to exit safely. Help!

Sincerely,

Mary M. Gilbert
2146 Choya Canyon Rd.
Escondido, CA 92025
760 505 1859
marigoldfarms@hotmail.com

O8-1 This comment describes existing conditions on Bear Valley Parkway at Choya Canyon Road. This is a descriptive comment. As this comment does not critique the adequacy or accuracy of the Draft EIR, no response is necessary.

O8-2 This comment concerns the ability for Choya Canyon Road traffic to access Bear Valley Parkway.

The project's traffic distribution to the north of the driveway (affecting Choya Canyon Road) is 22%. This would result in 121 additional trips over 24 hours, with a maximum peak hour contribution of 12 trips (PM peak, southbound). In the AM, when Choya Canyon Road traffic is turning left onto Bear Valley Parkway, the northbound contribution of project traffic would be 5 trips over the hour. This would not adversely affect the existing operations of the Choya Canyon Road intersection.

Furthermore, the project proposes to install a traffic signal at the Zlatibor Ranch/project driveway intersection, south of Choya Canyon Road. This would create gaps in existing northbound traffic that would benefit Choya Canyon Road traffic turning onto southbound Bear Valley Parkway.

The project does not propose access to Choya Canyon Road; therefore, no improvements to Choya Canyon Road are proposed. The project would be developed such that corner sight distance at Choya Canyon Road is maintained to standards.

It should be noted that the while the proposed project is located within the City of Escondido, the portion to the north of the project boundary is located in unincorporated San Diego County. The County of San Diego is responsible for the future design and construction of improvements north of the proposed project boundary.

**From:** Vincent Whipple [mailto:vwhipple@RinconTribe.org]
**Sent:** Friday, May 12, 2017 5:45 PM
**To:** Ann F. Dolmage <adolmage@escondido.org>
**Subject:** Notice of Availability of the Draft Environmental Impact Report, 661 Bear Valley Parkway - ENV 15-0001 (SCH #2016111060)

RE: Notice of Availability of the Draft Environmental Impact Report, 661 Bear Valley Parkway - ENV 15-0001 (SCH #2016111060)

Ms. Ann Dolmage:

This message is sent on behalf of the Rincon Band of Luiseno Indians. We have received the Notice of Availability regarding the above named project. The identified location is within the Aboriginal Territory of the Luiseno people, and it is also situated within Rincon's specific area of cultural interest. Embedded in the Luiseno Territory are Rincon's history, culture, and identity.

O9-1

Rincon has previously commented on this project, and we reiterate our concern that as the site location is in our Traditional Use Area, we believe there is the potential for additional cultural findings, including inadvertent discoveries. Due to the culturally sensitive nature of the project area, Rincon recommends a Luiseno Tribal Monitor be present for all ground disturbing activities associated with the project. We are therefore agreeable to the archaeological/cultural resource mitigation measures identified as CR-1 through CR-8 in the Draft EIR.

Thank you for the opportunity to comment and to protect and preserve our Luiseno cultural heritage.

Vincent Whipple
Cultural Resources Manager
Rincon Band of Luiseno Indians
760-297-2635

O9-1 The comment letter expresses concern about the potential for tribal cultural items to be discovered at the project site during development. It recommends that a Luiseño Tribal Monitor be present for all ground disturbing activities and agrees with the language found in mitigation measures CR-1 through CR-8 of the Draft EIR.

# PART IV REVISED DRAFT EIR

## ES-1. Executive Summary

This chapter is a summary of the Environmental Impact Report (EIR) for the proposed 661 Bear Valley Parkway project (hereafter referred to as the "project"), prepared in compliance with the California Environmental Quality Act (CEQA). This chapter highlights the major areas of importance in the environmental analysis for the proposed project, as required by Section 15123 of the CEQA Guidelines. It provides a brief description of the proposed project's features, objectives, environmental impacts, areas of controversy, and alternatives to the proposed project. This chapter includes a discussion of issues to be resolved including the choice among alternatives and whether or how to mitigate the significant effects, as required by the CEQA Guidelines. Table ES-1 summarizes: 1) the direct and cumulative impacts that would occur from implementation of the proposed project; 2) the significance of impacts before mitigation; 3) the recommended mitigation measures that would avoid or lessen environmental impacts; 4) the significance of impact after mitigation; and 5) the comparative impacts of the project alternatives.

## ES-2. Project Description

The 661 Bear Valley Parkway Residential Project and the Bear Valley Parkway Specific Alignment Plan (collectively the proposed project) proposes development of a 55-unit residential development on a 40-62-acre site along with Bear Valley Parkway frontage improvements, private streets, dedicated open space, and recreation lots, as well as the phased improvement of a section of Bear Valley Parkway to 4-lane major road standards. The proposed project consists of two areas: the residential development project site and the Bear Valley Parkway Specific Alignment Plan (SAP) area. Both of these project areas are located in the eastern part of the City of Escondido, adjacent to the County of San Diego (Figures 2-1 and 2-2).

The proposed subdivision would include 55 residential lots ranging in size from approximately 10,000 square feet (sf) to roughly 24,500 sf, with an average lot size of 11,915 sf. The residential development includes eight open space lots that total 20.02 acres. Seven of these open space lots would remain undeveloped and one would be developed into a pocket park or other similar recreational use. Additionally, a private pedestrian trail would connect from the pocket park south along a coastal sage scrub re-vegetation slope. Primary access to and from the residential development site would be provided via a standard entrance residential street extending from the existing Zlatibor Ranch Road and Bear Valley Parkway intersection in a location similar to the existing single-family residence driveway. The intersection would be signalized as part of the project and would include an entry monument sign. A secondary emergency-access-only driveway would be provided off of Bear Valley Parkway in the southwestern portion of the residential development site. The proposed internal streets would be private.

The Bear Valley Parkway SAP improvements site is located along approximately 3,560 linear feet of Bear Valley Parkway alignment between the City boundary on the north (near the intersection with Choya Canyon Road) and the intersection of Bear Valley Parkway with Sunset Drive/Ranchito Drive to the south. This area includes the Encino Drive and Bear Valley Parkway intersection. The SAP improvements site includes three sections, based on anticipated phasing: the 2,937 linear feet of northbound Bear Valley Parkway along the residential development frontage; the 623 linear feet of northbound Bear Valley Parkway from the southern residential development area boundary to Sunset Drive/Ranchito Drive; and 3,560 linear feet of southbound Bear Valley Parkway from the City boundary on the north to Sunset Drive/Ranchito Drive on the south, including the intersection with Encino Drive.

The Specific Alignment Plan does not obligate the City, the residential development applicant, or another party to implement the identified improvements. Rather, it is intended to provide consistency in improvements along this segment of Bear Valley Parkway, should improvements be proposed or necessitated by a future project. As such, the analysis of impacts associated with improvements are addressed herein, but associated mitigation would be the responsibility of the future entity completing the construction of the improvements.

## ES-3. Project Objectives

The following project objectives have been identified for the proposed project:

1. Provide for the construction of housing that is consistent with the City of Escondido 2013-2021 Housing Element.
2. Design the project to appeal to the area's growing demand for high quality one- and two-story single-family residential housing that is compatible in density and character to the surrounding community.
3. Use compact and efficient design form to respect and integrate natural resources on site, while enhancing the City's ability to provide services through fiscally-positive development.
4. Cluster residential lots to minimize impacts to jurisdictional waters and other biological resources, resulting in the preservation of approximately 50 percent of the site as permanent open space.
5. Design project grading and construction to generally reflect the existing landform.
6. Maintain the existing drainage crossing near the southern property line as a pedestrian linkage to public sidewalks.
7. Establish a Specific Alignment Plan for full-width improvements to Bear Valley Parkway consistent with the major road classification identified in the City's General Plan Mobility and Infrastructure Element.

## ES-4. Impact Summary

This EIR examines the potential environmental effects from implementation of the project, including information related to existing site conditions, analyses of the types and magnitude of individual and cumulative environmental impacts, and feasible mitigation measures that could reduce or avoid environmental impacts. In accordance with Appendix G of the CEQA Guidelines, the following environmental topics were identified as requiring detailed analysis in this EIR:

- Aesthetics
- Agricultural Resources
- Biological Resources
- Cultural Resources including Tribal Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Land Use and Planning
- Noise
- Transportation and Traffic

The nine environmental topics listed above that have potentially significant impacts are addressed in detail in this EIR. The project is not anticipated to result in significant impacts to the following topics, which were discussed in the Initial Study (Appendix A) and not addressed in detail in this EIR:

- Forestry Resources
- Air Quality
- Paleontological Resources
- Seismic Activity, Liquefaction, Landslides, and Soil Erosion
- Greenhouse Gas Emissions and Energy
- Hydrology and Water Quality
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Utilities and Service Systems

This EIR also contains other mandatory discussions required by CEQA including the analysis of cumulative impacts provided in the various subsections of Chapter 3, Environmental Analysis; effects found not to be significant, growth inducement, significant and unavoidable environmental effects, and significant irreversible environmental effects provided in the various subsections of Chapter 4, Other CEQA Considerations; and alternatives to the project provided in Chapter 5, Alternatives.

Table ES-1, presented at the end of this Executive Summary, provides a summary of the environmental impacts that could result from implementation of the proposed project and identifies feasible mitigation measures that could reduce or avoid environmental impacts, as discussed in detail in Chapter 3 of this EIR. Based on this environmental impact analysis, implementation of the 661 Bear Valley Parkway project would result in potentially significant impacts associated with the following issues:

- Biological Resources (special-status species; sensitive habitats; jurisdictional habitat; local policies and ordinances)
- Cultural Resources (archaeological resources; tribal cultural resources)
- Geology and Soils (soil stability)
- Hazards and Hazardous Materials (accidental release of hazardous materials)
- Noise (excessive noise levels; excessive ground-borne vibration; temporary noise levels)
- Transportation and Traffic (circulation system operations)

The proposed project would not result in any significant and unavoidable environmental impacts. Mitigation measures have been identified that would reduce all potentially significant environmental impacts to below a level of significance.

The cumulative impact analysis determines whether the proposed project's incremental effect would be "cumulatively considerable" when viewed in connection with the effects of past, present, or probably future projects. A cumulative impact is not considered significant if the effect would be essentially the same whether or not the proposed project is implemented. Table ES-1 includes the potential significant cumulative Traffic and Transportation impact (circulation system operations) to which the proposed project may contribute.

## ES-5. Areas of Known Controversy

Section 15123 of the CEQA Guidelines requires the summary of an EIR to include areas of controversy known to the Lead Agency including issues raised by agencies and the public. On November 28, 2016, a Notice of Preparation (NOP), prepared in compliance with Section 15082 of the CEQA Guidelines, was distributed for the project. The NOP included an Initial Study in order to supply the necessary information to determine the probable environmental effects of the project and the scope of the EIR. In accordance with Section 15082 of the CEQA Guidelines, the NOP was circulated to interested agencies, groups, and individuals for a period of 30 days, during which time comments were solicited pertaining to environmental topics and issues that the EIR should evaluate. The NOP comment period ended on December 30, 2016. Comment letters were received from the San Diego County Archaeological Society, the County of San Diego, the Rincon Band of Luiseno Indians, and the Native American Heritage Commission (NAHC).

The NAHC provided a description of state and federal statutes related to cultural resources and requested that the NAHC be provided with pertinent project information. The Rincon Tribe noted that the project site is within its Traditional Use Area, agreed with the decision to analyze impacts to historical and archaeological resources in the EIR, and recommended a Luiseno Tribal Monitor be present for all ground disturbing activities associated with the project. The San Diego County Archaeological Society requested to be included in the distribution of the Draft EIR and provided with a copy of the cultural resources technical report. The County of San Diego requested the EIR address impacts in the unincorporated County areas neighboring the site; the EIR address impacts related to existing on-site and nearby septic systems and water wells; the EIR address impacts from possible mosquito breeding sources; the City coordinate with the County on any potential impacts to County infrastructure in the drainage that spans the Encino Drive / Rancho Verde Drive intersection; the City should condition the project to complete the full four lane road improvements to Bear Valley Parkway; and that the City should demonstrate that there is an existing programmed improvement for the fair-share contribution to the improvement at Bear Valley Parkway and Encino Drive.

The NOP, Initial Study, and comments received during the 30-day NOP review period are included in Appendix A of this document. All of the issues raised during the NOP comment period have been addressed in Chapters 3 through 5 of this EIR.

## ES-6. Alternatives to the Proposed Project

The objective of the alternatives analysis is to consider a reasonable range of potentially feasible alternatives to foster informed decision-making and public participation. Two alternatives to the proposed project were considered: 1) the No Project Alternative; and 2) the Reduced Project Alternative.

- Under the No Project Alternative, the existing on-site single-family house would remain. Existing, on-site landforms, biological resources and the drainage crossing near the southern property line would remain unchanged. Half-width frontage improvements on Bear Valley Parkway associated with the proposed residential development would not be constructed. Similarly, the SAP would not be established. The current layout of the Encino Drive-Bear Valley Parkway intersection would remain unchanged.
- The Reduced Project Alternative reduces the development intensity in order to reduce traffic impacts. Development under the Reduced Project Alternative would be limited to 31 houses in the same development footprint as the proposed project (see Figure 5-1). Removal of 24 houses would correspondingly reduce the number of daily trips generated by the project. The Specific Alignment Plan for full-width roadway improvements to Bear Valley Parkway would be implemented under the Reduced Project Alternative with no differences from the improvements proposed by the project.

An EIR is required to identify the environmentally superior alternative among the range of reasonable alternatives that are evaluated. The Reduced Project Alternative would avoid the significant but mitigable impacts identified for the proposed project related to circulation system traffic impacts. The Reduced Project Alterative would, therefore, be the environmentally superior alternative. It would meet 5 of the 6 project objectives.

Table ES-1 summarizes the potential impacts associated with each analyzed alternative, as compared to the proposed project, and identifies mitigation measures that would need to be incorporated into each project alternative to substantially lessen the impacts.

## ES-7. Issues to be Resolved by the Decision-Making Body

The issues to be resolved by the decision-making body include whether and how to mitigate the significant effects of the project; consideration of the various mitigation measures and alternatives identified in the EIR; and whether the discretionary approvals required to implement the project and its development components should be granted.

## Table ES-1 Direct and Cumulative Environmental Impacts and Mitigation Measures of the Proposed Project and Project Alternatives

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
|---|---|---|---|---|---|
| Key: LS = Less than Significant; PS = Potentially Significant; SU = Significant and Unavoidable; NA = Not Applicable | | | | | |
| **3.1 Aesthetics** | | | | | |
| Issue 1: Scenic Vistas | | | | | |
| The partial obstruction of scenic vistas by the residential development and SAP would be less than significant | LS | NA | LS | LS / LS | LS / LS |
| Issue 2: Scenic Resources within a Scenic Roadway | | | | | |
| Minimal impacts within the Bear Valley Parkway scenic roadway corridor from the residential development and SAP are considered less than significant | LS | NA | LS | LS / LS | LS / LS |
| Issue 3: Visual Character and Quality | | | | | |
| The residential development would improve the visual quality of the site relative to the existing condition and would be consistent with the character of surrounding developments. The SAP improvements would create visual consistency along the roadway between the proposed project site and the surrounding area. | LS | NA | LS | LS / LS | LS / LS |
| Issue 4: Light and Glare | | | | | |
| The residential development and SAP would have less-than-significant impacts regarding new sources of light and glare. | LS | NA | LS | LS / LS | LS / LS |
| **3.2 Agricultural Resources** | | | | | |
| Issue 1: Direct Conversion of Agricultural Resources | | | | | |
| The site was previously used for agriculture; however, development of the proposed residential development site with residential uses in accordance with the General Plan would result in a less-than-significant impact related to direct conversion of | LS | NA | LS | LS / LS | LS / LS |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| agricultural resources. Given the minimal amount of potential agricultural resources within the boundary of the SAP improvements site, the proposed SAP improvements would have a less-than-significant impact related to direct conversion of agricultural resources. | | | | | |
| Issue 2: Land Use Conflicts | | | | | |
| The proposed residential development and SAP would not conflict with zoning for agricultural use or a Williamson Act contract. | LS | NA | LS | LS / LS | LS / LS |
| Issue 3: Indirect Conversion of Agricultural Resources | | | | | |
| Impacts related to indirect conversion of agricultural resources would be less than significant because the proposed residential development and SAP would not affect land use activities on adjacent lands and conversion of agriculturally significant sites adjacent to the site within city limits would be consistent with long-range planning policies. | LS | NA | LS | LS / LS | LS / LS |
| **3.3 Biological Resources** | | | | | |
| Issue 1: Candidate, Sensitive, or Special-Status Species | | | | | |
| The proposed project would result in less-than-significant direct and indirect impacts on special-status plants. Prior to mitigation, tree removal and other construction-related activities have the potential to result in significant direct and indirect impacts on raptors and other nesting birds. | PS | Residential Development and SAP:<br>BIO-1. If construction activity occurs during the breeding season for raptors and other birds (typically January 1 through September 15), a one-time biological survey for nesting bird species shall be conducted within the proposed impact area and a 300-foot buffer within 72 hours prior to construction. This survey is necessary to ensure avoidance of impacts on nesting raptors (e.g., Cooper's hawk and red-tailed hawk) and/or birds protected by the federal MBTA. If any active nests | LS | LS / LS | PS / BIO-1 / LS |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| | | are detected, the area shall be flagged and mapped on the construction plans along with a minimum of a 300-foot buffer and up to a maximum of 500 feet for raptors, as determined by the project biologist, and shall be avoided until the nesting cycle is complete. The project biologist may reduce the avoidance buffer if a reduced buffer maintains protection of the nesting cycle of the avian species. | | | |
| Issue 2: Sensitive Habitats | | | | | |
| Direct impacts on 0.67 acre of southern coast live oak riparian forest (0.40 acre on site and 0.27 acre off site) from the construction of frontage improvements along Bear Valley Parkway associated with the residential development would be significant. Direct impacts on 0.19 acre of on-site southern coast live oak riparian forest from the SAP improvements would be significant. | PS | Residential Development:<br>BIO-2: To mitigate impacts on sensitive habitats from the proposed residential development, the project applicant shall establish or enhance at least 2.01 acres (a 3:1 ratio) of southern coast live oak riparian forest with establishment of 0.67 acre within an on-site mitigation area and enhancement of 1.34 acre within the open space area in general, including enhancing the 0.13 acre area of non-native riparian and enhancing the balance within the area mapped as southern coast live oak riparian forest that contains non-native and invasive species (Table 3.3-10). The mitigation shall occur within the open space lot (Lot H) totaling 8.0 acres. The mitigation area occurs along the ephemeral drainage that runs along the southern boundary of the proposed residential development site, as shown in Figure 3.3-3. A Conceptual Mitigation Plan shall be prepared as part of the permit application process (i.e., CWA Section 401/404 permit) described in mitigation | LS | LS / LS | PS / BIO-2, BIO-3 / LS |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| Key: LS = Less than Significant; PS = Potentially Significant; SU = Significant and Unavoidable; NA = Not Applicable | | | | | |
| | | measure BIO-5 by persons with expertise in southern California ecosystems and native plant revegetation techniques. The Conceptual Mitigation Plan shall include, at a minimum (a) the location of the mitigation site; (b) the plant species to be used, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.<br><br>SAP:<br>BIO-3: To mitigate impacts on sensitive habitats in the proposed SAP improvements area, the SAP improvements applicant shall establish/enhance southern coast live oak riparian forest (or similar vegetation community) at a suitable location at a 1:1 to 3:1 mitigation ratio. If establishment or enhancement is unavailable or not practical, the SAP improvements applicant shall secure mitigation credits at an approved mitigation bank at a 1:1 to 3:1 mitigation ratio. Details will be finalized as part of the permit application process (i.e., CDFW Section 1602 Streambed Alteration Agreement described in mitigation measure BIO-6. | | | |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| Key: LS = Less than Significant; PS = Potentially Significant; SU = Significant and Unavoidable; NA = Not Applicable | | | | | |
| Issue 3: Jurisdictional Habitat | | | | | |
| The residential development would directly affect 0.03 acre of unvegetated stream channel and 0.67 acre of southern coast live oak riparian forest (0.40 acre on site and 0.27 acre off site). There would be no off-site impact on ephemeral and perennial channels or areas under the jurisdiction of USACE/RWQCB. The SAP improvements would directly affect 0.19 acre of southern coast live oak riparian forest under jurisdiction of CDFW. Direct impacts on jurisdictional habitat would be significant. | PS | Residential Development:<br>BIO-2 (see above)<br>BIO-4: To mitigate impacts on jurisdictional habitat in the proposed residential development, the project applicant shall establish or enhance approximately 0.03 (1:1 mitigation ratio) acre of unvegetated stream channel (Table 3.3-11). The mitigation area occurs along the ephemeral drainage that runs along the southeastern boundary, as shown in Figure 3.3-3. The 0.03 acre plus the 2.01 acre from mitigation measure BIO-2 will result in establishment of 2.04 acres within the mitigation area. Details shall be provided in a Conceptual Mitigation Plan, which shall be prepared as part of the permit process (i.e., CWA Section 401/404 permit) described in mitigation measure BIO-5.<br><br>BIO-5: To comply with the state and federal regulations for impacts on jurisdictional aquatic resources, the following agency permits are required, or verification that they are not required shall be obtained:<br>• A CWA, Section 401/404 permit issued by the RWQCB and the USACE for all project-related disturbances of non-wetland waters of the United States and/or associated wetlands.<br>• A Section 1602 Streambed Alteration Agreement issued by CDFW for all project-related disturbances of any streambed and associated | LS | LS / LS | PS / BIO-2 through BIO-6 / LS |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| | | riparian habitat. Permits are required to be obtained by the applicant prior to the impact on the resources.<br><br>As noted in mitigation measures BIO-2 and BIO-4, a Conceptual Mitigation Plan is required to provide compensatory mitigation for impacts. The on-site wetland preservation area and the proposed wetland mitigation area (Open Space, Lot H) shall be protected under a covenant of easement or conservation easement. A long-term management plan for the area shall be prepared and will include maintenance of the wetland functions and values of the existing and restored habitat in perpetuity by the Home Owners Association, underlying land owner, or an approved land manager.<br><br>The land manager shall be an entity approved by CDFW and USFWS according to a long-term management plan approved by these agencies. The responsible party shall deter access to the Open Space through the use of signage and/or barriers, which will also be placed along the proposed trail within the Open Space. The tasks in the long-term management plan shall provide for long-term monitoring; documentation of site conditions; and tasks such as removal of trash, repair of any vandalism, and control of invasive species. The long- term management plan shall also provide BMPs that help reduce the spread of Polyphagous and Kuroshio shot hole borers (SHBs). | | | |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| | | BMPs may include on-site worker education, reporting of infestations, equipment disinfection, pruning infected limbs, avoidance of transport of infected host tree materials, chipping potential infected material to less than one inch in size and solarizing prior to removal or composting, and solarizing or burning of cut material that is potentially infected.<br><br>The condition of the Open Space shall be documented annually by preparation of an annual report submitted to the City and resource agencies. The responsible party shall also be responsible for implementation of any remedial measures (e.g., planting native wetland plants) to repair damage or loss due to any of the above-mentioned factors. The long-term management plan shall be funded by a non-wasting endowment for which the amount can be determined via preparation of a Property Analysis Record or similar method.<br><br>SAP:<br>BIO-3 (see above) and<br>BIO-6: To comply with the state and federal regulations for impacts on jurisdictional aquatic resources, the following agency permit is required, or verification that it is not required shall be obtained:<br>• A Section 1602 Streambed Alteration Agreement issued by CDFW for all project-related | | | |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| | | disturbances of any streambed and associated riparian habitat. Permits are required to be obtained by the applicant prior to the impact on the resources. | | | |
| Issue 4: Wildlife Movement Corridors and Nursery Sites | | | | | |
| The proposed project would result in less-than-significant direct or indirect impacts associated with wildlife movement corridors and nursery sites. | LS | NA | LS | LS / LS | LS / LS |
| Issue 5: Local Policies and Ordinances | | | | | |
| The residential development would remove 110 trees (including 60 coast live oak). An additional 39 trees (including 32 coast live oak) would be encroached on. The SAP improvements would remove 42 trees and encroach on 3 trees. This would be a significant impact. The project's potential impact on shot hold borer spread would be significant. | PS | Residential Development:<br>BIO-5 (see above)<br>BIO-7: Prior to the issuance of grading permits, the residential development applicant shall submit a Tree Mitigation Program to the City Community Development Department for review and approval. The Tree Mitigation Program shall focus on preservation, restoration, and enhancement of preserved oak trees/stands through sustainable tree plantings and native tree planting in the transition area between open space and development areas throughout the project site. Table 3.3-12 identifies the total number of plantings required to meet the intent of the City's tree protection and replacement requirements. A minimum of 195 trees (including coast live oak and other suitable native or ornamental species) shall be planted within the residential development landscape areas. The Tree Mitigation Program shall ensure that a minimum of 773 landscape trees are planted on the residential development site, as shown in Table 3.3-13. | LS | LS / LS | PS / BIO-5, BIO-7, BIO-8, BIO-9 / LS |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| Key: LS = Less than Significant; PS = Potentially Significant; SU = Significant and Unavoidable; NA = Not Applicable | | | | | |
| | | SAP:<br>BIO-8: To meet the City's mitigation planting requirements for the removal and encroachment of trees, 60 trees shall be planted along Bear Valley Parkway following completion of the proposed SAP improvements. Table 3.3-14 identifies the total number of plantings required to meet the intent of the City's tree protection and replacement requirements. A minimum of 60 trees (including coast live oak and other suitable native or ornamental species) shall be planted in areas along Bear Valley Parkway. Table 3.3-15 provides a list of species that are not invasive, are acceptable to fire agencies, and are anticipated to perform well along Bear Valley Parkway.<br><br>BIO-9: The following measures shall be implemented prior to, during, and following site activities to minimize Polyphagous Shot Hole Borer (PSHB) and Kuroshio Shot Hole Borer (KSHB) spread.<br>1. Provide education of on-site workers regarding shot hole borers and its spread (provided by the biological monitor)<br>2. Report sign of shot hole borer infestation to the CDFW and University of California Riverside's Eskalen Lab<br>3. Disinfect hand tools and machinery used to cut trees, chip trees, and process trees.<br>4. If infection is observed, remove | | | |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| | | infested/infected limbs to the extent feasible. If warranted, entire trees may require removal and would be coordinated with the City and or CDFW, as appropriate.<br>5. Avoid and minimize transportation of potential host tree materials.<br>6. Following tree felling for known host tree species within the disturbance area, the trees will be ground to less than one-inch diameter and solarized, prior to spreading on-site or delivering to a landfill.<br>7. Cut logs of known host species that are too large to be chipped/ground will be solarized before being removed from the site.<br>8. If acceptable, known host species material will be burned in lieu of other protective measures if determined to be preferred to chipping and solarization.<br>9. Post project landscapes will be maintained in good horticultural condition and trees will be provided necessary maintenance for establishment and growth. | | | |
| Issue 6: Habitat Conservation Plans and NCCPs | | | | | |
| There would be no impact related to HCPs and NCCPs. | LS | NA | LS | LS / LS | LS / LS |
| **3.4 Cultural Resources** | | | | | |
| Issue 1: Historical Resources | | | | | |
| The project would result in less-than-significant impacts on built historical resources. | LS | NA | LS | LS / LS | LS / LS |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| Key: LS = Less than Significant; PS = Potentially Significant; SU = Significant and Unavoidable; NA = Not Applicable | | | | | |
| Issue 2: Archaeological Resources | | | | | |
| Because of the known archaeological resource sites on the project site and in the vicinity, there is potential for the project to result in a significant impact on an unknown subsurface archaeological resource. | PS | Residential Development and SAP:<br>CR-1: The City of Escondido Planning Division recommends the applicant enter into a Tribal Cultural Resource Treatment and Monitoring Agreement (also known as a pre-excavation agreement) with a tribe that is traditionally and culturally affiliated with the project location (TCA Tribe) prior to issuance of a grading permit. The purposes of the agreement are (1) to provide the applicant with clear expectations regarding tribal cultural resources; and (2) to formalize protocols and procedures between the applicant and the TCA Tribe for the protection and treatment of, including but not limited to, Native American human remains; funerary objects; cultural and religious landscapes; ceremonial items; traditional gathering areas; and cultural items located and/or discovered through a monitoring program in conjunction with the construction of the proposed project, including additional archaeological surveys and/or studies, excavations, geotechnical investigations, grading, and all other ground disturbing activities.<br><br>CR-2: Prior to issuance of a grading permit, the applicant shall provide written verification to the City that a qualified archaeologist and a Native American monitor associated with a TCA Tribe have been retained to implement the monitoring program. The archaeologist shall be responsible | LS | LS / LS | PS / CR-1 through CR-10 / LS |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| | | for coordinating with the Native American monitor. This verification shall be presented to the City in a letter from the project archaeologist confirming that the selected Native American monitor is associated with a TCA Tribe. Prior to any pre-construction meeting, the City shall approve all persons involved in the monitoring program.<br><br>CR-3: The qualified archaeologist and a Native American monitor shall attend the pre-grading meeting with the grading contractors to explain and coordinate the requirements of the monitoring program.<br><br>CR-4: During the initial grubbing, site grading, excavation, or disturbance of the ground surface, the qualified archaeologist and the Native American monitor shall be onsite full-time. If imported fill materials, or fill used from other areas of the project site, are to be incorporated at the project site, those fill materials shall be absent of any tribal cultural resources. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of tribal cultural resources as defined in PRC Section 21074. Archaeological and Native American monitoring will be discontinued when the depth of grading and soil conditions no longer have the potential to contain cultural deposits. The qualified archaeologist, in consultation with the | | | |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| Key: LS = Less than Significant; PS = Potentially Significant; SU = Significant and Unavoidable; NA = Not Applicable | | | | | |
| | | Native American monitor, shall be responsible for determining the duration and frequency of monitoring.<br><br>CR-5: In the event that previously unidentified tribal cultural resources are discovered, the qualified archaeologist and the Native American monitor shall have the authority to temporarily divert or temporarily halt ground disturbance operations in the area of discovery to allow for evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so that the monitored grading can proceed.<br><br>CR-6: If a potentially significant tribal cultural resource is discovered, the archaeologist shall notify the City of said discovery and shall conduct consultation with TCA tribes to determine the most appropriate mitigation. The qualified archaeologist, in consultation with the City, the TCA Tribe, and the Native American monitor, shall determine the significance of the discovered resource. A recommendation for treatment and disposition of the tribal cultural resource shall be made by the qualified archaeologist in consultation with the TCA Tribe and the Native American monitor, and shall be submitted to the City for review and approval. | | | |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| Key: LS = Less than Significant; PS = Potentially Significant; SU = Significant and Unavoidable; NA = Not Applicable | | | | | |
| | | CR-7: The avoidance and/or preservation of the significant tribal cultural resource and/or unique archaeological resource must first be considered and evaluated under CEQA. Where any significant tribal cultural resources and/or unique archaeological resources have been discovered and avoidance and/or preservation measures are deemed to be infeasible by the City, a research design and data recovery program to mitigate impacts shall be prepared by the qualified archaeologist (using professional archaeological methods), in consultation with the TCA Tribe and the Native American monitor, and shall be subject to approval by the City. The qualified archaeologist, in consultation with the Native American monitor, shall determine the amount of material to be recovered for an adequate artifact sample for analysis. Before construction activities are allowed to resume in the affected area, the research design and data recovery program activities must be concluded to the satisfaction of the City.<br><br>CR-8: In accordance with CEQA, all tribal cultural resources shall be treated with culturally appropriate dignity. If the qualified archaeologist elects to collect any tribal cultural resources, the Native American monitor must be present during the collection and cataloging of those resources. Moreover, if the qualified archaeologist does not collect the tribal cultural resources that are | | | |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| | | unearthed during the ground-disturbing activities, the Native American monitor may, at their discretion, collect said resources and provide them to the TCA Tribe for respectful and dignified treatment in accordance with the tribe's cultural and spiritual traditions.<br><br>The project archaeologists shall document evidence that all cultural materials have been curated and/or repatriated as follows:<br><br>1) It is the preference of the City that all tribal cultural resources be repatriated to the TCA Tribe, as such preference would be the most culturally sensitive, appropriate, and dignified. Therefore, any tribal cultural resources collected by the qualified archaeologist shall be provided to the TCA Tribe. Evidence that all cultural materials collected have been repatriated shall be in the form of a letter from the TCA Tribe to whom the tribal cultural resources have been repatriated identifying that the archaeological materials have been received.<br>OR<br>(2) Any tribal cultural resources collected by the qualified archaeologist shall be curated with its associated records at a San Diego curation facility or a culturally-affiliated Tribal curation facility that meets federal standards per 36 CFR Part 79, and, therefore, would be professionally curated and made available to other archaeologists/ | | | |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| | | researchers for further study. The collections and associated records, including title, shall be transferred to the San Diego curation facility or culturally affiliated Tribal curation facility and shall be accompanied by payment of the fees necessary for permanent curation. Evidence that all cultural materials collected have been curated shall be in the form of a letter from the curation facility stating that the prehistoric archaeological materials have been received and that all fees have been paid.<br><br>CR-9: Prior to the release of the grading bond, a monitoring report and/or evaluation report, if appropriate, that describes the results, analysis, and conclusion of the archaeological monitoring program and any data recovery program on the project site shall be submitted by the qualified archaeologist to the City. The Native American monitor shall be responsible for providing any notes or comments to the qualified archaeologist in a timely manner, to be submitted with the report. The report will include California Department of Parks and Recreation Primary and Archaeological Site Forms for any newly discovered resources.<br><br>CR-10: As specified by California Health and Safety Code Section 7050.5, if human remains are found on the project site during construction or during archaeological work, the person responsible for | | | |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| | | the excavation, or his or her authorized representative, shall immediately notify the San Diego County Coroner's office. Determination of whether the remains are human shall be conducted onsite and in situ where they were discovered by a forensic anthropologist, unless the forensic anthropologist and the Native American monitor agree to remove the remains to an offsite location for examination. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the Coroner has made the necessary findings as to origin and disposition. A temporary construction exclusion zone shall be established surrounding the area of the discovery so that the area would be protected, and consultation and treatment could occur as prescribed by law. In the event that the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the Native American Heritage Commission, shall be contacted in order to determine proper treatment and disposition of the remains in accordance with California Public Resources Code section 5097.98. The Native American remains shall be kept in situ, or in a secure location in close proximity to where they were found, and the analysis of the remains shall only occur onsite in the presence of a Native American monitor. | | | |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| Key: LS = Less than Significant; PS = Potentially Significant; SU = Significant and Unavoidable; NA = Not Applicable | | | | | |
| Issue 3: Tribal Resources | | | | | |
| Because of the known archaeological resource sites on the project site and in the vicinity, there is potential for the proposed project to result in a significant impact on an unknown subsurface tribal resource. | PS | Residential Development and SAP:<br>CR-1 through CR-10 (see above) | LS | LS / LS | PS / CR-1 through CR-8 / LS |
| Issue 4: Human Remains | | | | | |
| Compliance with California Health and Safety Code Section 7050.5 would prevent potentially significant impacts in the unlikely event that human remains are encountered during construction. Therefore, impacts associated with the disturbance of human remains would be less than significant. | LS | NA | LS | LS / LS | LS / LS |
| **3.5 Geology and Soils** | | | | | |
| Issue 1: Soil Stability and Expansive Soils | | | | | |
| The proposed construction on a site with existing issues related to soil stability and expansive soil conditions would result in the potential for substantial risks to life or property. | PS | Residential Development:<br>GEO-1: To reduce impacts related to soil stability and expansive soils on the proposed residential development site, the tentative map grading plan shall include the recommendations contained in the Geotechnical Investigation (Appendix I-1) and the Geotechnical Update Report (Appendix I-2), or equivalent measures identified in a Final Geotechnical Report, prior to the issuance of grading permits. The recommendations regarding expansive soils and the existing known mine excavations are listed below.<br>a. Potentially expansive clayey soils, where encountered, shall be thoroughly mixed with an abundance of sandy granular soils available from the project site bedrock excavations to | LS | LS / LS | PS / GEO-1, GEO-2 / LS |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| | | manufacture a very low expansive mixture. Alternatively, expansive clayey soils shall be selectively buried within deeper site fills and away from the finish fill slope faces, with the upper pad grades and embankment surfaces capped with good quality sandy soils, as recommended in the Geotechnical Investigation (Appendix I-1).<br>b. Mine-related excavations with 10 feet minimum of competent bedrock overburden are determined not to be susceptible to future collapse (as inspected and approved by the project geotechnical consultant) and will be sealed and capped. The following procedures will be applied to the four known former mining shafts:<br>1. Test Pit 4: Due to the shallow nature of the excavation, the mine tunnel shall be exposed in both directions with a large track hoe or suitable excavating equipment. The northern portion of the mine tunnel shall be exposed to its end and backfilled with 90% compacted soil. Should the north end of the mine excavation extend beyond the property line (and possibly beneath Bear Valley Parkway), the tunnel shall be exposed and backfilled with 90% compacted soil to the extent necessary or equivalent measure to provide soils stability on the residential development site and for proposed Bear Valley Parkway Frontage Improvements, as determined by a qualified geotechnical engineer in consultation with the City of Escondido engineering department. The south portion of the mine tunnel shall be continuously | | | |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| | | exposed to its end or until a minimum of 10 feet of competent bedrock is exposed. The open mine excavation, if exposed with a minimum of 10 feet of competent bedrock, will be capped as outlined in the Geotechnical Investigation (Appendix I-1).<br>2. Test Pit 7: The nearly horizontal mine shaft and associated secondary mine excavations exposed at this location are located within a planned deep cut area and are expected to be completely removed as part of the cut grading operation. If the shaft continues below finish grade, it shall be completely excavated and backfilled with 90% compacted soil, as approved by the geotechnical engineer.<br>3. Test Pit 9: The well-developed horizontal mine tunnel (adit) at this location is in a planned fill slope area. The entrance to this mine excavation shall be exposed and the overburden removed until there is a minimum of 10 feet of competent bedrock above the mine excavation. The opening shall then be sealed as outlined in the Geotechnical Investigation (Appendix I-1).<br>4. Test Pit 15: The mine excavation exposed at this location is in a planned deep fill area. The entrance to this mine excavation shall be exposed and the overburden removed until there is a minimum of 10 feet of competent bedrock above the mine excavation. The excavation shall then be sealed as outlined in the Geotechnical Investigation (Appendix I-1). | | | |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| Key: LS = Less than Significant; PS = Potentially Significant; SU = Significant and Unavoidable; NA = Not Applicable | | | | | |
| | | SAP:<br>GEO-2: To reduce project impacts related to soil stability and expansive soils on the proposed SAP improvements site, the tentative map grading plan shall include the recommendations contained in the Geotechnical Investigation for Proposed Roadway Improvements (Appendix J), or equivalent measures identified in a Final Geotechnical Report, prior to the issuance of grading permits. The recommendations include the following:<br>1. Over-excavation to suitable materials or ground stabilization shall be used.<br>2. Over-excavation for treatment of bearing soil under the proposed wall foundations shall be extended to well-compacted fills or dense native ground and placed back as a properly compacted fill.<br>3. To address surface drainage and storm water control, drainage swales shall be constructed along the top of all graded slopes and surface run-off shall be collected and directed to a selected location in a controlled manner. | | | |
| **3.6 Hazards and Hazardous Materials** | | | | | |
| Issue 1: Routine Use of Hazardous Materials | | | | | |
| The proposed project would result in less-than-significant impacts related to the routine transport, use, or disposal of hazardous materials for both the residential development and SAP improvements. | LS | NA | LS | LS / LS | LS / LS |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| Key: LS = Less than Significant; PS = Potentially Significant; SU = Significant and Unavoidable; NA = Not Applicable | | | | | |
| Issue 2: Accidental Release of Hazardous Materials | | | | | |
| Residential development would result in demolition of structures that could contain asbestos and/or lead-based paint. This is considered a potentially significant impact. The SAP improvements would result in less-than-significant impacts related to the accidental release of hazardous materials. | PS | Residential Development:<br>HAZ-1: At least 10 days prior to demolition or removal of existing on-site structures, the project applicant shall submit an Asbestos Demolition or Renovation Operational Plan (Notice of Intention) to the City Community Development Department. This plan shall be prepared by an asbestos consultant licensed with the California State Licensing Board and certified by Cal OSHA to conduct an asbestos inspection in compliance with Asbestos NESHAP requirements. The Asbestos NESHAP, as specified under Rule 40, CFR 61, Subpart M, (enforced locally by the San Diego APCD, under authority, per Regulation XI, Subpart M - Rule 361.145), requires the owner of an establishment set for demolition to submit an Asbestos Demolition or Renovation Operational Plan at least 10 working days before any asbestos stripping or removal work begins (such as site preparation that would break up, dislodge or similarly disturb asbestos-containing material.)<br><br>Removal of all asbestos-containing material or potential asbestos-containing material on the project site shall be monitored by the certified asbestos consultant and shall be performed in accordance with all applicable laws, including Title 8 CCR Section 1529, Asbestos; OSHA standards; and the San Diego County APCD Rule 361.145, Standard for Demolition and Renovation | LS | LS / LS | PS / HAZ-1, HAZ-2 / LS |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| | | HAZ-2: Demolition or removal of existing on-site structures constructed pre-1979 shall be performed by a Certified Lead Inspector/Assessor, as defined in Title 17, CCR Section 35005, and in accordance with all applicable laws pertaining to the handling and disposal of lead-based paint. Lead-based materials exposure is regulated by Cal OSHA. Title 8 CCR Section 1532.1 requires testing, monitoring, containment, and disposal of lead-based materials such that exposure levels do not exceed Cal OSHA standard. | | | |
| Issue 3: Emergency Response and Evacuation Plans | | | | | |
| Both the proposed residential development and SAP improvements would result in less-than-significant impacts related to emergency response and evacuation plans. | LS | NA | LS | LS / LS | LS / LS |
| Issue 4: Wildland Fires | | | | | |
| Both the proposed residential development and SAP improvements would result in less-than-significant impacts related to wildland fires. | LS | NA | LS | LS / LS | LS / LS |
| **3.7 Land Use and Planning** | | | | | |
| Issue 1: Divide and Established Community | | | | | |
| The project would have a less-than-significant impact related to the physical division of an established community, new land use barriers, disruption of physical arrangement, existing street and sidewalk patters, preclusion of development of surrounding parcels, | LS | NA | LS | LS / LS | LS / LS |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| Key: LS = Less than Significant; PS = Potentially Significant; SU = Significant and Unavoidable; NA = Not Applicable | | | | | |
| Conflict with Land Use Plan | | | | | |
| The project would be consistent with the General Plan and the Zoning Ordinance. No significant impacts would occur. | LS | NA | LS | LS / LS | LS / LS |
| Conflict with Habitat Conservation Plan | | | | | |
| There would be no impact related to HCPs and NCCPs. | LS | NA | LS | LS / LS | LS / LS |
| **3.8 Noise** | | | | | |
| Issue 1: Excessive Noise Levels | | | | | |
| Noise levels from Bear Valley Parkway would exceed the normally acceptable noise compatibility standard of 60 dBA CNEL for proposed residences on lots 2 through 5 and would exceed the Title 24 threshold of 60 dBA for 13 residences. | PS | Residential Development:<br>NOI-1: Prior to approval of final project designs, the residential development applicant shall incorporate a perimeter block noise wall, or similar noise-attenuating structure, that fronts proposed lots 1–5 into the residential development design. The noise wall shall be approximately 552 feet in length and 5 feet high in front of lots 1–4 and 6 feet high in front of lot 5. Refer to Figure 3.8-1 for the location and heights of the noise wall.<br><br>NOI-2: Prior to construction, a qualified acoustical consultant shall review final site plans, building elevations, and floor plans to calculate expected interior noise levels, as required by state noise regulations. Project-specific acoustical analyses are required by Title 24 to confirm that the design results in interior noise levels reduced to 45 dBA or lower. The specific determination of what noise insulation treatments are necessary shall be completed on a unit-by-unit basis. Results of the analysis, including the description of the necessary | LS | LS / LS | PS / NOI-1, NOI-2 / LS |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| | | noise control treatments, shall be submitted to the City along with the building plans, and shall be approved prior to issuance of a building permit.<br><br>Building sound insulation requirements may include the provision of forced-air mechanical ventilation for residential units as recommended by the qualified acoustical consultant, so that windows can be kept closed at the occupant's discretion to control noise.<br><br>Special building techniques (e.g., sound-rated windows and building façade treatments) shall be implemented as recommended by the qualified acoustical consultant to maintain interior noise levels at or below acceptable levels. These treatments may include, but are not limited to, sound-rated windows and doors, sound-rated wall constructions, acoustical caulking, and protected ventilation openings | | | |
| Issue 2: Excessive Ground-Borne Vibration | | | | | |
| Construction activities would generate significant temporary ground-borne vibration close to existing residential units. | PS | Residential Development and SAP:<br>NOI-3: At least 3 weeks prior to the start of construction activities, the construction contractor shall provide written notification to all residences located within 75 feet of the proposed construction activities informing them of the estimated start date and duration of daytime vibration-generating construction activities. This notification shall include information about the potential for nuisance vibration. The City shall | LS | LS / LS | PS / NOI-3, NOI-4 / LS |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| | | provide a phone number for the affected residences to call if they have concerns about construction-related vibration. If additional houses are built within 75 feet of the proposed development site prior to completion of proposed construction, written notification shall be provided to these residences as well.<br><br>NOI-4: For construction activities within 75 feet of residences on Bear Valley Parkway, the construction contractor shall implement the following measures during construction:<br>1. Stationary sources, such as temporary generators, shall be located as far from nearby vibration-sensitive receptors as possible.<br>2. Trucks shall be prohibited from idling along streets serving the construction site where vibration-sensitive receptors are located.<br>3. Demolition, earthmoving, and ground-disturbing operations shall be phased so as not to occur in the same time period.<br>If additional houses are built within 75 feet of the proposed development site prior to completion of proposed construction, the measures shall be implemented for these residences as well. | | | |
| Issue 3: Permanent Increase in Ambient Noise | | | | | |
| Impacts associated with a permanent increase in ambient noise levels would be less than significant. | LS | NA | LS | LS / LS | LS / LS |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| Issue 4: Temporary Increase in Ambient Noise | | | | | |
| Construction activities could generate temporary significant noise next to existing residences. | PS | Residential Development and SAP:<br>NOI-3 and NOI-4 (see above)<br>NOI-5: Prior to grading activities, the construction contractor shall implement and monitor the noise reduction measures described below to the extent necessary to reduce construction noise levels to below an hourly average noise level of 75 dBA at any residential property line. Noise reduction measures are required for all construction within 145 feet of a residence. Any one or a combination of measures can be used as necessary. Typical measures that may be implemented include the following, as necessary, to achieve compliance with the City's noise ordinance:<br>• Use "quiet" gasoline-powered compressors or other electric-powered compressors, and use electric-powered rather than gasoline- or diesel-powered forklifts for small lifting.<br>• Locate stationary noise sources, such as temporary generators, as far from nearby receptors as possible.<br>• Use the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) for construction equipment and trucks.<br>• Muffle and enclose stationary noise sources within temporary sheds or incorporate insulation barriers.<br>• Limit simultaneous operation of construction | LS | LS / LS | PS / NOI-3 through NOI-5 / LS |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| | | equipment or limit construction time within an hour to reduce hourly average noise level.<br>• Implement temporary noise barriers, such as sound blankets, of a sufficient height and thickness around the perimeter of the construction area to minimize construction noise to 75 dBA as measured at the applicable property lines of the adjacent uses.<br>To ensure compliance with the City's Noise Ordinance, noise monitoring shall be conducted on the first day of typical construction. A 1-hour noise measurement shall be conducted in accordance with Section 17-228 of the City's Noise Ordinance at 50 feet from the most intensive construction activity. If it is determined that construction would have the potential to exceed the hourly construction noise level limit at any residential property, additional noise control measures shall be implemented as necessary and an additional noise measurement will be conducted to confirm compliance. | | | |
| **3.9 Transportation and Traffic** | | | | | |
| Issue 1: Circulation System Operations | | | | | |
| The residential development would result in a significant cumulative level-of-service impact on the Bear Valley Parkway/Encino Drive intersection. | PS | Residential Development:<br>TR-1: To address operating deficiencies, a fair-share contribution will be made to realignment and signalization of the unsignalized intersection. It is proposed that the intersection be realigned such that Encino Drive is simplified to include one approach lane and one departure lane. Also, the median separating the approach and departure | LS | LS / LS | LS / LS |

| Issue and Impact | Significance Before Mitigation | Mitigation Measure(s) | Significance After Mitigation | No Project Alternative Significance Before / After Mitigation | Reduced Project Alt. Significance Before Mitigation / Mitigation / Significance After Mitigation |
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| | | lanes is proposed to be reduced as Encino Drive is realigned to intersect with Bear Valley Parkway at a 90-degree angle. These proposed improvements are consistent with the designs shown in the SAP. | | | |
| Issue 2: Traffic Hazards and Emergency Access | | | | | |
| Both components of the project would result in less-than-significant impacts related to traffic hazards and emergency access. | LS | NA | LS | LS / LS | LS / LS |
| Issue 3: Alternative Transportation | | | | | |
| Project impacts related to alternative transportation would be less than significant | LS | NA | LS | LS / LS | LS / LS |

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# Chapter 1. Introduction

## 1.1 Intended Use and Purpose of the EIR

This Environmental Impact Report (EIR) has been prepared by the City of Escondido (City) for the 661 Bear Valley Parkway Residential Project and the Bear Valley Parkway Specific Alignment Plan (collectively the proposed project) to satisfy the requirements of the California Environmental Quality Act (CEQA) (California Code of Regulations, Section 15000, et seq.). Pursuant to CEQA, this EIR assesses the environmental effects of the proposed project, identifies feasible mitigation measures as appropriate, and evaluates a reasonable range of alternatives to reduce significant environmental impacts. This document is intended to disclose the environmental consequences of the project decision makers as well as other agencies with discretionary authority. As this EIR is intended to cover a single development project, a project-level EIR was prepared. This EIR complies with all criteria, standards, and procedures of CEQA (1970), as amended (Public Resources Code [PRC] 21000 et seq.), and CEQA Guidelines (California Administrative Code 15000 et seq.).

## 1.2 Scope of the EIR

A Notice of Preparation (NOP), prepared in compliance with Section 15082 of the CEQA Guidelines, was distributed for the project on November 28, 2016. The NOP included an Initial Study in order to supply the necessary information to determine the probable environmental effects of the project and the scope of the EIR. The NOP, Initial Study, and comments received during the 30-day NOP review period are included in Appendix A of this document. It is noted that the Initial Study analysis relied on Sewer Service Analysis (Dexter Wilson Engineering, Inc. 2016), a water system analysis (Dexter Wilson Engineering 2015), Drainage Study (Hunsaker & Associates, 2016a), Storm Water Quality Management Plan (Hunsaker & Associates, 2016b), and numerous other technical reports in addition to the project-specific technical reports included in the EIR Appendix. All comments received in response to the NOP are addressed in appropriate sections of this EIR.

The NOP identified that the EIR would address environmental impacts related to:

- Aesthetics
- Agricultural Resources
- Biological Resources
- Cultural Resources (including Tribal Cultural Resources)
- Geology and Soils
- Hazards and Hazardous Materials
- Land Use and Planning
- Noise
- Transportation and Traffic

Based on the preliminary analysis completed as a part of the Initial Study, impacts related to the following issues were determined to be less than significant and are not addressed in the EIR:

- Forestry Resources
- Air Quality
- Energy and Greenhouse Gas
- Hydrology/Water Quality
- Mineral Resources
- Paleontological Resources
- Population/Housing
- Public Services
- Recreation
- Utilities/Service Systems

For each issue included in EIR Chapter 3, the EIR contains a discussion of the existing conditions, regulatory framework, thresholds of significance, project impacts, cumulative impacts, significance of impact prior to mitigation, mitigation, and conclusion. A Mitigation Monitoring and Reporting Program (MMRP) will be prepared incorporating the mitigation identified in the EIR in accordance with CEQA Section 21081.06.

Significant environmental effects that could not be avoided if the project were to be implemented as proposed are identified in Chapter 4. In accordance with Section 15126 of the CEQA Guidelines, Chapter 5 of the EIR includes an alternatives analysis. The considered alternatives are the No Project Alternative and the Reduced Project Alternative. The Alternate Land Use Alternative and the Alternate Location Alternative were considered, but rejected.

## 1.3 Lead, Responsible, and Trustee Agencies

In accordance with Section 21067 of CEQA and Sections 15367 and 15050 through 15053 of the CEQA Guidelines, the City of Escondido is the Lead Agency for this project because it would be constructed within the jurisdiction of the City. As the decision makers for the Lead Agency, the City Council will consider the information included in the EIR along with any other relevant information included in the public record to make their decision on the proposed project.

In addition to the Lead Agency, Responsible Agencies or Trustee Agencies may be involved in the CEQA process. A *Trustee Agency* is defined in Section 15386 of the CEQA Guidelines as a state agency having jurisdiction by law over natural resources affected by a project that are held in trust for the people of the State of California. Per Section 15381 of the CEQA Guidelines, the term *Responsible Agency* includes all public agencies other than the Lead Agency with discretionary approval power over the project. For the proposed project, the California Department of Fish and Wildlife is a Trustee Agency. Responsible Agencies that may have an interest in the project include the U.S. Army Corps of Engineers and San Diego Regional Water Quality Control Board. State law requires that all EIRs be reviewed by Trustee and Responsible Agencies.

## 1.4 Environmental Review Process

The City of Escondido, as Lead Agency, is responsible for preparation of this EIR. The preparation process involves two stages; the Draft EIR and the Final EIR. As described further below, the Draft EIR will be circulated for public review and comment for 45 days. The public review comments will be incorporated and addressed in the Final EIR, which is the final document that the City Council will review to decide whether to approve or deny the proposed project.

### 1.4.1 Draft EIR

The Draft EIR is distributed for review to the Responsible Agencies and Trustee Agencies with resources affected by the project, state agencies, federal agencies, and interested parties and individuals. The Draft EIR review period is typically 45 days. The purpose of the review period is to obtain comments "on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided and mitigated" (CEQA Guidelines Section 15204). In accordance with CEQA Guidelines Sections 15085 and 15087(a)(1), upon completion of the Draft EIR, a Notice of Completion is filed with the State Office of Planning and Research, and a Notice of Availability of the Draft EIR is issued in a newspaper of general circulation in the area.

The Draft EIR and all related technical studies are available online for review during the public review period at: https://www.escondido.org/bear-valley-parkway--residential-project.aspx, at City Hall (see address below), and at the Escondido Public Library at 239 S. Kalmia Street, Escondido, CA 92025.

Comment letters on the Draft EIR may be submitted in writing and addressed to:

Ann Dolmage, Associate Planner
City of Escondido Planning Division
201 North Broadway
Escondido, CA 92025
E-mail: adolmage@escondido.org
Phone: (760) 839-4548
Fax: (760) 839-4313

### 1.4.2 Final EIR

The City of Escondido will provide written responses to comments regarding the adequacy of the Draft EIR per CEQA Guidelines Section 15088, and will consider all comments in making its decision whether to certify the Final EIR. While not included in the Final EIR, an MMRP; Findings of Fact; and Statement of Overriding Considerations for impacts identified in the Draft EIR as significant and unmitigable will be prepared as part of the EIR process, as appropriate. The

culmination of this process is a public hearing where the City Council will determine whether to certify the Final EIR as being complete and in accordance with CEQA.

## 1.5 Document Organization

The EIR includes two volumes; Volume I includes Chapters 1.0 to Chapter 7.0, and Volume II includes the technical appendices.

### 1.5.1 Volume I

The following is a description of each chapter of Volume I:

**Executive Summary:** Provides a summary of the project, environmental impacts, mitigation measures, significance of impacts after mitigation, and project alternatives.

**Chapter 1 – Introduction:** Describes the purpose and intended use of the EIR, scope of the EIR, environmental review process, and organizational format of the EIR.

**Chapter 2 – Project Description:** Includes a detailed description of the project components, project objectives, and discretionary actions, as well as a basic description of the project location, environmental setting, and site history.

**Chapter 3 – Environmental Analysis:** Provides a discussion of each environmental topic to be addressed in detail in the EIR, including existing conditions; regulatory framework; thresholds of significance; assessment of potential direct, indirect, and cumulative environmental impacts; significance of impacts; and a recommendation of reasonable and feasible mitigation measures, if necessary.

**Chapter 4 – Other CEQA Considerations:** Covers effects found not to be significant, significant and unavoidable effects, significant irreversible changes, and growth-inducing impacts.

**Chapter 5 – Alternatives:** Addresses alternatives to the proposed project.

**Chapter 6 – References:** Includes a list of reference documents and other sources of information.

**Chapter 7 – Preparers and Persons Contacted:** Provides a list of City staff and consultants involved in preparation of the EIR.

### 1.5.2 Volume II

The following technical and supporting materials discussed and cited in the text are either bound separately or included as electronic files in the appendices.

A: Notice of Preparation and Responses
B: Biological Resources Technical Report
C: Specific Alignment Plan Biological Technical Report
D: Arborist Report
E: Specific Alignment Plan Arborist Report

F: Cultural Resources Survey and Evaluation of Built Environment
G: Cultural Resources Evaluation of Prehistoric Archaeological Site CA-SDI-21808
H: Additional Cultural Resources Survey
I-1: Geotechnical Investigation
I-2: Geotechnical Update Report
J: Geotechnical Investigation for Specific Alignment Plan
K: Fire Protection Plan
L-1: Phase I Environmental Site Assessment (ESA) (2013)
L-2: Addendum to Phase I ESA
L-3: Phase I ESA Update (2016)
M-1: Limited Phase II ESA
M-2: Addendum to Limited Phase II ESA
N: Report of Soil Removal Action
O: Acoustical Site Assessment
P: Noise – Specific Alignment Plan Assessment Memo
Q Construction Vibration Assessment
R: Traffic Impact Analysis
S Specific Alignment Plan Traffic Supplemental Memo
T: Traffic Impact Analysis – Reduced Project Alternative

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# Chapter 2. Project Description

## 2.1 Introduction

The following section provides detailed information on the 661 Bear Valley Parkway Residential Project and the Bear Valley Parkway Specific Alignment Plan (collectively the proposed project), which proposes development of a 55-unit residential development with Bear Valley Parkway frontage improvements, private streets, dedicated open space, and recreation lots, as well as the phased improvement of a section of Bear Valley Parkway to 4-lane major road standards, as described below. For purposes of the California Environmental Quality Act (CEQA), a complete project description must contain the following information: (a) the precise location and boundaries of the proposed project, shown on a detailed map, along with a regional map of the project's location (refer to Section 2.2, "Project Location and Environmental Setting"); (b) a statement of the objectives sought by the proposed project that should include the underlying purpose of the project (refer to Section 2.4, "Statement of Project Objectives"); (c) a general description of the project's technical, economic, and environmental characteristics (refer to Section 2.5, "Project Components"); and (d) a statement briefly describing the intended uses of the EIR (refer to Section 1.1, Intended Use and Purpose of the Environmental Impact Report [EIR]). An adequate project description need not be exhaustive, but should supply the information necessary for evaluation and review of the proposed project's significant effects on the environment.

## 2.2 Project Location and Environmental Setting

The proposed project consists of two areas: the residential development project site and the Bear Valley Parkway Specific Alignment Plan (SAP) area. Both of these project areas are located in the eastern part of the City of Escondido, adjacent to the County of San Diego (Figures 2-1 and 2-2). Regional access to the site is provided by Interstate 15 (I-15), State Route 78 (SR 78), and Bear Valley Parkway. The character of the area is generally rural residential, with a mix of tract homes, larger lot residential, open space, and small agricultural areas.

### 2.2.1 Residential Development Site

The 40.62-acre tear-shaped residential development site is located at 661 Bear Valley Parkway. The development site is generally bound by Bear Valley Parkway, single-family residential uses, and vacant parcels to the north (zoned RR and A70); Choya Canyon Road, single-family residential uses, and vacant land to the east (zoned A70); single-family residential uses and vacant parcels to the south (zoned RE-40 and RE-20); and Bear Valley Parkway, single-family residential uses (zoned RR, RS, and RE-20), and a church to the west.

The site is currently undeveloped with the exception of a single-family home and associated driveway located in the northern portion of the site. Most of the site consists of bare soils with sparse weeds. A southern coast live oak riparian corridor with a perennial drainage is located along the southwest edge of the site, and an incised ephemeral drainage is located in the southeastern portion of the site. A bee colony is currently housed in the southwestern area of the site. The site also has a dilapidated irrigation system, propane tank, and filled mine shafts associated with the site's former uses as an orchard and for exploratory mining, which are discussed further below. The highpoint of the residential development site is 678 feet above mean sea level (AMSL) and is located just north of the existing residence (Figure 2-3). The lowest area of the site is along the southern edge where the riparian corridor exists.

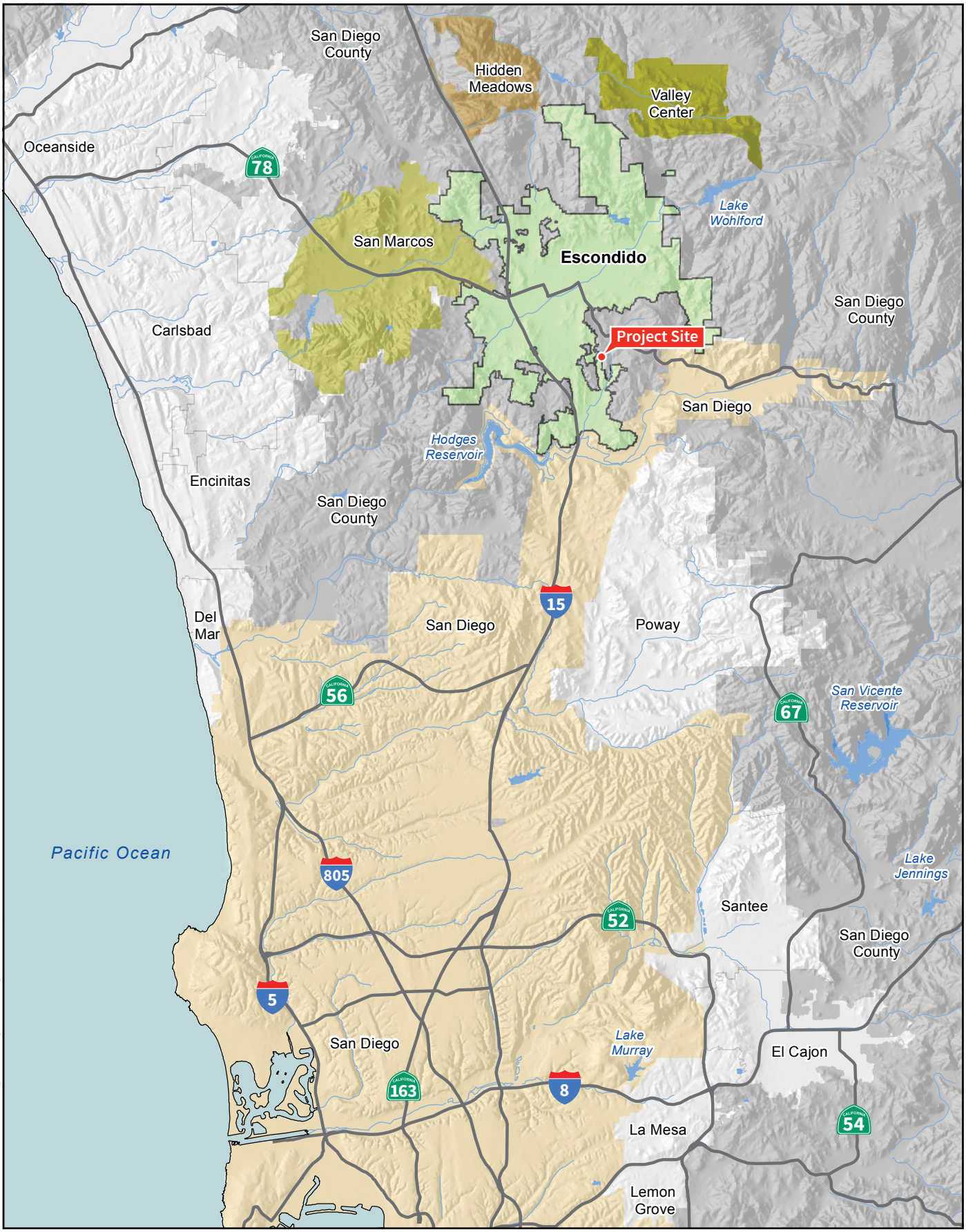
The *City of Escondido General Plan* (General Plan) (City of Escondido 2012a) designates the residential development site as Estate II, and the site is zoned as Residential Estate (RE). The area to the south is zoned as RE-20 and RE-40 by the City. The County has zoned the areas to the southwest as Residential-Single (RS) and Rural Residential (RR); the area to the northwest as Rural Residential (RR); and the area to the north and east as Agricultural (A70).

### 2.2.2 Bear Valley Parkway SAP Improvements

The Bear Valley Parkway SAP improvements site is located along approximately 3,560 linear feet of Bear Valley Parkway alignment between the City boundary on the north (near the intersection with Choya Canyon Road) and the intersection of Bear Valley Parkway with Sunset Drive/Ranchito Drive to the south. This area includes the Encino Drive and Bear Valley Parkway intersection. The SAP improvements site includes three sections, based on anticipated phasing: the 2,937 linear feet of northbound Bear Valley Parkway along the residential development frontage; the 623 linear feet of northbound Bear Valley Parkway from the southern residential development area boundary to Sunset Drive/Ranchito Drive; and 3,560 linear feet of southbound Bear Valley Parkway from the City boundary on the north to Sunset Drive/Ranchito Drive on the south, including the intersection with Encino Drive. Phasing is discussed further in Section 2.5.2.1 below.

Surrounding areas include the residential development site area, a riparian corridor and residential development (zoned RE-20) to the east; and a riparian corridor, a church, and residential development (zoned RR, RS, and RE-20) to the west. An area to the north/northwest of the site is zoned by the County as Agricultural (A70).

In this area, Bear Valley Parkway is currently a two-lane roadway. The majority of the existing roadway does not include full curb, gutter or sidewalk improvements. A guardrail is located on the east and west side of the roadway near the riparian corridor and the Encino Drive intersection. The General Plan identifies the ultimate buildout classification of this roadway to be Major Road.




Source: City of Escondido 2012

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**Figure 2-1**
Regional Location

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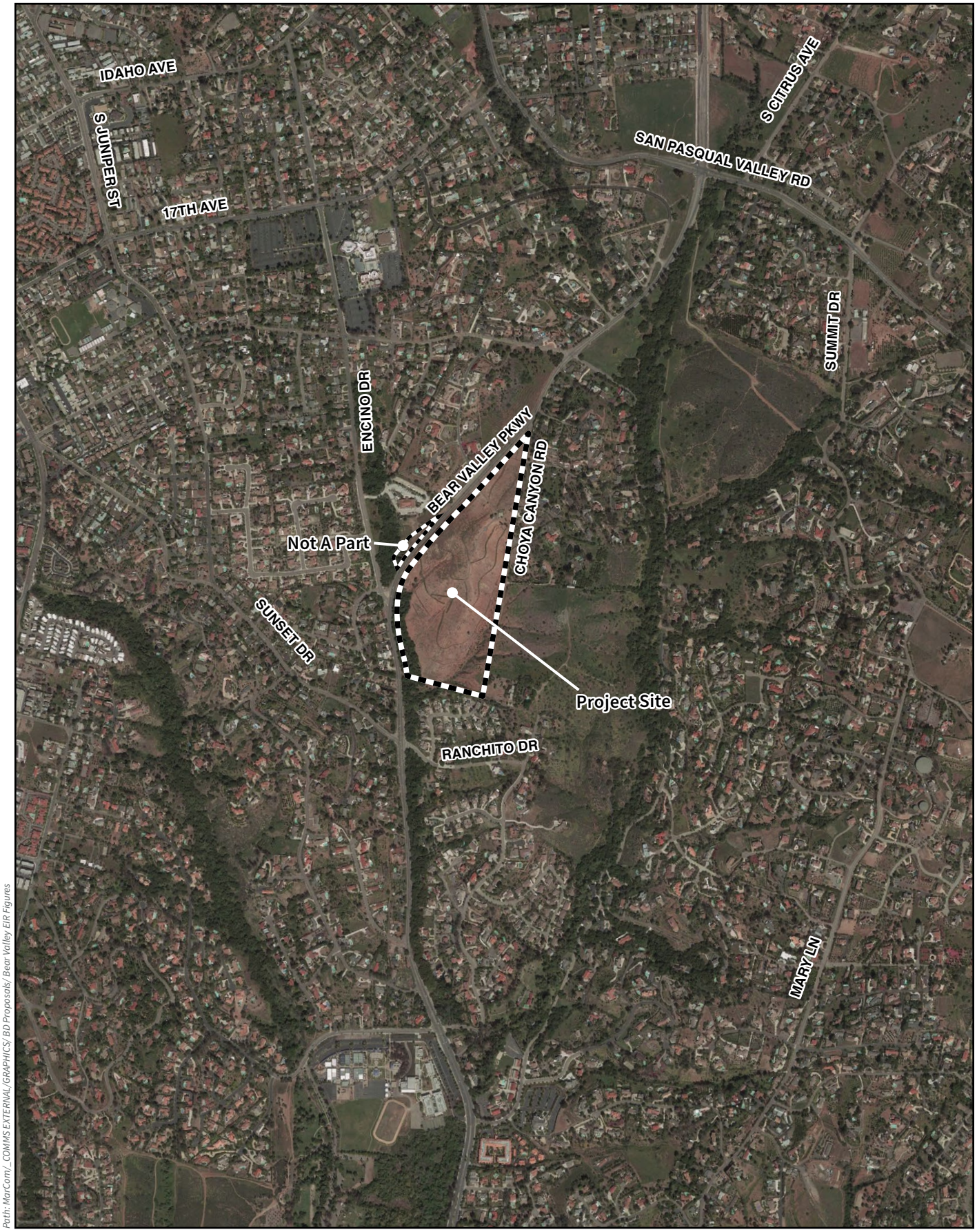


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*Source: Google 2016*

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**Figure 2-2**
Project Vicinity

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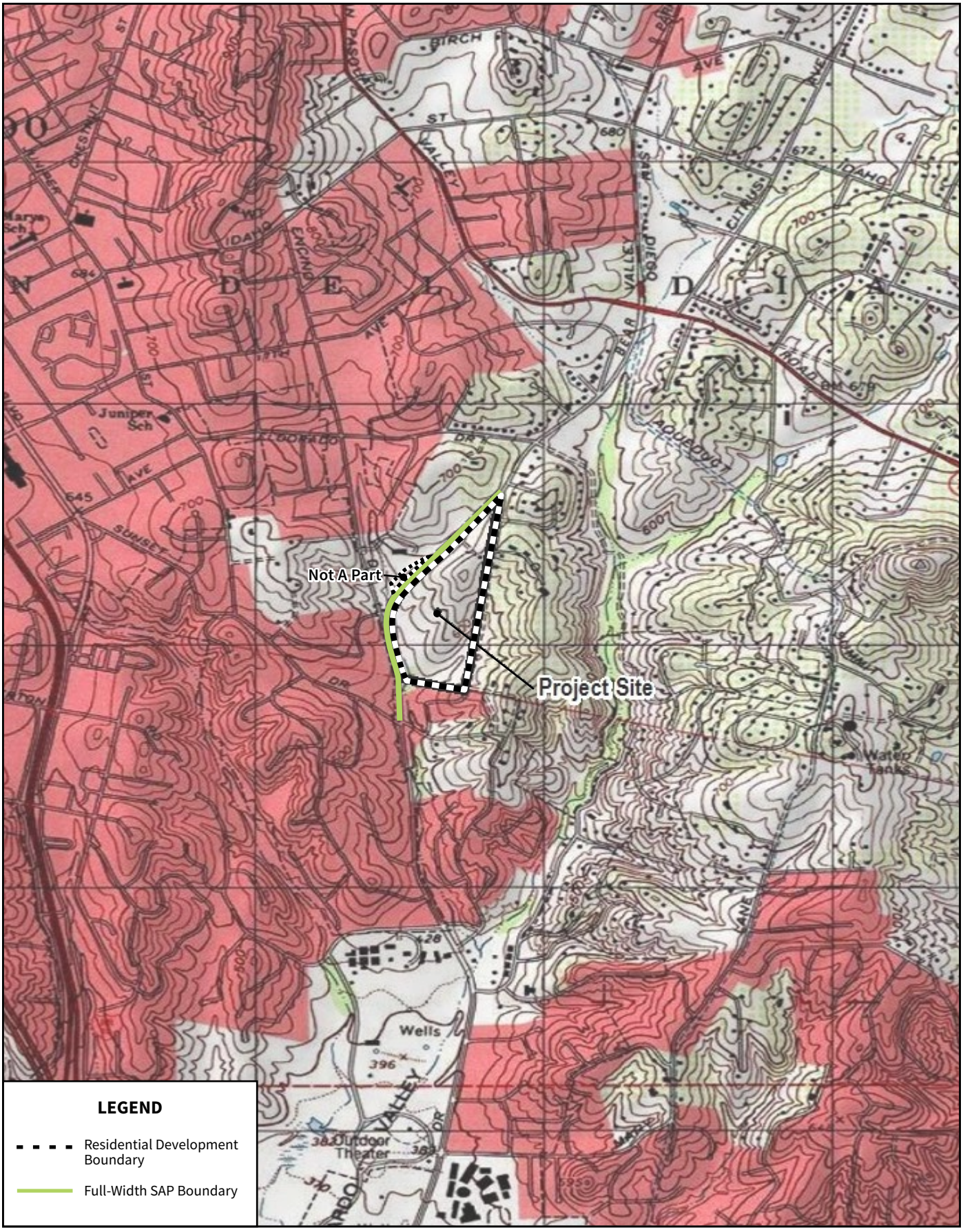


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*Source: USGS 2013*

Harris & Associates

**Figure 2-3**
Topographic Map

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## 2.3 Project Site History

As with most of the city, the proposed project site was a part of the original Rancho Del Diablo Mexican Land Grant. Ownership of the proposed project site has changed many times since the original land grant, with previous owners including the Escondido Land and Town Company, John Becker and Cleveland-Pacific Mining Company, Lawrence C. Spieth, and Burnet C. Wohlford. Early uses of the residential development site included prospecting and exploratory mining; however, no significant mineral resources were located on the property. Circa 1938, a portion of the site was used as citrus and avocado orchards and included an irrigation system and a shed. In 1946, the house and garage were constructed. A 1947 historical aerial shows a roadway extending from the existing driveway location to the north and Bear Valley Parkway constructed south of Encino Drive. Additional citrus and avocado orchards were added in 1953, and the site was used for commercial agricultural operations until 1979. Between 1968 and 1980, the Bear Valley Parkway roadway was constructed along the western residential development boundary similar to the present day roadway configuration. The shed was removed from the property, and the trees were removed sometime between 1989 and 1995. As indicated above, a residence, garage, irrigation system, filled mine shafts, and driveway are currently present on the residential development site.

## 2.4 Statement of Project Objectives

Section 15124(b) of the State California Environmental Quality Act (CEQA) Guidelines requires an EIR to include a statement of objectives for the proposed project. The objectives outline the underlying purpose of the project and assist in the development of project alternatives. The following project objectives have been identified for the proposed project:

1. Provide for the construction of housing that is consistent with the City of Escondido 2013-2021 Housing Element.
2. Design the project to appeal to the area's growing demand for high quality one- and two-story single-family residential housing that is compatible in density and character to the surrounding community.
3. Use compact and efficient design form to respect and integrate natural resources on site, while enhancing the City's ability to provide services through fiscally-positive development.
4. Cluster residential lots to minimize impacts to jurisdictional waters and other biological resources, resulting in the preservation of approximately 50 percent of the site as permanent open space.
5. Design project grading and construction to generally reflect the existing landform.
6. Maintain the existing drainage crossing near the southern property line as a pedestrian linkage to public sidewalks.

7. Establish a Specific Alignment Plan for full-width improvements to Bear Valley Parkway consistent with the major road classification identified in the City's General Plan Mobility and Infrastructure Element.

## 2.5 Project Components

The proposed project would include a single-family residential subdivision as well as the Bear Valley Parkway SAP improvements. The proposed development would entitle a new single-family residential subdivision consisting of 55 single-family residential lots, seven open space lots, one recreation lot, and two private street lots (Figure 2-4). In addition, the residential development would include supporting infrastructure improvements, including Bear Valley Parkway frontage improvements. The Bear Valley Parkway SAP improvements is a retrofit to widen existing Bear Valley Parkway between Sunset Drive and the City boundary to four lanes (a portion of the Bear Valley Parkway retrofit would be constructed by the residential development applicant along the frontage of the residential project as part of the residential development). In addition, a development agreement between the City and applicant is proposed that contemplates the retrofit by the applicant of a 262 lineal feet off-site portion of northbound Bear Valley Parkway immediately to the south of the 661 Bear Valley residential development site. The residential development developer would not construct any additional components of the Bear Valley Parkway SAP retrofit improvements, which would be constructed by others. The individual project components are described further in the following sections.

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*Source: Hunsaker & Associates 2015*

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**Figure 2-4**
Site Plan

*Note: All drawings are approximate.*

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## 2.5.1 Residential Development

### 2.5.1.1 Residential Lots

The proposed subdivision would include 55 residential lots ranging in size from approximately 10,000 square feet (sf) to roughly 24,500 sf, with an average lot size of 11,915 sf. The one- and two-story homes would include a minimum of 1,000 sf of living space in accordance with the minimum size requirements established in the Escondido Zoning Ordinance (Chapter 33 of the City's Municipal Code). The project net density would be 1.38 units per acre.

General development and architectural guidelines are proposed for the residential development, including lot coverage, setback requirements, building heights, and basic design guidelines to maintain a cohesive overall sense of place that is consistent with surrounding development. Lot coverage would be limited to a maximum of 45 percent, and building height would not exceed 35 feet (excluding chimneys). The variation in lot widths would accommodate a range of architectural elevations. The general design guidelines encourage design elements and building materials commonly associated with California ranch-style homes. Building materials and color palettes would include wood, stone, and other naturally-appearing material. Reflective, metallic, or bright colors would be considered out of character and would not be permitted. Fencing and walls would be limited to 6 feet and could be masonry, wood, vinyl, or tubular steel. Future building design would be subject to architectural design guidelines and approval by the City's Design Review Board to confirm that ultimate home designs are consistent with the character of the surrounding uses and project area. Implementation of the residential development would include establishment of a homeowner's association (HOA) to maintain the appearance of the site, including the residences and landscaping.

### 2.5.1.2 Open Space and Recreation

The residential development includes eight open space lots (Open Space Lots "A" to "H") that total 20.02 acres. Seven of these open space lots would remain undeveloped and would consist of HOA-maintained slopes, basins, areas to be preserved as biological open space, or fuel modification areas. Open Space Lot "E" would be developed into a 0.24-acre pocket park or other similar recreational use. The park is anticipated to include a tot-lot, turf area, seating area, and bocce ball court or similar activity area. Additionally, a private pedestrian trail would connect from the pocket park south along a coastal sage scrub re-vegetation slope. Lodge-pole fencing would be provided along the trail to keep trail users out of the biological open space areas, while still allowing for animal species' movement.

### 2.5.1.3 Access and Internal Circulation Improvements

Primary access to and from the residential development site would be provided via a standard entrance residential street extending from the existing Zlatibor Ranch Road and Bear Valley Parkway intersection (Figure 2-4). The proposed driveway is in a location similar to the existing single-family residence driveway. The intersection would be signalized as part of the project and would include an entry monument sign. A secondary emergency-access-only driveway would be provided off of Bear Valley Parkway in the southwestern portion of the residential development site. The secondary driveway would be gated, with access controlled via a device that would provide emergency responders with immediate entry to the residential development site.

The proposed internal streets would be private, and are designated as Streets A to D (Figure 2-4). Street A would be the main internal roadway and would include a 60-foot-wide right-of-way (ROW), while Streets B to D would have 56-foot-wide ROWs. All the on-site roadways would include two, 14-foot-wide travel lanes; an 8-foot-wide parking shoulder; and 5-foot-wide sidewalks. However, Street A would have 7-foot-wide landscaped parkways between the street and the sidewalks while Streets B to D would have 5-foot-wide landscaped parkways. As mentioned previously, a trail system would connect the internal pedestrian system to the public sidewalk near the southwest corner of the residential development site. The residential development would require two design standard waivers, as follows:

1. Reduction of centerline horizontal radius from private street standards, consisting of a reduction from 435 feet to a minimum of 200 feet.
2. Reduction of ROW from the 60-foot residential street standards to 56 feet, and allowing a non-contiguous sidewalk.

### 2.5.1.4 Bear Valley Parkway Frontage Improvements

The proposed residential development would provide half-width frontage improvements along Bear Valley Parkway, as shown in Figure 2-5 (a to d). The proposed frontage improvements along the east side of Bear Valley Parkway would include an additional northbound travel lane, as well as curb, gutter, sidewalk, overhead power line relocation, parkway, and bike lane improvements. The width of the improvements would vary along the residential development site frontage. At the southern end of the improvement area, within the residential project boundary, the roadway would be widened by approximately 9.0 feet and a 6.0-foot-wide sidewalk would be constructed. A safety fence and retaining wall are proposed along the southern sidewalk segment due to a change in elevation at the edge of the improvements. North of the proposed secondary emergency access driveway, the widening of Bear Valley Parkway would add 12.5 feet of roadway with an additional 5.5-foot-wide sidewalk. At the residential development entrance across from Zlatibor Ranch Road, Bear Valley Parkway would be widened by 28.5 feet to accommodate a right-turn lane for the primary residential

development site entry and would narrow to 19 feet wide at the northern end of improvements. The 5.5-foot-wide sidewalk would continue to the northern end of the improvement area, along with a 4.5-foot-wide parkway. The improvements would be designed to transition to the existing roadway widths to the north and south of the improvement area.

To accommodate the additional improvements, the proposed residential development would dedicate additional ROW along the project frontage ranging from 7 to 28 feet. A small area of ROW would be vacated, as shown in Figure 2-5d. With the ROW proposed, Bear Valley Parkway along the residential development frontage would have an overall ROW ranging between 85 and 164 feet.

The residential development's half-width improvements would be consistent with the first phase of the proposed SAP improvements prepared for Bear Valley Parkway (Hunsaker & Associates 2016d), which are discussed further below.

#### 2.5.1.5 Site Drainage

All on-site runoff from the residential project would be directed toward two proposed bioretention areas designed to meet water quality and hydromodification requirements of San Diego Regional Water Quality Control Board Order No. R9-2013-001 as incorporated into the City of Escondido BMP Design Manual. The two bioretention areas would consist of Open Space Lots C and D located near the western development site boundary, adjacent to the two proposed site access driveways. The locations of these basins are shown in Figure 2-4. The northerly bioretention area would encompass approximately 19,600 sf, and the southerly area would cover roughly 27,000 sf. A new storm drain system is proposed within the proposed residential development to collect runoff from these basins and connect to the existing 60-inch culvert in Bear Valley Parkway. South of the proposed access driveways, storm water runoff from Bear Valley Parkway retrofit areas would be intercepted and treated using design elements from the U.S. E.P.A. green streets guidance document, including a rain garden, street trees, and a vegetated swale at the southern end of the project site. A 20-foot public storm drain easement is proposed on site, which would include the discharge area associated with the rain garden, rip-rap, and maintenance access road.

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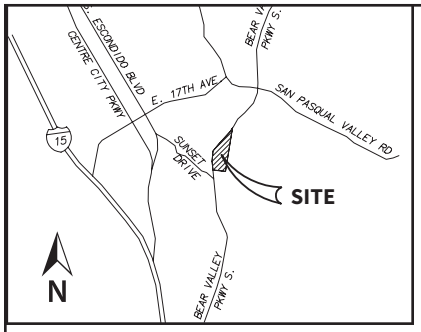


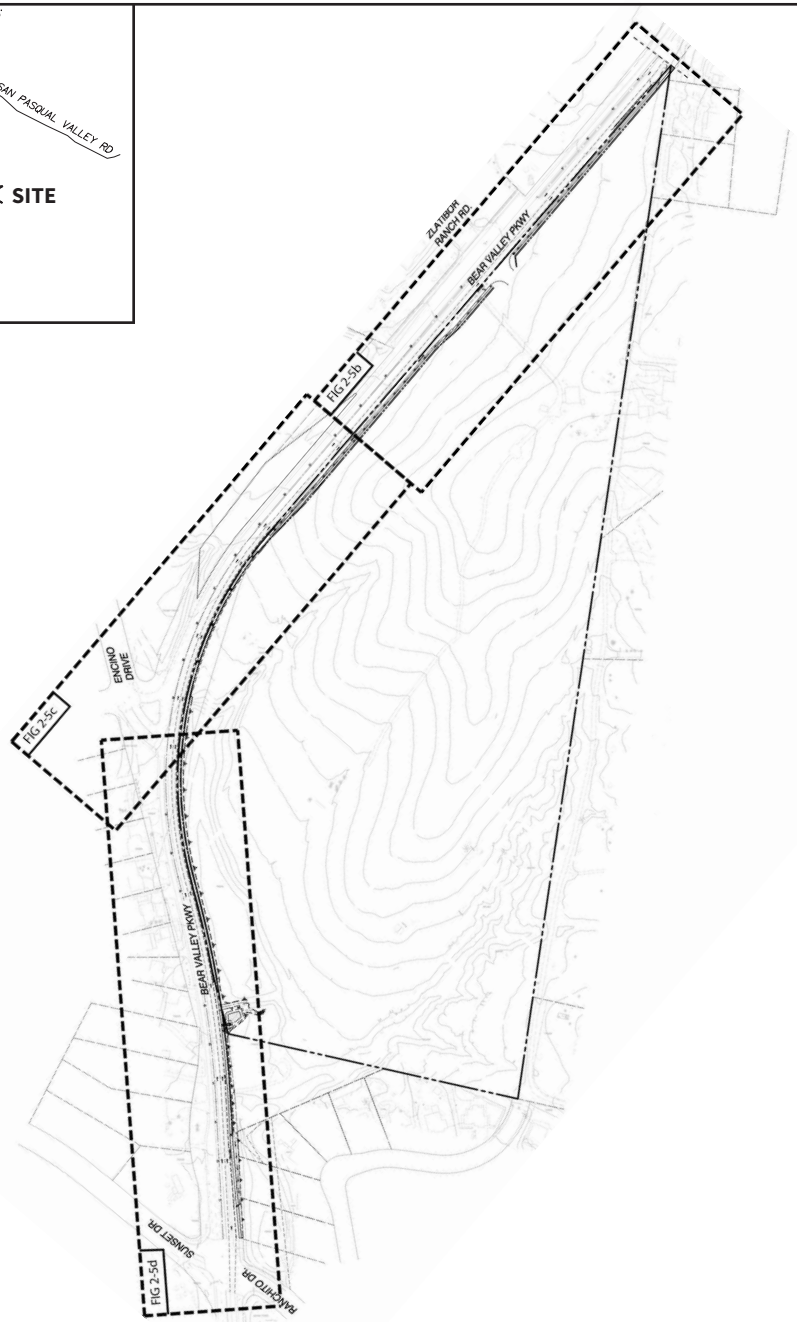


- Existing Fence
- Existing Manhole
- Existing Mailbox (MB)
- Existing Power Pole
- Existing Street Sign
- Existing Landscaping
- Existing Electrical Box
- Existing Contours
- Proposed Contours (600)
- Proposed Slope (2:1 Max.)
- Limits of Proposed Grading/Daylight
- Proposed Green Street Vegetated Swale
- Proposed Green Street Rain Garden
- Proposed Green Street Street Tree

## SHEET INDEX


| | |
|---|---|
| FIGURE 2-5a | TITLE SHEET/ CITY STREET SECTION |
| FIGURE 2-5b | SPECIFIC ROAD PLAN FOR BEAR VALLEY PKWY |
| FIGURE 2-5c | SPECIFIC ROAD PLAN FOR BEAR VALLEY PKWY |
| FIGURE 2-5d | SPECIFIC ROAD PLAN FOR BEAR VALLEY PKWY |


## *NOTE:*

***THIS IS A ROAD RETROFIT PROJECT TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH USEPA GREEN STREET GUIDANCE AND IS EXEMPT FROM PRIORITY DEVELOPMENT PROJECT CRITERIA. SEE SAN DIEGO REGIONAL QUALITY CONTROL BOARD ORDER R9-2013-0001 SECTION E.3.b.(3)(b)***

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**Figure 2-5a**
Bear Valley Parkway Improvements

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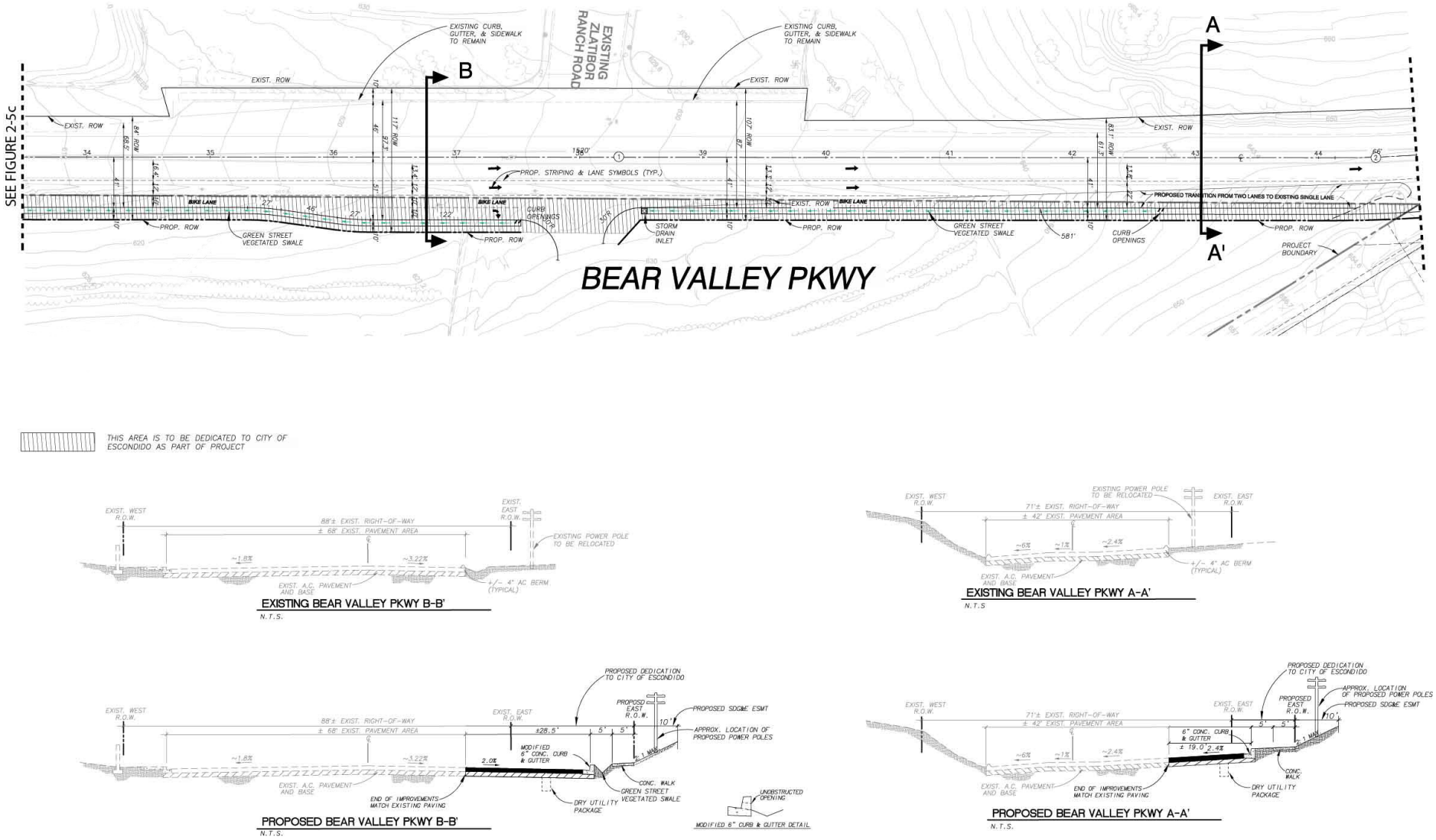


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**Figure 2-5b**
Bear Valley Parkway Improvements

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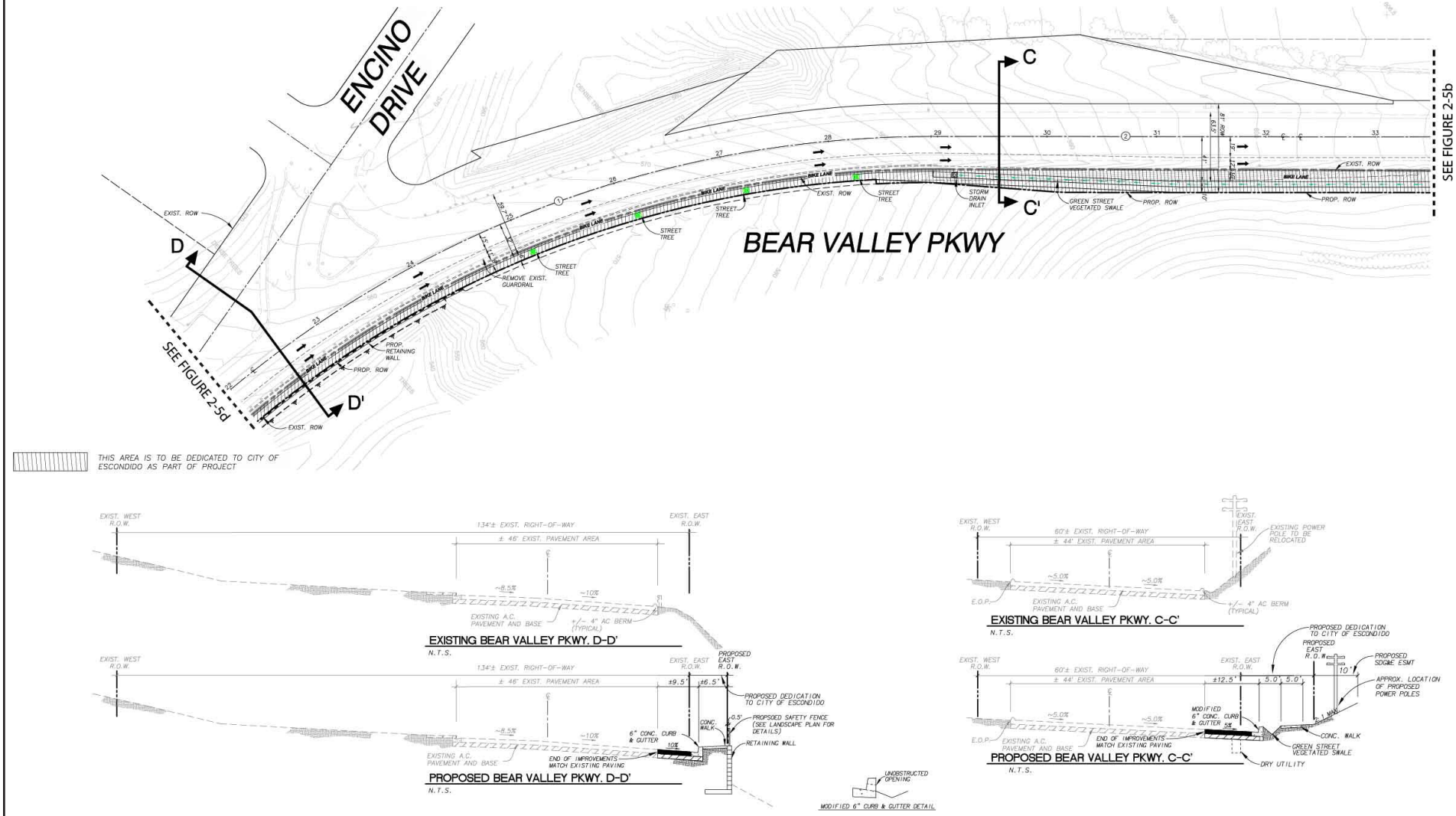


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**Figure 2-5c**
Bear Valley Parkway Improvements

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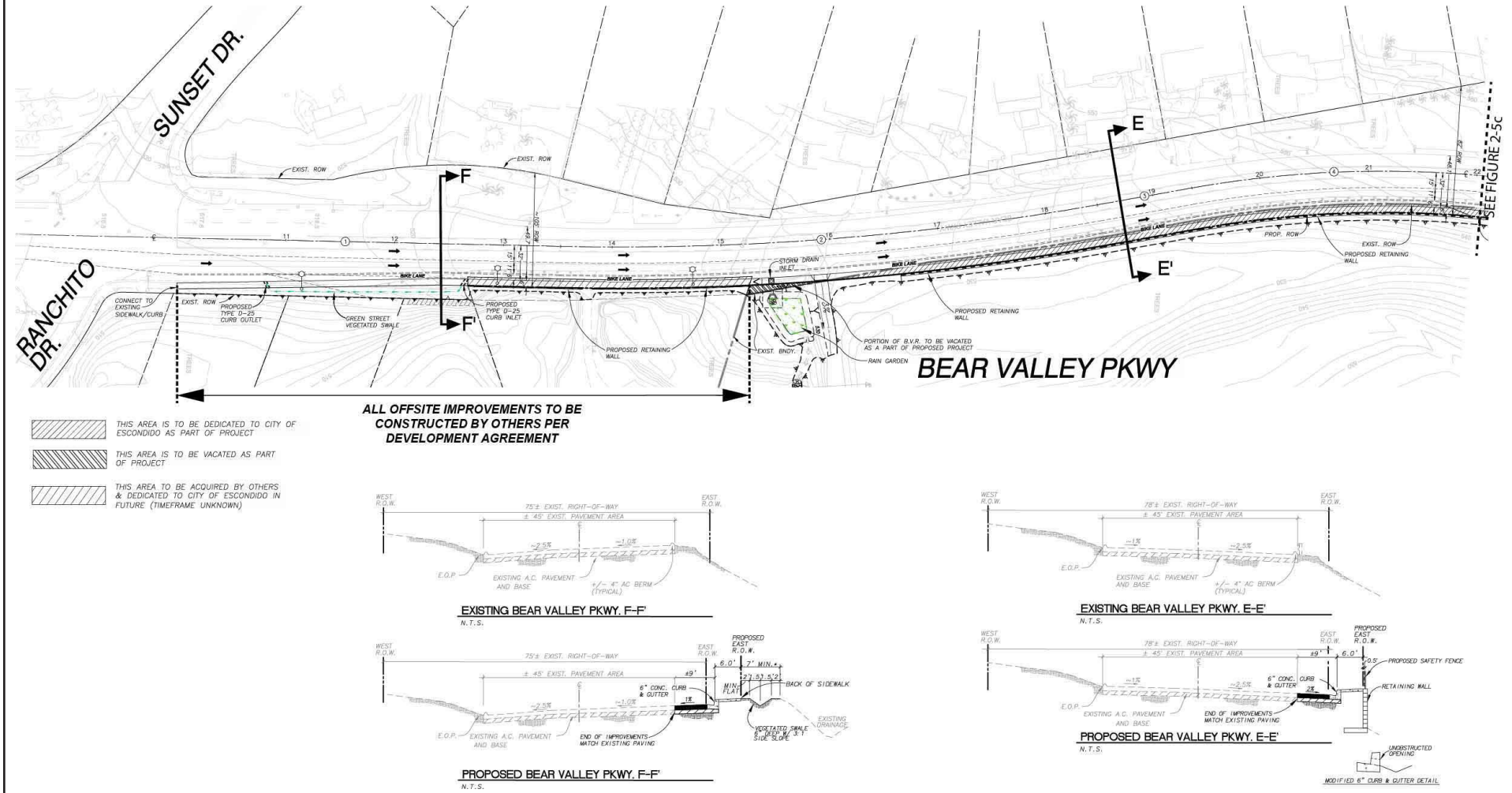


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**Figure 2-5d**

Bear Valley Parkway Improvements

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### 2.5.1.6 Utilities

Residential development utilities construction would include the extension of gas and electric transmission facilities, sewer and water pipelines, and communications facilities to the residential development site. The City's Water and Wastewater Divisions currently provide domestic water service and sanitary water service to the project area, and would serve the residential development site. The residential development would connect to the existing water system in Bear Valley Parkway at Zlatibor Ranch Road and at the proposed emergency access road. Effluent generated by the residential development would be conveyed to and treated at the Escondido Hale Avenue Resource Recovery Facility (HARRF). A new sewer line would be installed in Bear Valley Parkway beginning at the northern property line to connect the proposed residential development to the existing sewer system at Encino Drive. San Diego Gas & Electric provides energy service to the project area under existing conditions and would serve the residential development. As part of the Bear Valley Parkway frontage improvements described in Section 2.5.1.4, existing power poles on the east side of Bear Valley Parkway would be relocated further east in an easement outside of the roadway ROW, but within San Diego Gas & Electric ROW, to accommodate the additional travel lane, bike lane, curb, and sidewalk. The potential impacts from utility relocation were considered in this EIR.

### 2.5.1.7 Lighting

Nighttime exterior lighting would be provided on the residential development site for safety, security, and circulation purposes. Different exterior lighting fixtures would be used, including pole-mounted streetlights and wall-mounted residential lights. Consistent with Article 35 of the Zoning Ordinance, all exterior lighting fixtures, with the exception of street lamps, would be aimed or shielded so that unnecessary nighttime lighting and glare are reduced for the benefit of the citizens of the city and astronomical research at Palomar Mountain Observatory. Additionally, in accordance with Zoning Ordinance Section 33-713(d), street lighting installed on the private streets would comply with the City's Engineering Design Standards and Standard Drawings.

### 2.5.1.8 Landscaping

The residential development site would be landscaped with a combination of trees, shrubs, plants, groundcover, turf, and hardscape elements. The conceptual landscape plan is provided in Figure 2-6. Landscaping is proposed to surround the entire developed area of the site and would include fuel modification zones to reduce fire risk. Private streets and walkways would also include streetscaping to separate walkways from vehicular lanes. Seating areas with benches may be provided throughout the development. In accordance with Article 62 of the Zoning Ordinance, landscape areas would include a selection of plant materials based on their adaptability to the climatic, geologic, and topographical conditions. Article 62 establishes water use standards for landscaping in the city and implements the 2006 development landscape

design requirements established by the California Water Conservation in Landscaping Act (Government Code Sections 65591 et seq.). As such, landscape design would encourage use of drought-tolerant plants, drip irrigation and micro spray systems, and reclaimed water, and minimal use of turf. Species potentially planted on site include California live oak (*Quercus agrifolia*), western redbud (*Cercis occidentalis*), coral aloe (*Aloe striata*), and foxtail agave (*Agave attenuata*). The residential development landscaping would be conditioned to comply with the landscaping suggestions in the Fire Protection Plan and avoid highly and moderately invasive species identified by the California Invasive Plant Council (Cal-IPC 2013).

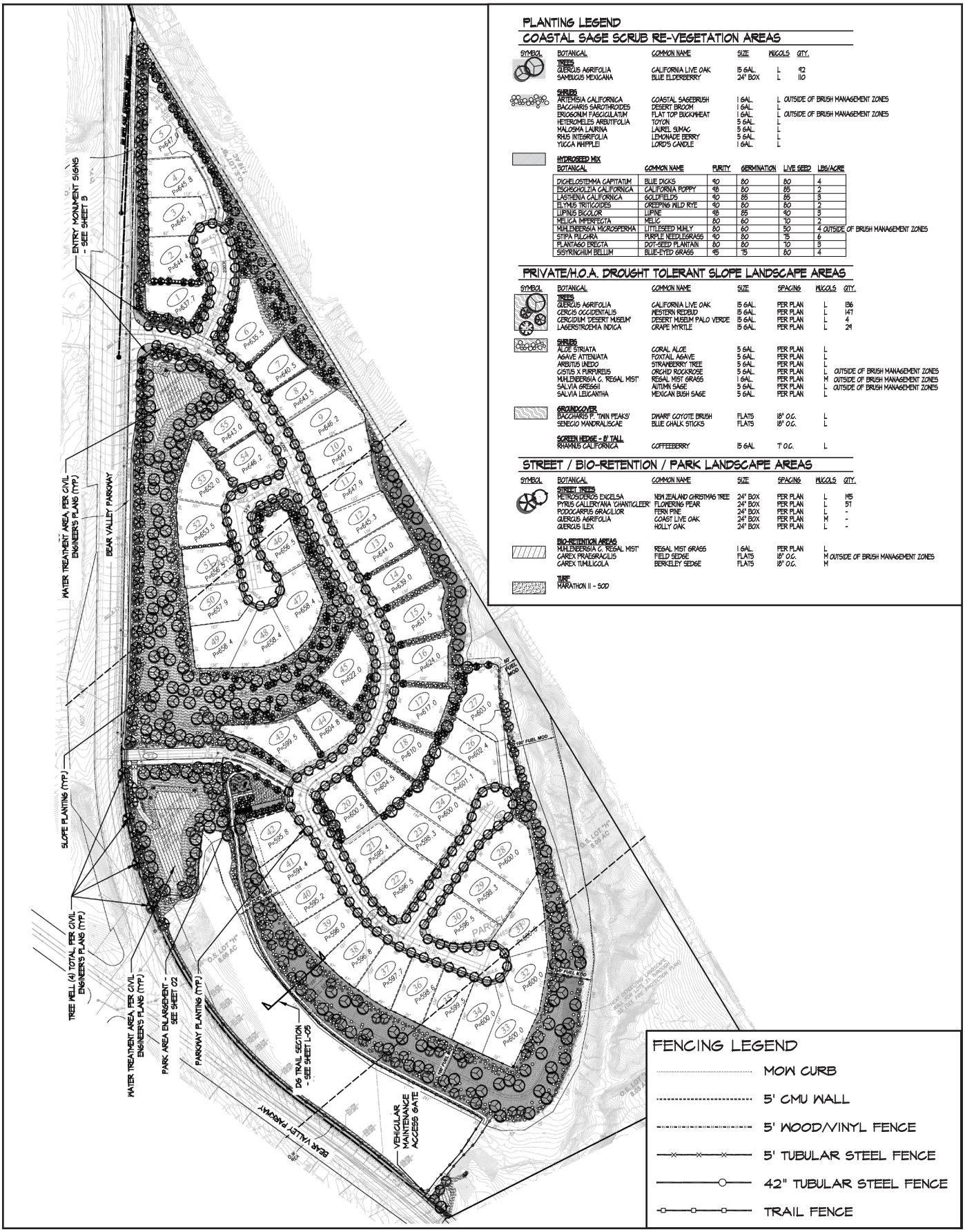
### 2.5.1.9 Grading and Construction

The residential development would require grading of approximately 33 acres of the development site, as shown in Figure 2-7. On-site grading activities would include 342,750 cubic yards of cut and 342,750 cubic yards of fill, with cut and fill balanced on site. A maximum of 38 feet of cut would occur on site in the central area of the site, with the maximum fill being 58 feet along the southern edge of the development. Slope inclination of cut slopes would not exceed a two to one (2:1) ratio. The residential development would require the following four grading exemptions in accordance with the City of Escondido Municipal Code, Article 55, Grading and Erosion Control, Section 33-1066, Design Criteria:

1. Fill slopes within 50 feet of the property line, limited to 5 feet in height; propose up to 16 feet (Lots 1–4 and Open Space Lot “B”).
2. Fill slopes beyond 50 feet of the property line in excess of 20 feet in height; propose up to 58 feet (Open Space Lots “C,” “F,” and “G”).
3. Cut slopes within 50 feet of the property line limited to 20 feet in height; propose up to 23 feet (Lots 7 and 8).
4. Cut slopes in excess of 20 feet in height; propose up to 38 feet (Lots 43, 44, 45, and Open Space Lot "C").

The residential development would also require remedial grading. Refer to Section 3.5 for additional information.

The proposed residential development is anticipated to be developed over a number of phases, with the construction schedule of the development ultimately being determined by market demand. The development construction activities would include demolition of the existing residential structure, site preparation and grading, construction, paving, and architectural coating application. The preliminary development construction phase would include grading and off-site public improvements, followed by construction of homes in one or more phases. Overall, construction of the residential development is anticipated to take approximately 3 years**.**




Source: GMP 2017

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**Figure 2-6**
Landscape Plan

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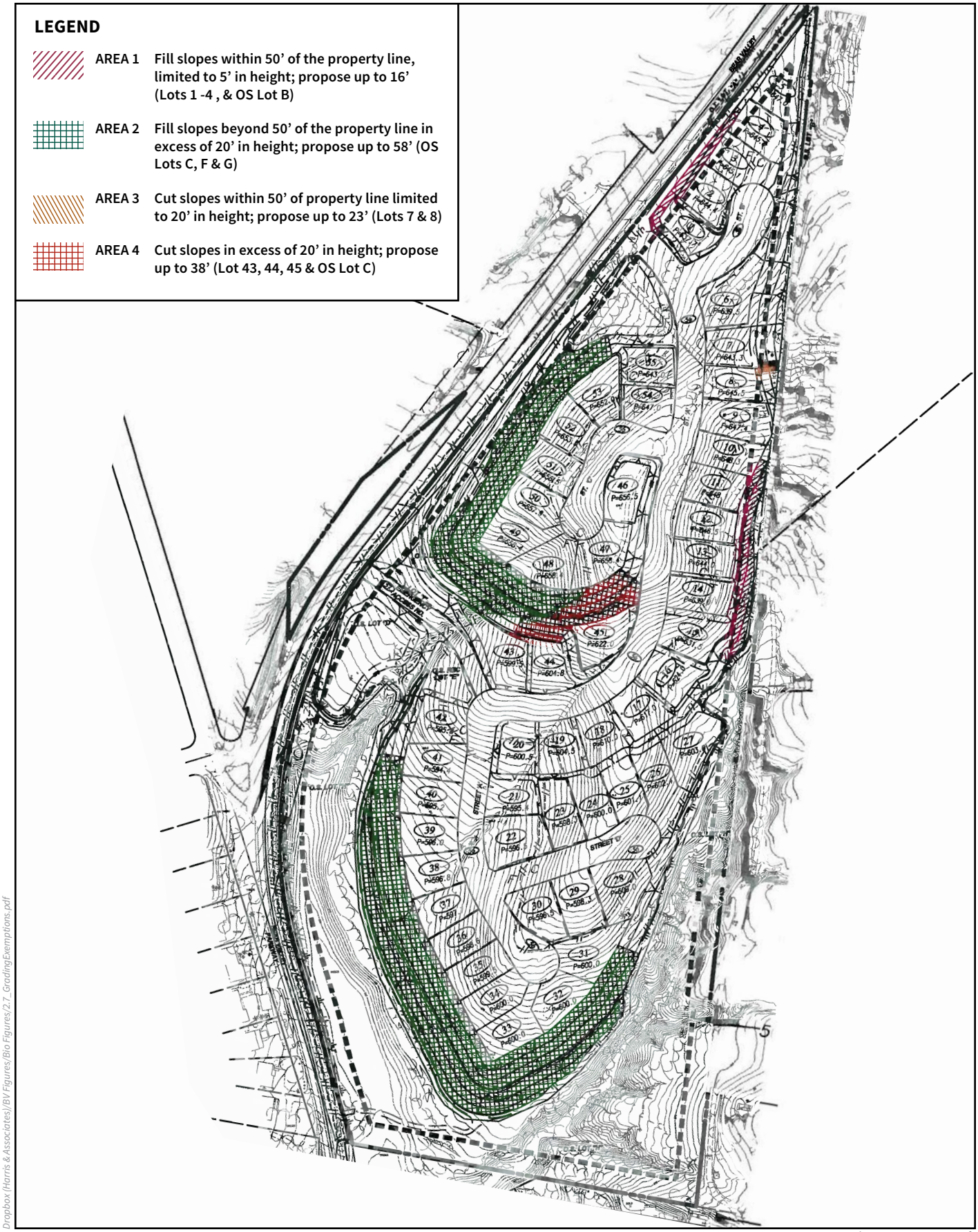


*Source: Hunsaker & Associates 2016f*

**Figure 2-7**
Grading Exemptions

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### 2.5.2 Bear Valley Parkway Specific Alignment Plan

The Specific Alignment Plan (Figure 2-8 [a–d]) identifies full-width improvements for retrofit of existing Bear Valley Parkway from Sunset Drive to the City boundary near the intersection of Bear Valley Parkway with Choya Canyon Road. The residential development would include the widening improvements on the east side of Bear Valley Parkway along the proposed development frontage, as described in Section 2.5.1.4. In addition, the SAP identifies improvements to the south of the proposed development to Sunset Drive, as well as along the west, southbound side of Bear Valley Parkway.

The recommended improvements per the full-width SAP plans, on the west side of Bear Valley Parkway include extension of the ROW to include another travel lane, bike lane, sidewalk, retaining wall, raised median, curb and gutter, and relocated street lights. The existing fence and hardscape north of Zlatibor Ranch Road would be relocated farther west and the existing curb and sidewalk on both sides of Zlatibor Ranch Road would be matched. South of Zlatibor Ranch Road, a portion of the existing retaining wall, the existing fence and brow ditch would be relocated farther west. These improvements would require approximately six-tenths of an acre of land acquisition.

At Encino Drive, the SAP improvements would relocate the existing guardrail. The existing curb on the east side of Encino Drive would be matched and extended along the curve to Bear Valley Parkway. The bike lane and raised median would continue south of Encino Drive.

South of Encino Drive, portions of the existing fence and retaining wall would be relocated farther west. The raised median would continue to a point north of Sunset Drive where it would be continued as a painted median. Curb and sidewalk would be installed to match the existing features at Sunset Drive and the existing street lights north of Sunset Drive would be relocated farther west.

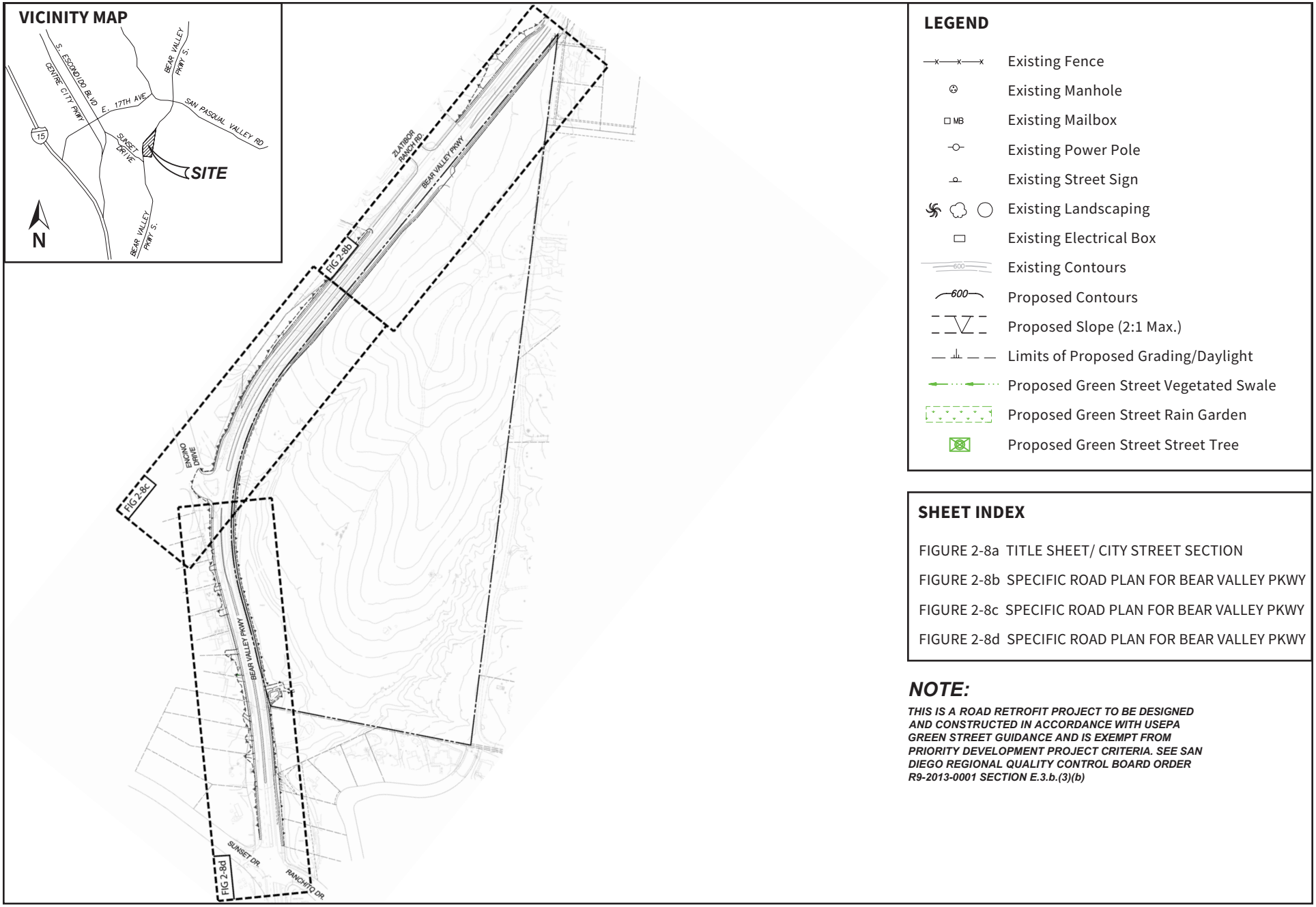
The SAP improvements would also include improvements to the northbound, east side of Bear Valley Parkway, south of the residential development's boundaries. A bike lane, vegetated swale, retaining wall, and new sidewalk, curb, and gutter would be installed south of the residential development boundary. These improvements would require approximately six-tenths of an acre of land acquisition. An approximately 262-lineal foot portion of these widening improvements, immediately south of the residential development, would be constructed by the residential development applicant pursuant to a proposed development agreement with the City. The residential development applicant would have no other responsibility for Bear Valley Parkway SAP improvements. All of the SAP improvements, however, are considered part of the project, for the purposes of this EIR.

The SAP improvements would include the U.S. E.P.A. green streets design elements described in Section 2.5.1.5. Runoff would be collected in a vegetated swale located on the east side of Bear Valley Parkway, south of the residential development site, where the wider ROW creates available space. Street trees are also proposed along the east side of Bear Valley Parkway to capture and treat runoff.

The future implementation of the SAP improvements would require right of way acquisition along the western edge of the alignment. In addition, grading associated with construction in existing right of way areas and adjacent private property would require private driveway reconfiguration on several residential lots along the western right of way limits.

The SAP construction is expected to occur in three phases. The first phase would be completed as a part of the proposed residential development, as described in Section 2.5.1.4. The second phase is anticipated to consist of the northbound Bear Valley Parkway segment located between the southern proposed residential development boundary and Sunset Drive. The small parcel to the south of the residential project, which includes approximately 262 lineal feet of proposed Bear Valley Parkway northbound frontage improvements, is not owned by the City nor the residential development project applicant. Consequently, additional right-of-way may be needed along this frontage in order to implement the SAP improvements. A proposed Development Agreement between the City and the residential development applicant contemplates the improvement of this 262 feet section south of the residential development site during the second phase, provided necessary right-of-way is obtained. The third phase would include the southbound Bear Valley Parkway SAP improvements, including the Bear Valley Parkway and Encino Drive intersection. The construction schedule of the second and third phase of the SAP improvements is currently unknown, but improvements are expected to be completed by 2035.

The Specific Alignment Plan does not obligate the City, the residential development applicant, or another party to implement the identified improvements. Rather, it is intended to provide consistency in improvements along this segment of Bear Valley Parkway, should improvements be proposed or necessitated by a future project. As such, the analysis of impacts associated with improvements are addressed herein, but associated mitigation would be the responsibility of the future entity completing the construction of the improvements.




## LEGEND

- Existing Fence
- Existing Manhole
- Existing Mailbox (MB)
- Existing Power Pole
- Existing Street Sign
- Existing Landscaping
- Existing Electrical Box
- Existing Contours
- Proposed Contours (600)
- Proposed Slope (2:1 Max.)
- Limits of Proposed Grading/Daylight
- Proposed Green Street Vegetated Swale
- Proposed Green Street Rain Garden
- Proposed Green Street Street Tree

## SHEET INDEX


FIGURE 2-8a TITLE SHEET/ CITY STREET SECTION

FIGURE 2-8b SPECIFIC ROAD PLAN FOR BEAR VALLEY PKWY

FIGURE 2-8c SPECIFIC ROAD PLAN FOR BEAR VALLEY PKWY

FIGURE 2-8d SPECIFIC ROAD PLAN FOR BEAR VALLEY PKWY


## *NOTE:*

***THIS IS A ROAD RETROFIT PROJECT TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH USEPA GREEN STREET GUIDANCE AND IS EXEMPT FROM PRIORITY DEVELOPMENT PROJECT CRITERIA. SEE SAN DIEGO REGIONAL QUALITY CONTROL BOARD ORDER R9-2013-0001 SECTION E.3.b.(3)(b)***

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*Source: Hunsaker & Associates 2016d*

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**Figure 2-8a**
Bear Valley Parkway Full-Width SAP Improvements

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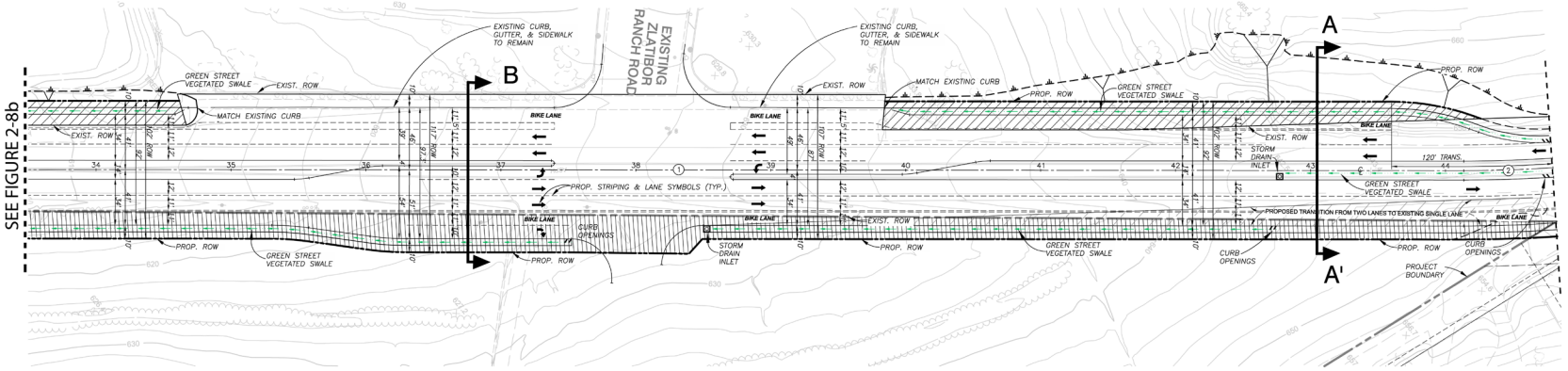
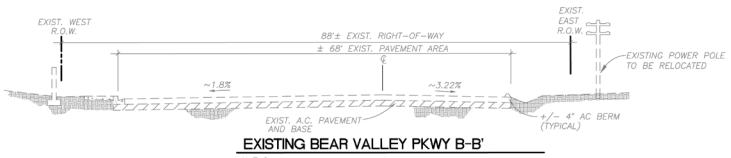



## BEAR VALLEY PKWY

THIS AREA IS TO BE DEDICATED TO CITY OF ESCONDIDO AS PART OF PROJECT

THIS AREA TO BE ACQUIRED BY OTHERS & DEDICATED TO CITY OF ESCONDIDO IN FUTURE (TIMEFRAME UNKNOWN)




EXISTING BEAR VALLEY PKWY B-B'
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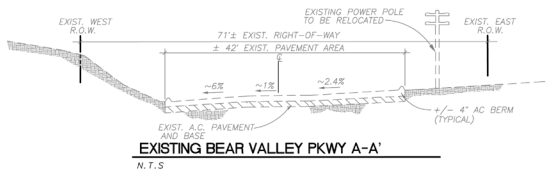


EXISTING BEAR VALLEY PKWY A-A'
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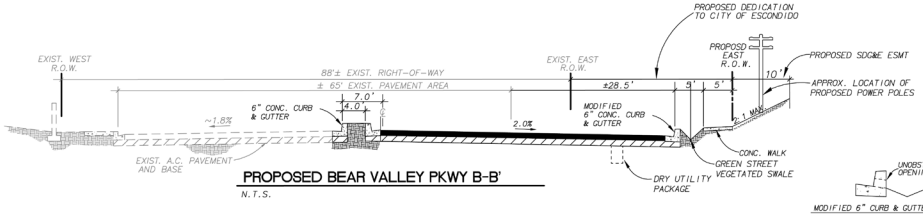


PROPOSED BEAR VALLEY PKWY B-B'
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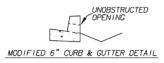
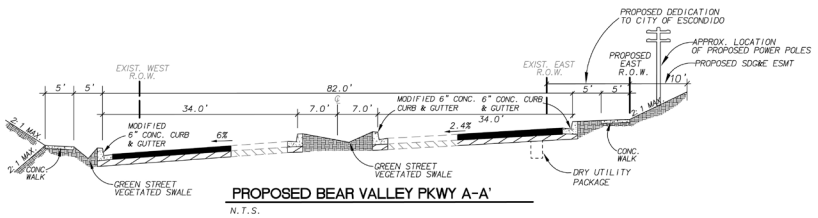



MODIFIED 6" CURB & GUTTER DETAIL




PROPOSED BEAR VALLEY PKWY A-A'
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Source: Hunsaker & Associates 2016d

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**Figure 2-8b**
Bear Valley Parkway Full-Width SAP Improvements

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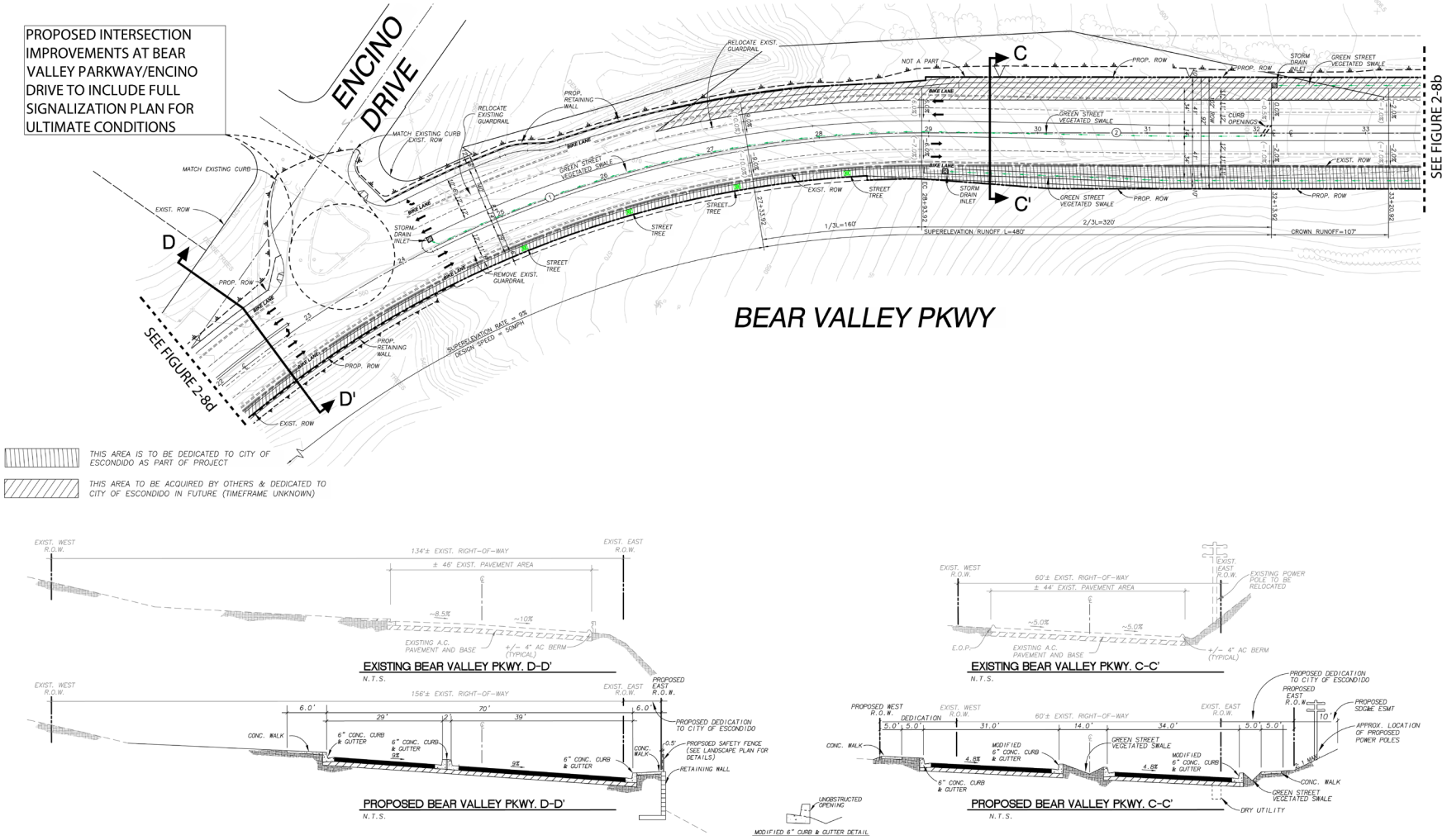


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Source: Hunsaker & Associates 2016d

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**Figure 2-8c**
Bear Valley Parkway Full-Width SAP Improvements

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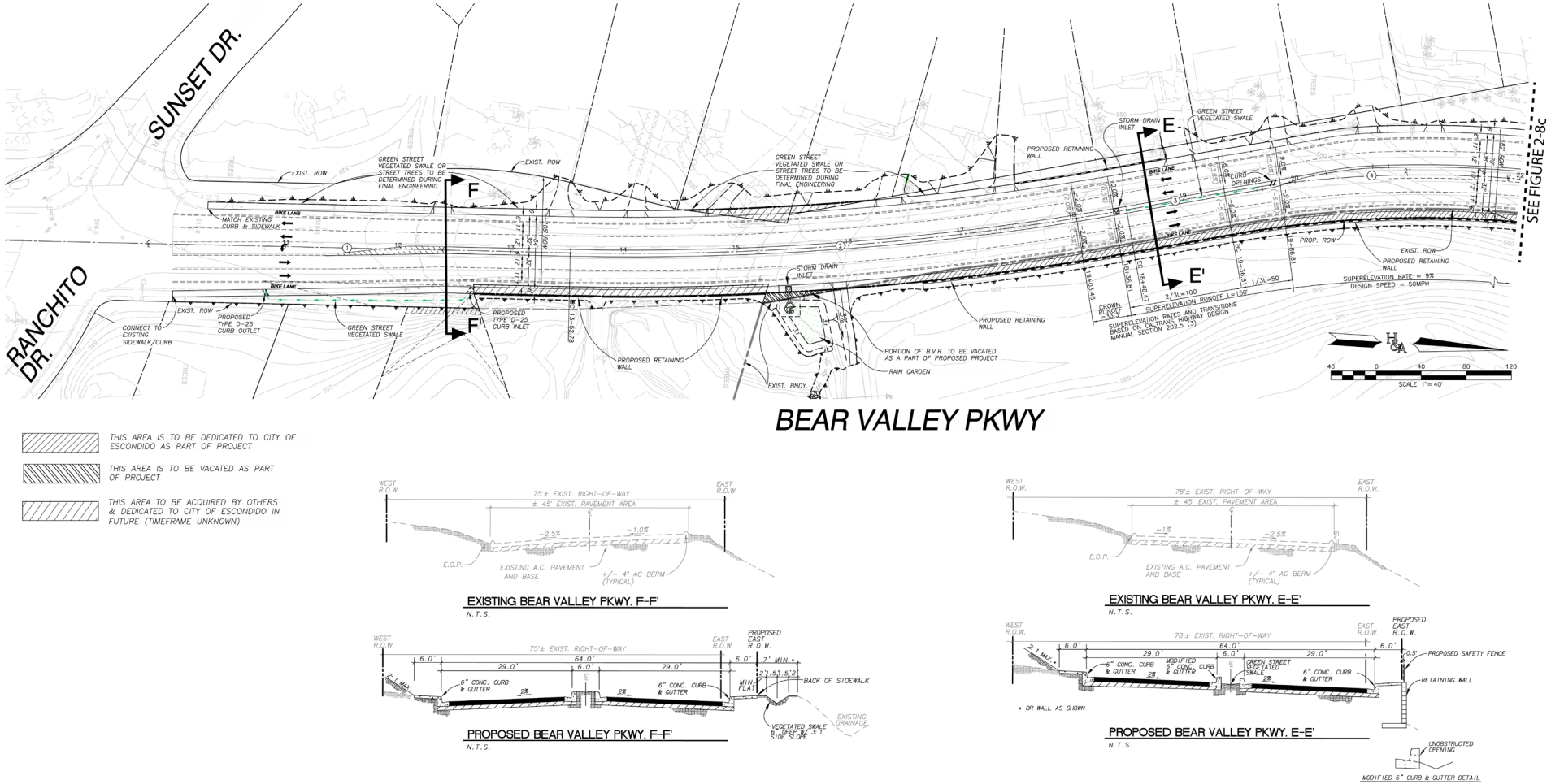


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*Source: Hunsaker & Associates 2016d*

Harris & Associates

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**Figure 2-8d**

Bear Valley Parkway Full-Width SAP Improvements

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### 2.5.3 Project Design Features

The following specific design considerations are included as proposed project features and would be conditions of approval:

a. Fencing shall be included per the landscape plans to preclude humans from traveling into the areas to be preserved as biological open space.
b. Landscaping adjacent to preserved land shall not include species listed as highly or moderately invasive by the California Invasive Plant Council (Cal- IPC 2013).
c. Landscaping shall comply with recommendations of the Fire Protection Plan (Appendix K).
d. Proper selection, design, placement, and utilization of BMPs including source control (i.e., signage and trash enclosures), treatment control (i.e., constructed wetlands, filter inserts, and catch basins), and site design (i.e., landscaping) BMPs shall be required. Runoff at each discharge location shall be limited to pre-project rates.
e. The applicant shall provide payment of the Escondido Public Facility Development Fee (Article 18B of Chapter 6 of the Escondido Municipal Code).
f. The applicant shall provide payment of school fees pursuant to Article 21 of Chapter 6 of the Escondido Municipal Code.
g. In compliance with the Air Pollution Control District rules, the project shall include dust control measures during grading. This shall include wetting the disturbed grading area a minimum of three times per day.
h. As specified by California Health and Safety Code Section 7050.5, if human remains are found on the project site during construction or during archaeological work, the person responsible for the excavation, or his or her authorized representative, shall immediately notify the San Diego County Coroner's office. Determination of whether the remains are human shall be conducted on-site and in situ where they were discovered by a forensic anthropologist, unless the forensic anthropologist and the Native American monitor agree to remove the remains to an off-site location for examination. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the Coroner has made the necessary findings as to origin and disposition. A temporary construction exclusion zone shall be established surrounding the area of the discovery so that the area would be protected, and consultation and treatment could occur as prescribed by law. In the event that the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the Native American Heritage Commission, shall be contacted in order to determine proper treatment and disposition of the remains in accordance with California Public Resources Code Section 5097.98. The Native American remains shall be kept in-situ, or in a secure location in close proximity to where they were found, and the analysis of the remains shall only occur on-site in the presence of a Native American monitor.

i. Prior to construction of Bear Valley Parkway SAP improvements or residential development construction activities, the applicant shall submit a traffic control and management plan for review and approval by the City Engineer The traffic control and management plans shall provide for continued access through Bear Valley Parkway during construction. Also, the haul route shall be approved by the City Engineer, and construction traffic shall be limited to between 7 a.m. and 6 p.m. Monday to Friday (Holidays excepted). Construction traffic on Bear Valley parkway between Sunset Drive and I-15 shall be limited during the school peak hours of 7:00 to 8:30 a.m. and 2:00 p.m. to 3:30 p.m.

## 2.6 Discretionary Actions

Approval of the proposed project would require a number of discretionary actions. According to Sections 15050 and 15367 of the State CEQA Guidelines, the City of Escondido is designated as the Lead Agency for the project. Trustee agencies are state agencies with jurisdiction by law over natural resources affected by a proposed project that are held in trust of the people of the State of California. The California Department of Fish and Wildlife is a Trustee Agency for the proposed project. The Responsible Agencies for the project include the U.S. Army Corps of Engineers and San Diego Regional Water Quality Control Board. The following list indicates the various discretionary actions that would be required to implement the proposed project and the agencies that would grant discretionary approval for these actions.

**City of Escondido (Lead Agency)**

- Tentative Map Approval for the subdivision of the property into 65 lots, including 55 residential lots, two private street lots, seven open space lots, and one recreation lot.
- Preliminary/Master/Precise Development Plan in accordance with the Escondido Municipal Code, Chapter 33 – Zoning, Article 19. Planned Development (P-D) Zone, Sec. 33-415 requirements.
- Rezone from RE-20 (Residential Estates, 20,000-square-foot minimum lot size) to PD-R (Planned Development Residential), with a density of 1.34 units per acre.
- Grading exemptions would be required for four areas per Escondido Municipal Code, Article 55, Grading and Erosion Control, Section 33-1066, Design Criteria.
- Specific Alignment Plan for Bear Valley Parkway proposed by the proposed residential development to identify frontage improvements to the northbound, east side of Bear Valley Parkway between the City boundary to the north (near the intersection with Choya Canyon Road) and the intersection with Sunset Drive/Ranchito Drive to the south.
- Full-width Specific Alignment Plan for Bear Valley Parkway to identify future widening improvements and illustrate consistency of the residential development's frontage improvements with future widening goals.
- Possible right of way acquisition through eminent domain for portions of Bear Valley Parkway as may be needed to implement the full-width Specific Alignment Plan improvements based on potential further study and consideration.

- Dedication and vacation of right of way area on Bear Valley Parkway along residential development frontage.
- Proposed Development Agreement between City and the applicant.

**California Department of Fish and Wildlife (Trustee Agency)**

- California Fish and Game Code Section 1602 Streambed Alteration Agreement for potential impacts on streambed.

**U.S. Army Corps of Engineers (Responsible Agency)**

- Clean Water Act Nationwide 39 Section 404 Permit for potential impacts on waters of the United States.

**San Diego Regional Water Quality Control Board (Responsible Agency)**

- National Pollutant Discharge Elimination System Construction Activities Storm Water General Permit for construction.
- Clean Water Act Section 401 Water Quality Certification for potential impacts on waters of the United States.

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# Chapter 3. Environmental Analysis

This chapter analyzes the potentially significant environmental impacts that may occur as a result of project implementation. The environmental issues subject to detailed analysis in the following sections include those that were identified by the City through the Initial Study (Appendix A) and subsequent preliminary project review as potentially significant. Nine environmental issues are addressed in the following sections, consisting of:

- Aesthetics
- Agricultural Resources
- Biological Resources
- Cultural Resources (including Tribal Cultural Resources)
- Geology and Soils
- Hazards and Hazardous Materials
- Land Use and Planning
- Noise
- Transportation and Traffic

Each issue analysis section is formatted to include a discussion of existing conditions, regulatory framework, thresholds of significance, project impacts, cumulative impacts, significance of impact prior to mitigation, mitigation, and conclusion. Each topic addresses impacts related to the residential development and the specific alignment plan (SAP) improvements separately, under separate headings, to clearly indicate which impacts and mitigation measures pertain to the residential development and which impacts and mitigation measures pertain to the SAP improvements.

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# 3.1 Aesthetics

This section of the Environmental Impact Report (EIR) describes the existing aesthetics of the site and community. It analyzes project impacts on scenic vistas, scenic resources, visual character and quality, and light and glare. To address the proposed project's potential impact on visual character and quality, a set of key views and visual simulations of the project were prepared by Harris & Associates in October 2016. Those visual simulations are included as Figures 3.1-2, 3.1-3, and 3.1-4. General information in this section is taken from the *City of Escondido General Plan* (General Plan) (City of Escondido 2012a) and *Escondido General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report* (General Plan Program EIR) (City of Escondido 2012b), unless otherwise referenced.

## 3.1.1 Existing Conditions

### 3.1.1.1 Existing Visual Landscape

Existing visual resources define a community's character and identity. Scenic vistas, scenic resources, community character and quality, and light and glare are all part of the visual landscape. These features of the existing visual landscape are described below.

**Visual Character and Quality**

***City of Escondido***

Community character can be described as the "personality" of a community and is defined by its land uses, historical resources, community design, architectural themes, natural resources, and any other man-made or natural features that give the community its overall look and feel (City of Escondido 2012b). The City of Escondido is characterized by, "hills and mountains surrounding an open valley bisected by Escondido Creek…Expanding out from its historic downtown and urban core (with their traditional street grid patterns) are established single and multi-family neighborhoods that have long since replaced agricultural groves. Densities and intensities diminish and streets follow topographic contours in outlying areas as the community transitions to higher elevations where agricultural operations remain in many areas" (City of Escondido 2012a). Significant visual resources include ridgelines; hillsides; unique landforms such as rock outcroppings, creeks, lakes, and natural open space areas; and viewsheds that serve as a scenic amenity and contribute to the quality of life for Escondido residents (City of Escondido 2012a). Escondido's agricultural production was identified as a visual amenity in the General Plan EIR (City of Escondido 2012b).

The City has identified several scenic roadways, including the segment of Bear Valley Parkway that is part of the proposed project (City of Escondido 2012a). The General Plan EIR also described the mature trees on Bear Valley Parkway as valuable visible resources. Scenic roadways are vehicular right-of-ways with considerable natural landscape and a high aesthetic value. Scenic roadway corridors generally include the land adjacent to and visible from the

vehicular right-of-way. The dimension of the corridor is usually identified using a motorist's line of vision, but a reasonable boundary is selected when the view extends to the distant horizon (City of Escondido 2012b).

***Viewshed***

Due to the rolling hills that conceal the proposed project site, the project viewshed is generally limited to the area immediately surrounding the project site. The project viewshed consists of an approximately 3,200-foot corridor on Bear Valley Parkway, and an approximately 1,200-foot corridor on Choya Canyon Road. The site is also viewable from residential streets west of the project, including Amparo Drive, Pamplona Court, and Encino Drive. Private views of the proposed project can be found at houses west, south, and east of the project site. Public viewers within the viewshed include motorists on roadways, pedestrians on sidewalks, and bicyclists on the roadways. There are no public parks or schools with views of the project site, although there is a church west of the site at 2080 Encino Drive that has a view of the project site. Most of the viewers will be motorists travelling north and south along Bear Valley Parkway. The longest duration of site views from Bear Valley Parkway would occur at the intersection with Zlatibor Ranch Road where motorists will stop at the proposed traffic signal. Considering this, key viewpoints within the viewshed are (1) Bear Valley Parkway looking northeast toward the residential development site; (2) Bear Valley Parkway looking south toward the proposed project; and (3) Choya Canyon Road looking southwest over the project site (Figure 3.1-1).

Key View 1 (Figure 3.1-2) includes a corridor view along Bear Valley Parkway just north of the intersection with Encino Drive, as motorists round a corner and the proposed residential development site comes into view. After driving past existing single-family detached residential development, vegetation along the perennial drainage between Bear Valley Parkway and Encino Drive can be seen to the west. The houses on Zlatibor Ranch Road can be seen to the north. The large vacant lot on which the residential development is proposed to be built is prominent in this key view.

Key View 2 (Figure 3.1-3) also features Bear Valley Parkway. From this view just southwest of the intersection of Choya Canyon Road and Bear Valley Parkway, the existing house on the residential development site is clearly visible. The location of the proposed SAP improvements on Bear Valley Parkway feature prominently in this view, as do the electrical utility lines on the east side of Bear Valley Parkway in front of the proposed residential development site. Residential units and landscaping trees can be seen ahead in the foreground, with Bernardo Mountain and intermediate ridgelines behind them in the distance. Bernardo Mountain and the intermediate ridgelines in front of it have been identified as visually important (City of Escondido 2012a, Figure VII-5). The houses on the right-hand side of the key view are partially concealed by a vacant lot in the foreground.

Key View 3 (Figure 3.1-4) is located on Choya Canyon Road. Choya Canyon Road is higher in elevation than Bear Valley Parkway and Key View 3 represents the more expansive, long-distance view of the proposed project from this higher vantage point. Key view 3 includes the existing trees on Choya Canyon Road, the residential development site including the extant single-family house, Bernardo Mountain in the distance, the SAP improvements site on Bear Valley Parkway, and rural residential development to the west of the proposed project site.

***Community Character***

The surrounding area is a mix of residential development, disturbed vacant land, a house of worship, and a stream. The following is a visual description of the surrounding sites as they appear from public roadways and sidewalks:

- **North:** A large parcel with disturbed vacant land that slopes up from Bear Valley Parkway sits to the north of the proposed project. The vegetation includes mature trees, shrubs, rock outcroppings, cacti, and vacant land. The vacant property has remnants of historical agricultural operations including terracing and old fencing. The low-profile houses to the north of the proposed project site are characterized by relatively small, single-family detached homes on large lots.
- **Northeast:** On the opposite side of Choya Canyon Road from the proposed project, is a community of rural residential houses. The landscaping on the approximately 3-acre lots consists of mature trees – including fruit trees – and ornamental plants and shrubs. The community is situated on a slope at a higher elevation than the proposed project with views of surrounding houses, roads, electrical utility lines, ridgelines and hills. The houses are a mixture of single-story detached residences and two-story estate-style homes.
- **East:** To the east of the proposed project site is a 30-acre vacant parcel of land that has been cleared for agriculture in the past. Currently, there are no crops or structures on the property.
- **South:** A relatively new residential development sits to the south of the project site. Homes in this development are generally two-story, with attached two- and three-car garages and half-acre lots. The homes are characterized by stucco exterior, tile or shingle roofs, and neutral colors including cream, grey, and beige. Landscaping consists of trees, shrubs and lawns. Many of the homes have swimming pools.
- **West:** To the west of the proposed project site is an established community of detached single family homes. The development is generally single-story houses on 0.3-acre lots with prominent fences and walls facing Bear Valley Parkway. Landscaping includes mature trees, lawns, cacti, and juniper bushes. A Jehovah's Witnesses hall of worship is also located to the west of the project site opposite Bear Valley Parkway. The 10.25-acre property is mostly undeveloped with trees growing along a stream and along the property line where it borders Bear Valley Parkway.
- **Northwest:** A gated residential development with large, custom homes sits across Bear Valley Parkway on Zlatibor Ranch Road. The homes are characterized by neutral beige

tones, stucco exteriors and tile roofs. Most of the homes have fences or walls and most have swimming pools. The designed landscaping consists of maturing trees, ornamental plants, lawns, and rock outcroppings.

***Proposed Project Site***

The residential development site currently consists of vacant, disturbed land with remnants of historical agricultural activities. A residential structure with a driveway and detached garage sits on the northern portion of the site. The topography of the residential development site is characterized by a north-south trending ridgeline and the existing residential structure is located at the top of the ridgeline. The small, 1,120-square-foot house, which was built in 1946, has a boxy structure and is landscaped with several mature trees, a couple-dozen immature shrubs, and ice plant. It is painted white and has a standard shingle roof. The driveway that serves as the access to the house from Bear Valley Parkway extends southward along the top of the ridgeline. Most of the residential development site consists of bare, eroding soil and sparse weeds. The site also has a dilapidated irrigation system, propane tank, and filled mine shafts associated with the site's former uses as an orchard and for exploratory mining. Remnants of terraced grading from the historical agricultural operations are visible throughout the site. A bee colony is currently housed in the southwestern portion of the property.

The Bear Valley Parkway SAP improvements site is located along approximately 3,560 linear feet of Bear Valley Parkway alignment between the city boundary on the north (near the intersection with Choya Canyon Road) and the intersection of Bear Valley Parkway with Sunset Drive/Ranchito Drive to the south. In this area, Bear Valley Parkway is currently a two-lane roadway. The majority of the existing roadway does not include full curb, gutter or sidewalk improvements. A guardrail is located on the east and west side of the roadway near the riparian corridor and the Encino Drive intersection.

A southern coast live oak riparian corridor with a perennial drainage is located west of the SAP improvements site and runs along the southwest edge of the residential development site, adjacent to the SAP improvements site. It has dense trees and vegetation growing along it. An incised ephemeral drainage is also located in the southeastern portion of the residential development site, which is characterized by steep, eroded slopes and several outcroppings of large boulders.

**Scenic Resources**

Scenic resources include elements of both the natural and the built environment. Significant visual resources in Escondido include ridgelines; hillsides; unique landforms such as rock outcroppings, creeks, lakes, and natural open space areas; and agricultural operations. Scenic resources at the proposed project site include rock outcroppings and the perennial drainage. The ridgeline on the residential development site was not identified as an important

intermediate or skyline ridgeline in the General Plan (City of Escondido 2012a, Figure VII-5). In the immediate vicinity of the site, scenic resources include potential crop lands and rolling hills.

**Scenic Vistas**

The California Department of Transportation (Caltrans) designates State Scenic Highways to protect public views with high aesthetic value. There are no officially designated or eligible State Scenic Highways within the City of Escondido. The City, however, has identified several scenic roadways in Escondido for the purposes of preserving the significant views from these roadways. Bear Valley Parkway to Valley Parkway was included in the General Plan EIR as one of these scenic roadways (City of Escondido 2012b). The proposed project is located on this stretch of roadway and would be within the scenic viewshed of motorists, bicyclists, and pedestrians travelling along Bear Valley Parkway. The proposed project would also be visible to travelers on Choya Canyon Road, and several residential streets to the west of the project site including Amparo Drive, Pamplona Court, and Encino Drive.

The General Plan also emphasizes the protection of viewsheds that serve as a scenic amenity and contribute to the quality of life for Escondido residents. Valuable scenic vistas include those of hillsides, ridgelines, unique landforms, open space, agricultural areas, and bodies of water. The proposed project site is primarily surrounded by residential development with private views of distant mountains, nearby rolling hills, and the perennial drainage.

**Light and Glare**

Excessive nighttime lighting can interfere with the operation of observatories, affect residents' ability to sleep, affects night sky views, and wildlife. In the City of Escondido, light and glare are of particular concern because of the proximity of Palomar Mountain Observatory, as well as the nuisance that excessive nighttime lighting and glare can create for the City's residents. San Diego County Municipal Code establishes Light Zones to control light pollution around observatories. The area within a 15 mile radius of the center of the Palomar Observatory is included in the definition of Zone A (San Diego County n.d.). The proposed project site, at approximately 20 miles from an observatory, lies outside of Light Zone A. Nonetheless, the site is subject to the City's outdoor lighting ordinance that is described further below under Section 3.1.2, "Regulatory Framework."

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*Source: USDA NAIP Imagery and SanGIS 2016*

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**Figure 3.1-1**
Key View Locations

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Harris & Associates

Not to scale

**Figure 3.1-2**
Key View 1: Bear Valley Parkway Northbound

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**Figure 3.1-3**
Key View 2: Bear Valley Parkway Southbound

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Harris & Associates

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**Figure 3.1-4**
Key View 3: Choya Canyon Road Southwest

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There currently is no lighting on site except for minimal lights associated with the existing, single residential structure. Overall, the rural residential communities surrounding the proposed project site currently generate a moderate amount of nighttime lighting.

Glare can cause annoyance, discomfort, or visual impairment, and can be a nuisance or hazard. Glare commonly occurs when an object is significantly brighter in contrast to the rest of the viewshed. Glare typically occurs as a result of light reflecting off an expanse of glass or other reflective material. Potential sources of glare at the proposed project site and in the project vicinity are primarily windows on residential houses and car windows. The existing residential structure on site includes 10 to 12 standard size windows and the garage has 1 to 2 small windows. No large windows exist on site or in the immediate site vicinity that create a glare issue.

## 3.1.2 Regulatory Framework

**Local Regulations**

***City of Escondido General Plan***

The Resource Conservation Element of the General Plan identifies the visual importance of preserving scenic open space features such as ridgelines, unique landforms, and steep slopes in the City's viewshed. The Land Use and Community Form Element prioritizes preserving the unique community character of Escondido, including the historic downtown, agricultural areas, valleys, and mountains. The Land Use and Community Form Element also address the issues of light pollution and glare. As indicated above, the site includes several scenic resources (rock outcroppings, perennial drainage), as well as scenic roadway. The immediate vicinity around the site has views of surrounding rolling hills. The applicable goals and policies from these elements are identified below.

- **GOAL LU-1:** A community composed of distinct residential neighborhoods, business districts, and employment centers, whose urban form reflects the natural environmental setting.
- **Policy LU-1.1:** New development should serve to reinforce the city's present development pattern of higher-intensity development within the downtown area and lower-intensity development in outlying areas. As a guide toward accomplishing this objective, new development projects shall be at an appropriate density or clustered intensity based upon their compatibility with the majority of the existing surrounding land uses. This policy shall limit density transfers from constrained portions of a property as defined in the land use and open space goals.
- **Policy LU-1.3:** Focus development into areas where land use changes achieve the community's long term goals. Facilitate development that is consistent with the build out vision for each area through incentive programs and efficient administrative and discretionary approval processes for plot plans, Planned Developments, Area Plans, Specific Plans, and Zoning Overlays.

- **Policy LU-1.5:** The city should maintain its single-family residential development pattern, except in locations such as the downtown, along major transportation corridors, and around commercial and public activity centers, where higher densities are more appropriate.
- **Policy LU-1.10:** Reduce light pollution and preserve views of the night sky through the design and siting of light fixtures to minimize light spill-over onto adjacent properties.
- **Policy LU-1.11:** Encourage new development to minimize the creation of incompatible glare through development design features (e.g., minimizing use of certain types of exterior building materials).
- **Goal LU-5:** Clustering of single family residential units to maintain site topography, protect natural resources, and avoid hazards.
- **Policy LU-5.2:** Clustering is not intended to maximize the density or yield, or to circumvent the existing zoning. It shall be utilized as a tool to preserve slopes, ridgelines and sensitive habitat or provide a community benefit.
- **Policy LU-5.4:** When utilizing cluster provisions, a project shall not have an adverse visual impact on the surrounding areas by blocking scenic views, by resulting in a scale of development incompatible with the setting, by siting buildings that project above the ridgeline, or by extensive grading, cutting and filling, or by terracing that disrupts the natural shape and contour of the site.
- **Policy LU-5.10:** When clustering, the portion of the site to be developed for residential purposes shall not significantly change the character of the surrounding area.
- **GOAL RC-3:** Preservation of significant visual resources such as ridgelines, hillsides, and viewsheds that serve as a scenic amenity and contribute to the quality of life for residents.
- **Policy RC-3.1:** Preserve significant visual resources that include unique landforms (e.g., skyline ridges, intermediate ridges, hilltops, and rock outcroppings), creeks, lakes, and open space areas in a natural state, to the extent possible.
- **Policy RC-3.2:** Require new development to avoid obstructing views of, and to minimize impacts to significant visual resources through the following: creative site planning; integration of natural features into the project; appropriate scale, materials, and design to complement the surrounding natural landscape; clustering of development to preserve open space vistas and natural features; minimal disturbance of topography; and creation of contiguous open space networks.
- **Policy RC-3.3**: Maintain density and development standards designed to protect significant visual resources such as existing terrain, steep slopes, floodways, habitat areas, and ridgelines, and to minimize visual impacts of grading and structures.

***Escondido Municipal Code***

Chapter 33 of the Escondido Municipal Code contains the Escondido Zoning Ordinance. The Zoning Ordinance contains several articles that pertain to aesthetic character and resources, which are summarized below.

***Residential Estates***

Article 8 of the City's Zoning Ordinance describes allowable development in the residential estates zone. This zone is intended to provide an area to be developed exclusively for single-family dwellings in a rural setting.

***Open Space Development Standards***

Article 5, the Open Space Development Standards of the City's Zoning Ordinance, establishes standards for the development of lands identified as having open space value to the community and its citizens in one or more of the following categories: slopes greater than 15%, vegetation conservation areas, and natural drainage courses not otherwise defined as floodways. All developments proposed on these lands must follow certain development standards, including protecting natural features such as rock outcroppings, creeks and other natural drainage courses, and wooded areas; and performing grading for buildings and roads to follow existing site terrain contours, except as necessary for safety.

***Outdoor Lighting Ordinance***

Article 35 of the City's Zoning Ordinance, referred to as the Escondido Outdoor Lighting Ordinance, is intended to minimize glare, light trespass, and artificial sky glow for the benefit of the citizens of the City and astronomical research at Palomar Mountain Observatory. In Section 33-713, the ordinance defines requirements for outdoor lighting, such as shielding, automatic timing devices, and requiring that certain outdoor light fixtures and lamps be turned off at night.

***Grading and Erosion Control***

The purpose of Article 55, the Grading and Erosion Control article of the City's Zoning Ordinance, is to assure that development occurs in a manner which protects the natural and topographic character and identity of the environment, the visual integrity of hillsides and ridgelines, sensitive species and unique geologic/geographic features, and the health, safety, and welfare of the general public by regulating grading on private and public property and providing standards and design criteria. In addition to establishing design criteria for grading on steep slopes and ridgelines, the article recommends that grading designs be sensitive to natural topographic, cultural, or environmental features, as well as mature and protected trees, by preserving the following features in permanent open space easements, or such other means which will assure their preservation: undisturbed steep slopes (over 35%); riparian areas, mitigation areas, and areas with sensitive vegetation or habitat; unusual rock outcroppings; other unique or unusual geographic features; and significant cultural or historical features.

***Protected Trees***

Section 33-1052 of the City's Municipal Code includes definitions for a "mature tree" and a "protected tree" (refer to Section 3.3.2.3). Section 33-1068 of the City's Municipal Zoning Code establishes regulations and standards for the preservation, protection, and selected removal of mature and protected trees. Pursuant to Section 33-1069, every feasible effort and measure to avoid damage to existing trees to remain on site must be taken by the owner and developer during clearing, grading, and construction activities. Section 33-1069 also includes replacement ratios for mature and protected trees.

## 3.1.3 Thresholds of Significance

The State CEQA Guidelines Appendix G (14 California Code of Regulations 15000 et seq.) has identified significance criteria to be considered for determining whether a project could have significant impacts on existing aesthetic resources.

An impact would be considered significant if construction or operation of the proposed project would have any of the following consequences:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

## 3.1.4 Analysis of Project Impacts and Determination of Significance

### 3.1.4.1 Issue 1: Scenic Vistas

**Residential Development**

As discussed under the existing conditions, the scenic vistas in the proposed project viewshed consist of distant views of mountains and ridgelines, and nearby views of rock outcroppings, trees, and a perennial drainage from Bear Valley Parkway, Choya Canyon Road, and residential streets to the west of the proposed project, including Amparo Drive, Pamplona Court and Encino Drive. Travelers on roads in the residential neighborhoods west of the project site would see the proposed project as they drove, walked, or biked on the residential streets in an east / southeast direction. One of the roads in this region, Encino Drive, is classified as a Local Collector. According to the Traffic Impact Analysis (Appendix R), average daily traffic volume on Encino Drive west of Bear Valley Parkway is currently 1,420, but only southbound motorists on Encino Drive have a view of the site. The proposed residential development would develop the existing vacant site, which would be visible from Encino Drive and other nearby residential streets. However, the proposed residential development would be constructed to conform to

the existing site topography and not significantly project above the ridgeline, in accordance with the City Zoning Ordinance and General Plan. The proposed project would not significantly obstruct scenic vistas of distant ridgelines and hilltops for motorists, bicyclists, and pedestrians in this area.

Drivers, bicyclists and pedestrians would have a prominent view of the proposed project on the 3,200-foot corridor of Bear Valley Parkway that borders the residential development site. However, the scenic vistas from Bear Valley Parkway of distant mountains and ridgelines would remain largely in-tact. As shown in the photosimulations (Figure 3.1-2 and Figure 3.1-3), scenic vistas from Bear Valley Parkway in the northbound direction would not be significantly affected by the residential development because distant views from this vantage point are already limited by lower-elevation ridgelines in the foreground. From the southbound direction on Bear Valley Parkway (Figure 3.1-3), the landscaping and houses associated with the proposed residential development would partially block the lower portion of the scenic vista of distant intermediate ridgelines and Bernardo Mountain. Motorists travelling at the 50-miles-per-hour (mph) speed limit on this stretch of Bear Valley Parkway would view this vista for approximately 25 seconds. The impact of this partial obstruction of a scenic vista would not be significant.

The residential development has the potential to obstruct views of distant mountains and ridgelines for motorists traveling on Choya Canyon Road. As shown in the photosimulation (Figure 3.1-4), the proposed landscaping and houses associated with the residential development would block views of Bernardo Mountain and distant intermediate ridgelines from this vantage point. However, the current view is not pristine: it is currently partially obstructed by existing development and landscaping, as well as electrical utility lines. The bare soil and weeds that exist on the proposed project site in the foreground do not enhance the scenic view. Additionally, existing trees already obstruct the view along approximately 20% of the 1,200-foot Choya Canyon Road viewshed. Furthermore, Choya Canyon Road is not a heavily travelled roadway. The Traffic Impact Analysis did not analyze traffic volumes on this roadway, but it can reasonably be assumed that Choya Canyon Road is only used to access the approximately 18 houses located on Choya Canyon, Lexine Lane, and Chaparral Lane. For these reasons, the residential development would have a less-than-significant impact on a valuable scenic vista at this location.

**Specific Alignment Plan Improvements**

As previously discussed, the scenic vistas in the SAP improvements site viewshed consist of distant views of mountains and ridgelines, and nearby views of rock outcroppings, trees, and a perennial drainage. These vistas can be seen from the following public viewpoints: Bear Valley Parkway, Choya Canyon Road, and residential streets to the west of the proposed project, including Amparo Drive, Pamplona Court, and Encino Drive.

As shown in the photosimulations of Bear Valley Parkway (Figure 3.1-2, Figure 3.1-3), the SAP improvements would widen the existing roadway right-of-way, and add roadway elements including a raised, landscaped median and sidewalk. Scenic vistas from Bear Valley Parkway in the northbound direction would not be significantly affected by the SAP improvements because distant views are already limited by lower-elevation ridgelines in the foreground. The SAP roadway improvements have the potential to partially obstruct the scenic vista of distant intermediate ridgelines for motorists travelling south on Bear Valley Parkway. As previously mentioned, motorists travelling at the 50-mph speed limit on this stretch of Bear Valley Parkway would view this vista for approximately 25 seconds. The impact of this partial obstruction of a scenic vista would not be significant.

The roadway widening would impact a small stretch of land to the west and to the east of the SAP improvements site. Impacted areas are currently primarily occupied by vacant land covered in sparse weeds. However, small patches of rock outcroppings and approximately 0.19 acre of the perennial drainage may be disturbed by the SAP improvements, which could impact nearby views of these resources. These impacts would be considered less than significant.

### 3.1.4.2 Issue 2: Scenic Resources within a Scenic Roadway

**Residential Development**

As discussed above, the residential development site is within the viewshed of Bear Valley Parkway. Although Bear Valley Parkway is not a designated state scenic highway, the City has identified it as a scenic corridor. The residential development site, as visible from Bear Valley Parkway, is currently vacant and covered primarily in bare soil and sparse weeds. However, in the southwest corner of the proposed site, there is a perennial drainage with trees and vegetation growing along it, which is considered a scenic resource. The site also has a handful of unique rock outcroppings; however, they are located on the east side of the site and not visible from the Bear Valley Parkway corridor.

The proposed residential development would impact a total of 0.67 acre of southern live oak riparian forest (0.40 acre on site and 0.27 acre off site) from the construction of frontage improvements along Bear Valley Parkway consisting of curb, gutter, sidewalk, parkway, bike lane, and travel lane. There would be no impacts on the perennial channel along the western site boundary and no impacts on the ephemeral channel that runs along the eastern portion of the residential development boundary (Appendix B). A total of 110 trees (including 60 coast live oak) would be removed and 39 trees (including 32 coast live oak) would be preserved in place with protections but encroached on by the proposed project. (Appendix D).

The residential development applicant is required to submit a Tree Mitigation Program to the City Community Development Department (see mitigation measure BIO-7 in Section 3.3). As such, a minimum of 195 trees (including coast live oak and other suitable native or ornamental species) shall be planted within the residential development landscape areas. The Tree

Mitigation Program shall ensure that a minimum of 773 landscape trees are planted on the residential development site. Compliance with this Mitigation Measure will result in the residential development not ultimately damaging scenic resources within a scenic corridor. As such, the proposed residential development would result in a less-than-significant impact on scenic resources within a scenic roadway.

**Specific Alignment Plan Improvements**

As discussed above, Bear Valley Parkway is not a designated state scenic highway; however, the City of Escondido has identified it as a scenic corridor. The portion of Bear Valley Parkway at the location of the proposed SAP improvements is currently two-lanes and most of it lacks full curb, gutter, or sidewalk improvements. As described in detail in Chapter 2, "Project Description," the SAP improvements would widen Bear Valley Parkway and add elements including a median and sidewalks.

The majority of the roadway widening impacts would be on land that is already developed or disturbed. A total of 0.19 acre of southern live oak riparian forest on either side of Bear Valley Parkway would be directly affected by the SAP improvements. However, there would be no impacts in the perennial channel along the boundary of the SAP improvements site (Appendix C). The 0.19 acres equates to approximately 200 linear feet of riparian forest east of the road and 200 feet west of the road. Motorists travelling at the 50 mph speed limit on this stretch of Bear Valley Parkway would view the affected riparian forest for approximately 5.5 seconds.

A total of 42 trees would be removed and 3 trees would be encroached on by the proposed SAP improvements (Appendix E). However, 60 trees would be planted in areas along Bear Valley Parkway to mitigate for the tree impacts (see mitigation measure BIO-8 in Section 3.3). These minimal impacts within a scenic roadway corridor are considered less than significant.

### 3.1.4.3 Issue 3: Visual Character and Quality

**Residential Development**

Visual simulations (see Figures 3.1-2 to 3.1-4) of the proposed project were completed to show what the proposed project would look like in the context of the surrounding community, including the size, architectural style, colors, and landscaping.

As shown in the visual simulations, the proposed residential development includes houses that are similar in scale, architectural style, and coloring to surrounding development. As discussed above, the proposed project site is surrounded largely by communities of rural and spaced residential development to the north, west, south, and northeast. Existing houses surrounding the site are one or two stories on approximately 1/3 to 3 acre lots with established landscaping. Homes in the vicinity of the proposed project are generally neutral in tone with tile or shingle roofs. Architectural design guidelines were established for the proposed residential development, which are intended to ensure the proposed development shares a "look" with

pre-existing residential development in the surrounding area. Future development would be composed of a mix of one- and two-story units with a color palette of predominantly soft earth tones such as beige, browns, greens, or sandy hues. Building accent materials and facades would include a mix of wood, stone, and other material that blends with the conserved natural environment. Roof colors may vary, but bright colored tiles that conflict with the surrounding natural setting would not be permitted. Overall, the proposed residential development would be consistent with the existing surrounding development in terms of scale and style.

Furthermore, the proposed residential development would replace an existing vacant property which is presently covered primarily in bare soil and weeds. The development would add trees and visually appealing landscaping, while conserving the natural topography of the existing ridgeline. Overall, the residential development would improve the visual quality of the site relative to the existing condition, and would be consistent with the character of surrounding developments. Thus, the residential development would have a less than significant character and visual quality impact.

**Specific Alignment Plan Improvements**

As described in detail in Chapter 2, "Project Description," the proposed SAP improvements include bike lanes, sidewalks, retaining wall, raised median, curbs and gutters, and relocated street lights. These improvements would make Bear Valley Parkway compatible with classification as a Major Road, as defined in the General Plan (City of Escondido 2012a). Bear Valley Parkway already has elements compatible with the Major Road classification in the area surrounding the proposed SAP improvements site. For example, from Las Palmas Avenue to Beethoven Drive, south of the proposed project site, Bear Valley Parkway is constructed as a four-lane divided roadway. Thus, the proposed SAP improvements would create consistency along the roadway between the proposed project site and the surrounding area. The SAP improvements would therefore have a less than significant character and visual quality impact.

### 3.1.4.4 Issue 4: Light and Glare

**Residential Development**

The site currently includes one single-family home with a detached garage and no additional exterior lighting. The proposed residential development would demolish the existing house and replace it with 55 housing units. Nighttime exterior lighting would be provided on the residential development site for safety, security, and circulation purposes. Different exterior lighting fixtures would be used, including pole-mounted streetlights and wall-mounted residential lights.

Consistent with Article 35 of the Zoning Ordinance, all exterior lighting fixtures, with the exception of street lamps, would be aimed or shielded so that unnecessary nighttime lighting and glare are reduced for the benefit of the citizens of the city and astronomical research at Palomar Mountain Observatory. Additionally, in accordance with Zoning Ordinance Section 33-

713, street lighting installed on the private streets would comply with the City's Engineering Design Standards and Standard Drawings. Windows on the proposed additional houses and associated cars have the potential to create new sources of glare. However, these land uses would not be inconsistent with existing surrounding development or plans for the residential development site. For these reasons, the residential development would have a less-than-significant impact in regard to new sources of light and glare.

**Specific Alignment Plan Improvements**

Bear Valley Parkway currently has streetlights at the intersections with Zlatibor Ranch Road, Encino Drive, and Sunset/Ranchito Drive. There are also street lights along Bear Valley Parkway between Sunset and Encino Drives. The SAP improvements proposed to relocate street lights to accommodate the widening. However, new street lights are not included in the proposed SAP improvements. Cars on Bear Valley Parkway have the potential to create glare. However, the SAP improvements would not increase the number of cars on the proposed project site. For these reasons, the SAP improvements would have a less-than-significant impact in regard to light and glare.

## 3.1.5 Cumulative Impacts

The analysis above finds that the proposed project would have a less-than-significant impact regarding aesthetics. There are no pending projects in the project viewshed. The project would have a negligible impact on views along Bear Valley Parkway and Choya Canyon Road of intermediate ridgelines and distant mountains. The scenic resources on site that contribute to the views from Bear Valley Parkway consist of the trees along the perennial drainage. The residential development would implement a Tree Mitigation Program and therefore have a less than significant contribution to scenic resource impacts. The proposed project would not result in a significant cumulative viewshed character or quality impact because development associated with the proposed project would conform to the visual character of existing surrounding communities. Furthermore, the residential development would comply with Escondido's lighting requirements that are intended to protect the night sky from cumulative light impacts, and the SAP improvements would not change existing levels of illumination. For these reasons, cumulative aesthetic impacts would be less than significant.

## 3.1.6 Significance of Impacts prior to Mitigation

The proposed project would result in a less-than-significant impact on scenic vistas, scenic resources within a scenic roadway, visual character and quality, and light and glare. Potential impacts on visual and aesthetic resources from the proposed overhead power line relocation described in Section 2.5.1.6 were analyzed as part of this EIR and found to be less than significant.

### 3.1.7 Mitigation Measures

As the proposed project would have less-than-significant aesthetic impacts, no mitigation is required.

### 3.1.8 Conclusion

The project would have less-than-significant aesthetic impacts.

## 3.2 Agricultural Resources

This section of the Environmental Impact Report (EIR) describes and evaluates potential impacts on agricultural resources that could result from implementation of the proposed project. This section is based on the information provided by the City of Escondido (City); the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP); the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey Geographic Database (SSURGO); and other sources, as cited throughout the document. General information in this section is taken from the *Escondido General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Final Environmental Impact Report* (General Plan Program EIR) (City of Escondido 2012b) unless otherwise referenced. Site-specific information is derived from the Geotechnical Investigation prepared by Vinje & Middleton Engineering, Inc. in 2013 (Appendix I-1) and associated update prepared in 2014 (Appendix I-2). In addition, historical site information is based on the Phase I Environmental Site Assessment (ESA) prepared by Vinje & Middleton Engineering, Inc. in 2013 (Appendix L-1).

### 3.2.1 Existing Conditions

The proposed residential development site has a history of agriculture uses but is not currently in agricultural use. According to aerial photographs, the site was used for growing citrus fruit and avocados for at least 48 years. Aerial imagery in 1990 shows the presence of the tree crops, but the trees had been removed as of a 1995 aerial survey. The oldest aerial images from 1947 show that the site was being used for agriculture, but farming activities may have started before that. Agricultural production has not occurred on the property since 1995. The proposed residential development site is presently vacant with remnants of the citrus and avocado groves, including tree stumps, older irrigation pipeline, valves, and a stockpile of metal irrigation pipe on the hilltop.

The proposed approximately 2.60-acre Bear Valley Parkway full-width Specific Alignment Plan improvements (SAP improvements) would occur largely within the existing roadway right-of-way. The SAP improvements would require an additional six-tenths of one acre of land currently designated as Estate II (Large Lot Single Family Residential, 1 dwelling unit [du] per 0.5, 1, 20 acres) to be dedicated to the City of Escondido in the future. Given the minimal amount of potential agricultural land within the boundary of the SAP improvements site, the evaluation of the current agricultural resources below focuses primarily on resources potentially present on the residential development site. The evaluation below is based on farmland mapping and designations, agricultural soil conditions, water resource availability, and surrounding uses.

### 3.2.1.1 Farmland Mapping

The California Environmental Quality Act (CEQA) Statute Section 21060.1 references maps produced by the FMMP as a resource that may be used to identify agricultural resources. In addition, CEQA Appendix G identifies lands covered by a Williamson Act contract as potential agricultural resources. Locally, the *City of Escondido General Plan* (General Plan) (City of Escondido 2012a) also identifies potential agricultural resources. This section discusses each of these farmland mapping resources below.

**Williamson Act Contract Lands**

As described in more detail in the "Regulatory Framework" section, the California Land Conservation (Williamson) Act provides tax incentives for private landowner-local agency partnerships to slow the conversion of agricultural lands. According to the most recent Department of Conservation's Williamson Act Program maps for San Diego County (County) published November 2013, the proposed residential development site and proposed SAP improvements site are not in an area under a Williamson Act contract (California Department of Conservation 2016d).

**Farmland Mapping and Monitoring Program**

This analysis consulted the FMMP maps to identify potential farmland at the proposed residential development site. The FMMP rates agricultural land in California according to soil quality and irrigation status. The categories of farmland are as follows:

- Prime Farmland (P): Farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land in this category must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- Farmland of Statewide Importance (S): Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- Unique Farmland (U): Farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include nonirrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.
- Farmland of Local Importance (L): Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee. Farmland of Local Importance is either currently producing, or has the capability of production, but does not meet the criteria of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. Authority to adopt or to recommend changes to the

category of Farmland of Local Importance rests with the Board of Supervisors in each county.

- Grazing Land (G): Land on which the existing vegetation is suited to livestock grazing. It has a minimum mapping unit of 40 acres and was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities.
- Urban and Built-Up Land (D): Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.
- Water (W): Perennial water bodies with an extent of at least 40 acres.
- Other Land (X): Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

The California Department of Conservation is currently working on publishing 2014 FMMP data for San Diego County. Thus, the most recent FMMP data for the proposed project are from 2012. As presented in Table 3.2-1, the land at the proposed residential development site is designated as Farmland of Local Importance.

**Table 3.2-1 Farmland Mapping and Monitoring Program Categories on the Residential Development Site**

| Farmland Mapping and Monitoring Program Land Classification | Estimated Project Acres |
|---|---|
| Prime Farmland (P) | 0 |
| Farmland of Statewide Importance (S) | 0 |
| Unique Farmland (U) | 0 |
| Farmland of Local Importance (L) | 40 |
| Grazing Land (G) | 0 |
| Water (W) | 0 |
| Other Land (X) | 0 |
| **Approximate total acres** | **40** |
| Source: FMMP 2012. | |

The County defines Farmland of Local Importance (L) as follows:

> Land that meets all the characteristics of Prime and Statewide Importance, with the exception of irrigation. Farmlands not covered by the above [P, S, U] categories, but are of significant economic importance to the county. They have a history of good production for locally adapted crops. The soils are grouped in types that are suited for truck crops (such as tomatoes, strawberries, cucumbers, potatoes, celery, squash, romaine lettuce, and cauliflower) and soils suited for orchard crops (avocados and citrus).

**City of Escondido General Plan**

This analysis also consulted the General Plan to identify potential farmland at the proposed project site. The City identifies agricultural sites in Figure VII-6 of its General Plan. Per this map, the residential development site is considered an agricultural area (City of Escondido 2012a).

However, the General Plan designates the residential development site as Estate II (Figure II-1), which is generally intended to be used for spaced single-family development on relatively large lots and properties that transition between more intensive suburban development and Estate I. Furthermore, the residential development site is zoned RE-20 (Residential Estates with a minimum lot size of 20,000 square feet [sf]). While the Residential Estates zone allows provisions for the maintenance of limited agricultural pursuits such as truck crops (vegetables, berries, and melons), orchards and vineyards (fruits and tree nuts), horticultural specialties, and keeping of horses the purpose of the Residential Estates zone is to provide an area to be developed exclusively for single-family dwellings in a rural setting. (City of Escondido 2012a and City of Escondido n.d.).

### 3.2.1.2 Agricultural Resources

The California Agricultural Land Evaluation and Site Assessment (LESA) Model first addresses soil quality and then considers social, economic and geographic attributes to evaluate agricultural resources. The social, economic, and geographic attributes more specifically consider the project size and the acreage of suitable agricultural soils, availability of water resources, surrounding agricultural land rating, and the surrounding protected resource land rating. The analysis below considers those same factors to evaluate agricultural resources.

**Agricultural Soils**

Soil conditions affect the ability of a site to be used for agricultural operations. Per the geotechnical evaluation (Appendices I-1 and I-2), the residential development site consists of underlying crystalline bedrock mantled by surficial soils. Shallow topsoil deposits were found along the ridgelines and hilltops at the property. The topsoil consists of silty sand in overall damp and very loose conditions. A modest to thick mantle of colluvial soils, consisting largely of fine- to medium-grained sandy deposits and some clay-bearing soils, was found in the lower

perimeter terrain and hillside areas of the site. In the canyon flow line in the southern area of the property, the geotechnical survey found exposed alluvium deposits.

The Storie Index and Land Capability Classification (LCC) ratings developed by the NRCS commonly are used to determine the suitability of soils for agricultural use. These ratings are typically determined by site-specific surveys completed by the NRCS. As no site-specific survey was completed for this project, this analysis relies on agricultural analyses from other nearby projects and the associated SSURGO database. Based on the SSURGO mapping for the area, the residential development site includes Fallbrook sandy loam, Ramona sandy loam, and steep gullied land (Table 3.2-2). The corresponding LCC and Storie Index and the project site ratings are addressed further below, as well as the General Plan information regarding soils onsite.

**Table 3.2-2 Agricultural Soils on the Residential Development Site**

| SSURGO Map Unit Key | SSURGO Map Unit Key Soil Description | Estimated Project Acres | LCC | Storie Index |
|---|---|---|---|---|
| FaD2 | Fallbrook sandy loam, 9 to 15% slopes, eroded | 5 | Class IV | 40 to 59 |
| FaE2 | Fallbrook sandy loam, 15 to 30% slopes, eroded | 15 | Class VI | 20 to 39 |
| RaB | Ramona sandy loam, 2 to 5% slopes | 7 | Class II | 60 to 79 |
| RaD2 | Ramona sandy loam, 9 to 15% slopes, eroded | 9 | Class IV | 40 to 59 |
| StG | Steep gullied land | 4 | - | - |
| **Total** | | **40** | **-** | **-** |

Sources: NRCS 2015, County of San Diego 2010a and 2010b.
LCC = land capability classification

**Land Capability Classification**

The LCC ratings classify soils according to their limitations when cultivated and to the way they respond to management practices. Class I soils have no significant limitation for raising crops. Classes VI through VIII have severe limitations that generally preclude their use for agriculture.

As mentioned above, a Soils Resources Report was not prepared by the NRCS for the proposed project. However, according to similar reports conducted for other projects in the vicinity, Fallbrook sandy loam, 9 to 15% slopes, eroded generally has an LCC of Class IV; Fallbrook sandy loam, 15 to 30% slopes, eroded generally has an LCC of Class VI; Ramona sandy loam, 2 to 5% slopes generally has an LCC of Class II; Ramona sandy loam, 9 to 15% slopes, eroded generally has an LCC of Class IV; and Steep Gullied Land is not rated for soil quality. Based on this soils information, approximately 29 acres of the site would have limited agricultural capability, and approximately 7 acres of the site would not have limited agricultural capability.

**Storie Index**

The Storie Index, another traditional measure of soil quality, uses a 100-point scale to numerically express the relative degree of suitability or value of a soil for general intensive agriculture. Higher ratings indicate higher quality soils. The Storie Index rating is based on several factors such as profile characteristics (affecting root penetration); surface soil texture

(affecting the ease of tillage and capacity of soil to hold water); slope (affecting soil erosion); and other unique limiting factors of the soil such as poor drainage, high water table, salinity, and acidity. Productive agriculture in the County typically occurs on soils with low Storie Index ratings (typically in the 30's).

According to reports conducted for other projects in the vicinity, Fallbrook sandy loam, 9 to 15% slopes, eroded generally has a Storie Index in the range of 40 to 59; Fallbrook sandy loam, 15 to 30% slopes, eroded generally has a Storie Index in the range of 20 to 39; Ramona sandy loam, 2 to 5% slopes generally has a Storie Index in the range of 60 to 79; Ramona sandy loam, 9 to 15% slopes, eroded generally has a Storie Index in the range of 40 to 59; and steep gullied land is not rated for soil quality. Similar to the LCC results, the Storie Index ratings of soils onsite indicate that approximately 29 acres of the site would be suitable to only a few crops and would require special management, and approximately 7 acres of the site would be suitable for most crops with minor limitations.

**City of Escondido General Plan**

The General Plan Program EIR identified the approximately 7 acres of Ramona sandy loam, 2 to 5% slopes that are present at the residential development site as Prime Agricultural Soil (City of Escondido 2012b, Figure 4.2-2).

### 3.2.1.3 Availability of Water Resources

The availability of water resources to a property can affect the site's potential for agricultural production. Thus, the availability of water resources is a factor to consider when determining whether a property is a potentially valuable agricultural resource. Per the Geotechnical Study and Phase I ESA (Appendix I-1 and Appendix L-1), water is provided to the existing single-story residential structure at the project site by the City. Three hand-dug irrigation water wells with 15-horsepower pumps that were installed in 1946 were observed on the site. Older irrigation pipelines and valves also exist on the site, remnants of the previous avocado and citrus groves. The irrigation piping was installed around 1938. Surface water flows have been observed on the southwest corner of the site. Subsurface water was not encountered during the test excavations for the Geotechnical Study; however, the depth to groundwater was estimated to be shallow in the Phase I ESA. Based on the limited amount of information in the Geotechnical Study and Phase I ESA, it can conservatively be assumed that water resources are available to the property.

### 3.2.1.4 Surrounding Uses

In accordance with the LESA model, this section of the EIR considers the agricultural land ratings and the potential for protected agricultural resources within the project's zone of influence (a 0.25-mile buffer around the proposed project site). Within this surrounding area, there are no Williamson Act contract lands. As shown in Table 3.2-3, the FMMP classifies the

majority of the surrounding land as Urban and Built-Up. There are 62 acres of Farmland of Local Importance, and the rest is identified as Other Land.

**Table 3.2-3 Farmland Mapping and Monitoring Program Categories in Surrounding Land**

| Farmland Mapping and Monitoring Program Land Classification | Estimated Acres |
|---|---|
| Prime Farmland (P) | 0 |
| Farmland of Statewide Importance (S) | 0 |
| Unique Farmland (U) | 0 |
| Farmland of Local Importance (L) | 62 |
| Grazing Land (G) | 0 |
| Water (W) | 0 |
| Urban and Built-up Land (D) | 206 |
| Other Land (X) | 48 |
| **Approximate total acres** | **316** |
| Source: FMMP 2012. | |

The General Plan Program EIR identified Prime Agricultural Soils within the 0.25 mile zone of influence of the proposed project site, although an acreage estimate is difficult to decipher from the figure (City of Escondido 2012b, Figure 4.2-2). LCC and Storie Index agricultural soils ratings in the surrounding land are presented in Table 3.2-4. According to the LCC, 53 acres are suitable for agriculture, 133 acres have severe or very severe farming limitations, and 127 acres have limitations that restrict their use to non-cropland purposes. The Storie Index indicates that a range of crop choices could be grown on approximately 53 acres, while 260 acres would be unsuitable or would have severely limited options for agricultural activities. The 3 acres of Steep Gullied Land on site are not assigned LCC or Storie Index ratings.

**Table 3.2-4 Agricultural Soils in Surrounding Land**

| SSURGO Map Unit Key | SSURGO Map Unit Key Soil Description | Estimated Acres | LCC | Storie Index |
|---|---|---|---|---|
| FaC2 | Fallbrook sandy loam, 5 to 9% slopes, eroded | 20 | Class III | 40 to 59 |
| FaD2 | Fallbrook sandy loam, 9 to 15% slopes, eroded | 79 | Class IV | 40 to 59 |
| FaE2 | Fallbrook sandy loam, 15 to 30% slopes, eroded | 118 | Class VI | 20 to 39 |
| FvE | Fallbrook-Vista sandy loam, 15 to 30% slopes | 8 | Class VI | 40 to 59 |
| RaB | Ramona sandy loam, 2 to 5% slopes | 53 | Class II | 60 to 79 |
| RaC2 | Ramona sandy loam, 5 to 9% slopes, eroded | 17 | Class III | 40 to 59 |
| RaD2 | Ramona sandy loam, 9 to 15% slopes, eroded | 17 | Class IV | 40 to 59 |
| StG | Steep gullied land | 3 | - | - |
| VvG | Vista rocky course sandy loam, 30 to 65% slopes | 1 | Class VII | 0 to 19 |
| **Total** | | **316** | **-** | **-** |
| Sources: NRCS 2015, County of San Diego 2010a and 2010b, USDA 1973.<br>LCC = land capability classification | | | | |

## 3.2.2 Regulatory Framework

### 3.2.2.1 Federal Regulations

**Agricultural Conservation Easement Program**

The Agricultural Act of 2014 established the Agricultural Conservation Easement Program and repealed the Farm and Ranch Lands Protection Program (FRPP), a voluntary program that helped farmers and ranchers keep their land in agriculture. The Agricultural Conservation Easement Program combines the purposes of the FRPP with the similarly repealed Grassland Reserve Program into new agricultural land easements, which protect the agricultural use and conservation values of eligible farm and ranch land. The NRCS manages the program. Under the agricultural land easements, NRCS may contribute up to 50% of the fair market value of an agricultural land easement to Native American tribes, state and local governments, or non-governmental organizations.

**Farmland Protection Policy Act**

Congress passed the Agriculture and Food Act of 1981, containing the Farmland Protection Policy Act (FPPA) to protect American farmland and to combat urban sprawl and the waste of energy and resources that accompanies sprawling development. The purpose of the FPPA is to minimize the impact of federal programs on conversion of farmland to nonagricultural uses. Federal agencies are required to develop and review their policies and procedures to implement the FPPA every 2 years. For the purposes of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland that meets FPPA requirements does not have to be currently used for agriculture.

### 3.2.2.2 State Regulations

**California Civil Code Section 3482.5 (The Right to Farm Act)**

The Right to Farm Act is designed to minimize farm-urban edge conflicts. It states that no agricultural activity conducted in a "manner consistent with proper and accepted customs and standards" shall become a nuisance due to a change in land use around the locality. The Right to Farm Act applies to agricultural activities, operations, or facilities that have been in operation for more than 3 years if they were not a nuisance at the time they began.

**California Farmland Conservancy Program Act**

Originally, the Agricultural Land Stewardship Program Act of 1995, the California Farmland Conservancy Program Act promotes the long-term, voluntary conservation of farming and ranching lands by offering landowners financial incentives. The California Farmland Conservancy Program encourages local land use planning for orderly and efficient urban growth and conservation of agricultural land statewide by providing grant funding for easement and planning projects.

**California Land Conservation Act (Williamson Act)**

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act in honor of its author, John Williamson, is another California State program designed to encourage the voluntary conservation of agricultural lands. It allows for 10-year contracts between landowners and local governments that voluntarily restrict development on parcels, thereby protecting agriculture and open space from premature and unnecessary urban development. In return, the land under contract is assessed and taxed according to its actual use, and the State allocates payments to local governments based on acreage enrolled in the program. Participation in the Williamson Act program involves approximately 16 million acres statewide, which represents about one-half of the state's agricultural land.

**California Agricultural Land Evaluation and Site Assessment Model**

The California LESA Model is a point-based approach to rating the relative quality of land based on six measurable factors. Two land evaluation factors are based on measures of soil resource quality. Four site assessment factors assess a given project's size, availability of water resources, surrounding agricultural lands, and surrounding protected resource lands. The factors are weighted and combined, resulting in a single numerical score for a given project on a 100-point scale. Developed by the NRCS in 1981, the LESA approach was initially used at the federal level for addressing potential impacts of federal programs (e.g., funding of highway construction) on farmland protection. The formulation of the California LESA Model was the result of Senate Bill 850 (Chapter 812/1993), which called for an amendment to Appendix G of the State CEQA Guidelines "to provide lead agencies with an optional methodology to ensure that significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process." The LESA approach can be modified to reflect regional and local conditions, and at least 200 jurisdictions have developed local LESA methodologies nationwide.

**Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000**

The goal of the Cortese-Knox-Hertzberg Local Government Reorganization Act is to promote orderly development and to balance that development with the often competing priorities of discouraging urban sprawl, preserving prime agricultural lands and open space, and efficiently extending government services. The Act established procedures for local government organization changes, including city incorporations, annexations to a city of a special district, and city and special district consolidations.

The following California Government Code sections are associated with the Cortese-Knox-Hertzberg Local Government Reorganization Act:

**California Government Code Section 56016** defines "agricultural lands" to mean land currently used for the purpose of producing an agricultural commodity for commercial purposes, land left fallow under a crop rotational program, or land enrolled in an agricultural subsidy or set-aside program.

**California Government Code Section 56064** defines "prime agricultural land" to mean any area of land that has not been developed for a use other than agriculture and that meets any of the following qualifications:

a. Land that qualifies, if irrigated, for rating as class I or class II in the USDA NRCS land use capability classification, whether or not land is actually irrigated, provided that irrigation is feasible.
b. Land that qualifies for rating 80 through 100 Storie Index Rating.
c. Land that supports livestock used for the production of food and fiber and that has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture in the National Range and Pasture Handbook, Revision 1, December 2003.
d. Land planted with fruit or nut-bearing trees, vines, bushes, or crops that have a nonbearing period of less than five years and that will return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than four hundred dollars ($400) per acre.
e. Land that has returned from the production of unprocessed agricultural plant products an annual gross value of not less than four hundred dollars ($400) per acre for three of the previous five calendar years.

**California Government Code Section 56377** refers to powers of a local agency formation commission. It states:

In reviewing and approving or disapproving proposals which could reasonably be expected to induce, facilitate, or lead to the conversion of existing open-space lands to uses other than open-space uses, the commission shall consider all of the following policies and priorities:

a. Development or use of land for other than open-space uses shall be guided away from existing prime agricultural lands in open-space use toward areas containing nonprime agricultural lands, unless that action would not promote the planned, orderly, efficient development of an area.
b. Development of existing vacant or nonprime agricultural lands for urban uses within the existing jurisdiction of a local agency or within the sphere of influence of a local agency should be encouraged before any proposal is approved which would allow for or lead to the development of existing open-space lands for non-open-space uses which are outside of the existing jurisdiction of the local agency or outside of the existing sphere of influence of the local agency.

**California Government Code Section 56668(e)** says that review of a proposal shall consider, among other factors, the effect of the proposal on maintaining the physical and economic integrity of agricultural lands, as defined by Section 56016.

**Farmland Mapping and Monitoring Program**

As explained in the "Existing Conditions" section above, the FMMP provides data and maps of California's agricultural resources, which are used in assessing current status, reviewing trends, and planning for the future. Administered by the California Department of Conservation since 1982, agricultural land is rated according to soil quality and irrigation status. The best quality land is called Prime Farmland; other categories include Farmlands of Statewide Importance and Unique Farmlands. The maps are based on a computer mapping system, aerial imagery, public review, and field reconnaissance, and are updated every 2 years. Data are available from 1984 to the present. FMMP maps agricultural and urban land use on nearly 98% of the state's privately held land.

**Open Space Subvention Act**

The Open Space Subvention Act of 1972 provides for the partial replacement of local property tax revenue foregone as a result of participation in the Williamson Act and other enforceable open space restriction programs (Government Code Section 16140 et seq.). Participating local governments have received annual payments on the basis of quantity (number of acres); quality (soil type and agricultural productivity); and, for Farmland Security Zone contracts, location (proximity to a city) of land enrolled under eligible enforceable open space restrictions. Payments associated with the Act totaled more than $863 million between 1972 and 2010.

**Sustainable Agricultural Lands Conservation Program**

The Sustainable Agricultural Lands Conservation Program is a component of the Affordable Housing and Sustainability Program (AHSC). Senate Bill 862, Statutes of 2014 established the AHSC Program, to be administered by the Strategic Growth Council, "to reduce greenhouse gas emissions through projects that implement land use, housing, transportation, and agricultural land preservation practices to support infill and compact development." The AHSC Program is funded by the Greenhouse Gas Reduction Fund. The Sustainable Agricultural Lands Conservation Program complements investments made in urban areas with the purchase of agricultural conservation easements, development of agricultural land strategy plans, and other mechanisms that result in greenhouse gas reductions.

### 3.2.2.3 Local Regulations

**City of Escondido General Plan**

The General Plan addresses agricultural resources in the Resource Conservation Element (City of Escondido 2012a). The following agricultural goals and policies are relevant to this analysis:

- GOAL 4: Preservation of agricultural resources and continuation of agricultural production in appropriate areas within Escondido.

- Agricultural Resources Policy 4.1: Maintain large-lot residential land uses with appropriate zoning designations in agricultural areas that are compatible with preserving agricultural productivity.
- Agricultural Resources Policy 4.2: Require agricultural lands to be physically separated from more intensive urban development with intermediate land uses that are mutually compatible, and use landscape screening methods to minimize urban and agricultural conflicts.
- Agricultural Resources Policy 4.3: Explore a variety of techniques to preserve existing agricultural lands including:
  a. Agricultural Land Trusts designed as nonprofit corporations organized according to the Nonprofit Public Benefit Corporation Law of California and Section 501(c)(3) of the Internal Revenue Code.
  b. Transfer development rights from existing agricultural lands to other portions of the project or City-approved receiver sites, thereby preserving the agricultural lands in permanent open space, consistent with clustering policies.
  c. The "right to farm" in open space areas.

### 3.2.3 Thresholds of Significance

The State CEQA Guidelines Appendix G (14 CCR 15000 et seq.) has identified significance criteria to be considered for determining whether a project could result in significant impacts on existing agricultural resources.

An impact would be considered significant if construction or operation of the proposed project would have any of the following consequences:

- Convert farmland to a non-agricultural use;
- Conflict with existing zoning for agricultural use, or a Williamson Act contract; or
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to a non-agricultural use.

### 3.2.4 Project Impacts

#### 3.2.4.1 Issue 1: Direct Conversion of Agricultural Resources

**Residential Development**

Evaluation of the proposed residential development site as an agricultural resource was based on soil conditions in addition to social, economic and geographic factors. As described under the existing conditions, the site includes approximately 7 acres of Prime Soils, and the entire site is classified as Farmland of Local Importance. The site was also previously used for agricultural operations, and water is assumed to be available to the site. However, there are secondary social, economic, and geographic factors that affect the ability to use the site for future agricultural use. These considerations are discussed further below.

The size of the proposed residential development site and the current land uses surrounding its borders limit its potential for agricultural use. The property is approximately 40.62 acres; however, most of that area has steep slopes or eroded soil, or is occupied by drainages—leaving only approximately 7 acres of the site suitable for farming. The site is also surrounded by residential development to the north, northeast, south, and west. Conflicts arising from the urban-agricultural interface limit the site's potential for agricultural production.

The City's adopted planning and zoning policies recognize that low-density residential, rather than agriculture, is a more desirable long-term use for the project. The General Plan designates the residential development site as Estate II (Large Lot Single Family Residential, 1 du per 0.5, 1, 20 acres)), which is meant to accommodate detached single-family homes on large lots in areas on the edge of urban development (City of Escondido 2012a). It is currently zoned Residential Estate, with a minimum lot size of 20,000 square feet (RE-20) (City of Escondido 2014). The General Plan Program EIR explains that, while the Estate II land use designation allowed for limited agricultural activities under the City's 1990 General Plan, under the policies of the 2012 General Plan, agricultural operations would not be accommodated in the Estate II land use designation (City of Escondido 2012b). The proposed residential development would be consistent with the site's land use designation and zoning policies. As a residential development with lot sizes of 10,000 to 24,500 square feet, seven open space lots, and architectural design criteria stipulating one- and two-story ranch-style homes, the proposed residential development would conform to the goals of the General Plan.

Agricultural resources are conserved regionally through the General Plan. The Resource Conservation Element of the General Plan supports agricultural activities in the city while planning for the transition of certain properties to other uses in a manner consistent with the Land Use Element and Community Form Element of the General Plan. The Land Use Element promotes the continuance of farming within Rural I and Rural II designations and has an R-A zone (Residential Agriculture) available for those parcels planned for agricultural use. Agricultural activities are also allowed within the Estate I designation. The General Plan Program EIR concluded that implementation of the General Plan would potentially result in the direct and cumulative conversion of 3,546 acres of agricultural resources to non-agricultural use. The proposed residential development, with its Estate II designation, would have been included in that acreage. Due to the multiple policies within the General Plan that promote the preservation of agricultural resources, the General Plan Program EIR concluded that the conversion of agricultural resources to non-agricultural uses would be less than significant (City of Escondido 2012b).

In conclusion, while the site was previously used for agricultural operations and includes agricultural soils, the General Plan designates the site as Estate II and agricultural uses are no longer encouraged on site. The General Plan effects on agricultural resources were addressed in the General Plan Program EIR, which determined impacts on agricultural resources to be less than significant. Thus, development of the proposed residential development site with

residential uses in accordance with the General Plan would result in a less than significant impact related to direct conversion of agricultural resources.

**Specific Alignment Plan Improvements**

The proposed approximately 2.60-acre Bear Valley Parkway SAP improvements would occur largely within the existing roadway right-of-way. The SAP improvements would address goals in the General Plan Mobility Element such as bicycle and pedestrian access, and would add elements to Bear Valley Parkway that would make it compliant with infrastructure requirements for classification as a Major Road, including a median, bike lanes and sidewalks. The SAP improvements would require an additional six-tenths of one acre of land currently designated as Estate II (Large Lot Single Family Residential, 1 du per 0.5, 1, 20 acres) to be dedicated to the City of Escondido in the future. Given the minimal amount of potential agricultural resources within the boundary of the SAP improvements site, the proposed SAP improvements would have a less-than-significant impact related to direct conversion of agricultural resources.

### 3.2.4.2 Issue 2: Land Use Conflicts

**Residential Development**

The residential development site is not currently being farmed, nor has it been farmed for two decades. The site does not have a Williamson Act contract, and the General Plan designation does not encourage agricultural uses on site. As previously explained, the proposed residential development is in the Estate II (Large Lot Single Family Residential, 1 du per 0.5, 1, 20 acres) land use designation. The purpose of the Estate II land use designation under the General Plan is to accommodate detached single-family residential homes on large lots and is not designed to encourage agriculture. The project proposes residential land uses in accordance with the General Plan Estate II designation and would not include agricultural production.

The proposed residential development would also carry out the public purposes of City zoning policies. The existing zoning at the project site is Residential Estates with minimum lot sizes of 20,000 square feet (RE-20); the project proposes to rezone the site to Planned Development. Planned Development zoning is intended to "provide a more flexible regulatory procedure by which the basic public purposes of the Escondido General Plan and the Escondido Zoning Code may be accomplished" (City of Escondido n.d.).

In summary, there would be no impacts related to agricultural land use conflicts. The General Plan promotes residential use of the proposed residential development site, rather than preserving the property's farming potential. The proposed Planned Development (P-D) zone at the site would implement the policy objectives of the site's Estate II land use designation. Therefore, the proposed residential development would not conflict with zoning for agricultural use or a Williamson Act contract.

**Specific Alignment Plan Improvements**

The SAP improvements site does not have a Williamson Act contract. Similar to the residential development, the SAP improvements site is in the Estate II (Large Lot Single Family Residential, 1 du per 0.5, 1, 20 acres) land use designation, which does not encourage agricultural uses (City of Escondido 2012a). The majority of the SAP improvements would occur within the existing roadway right-of-way and address goals in the General Plan Mobility Element to make Bear Valley Parkway compliant with requirements for classification as a Major Road. Therefore, the proposed SAP improvements would not conflict with existing zoning for agricultural use or a Williamson Act contract and no impact would occur.

### 3.2.4.3 Issue 3: Indirect Conversion of Agricultural Resources

**Residential Development**

The proposed residential development would be located on two parcels (Assessor's Parcel Number [APN] 237-131-01 and 237-131-02) that are identified as Farmland of Local Importance by the FMMP. Within the project's zone of influence, as informed by the California LESA Model, two other areas within the Unincorporated Area of San Diego County have also been identified as Farmland of Local Importance. The first area, north of the project on the other side of Bear Valley Parkway, is approximately 11.5 acres on APN 237-130-07. The second area, east of the proposed project, covers approximately 50 acres and 12 separately owned parcels (APNs 239-130-22, -23, -32, -50, -54, and -55; and APNs 237-141-04, -05, -13, -16, -18, and -20). Two additional areas within the proposed project's zone of influence are within the city's boundaries and are identified as Farmland of Local Importance. The first area, southeast of the project, covers approximately 2 acres and is mostly on APNs 239-050-18 and -52. The second area, on the proposed project's southern border, is approximately 1 acre on APN 239-050-20. In addition to the FMMP maps, these areas were identified in the General Plan as agriculturally significant sites (City of Escondido 2012a, Figure VII-6).

The proposed residential development would fragment a 105-acre swath of land identified as Farmland of Local Importance by the FMMP (City of Escondido 2012b, Figure 4.2-1). However, the fragmentation would not necessarily affect the ability of those areas to be used for agricultural purposes. The addition of the proposed residential uses to the site would not significantly alter the ability to use the surrounding areas for agricultural purposes, as the area already has a significant amount of residential uses. Also, the adjacent parcels are independently owned, and farming practices on those parcels are not interdependent with land uses at the proposed project site. The two areas south of the proposed project that are within the city's boundaries and identified as agricultural resources by the FMMP and the City, have the highest potential for indirect impacts. Implementation of the proposed project would cause these two areas to be almost completely surrounded by low-density residential development, creating conflicts related to land values and the urban/agriculture interface. However, conversion of these areas would be consistent with long-range, regional plans because the two areas have the same land use designation as the project: Estate II (Large Lot Single Family Residential, 1 du per 0.5, 1, 20 acres) in the General Plan.

Although the proposed residential development would fragment a swath of agriculturally significant land, the project would not affect land use activities on adjacent lands within the County's unincorporated boundaries, considering that residential uses already exist in the area. Conversion of agriculturally significant sites adjacent to the proposed project within the city limits would be consistent with long-range planning policies. Thus, impacts related to indirect conversion of agricultural resources would be less than significant.

**Specific Alignment Plan Improvements**

The majority of the proposed SAP improvements would occur within the existing roadway right-of-way, although they would require an additional six-tenths of one acre of land to be dedicated to the City of Escondido in the future. Considering that the roadway already exists, the proposed SAP improvements are not anticipated to affect land use activities on adjacent land. Similar to the proposed residential development, conversion of agriculturally significant sites adjacent to the proposed project within city boundaries would be consistent with long-range planning policies. Thus, there would be no impact related to indirect conversion of agricultural resources.

## 3.2.5 Cumulative Impacts

The geographic scope for this cumulative analysis of agricultural resources includes the San Diego County region.

### 3.2.5.1 Issue 1: Direct Conversion of Agricultural Resources

In general, agricultural resources are in decline in the San Diego County region. This decline can be attributed, in part, to the increasing population in the region and subsequent pressures that would require the direct conversion of lands supporting agricultural resources to non-agricultural uses. Cumulative impacts in the incorporated cities and unincorporated County would have the potential to convert agricultural lands and resources to non-agricultural uses from development of land uses that are incompatible with agriculture. Therefore, cumulative projects would result in a potentially significant impact related to the direct conversion of agricultural resources in the San Diego County region.

As discussed above, implementation of the proposed project would result in less-than-significant impacts related to the direct conversion of agricultural resources. Therefore, in combination with other cumulative projects, the proposed project would not result in a cumulatively considerable contribution to a regionally significant impact related to the direct conversion of agricultural land.

### 3.2.5.2 Issue 2: Land Use Conflicts

Within the San Diego County region, incorporated cities (including Escondido) and the unincorporated County designate and adopt agricultural preserves, enter into Williamson Act contracts, and adopt agricultural zoning to protect their agricultural resources. Projects that are

subject to discretionary review by the City also are reviewed for Williamson Act contract conflicts based on State CEQA Guidelines Section 15317 (see above). Any identified impacts on agricultural resources from cumulative projects would be mitigated to a level below significant. With these regulations in place, cumulative projects occurring in the San Diego County region would not result in conflicts with existing agricultural zoning or Williamson Act contracts. Therefore, cumulative projects, in combination with the proposed project, would not result in a potentially significant cumulative impact related to agricultural land use conflicts.

#### 3.2.5.3 Issue 3: Indirect Conversion of Agricultural Resources

The indirect conversion of farmland is increasing due to population growth and the subsequent development required to support that growth in the San Diego County region. Land use conflicts often arise from increased agricultural-urban interface areas, high operating costs, and escalating property values. Similar to the proposed project, cumulative projects resulting in urban development are anticipated to indirectly affect the viability of agricultural resources in the region by increasing conflicts related to urban-agricultural interfaces and increasing land values, which would result in a potentially significant cumulative impact.

As explained in the "Project Impacts" section, implementation of the proposed project would result in a less-than-significant impact related to an indirect conversion of agricultural resources. In combination with other cumulative projects, the project would not result in a cumulatively considerable contribution to a regionally significant cumulative impact related to the indirect conversion of agricultural land.

### 3.2.6 Significance of Impacts prior to Mitigation

The proposed project would result in less-than-significant direct and cumulative impacts regarding direct and indirect conversion of agricultural resources to non-agricultural uses and land use conflicts with agricultural zoning or Williamson Act contract lands. Potential impacts on agricultural resources from the proposed overhead power line relocation described in Section 2.5.1.6 were analyzed as part of this EIR and found to be less than significant.

### 3.2.7 Mitigation Measures

The project would result in a less-than-significant impact associated with direct conversion of agricultural resources, conflicts with agricultural land uses, and indirect conversion of agricultural resources. No mitigation is required.

### 3.2.8 Conclusion

The discussion below provides a summary of the conclusions reached in each of the above impact analyses.

### 3.2.8.1 Issue 1: Direct Conversion of Agricultural Resources

The proposed residential development would convert land to a non-agricultural use. About 7 acres of the approximately 40.62-acre residential development site have soils that are suitable for farming, and the site was historically used for growing avocado and citrus fruit. However, agricultural operations have not existed on-site for at least 20 years. The proposed SAP improvements would largely occur within the existing right-of-way. Secondary social, economic, and geographic factors affect the ability to use the site for future agricultural use. Specifically, the proposed project would be consistent with the goals of the General Plan, and existing residential development surrounds the site. For these reasons, the proposed project would result in a less-than-significant impact related to direct and cumulative conversion of agricultural resources. No mitigation is required.

### 3.2.8.2 Issue 2: Land Use Conflicts

There are no agricultural preserve lands or Williamson Act contract lands on the proposed project site. The proposed project would not conflict with the City's land use designation or zoning policies. For these reasons, the proposed residential development would result in a less-than-significant impact related to direct and cumulative agricultural land use conflicts. The proposed SAP improvements would have no direct and cumulative land use conflicts. No mitigation is required.

### 3.2.8.3 Issue 3: Indirect Conversion of Agricultural Resources

The residential development would fragment a 105-acre swath of agricultural resources identified by the FMMP and the General Plan. However, residential uses already exist in the area, and conversion of agriculturally significant sites adjacent to the project within city boundaries would be consistent with the City's long-range planning policies. For these reasons, impacts of the proposed residential development related to indirect conversion of agricultural resources, both directly and cumulatively, would be less than significant, and no mitigation is required. The SAP improvements would largely occur within the existing right-of-way and would be consistent with the City's long-range planning policies. For these reasons, the proposed SAP improvements would have no impact on indirect conversion of agricultural resources, both directly and cumulatively, and no mitigation is required.

## 3.3 Biological Resources

This section of the Environmental Impact Report (EIR) describes the existing biological resources on the proposed project site and in the vicinity, and analyzes the potential for the project to affect significant biological resources. A Biological Resources Technical Report and Arborist Report were prepared by Dudek for the proposed residential development in ~~2016~~2017 (Appendices B and D, respectively). A Biological Resources Technical Report and Arborist Report were also prepared by Dudek for the proposed Specific Alignment Plan (SAP) improvements in 2016 (Appendices C and E, respectively). The following information is based on those reports and, unless otherwise referenced, the *Escondido General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Final Environmental Impact Report* (City of Escondido 2012b).

### 3.3.1 Existing Conditions

This section describes the existing conditions related to biological resources on the proposed project site. The majority of the proposed residential development site was once an avocado orchard; however, the orchard was removed and now is considered disturbed habitat. One occupied residence is in the central portion of the residential development site. The remainder of the proposed residential development site is undeveloped. The proposed SAP improvements would widen Bear Valley Parkway to four lanes in a relatively rural part of Escondido. An unnamed intermittent stream channel, with an overstory of oak riparian, crosses the southern portion of the proposed project site (refer to the perennial stream on Figure 3.3-1). The proposed project site is in an area characterized by low-density single-family residential uses.

#### 3.3.1.1 Vegetation Communities

The proposed project site is substantially disturbed because of the previous land uses as an orchard and the existing single-family residence. There are five vegetation communities/land covers on the proposed project site: southern coast live oak riparian forest, non-native riparian, disturbed southern cactus scrub, disturbed habitat, and developed land. Only the southern coast live oak riparian forest and southern cactus scrub in the southern portion of the site support native vegetation. Table 3.3-1 lists the vegetation communities and their acreages. Figures 3.3-1 and 3.3-2 show the location of each vegetation community on the proposed project site. The following sections provide brief descriptions of the vegetation communities present on the proposed project site.

**Southern Coast Live Oak Riparian Forest**

Approximately 3.35 acres of southern coast live oak riparian forest occurs along the perennial stream channel in the southern portion of the proposed residential development site. Approximately 0.19 acre of southern coast live oak riparian forest occurs on the proposed SAP improvements site along the perennial stream channel. The southern coast live oak riparian forest is dominated by coast live oak (*Quercus agrifolia*), scattered palm trees (*Washingtonia*

*robusta* and *Phoenix dactylifera*), poison oak (*Toxicodendron diversilobum*), edible fig (*Ficus carica*), and velvet ash (*Fraxinus velutina*). Because it is associated with the stream channel, all southern coast live oak riparian forest on the proposed project site is considered under the jurisdiction of the California Department of Fish and Wildlife (CDFW).

**Table 3.3-1. Vegetation Communities on the Proposed Project Site**

| Vegetation Community | Acreage | Percent of Project Site |
|---|---|---|
| | | |
| **Residential Development** | | |
| Southern coast live oak riparian forest | 3.35 | 8.3% |
| Non-native riparian | 0.13 | 0.3% |
| Disturbed southern cactus scrub | 0.17 | 0.4% |
| Disturbed habitat | 36.43 | 89.6% |
| Developed land | 0.54 | 1.4% |
| *Total residential development site* | *40.62* | *100%* |
| **SAP Improvements** | | |
| Southern coast live oak riparian forest | 0.19 | 7.3% |
| Disturbed habitat | 1.02 | 39.2% |
| Developed land | 1.39 | 53.5% |
| *Total SAP improvements site* | *2.60* | *100%* |
| Sources: Appendices B and C. | | |

### Non-Native Riparian

Approximately 0.13-acre of non-native riparian habitat exists on the proposed residential development site. Non-native riparian areas are dominated by Washington fan palms interspersed with edible fig. Non-native riparian areas occur in three locations along the western boundary of the residential development site and adjacent to the perennial stream. The non-native riparian areas on site constitute wetlands under the jurisdiction of the U.S. Army Corps of Engineers (USACE) and Regional Water Quality Control Board (RWQCB) and are also considered CDFW-associated riparian areas.

### Disturbed Southern Cactus Scrub

Approximately 0.17-acre of disturbed southern cactus scrub is located in the southeastern portion of the proposed residential development site. It is a rare form of coastal sage scrub that occurs in relatively isolated areas throughout San Diego County (County) (e.g., Chula Vista, San Pasqual). On the residential development site, this community consists of prickly-pear cactus (*Opuntia littoralis*) and Barbary fig (*Opuntia ficus-indica*), with ruderal species such as castor bean (*Ricinus communis*).

### Disturbed Habitat

Approximately 36.43 acres of the proposed residential development site and 1.02 acres of the proposed SAP improvements site are disturbed habitat. Disturbed habitat typically occurs in

areas where soils have been recently or repeatedly disturbed by grading or compaction, resulting in the growth of very few native perennials. The disturbed habitat on the residential development site is a combination of old orchard, graded lots, and cleared areas. Vegetation on the disturbed habitat areas is sparse and dominated by non-native annual weedy species. The disturbed habitat within the SAP improvements boundary includes the areas adjacent to Bear Valley Parkway that are dominated by non-native annual weedy species and a dirt road that crosses the adjacent stream channel in the southern portion of the proposed project boundary. There is a very small portion of disturbed coastal sage scrub (0.04 acre) that is dominated by black mustard (*Brassica nigra*) and ripgut brome (*Bromus diandrus*) and did not meet the minimum mapping unit of 0.10 acre for special-status vegetation communities; therefore, it is not mapped as a separate vegetation community.

**Developed Land**

Approximately 0.54 acre of the proposed residential development site and 1.39 acres of the proposed SAP improvements site are developed land. "Developed land" refers to existing roads and the single-family residence on the residential development site and Bear Valley Parkway, and adjacent residences on the SAP improvements site.

### 3.3.1.2 Jurisdictional Waters

In 2014, Dudek performed a formal delineation of jurisdictional waters on the proposed residential development site; and in 2016, on the proposed SAP improvements site. Refer to Appendices B and C for complete details regarding the delineations. In general, three types of potential jurisdictional aquatic resources were evaluated. Natural canyon drainages, southern coast live oak riparian forest, and wetlands/associated riparian areas located within the southern coast live oak riparian forest were evaluated for the presence of USACE, RWQCB, and CDFW jurisdictional aquatic resources.

***Residential Development***

There are 3.62 acres of wetlands and non-wetland waters under the jurisdiction of USACE/RWQCB, and streambeds and associated riparian areas under CDFW jurisdiction on the proposed residential development site. This includes 3.48 acres of wetlands/associated riparian areas. Jurisdictional aquatic communities on the project site include southern coast live oak riparian forest and non-native riparian habitat. The jurisdictional areas on the residential development site are shown in Table 3.3-2 and Figure 3.3-1.

USACE/RWCQB has jurisdiction over 0.44 acre of wetlands and stream channels on the proposed residential development site. This includes 0.13 acre of jurisdictional wetlands composed of non-native riparian areas and 0.31 acre of ephemeral and perennial stream channels.

CDFW jurisdiction extends over all the areas under USACE/RWCQB jurisdiction discussed above and includes areas that meet USACE wetland (i.e., hydrophytic) vegetation criteria but lack wetlands hydrology and/or hydric soils indicators. In total, there are 3.62 acres of CDFW jurisdictional resources on the proposed residential development site. This includes 3.48 acres of associated riparian habitat (3.35 acres of southern coast live oak riparian forests and 0.13 acre of non-native riparian habitat) and 0.31 acre of stream channels (0.14 acre of ephemeral stream channel and 0.17 acre of perennial stream channel[1]).

**Table 3.3-2 Jurisdictional Aquatic Resources on the Proposed Residential Development Site**

| Jurisdictional Aquatic Resource | CDFW Riparian Area (acres) | USACE/RWQCB Wetland (acres) |
|---|---|---|
| Southern coast live oak riparian forest | 3.35 | -- |
| Non-native riparian | 0.13 | 0.13 |
| *Total riparian/wetlands* | *3.48* | *0.13* |
| **Jurisdictional Aquatic Resource** | **CDFW Streambed (acres)** | **USACE/RWQCB Non-Wetland Waters (acres)** |
| Ephemeral stream channel | 0.14 | 0.14 |
| Perennial stream channel | 0.17 | 0.17 |
| *Total streambed/ non-wetland waters* | *0.31* | *0.31* |
| **Total jurisdictional area [a]** | **3.62** | **0.44** |

Source: Appendix B.

Notes:

[a] Ephemeral stream channels are an overlay within the disturbed habitat and southern coast live oak riparian forest vegetation communities. The perennial stream channel on site is within the understory of the oak canopy. To avoid double counting of resources, this channel, and the portion of the ephemeral channel within the oak canopy, are not counted toward the total jurisdictional area.

CDFW = California Department of Fish and Wildlife, RWQCB = Regional Water Control Board, USACE = U.S. Army Corps of Engineers

### *Specific Alignment Plan Improvements*

There is 0.19 acre of potential aquatic resources on the SAP improvements site under CDFW jurisdiction. The resources involve southern coast live oak riparian forest occurring along the stream channel bordering Bear Valley Parkway. Although this vegetation community did not show signs of wetland hydrology, hydric soils, or hydrophytic vegetation, it is considered riparian habitat under the jurisdiction of CDFW because it is associated with the stream channel. The jurisdictional areas in the SAP improvements site are shown in Table 3.3-3 and in Figure 3.3-2.

[1] The 0.17-acre perennial stream channel is included within the southern coast live oak riparian forest.

**Table 3.3-3. Jurisdictional Aquatic Resources on the Proposed SAP Improvements Site**

| Jurisdictional Aquatic Resource | CDFW Riparian Area (acres) |
|---|---|
| Southern coast live oak riparian forest | |
| Bear Valley Parkway (east) | 0.09 |
| Bear Valley Parkway (west) | 0.10 |
| *Total jurisdictional area* | *0.19* |
| Source: Appendix C<br>CDFW = California Department of Fish and Wildlife | |

### 3.3.1.3 Special-Status Plant and Wildlife Species

Special-status species are plants and animals that are legally protected under the California Endangered Species Act (CESA), the federal Endangered Species Act (federal ESA), or other regulations, in addition to species considered sufficiently rare by the scientific community to qualify for such listing (such as Species of Special Concern [SSC] identified by CDFW or other species that meet the California Environmental Quality Act [CEQA] definition of "rare").

For the purpose of the EIR, special-status species are those that meet any of the following definitions:

- Endangered or threatened plant or wildlife species recognized in the context of the CESA and federal ESA;
- Plant species with a California Rare Plant Rank of 1 or 2;
- California Species of Special Concern, as designated by CDFW; and
- Wildlife species fully protected in California (California Fish and Game Code, Sections 4700 [mammals] and 3511 [birds]).

To establish the environmental setting for special-status species, a records search of the California Natural Diversity Database and the California Native Plant Society for the Escondido U.S. Geological Survey 7.5-minute quadrangle and the surrounding eight topographic quadrangles was conducted. **Additionally, species included in the Public Review Draft Escondido Subarea Plan (Subarea Plan)** Table 3-2 ("Multiple Habitat Conservation Plan [MHCP] Species Occurring or Potentially Occurring in Escondido") (Ogden Environmental and Energy Services and Conservation Biology Institute 2001, as cited in Appendix B) were considered. These species are included in Appendices B and C. In addition to the literature reviews, Dudek performed a reconnaissance-level field survey in 2013 and formal jurisdictional delineation in 2014 on the proposed residential development site, as well as a field survey and jurisdictional delineation in 2016 on the proposed SAP improvements site.

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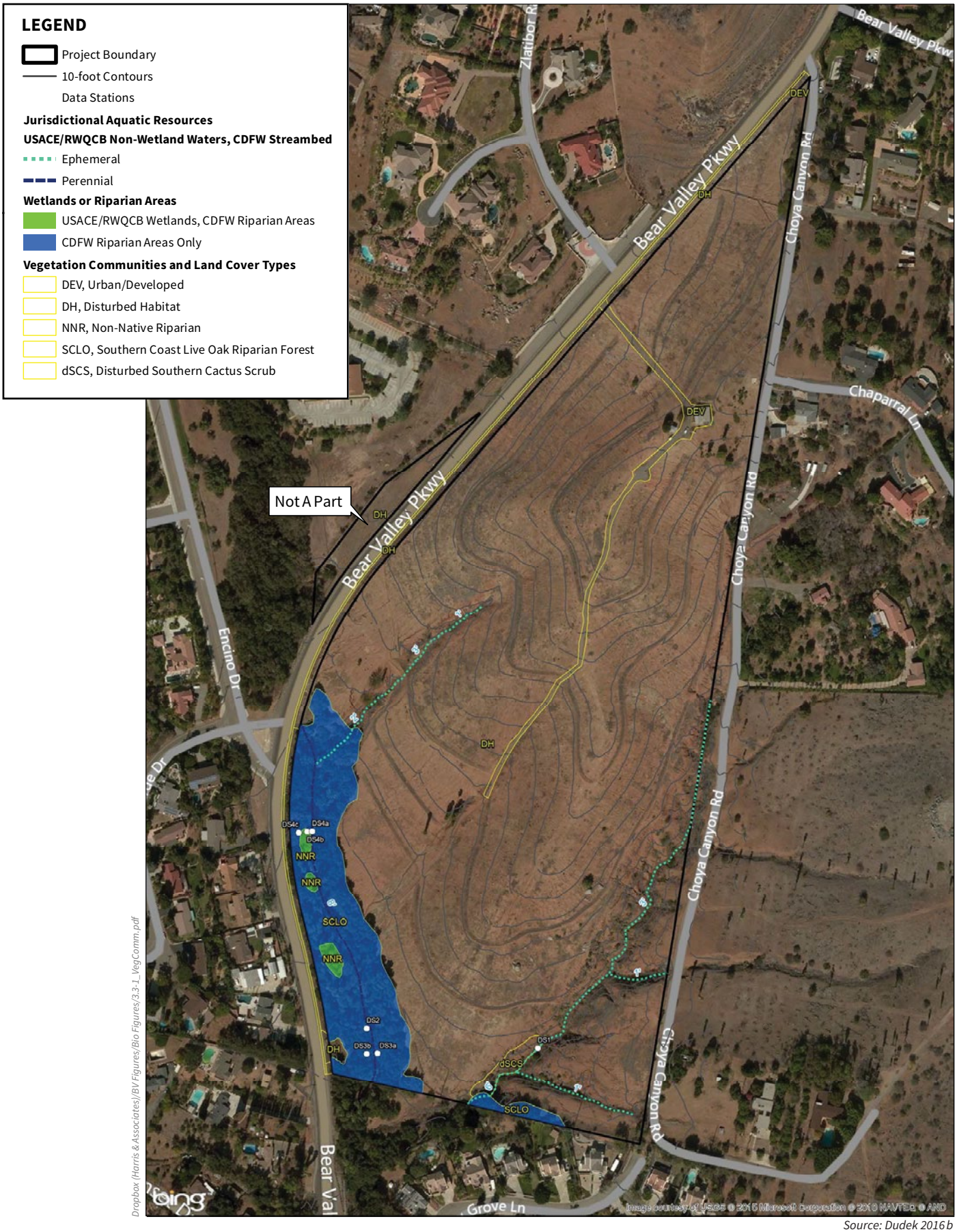


*Source: Dudek 2016 b*

Harris & Associates

0 200 400

Feet

N

**Figure 3.3-1**
Vegetation Communities on Proposed Residential Development Site

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*Source: Dudek 2016c*

Harris & Associates

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**Figure 3.3-2**
Biological Resources on Proposed SAP Improvements Site

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**Plants**

***Residential Development***

Refer to Appendix B for a list of the 108 special-status plant species with the potential to occur in the region of the proposed residential development site. Based on the habitats present on the residential development site, and the locations and dates of the occurrences for the 108 documented species, two of the 108 species were identified as having the potential to be present on the site: San Diego ambrosia (*Ambrosia pumila*) and smooth tarplant (*Centromadia pungens* ssp. *laevis*). These species are typically found within riparian habitats or disturbed areas with sandy soils, which the residential development site supports. The potential for the other 106 special-status plants to occur is low or not expected because of the high level of disturbance on the proposed project site.

As described in Appendix B, a reconnaissance-level survey conducted in 2013 and a jurisdictional delineation conducted in 2014 documented a total of 32 native and non-native plants on the proposed residential development site. No special-status plant species were recorded during either survey. A rare plant survey was not conducted because there is limited suitable habitat and low diversity of plant species on the project site.

***Specific Alignment Plan Improvements***

The San Diego ambrosia was also identified as having moderate potential to occur on the proposed SAP improvements site. Although the species was not observed during the site visit, the riparian habitats or disturbed areas with sandy soils on the SAP improvements site are known to be suitable for San Diego ambrosia in the region. Refer to Appendix C for the full list of 109 special-status plant species that have the potential to occur in the region of the SAP improvements site.

A reconnaissance-level field survey and jurisdictional delineation were conducted on the proposed SAP improvements site in 2016. A total of 25 species of vascular plants, 8 native (32%) and 17 non-native (68%), were recorded from the site. No special-status plant species were documented on the SAP improvements site, and a rare plant survey was not conducted.

**Wildlife**

No special-status wildlife species were observed on the proposed residential development or SAP improvement site during the reconnaissance-level surveys or jurisdictional delineations; however, several special-status species have a moderate to high potential to occur based on suitable habitat types and known species' range. These species are listed in Table 3.3-4 and are discussed in further detail below. Refer to Appendices B and C for a complete list of the special-status wildlife species with potential to occur in the project region.

## Table 3.3-4. Special-Status Wildlife with a Moderate to High Potential to Occur on the Proposed Project Site

| Species | Status | Potential to Occur on Residential Development Site | Potential to Occur on SAP Improvements Site |
|---|---|---|---|
| **Mammals** | | | |
| Western red bat (*Lasiurus blossevillii*) | California SSC/Western Bat Working Group species that are imperiled or at high risk of imperilment | Moderate potential to roost and forage on site. Suitable woodlands adjacent to stream occur on site. | Moderate potential to roost and forage on site. Suitable woodlands adjacent to channel occur on site. |
| San Diego blacktailed jackrabbit (*Lepus californicus bennettii*) | California SSC/covered under MHCP Subarea Plan | Moderate potential to occur. Site contains open areas but lacks grassland or coastal sage scrub habitat. Found in the vicinity. | Moderate potential to occur. Site contains open areas, and adjacent areas include open habitat, but the site lacks grassland or coastal sage scrub habitat. Found in the vicinity. |
| Southern mule deer (*Odocoileus hemionus fuliginata*) | Covered under MHCP Subarea Plan | High potential to occur. Suitable oak woodland occurs on site, and the species is known to readily move through rural residential neighborhoods on the edge of urban cities within San Diego County. | N/A |
| **Birds** | | | |
| Cooper's hawk (Accipiter cooperii) | CDFW Watch List/covered under MHCP Subarea Plan | High potential to occur. Suitable coast live oak woodland is found on site. | High potential to occur. Suitable coast live oak woodland is found on site. |
| California horned lark (*Eremophila alpestris actia*) | CDFW Watch List | High potential to occur. Suitable disturbed, agricultural habitat occurs on site. | N/A |
| Coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*) | California SSC/covered under MHCP Subarea Plan | High potential to occur. Observed in a palm tree immediately off site and could use cactus scrub areas on site for nesting. Found within the vicinity. | Not expected to occur. No suitable habitat on site for nesting. Found within the vicinity. |
| Western bluebird (*Sialia mexicana*) | Covered under MHCP Subarea Plan | High potential to occur. Suitable habitat occurs on site. | N/A |
| Burrowing owl (*Athene cunicularia*) burrow sites | California SSC/covered under MHCP Subarea Plan | Moderate potential to occur on site. Site contains open areas; however, no suitable burrows were observed during surveys. Found in the vicinity. | Moderate potential to occur on site. Site contains open areas, and adjacent areas include potentially suitable habitat; however, no suitable burrows were observed during surveys. Found in the vicinity. |

| Species | Status | Potential to Occur on Residential Development Site | Potential to Occur on SAP Improvements Site |
|---|---|---|---|
| White-tailed kite (*Elanus leucurus*) | CDFW Fully Protected Species | Moderate potential to occur. Suitable oak woodland and riparian habitat occur on site. | Moderate potential to occur. Some suitable oak woodland present on site, but it is close to residential areas and human activity. |
| **Reptiles** | | | |
| San Diego ringneck snake (*Diadophis punctatus similis*) | None | Moderate potential to occur. Suitable riparian habitat occurs on site. | N/A |
| Two-striped garter snake (*Thamnophis hammondii*) | California SSC | Moderate potential to occur. Suitable habitat on site. | Moderate potential to occur. Suitable habitat on site. |
| Orange-throated whiptail (*Aspidoscelis hyperythra*) | CDFW Watch List/covered under MHCP Subarea Plan | Moderate potential to occur in disturbed southern cactus scrub and southern coast live oak riparian forest. Found in the vicinity. | Moderate potential to occur on site. Found in the vicinity. |
| Coastal whiptail (*Aspidoscelis tigris stejnegeri*) | California SSC | Moderate potential to occur in disturbed southern cactus scrub and southern coast live oak riparian forest. Found in the vicinity. | Moderate potential to occur on site. Found in the vicinity. |

Sources: Appendices B and C.

Notes:

"N/A" indicates species was not mentioned in the list of species with a potential to occur on the SAP Improvements site (see Appendix C for further details).

Table includes birds with a moderate potential to nest on-site. Additional bird species have a moderate potential to use the site for foraging, but not nesting.

CDFW = California Department of Wildlife, SSC = Species of Special Concern, MHCP Subarea Plan = Multiple Habitat Conservation Plan Public Review Draft Escondido Subarea Plan

The U.S. Fish and Wildlife Service (USFWS) has designated critical habitat for five special-status species within a 3-mile buffer of proposed the project site: arroyo toad (*Anaxyrus californicus*), southwestern willow flycatcher (*Empidonax traillii extimus*), Quino checkerspot butterfly (*Euphydryas editha quino*), coastal California gnatcatcher (*Polioptila californica californica*), and least Bell's vireo (*Vireo bellii pusillus*). These species all have low potential to occur on site.

The areas of the proposed project site with intact native habitat, such as southern cactus scrub and southern coast live oak riparian forest, are expected to be generally used by wildlife. The perennial stream along the western boundary of the project site may provide a water source and associated habitat for a number of special-status wildlife species that could also use the project site for foraging, nesting, or dispersal.

***Mammals***

Of the 23 special-status mammals that may occur in the vicinity of the proposed residential development site, two species have moderate potential to use the site: western red bat (*Lasiurus blossevillii*) and San Diego black-tailed jackrabbit (*Lepus californicus bennettii*). The western red bat has potential to forage in habitat edges along riparian areas and to roost in trees on the residential development site. The San Diego black-tailed jackrabbit prefers open and disturbed areas, similar to those located on the residential development site. Southern mule deer (*Odocoileus hemionus fuliginata*) is a species covered by the draft Escondido MHCP Subarea Plan with a high potential to occur on the residential development site. Similar to the residential development site, the western red bat and San Diego black-tailed jackrabbit also have moderate potential to occur on the proposed SAP improvements site. No special-status mammals have high potential to occur on the residential development or SAP improvements site.

***Birds***

No special-status bird species were observed on the residential development site during the reconnaissance-level survey; however, one coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*; SSC species) was observed in a palm tree immediately off site; there is a small patch of disturbed cactus scrub on site that could provide potential nesting habitat for coastal cactus wren. The majority of nesting opportunities for raptors are along the southwestern border of the residential development site where the riparian habitat is located; however, no special-status raptors were observed during any of the site surveys.

Of the 25 special-status bird species with potential to occur in the region, three special-status bird species have a high potential to occur on the proposed residential development site: Cooper's hawk (*Accipiter cooperii*), California horned lark (*Eremophila alpestris actia*), and western bluebird (*Sialia mexicana*). Fifteen special-status bird species have moderate or low potential to use the residential development site based on its size; connectivity to other undeveloped areas; and potential perching, roosting, and nesting locations within the coast live oak trees. These species are further described in Appendix B.

No special-status bird species were observed at the proposed SAP improvements site during the surveys. However, a red-tailed hawk (*Buteo jamaicensis*) was observed, and other raptors could potentially use the southwestern border of the site boundary where the riparian habitat is located to nest in the oak woodland. Cooper's hawk is a special-status bird species with a high potential to occur in the oak woodland. Special-status bird species with a moderate potential to occur for nesting and foraging include burrowing owl and white-tailed kite. A number of special-status bird species, as described in Appendix C, have moderate or low potential to use the SAP improvements site based on its size; connectivity to other undeveloped areas; and potential perching, roosting, and nesting locations within the coast live oak trees.

***Amphibians and Reptiles***

There are 15 special-status amphibians and reptiles with potential to occur in the project region. The perennial stream in the southern portion of the proposed project site provides a regular water source. It has a low potential to support special-status amphibians due to the high level of disturbance surrounding the site and the stream's small size.

None of the listed special-status reptiles have a high potential to occur on the proposed project site. However, several species have a moderate potential to occur on the proposed residential development site, including San Diego ringneck snake (*Diadophis punctatus similis*), two-striped garter snake (*Thamnophis hammondii*; SSC species), orange-throated whiptail (*Aspidoscelis hyperythra*; SSC species), and coastal whiptail (*Aspidoscelis tigris stejnegeri;* SSC species). Several special-status reptile species have moderate potential to occur on the proposed SAP improvements site, including two-striped garter snake, orange-throated whiptail, and coastal whiptail.

### 3.3.1.4 Wildlife Movement Corridors and Habitat Linkages

"Wildlife corridors" are linear features that connect large patches of natural open space and provide avenues for the migration of animals. Wildlife corridors contribute to population viability by ensuring continual exchange of genes between populations, providing access to adjacent habitat areas for foraging and mating, and providing routes for recolonization of habitat after local extirpation or ecological catastrophes (e.g., fires). "Habitat linkages" are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation. Habitat linkages provide a potential route for gene flow and long-term dispersal of plants and animals; and may serve as primary habitat for smaller animals, such as reptiles and amphibians. Habitat linkages may be continuous habitat or discrete habitat islands that function as stepping stones for dispersal.

While the proposed project site may provide for localized wildlife movement along the stream channel, most of the site is composed of disturbed habitat. Although there is a perennial stream, there are no major aquatic resources that would be attractive for wildlife use and movement.

The perennial stream on site is considered a Constrained Lands (Wetlands) Outside the Focused Planning Area (FPA); it flows south to Kit Carson Park, which is a Hardline FPA. Wildlife are assumed to use the areas east of the project site designated in the North County Multiple Species Conservation Plan (MSCP) as Natural Lands and MSCP Habitat Preserve. Other wildlife movement could occur to the south around the Lake Hodges MSCP Habitat Preserve. The wildlife movement is somewhat fragmented, but mobile species such as birds would be able to traverse the off-site rural residential properties; connect to the drainage that flows south; and

connect to the regional corridor composed of Kit Carson Park, Lake Hodges and San Dieguito River to the south and east.

### 3.3.1.5 Protected Trees

Section 33-1052 of the City of Escondido's (City's) Municipal Code includes definitions for a "mature tree" and a "protected tree" (refer to Section 3.3.2.3). Section 33-1068 of the City's Municipal Zoning Code establishes regulations and standards for the preservation, protection, and selected removal of mature and protected trees. Pursuant to Section 33-1069, every feasible effort and measure to avoid damage to existing trees to remain on site must be taken by the owner and developer during clearing, grading, and construction activities. Section 33-1069 also includes replacement ratios for mature and protected trees.

A certified arborist completed the field evaluations at the proposed residential development site on April 17, 2015. There are 489 trees representing 14 different species located on the residential development site that meet the City's criteria as a mature tree. Only one species of trees on the site is native; the remainder are non-native. Mature and protected native trees found on site consist of coast live oak. Approximately 67% of the trees on site (327 trees) are coast live oak. Non-native species include tree of heaven (*Ailanthus altissima*), red gum eucalyptus (*Eucalyptus camaldulensis*), common fig (*Ficus carica*), Arizona ash (*Fraxinus velutina*), jacaranda (*Jacaranda mimisifolia*), Chinese flame tree (*Koelreuteria bipinnata*), crape myrtle (*Lagertroemia indica*), Chinaberry (*Melia azedarach*), Canary Island date palm (*Phoenix canariensis*), red willow (*Salix laevigata*), Peruvian pepper (*Schinus molle*), Brazilian pepper (*Schinus terebinthifolius*), and Mexican fan palm (*Washingtonia robusta*).

A certified arborist completed the field evaluations at the proposed SAP improvements site on November 22, 2016. There are 56 trees representing nine different species located on the SAP improvements site that meet the City's criteria as mature or protected trees. Similar to the residential development site, only one species of tree on the site is native; the remainder are non-native. Mature and protected native trees found on site consist of coast live oak. Approximately 75% of the trees on site (42 trees) are coast live oak. Non-native species include ash tree (*Fraxinus sp.*), silk oak (*Grevillea robusta*), jacaranda, Chinese juniper (*Juniperus chinensis*), Canary Island date palm, Brazilian pepper, queen palm (*Syagrus romanzoffiana*), and Mexican fan palm.~~Regulatory Framework~~

*Polyphagous and Kuroshio Shot Hole Borers*

These tree-boring insects have similar tendencies and are causing significant tree mortality in California. To date, the Polyphagous Shot Hole Borer (PSHB) has not been identified in San Diego County, while the Kuroshio Shot Hole Borer (KSHB) occurs widely in San Diego County (University of California 2017). The following discussion focuses on PSHB, but its content also is applicable to KSHB.

PSHB is a new pest in Southern California. This boring beetle, from the group of beetles known as ambrosia beetles, drills into trees and brings with it a pathogenic fungus (*Fusarium euwallacea*), as well as other fungal species that may to help establish the PSHB colonies. The PSHB attacks many species of trees, but some trees are resistant to the fungus it carries. The beetle is dark brown to black and tiny, with females between 0.07 and 0.1 inches long, and males even smaller, usually about 0.05 inches long. Pregnant females bore through the tree's bark, creating galleries under the bark. They plant the fungus in these galleries, where it grows and spreads throughout a susceptible tree. The female then lays her eggs in these galleries and when the eggs hatch, the larvae eat the fungus. The larvae develop into adults in about a month. Many more of the larvae develop into females than males, and the females mate with the males (their brothers) while still in the gallery. The pregnant females then pick up some of the fungus in their mouths, and leave through the entry holes created by their mothers to start the process again (University of California 2017).

KSHB are known to occur within San Diego County and the project area and PSHB are known to occur in Riverside and Orange Counties (University of California 2017). These pests are actively spreading to a large number of host species, preferring willows (*Salix sp.)* and sycamore (*Platanus sp.*), but also utilizing a variety of other species. Tree mortality resulting from the *Fusarium* fungus it introduces into trees has been widespread and is anticipated to continue, if not become worse. Efforts are under way to find methods for controlling these pests through biological, chemical, and other means (Dudek 2017b).

The project site's trees were not observed to be hosting PSHB at the time tree inventories were completed. However, the riparian oak woodland areas of the site (Figures 3.3-1 and 3.3-2) could potentially become infested due to the presence of known host species. This infestation would be possible with or without the proposed project.

## 3.3.2 Regulatory Framework

### 3.3.2.1 Federal Regulations

**Bald and Golden Eagle Protection Act**

Enacted in 1940, the Bald and Golden Eagle Protection Act prohibits the take, transport, sale, barter, trade, import, export, and possession of bald eagles—making it illegal for anyone to collect bald eagles and eagle parts, nests, or eggs without authorization from the Secretary of the Interior. The Act was amended in 1962 to extend the prohibitions to the golden eagle.

**Federal Endangered Species Act**

The U.S. Congress passed the federal ESA in 1973 to provide a means for conserving the ecosystems that endangered and threatened species require in order to prevent species extinctions. The federal ESA has four major components: (1) Section 4, which provides for

listing species and designating critical habitat; (2) Section 7, which requires federal agencies, in consultation with the USFWS, to ensure that their actions are not likely to jeopardize the continued existence of species or result in the modification or destruction of critical habitat; (3) Section 9, which prohibits against "taking" listed species; and (4) Section 10, which provides for permitting incidental take of listed species. Under the federal ESA, the term "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct."

**Migratory Bird Treaty Act**

The Migratory Bird Treaty Act (MBTA) (16 United States Code [USC] 703) enacts the provisions of treaties between the United States, Great Britain, Mexico, Japan, and the Soviet Union. It authorizes the U.S. Secretary of the Interior to protect and regulate the taking of migratory birds. It establishes seasons and bag limits for hunted species and protects migratory birds, their occupied nests, and their eggs (16 USC 703; 50 Code of Federal Regulations 21; 50 Code of Federal Regulations 10). Most actions that result in taking or in permanent or temporary possession of a protected species constitute MBTA violations. Examples of permitted actions that do not violate MBTA are the possession of a hunting license to pursue specific game birds, legitimate research activities, display in zoological gardens, bird-banding, and other similar activities. USFWS is responsible for overseeing compliance with the MBTA, and the U.S. Department of Agriculture's Animal Damage Control Officer makes recommendations on related animal protection issues. The MBTA applies to migratory birds, their occupied nests, and eggs within the proposed project site.

**Federal Water Pollution Control Act (Clean Water Act) (1972)**

The Water Pollution Control Act, passed by Congress in 1948, authorized the Surgeon General of the Public Health Service to prepare comprehensive programs for eliminating or reducing the pollution of interstate waters and tributaries, and improving the sanitary condition of surface and underground waters. The Act was later amended to become the Federal Water Pollution Control Act Amendments of 1972, commonly known as the Clean Water Act (CWA). The CWA was designed to restore and maintain the chemical, physical, and biological integrity of the waters of the United States and gave the U.S. Environmental Protection Agency the authority to implement pollution control programs, including setting wastewater standards for industry and water quality standards for contaminants in surface waters. The U.S. Environmental Protection Agency has delegated responsibility for implementation of portions of the CWA in California to the State Water Resources Control Board and the RWQCBs, including water quality control planning and control programs.

The CWA also prohibits the discharge of any pollutants from a point source into navigable waters, except as allowed by permits issued under certain sections of the CWA. Specifically, Section 404 authorizes the USACE to issue permits for and regulate the discharge of dredged or fill materials into wetlands or other waters of the United States. Under the CWA and its

implementing regulations, "waters of the United States" are broadly defined as rivers, creeks, streams, and lakes extending to their headwaters, including adjacent wetlands. Further, Section 401 allows states to certify or deny federal permits or licenses that might result in a discharge to state waters, including wetlands. Section 401 certifications are issued by the RWQCBs for activities requiring a federal permit or license that may result in the discharge of pollutants into waters of the United States.

### 3.3.2.2 State Regulations

**California Endangered Species Act**

CESA, administered by CDFW, is similar in many ways to the federal ESA. CESA provides a process for CDFW to list species as threatened or endangered in response to a citizen petition or by its own initiative (CDFW Code Section 2070 et seq.). Section 2080 of CESA prohibits the take of species listed as threatened or endangered pursuant to the Act. Section 2081 allows CDFW to authorize take prohibited under Section 2080 provided that: (1) the taking is incidental to an otherwise lawful activity; (2) the taking will be minimized and fully mitigated; (3) the applicant ensures adequate funding for minimization and mitigation; and (4) the authorization will not jeopardize the continued existence of the listed species.

**California Department of Fish and Game Code**

The California Department of Fish and Game Code regulates the taking or possession of birds, mammals, fish, amphibians, and reptiles, and natural resources such as wetlands and waters of the state.

**Section 1600 et seq. (Land and Streambed Alteration):** requires notifying the CDFW prior to any project activity undertaking in or near a river, stream, or lake that flows at least intermittently through a bed or channel. CDFW will issue a Lake and Streambed Alteration Agreement that conditionally allows work within the bed and bank of the lake or stream.

**Sections 3503 and 3503.5 (Bird Nests and Birds of Prey):** Section 3503 states that it is "unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the code or any regulation made pursuant thereto." Section 3503.5 specifically addresses birds in the orders Falconiformes (hawks, eagles, and falcons) and Strigiformes (owls), collectively referred to as "birds-of-prey." Under this subsection, both the nests and individual birds-of-prey may not be taken, possessed, or destroyed at any time.

**Sections 3511, 470, 5050, and 5515 (Fully Protected Species):** Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) identify 37 fully protected species that may not be taken or possessed at any time; and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of bird species for the protection of livestock, or as part of an approved natural community conservation plan. The fully protected classification was the State's initial effort in the 1960s to

identify and provide additional protection to those animals that were rare or faced possible extinction. Most fully protected species have also been listed as threatened or endangered under the more recent endangered species laws.

**Natural Community Conservation Planning Act of 1991**

The Natural Community Conservation Planning (NCCP) program is an effort initiated by CDFW to develop a broad-based approach for sustaining biological diversity. The primary objective of the NCCP program is to identify and provide for the regional protection of plants, animals, and their habitats, while allowing compatible and appropriate economic activity. Escondido is one of seven cities in northwestern San Diego County included in an NCCP subregion involved in the subregional MHCP that addresses the NCCP objectives.

### 3.3.2.3 Regional/Local Regulations

**Multiple Habitat Conservation Program**

The MHCP, adopted by the San Diego Association of Governments (SANDAG) in March 2003, is a comprehensive, multiple-jurisdiction planning program designed to create, manage, and monitor an ecosystem preserve in northwestern San Diego County. It is one of several large, multiple-jurisdiction habitat planning efforts in the County, each of which constitutes a subregional plan under California's NCCP Act of 1991. The MHCP preserve system is intended to protect viable populations of native plant and animal species and their habitats in perpetuity, while accommodating continued economic development and quality of life for residents of northern San Diego County. The MHCP subregion encompasses the seven incorporated cities of northwestern San Diego County (Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista). These jurisdictions are required to implement their portions of the MHCP through citywide subarea plans, which describe the specific policies each city will institute for the MHCP.

The MHCP replaces the traditional project-by-project approach to gaining approvals with a coordinated, comprehensive program that ensures that project mitigations are directed to those areas most critical to biological conservation, while allowing expedited development of less important habitat areas. MHCP implementation will also include perpetual monitoring and management of the preserve system. In exchange for these conservation actions, participating cities will receive "take authorization" from the USFWS and CDFW. Take authorization allows for otherwise lawful actions that may incidentally harm individuals of a species or its habitat (generally outside of the preserve system) in exchange for conserving the species inside the preserve system. Jurisdictions granted take authorization may share their benefits by using them to permit take by public or private projects that comply with the respective city's subarea plan.

The City of Escondido is the easternmost incorporated city within the MHCP. The draft Escondido MHCP Subarea Plan (Ogden Environmental and Energy Services and Conservation

Biology Institute 2001, as cited in Appendix B) includes the incorporated city limits plus approximately 3,000 acres owned by the City in the unincorporated areas surrounding Lake Wohlford, Valley Center Road, and isolated parcels with existing or planned utility improvements. The Subarea Plan boundary abuts the approved South County MSCP preserve area and the North County MSCP planning area within the unincorporated areas. The Subarea Plan currently encompasses an area of approximately 24,624 acres. The MHCP identifies 47 species (32 animals and 15 plants) that occur or potentially occur in Escondido and therefore are evaluated for coverage in the Subarea Plan. The plan addresses the potential impacts on natural habitats and potential species endangerment due to projects within the city. The plan also institutes a strategy to proactively mitigate these impacts on the city's biological resources. Approval and adoption of the Subarea Plan would result in federal and state authorization for incidental take of sensitive species caused by implementation of public and private projects within the city. The intent of the draft Escondido MHCP Subarea Plan is to provide regulatory certainty to landowners within the city and aid in conserving the region's biodiversity and enhancing the overall quality of life for residents. At full implementation, the draft Escondido MHCP Subarea Plan would conserve a total of 6,570 acres of natural habitats within the proposed preserve area. An additional 332 acres of wetlands and 39 acres of natural habitat constrained by steep slopes would be expected to remain undeveloped outside the preserve area. The preserve is designed to protect important portions of sensitive vegetation communities, including 65% of the coastal sage scrub and 100% of wetlands in the Escondido subarea.

The proposed project site is located within the southeast portion of the draft Escondido MHCP Subarea Plan. It is not located within the Biological Core and Linkage Area (see Figure 3-2 of the draft Escondido MHCP Subarea Plan). The proposed site is located outside of any FPAs; however, the stream channel that runs through the southwestern portion of the project site is designated as a Constrained Lands (Wetlands) Outside the FPA (see Figure 4-1 of the draft Escondido MHCP Subarea Plan). The Constrained Lands designation includes lands with steep slopes and wetlands regulated by the USACE federal wetland permitting requirements and the MHCP "no net loss of wetlands" policy. The remaining portion of the property is designated as agriculture, although it has been fallow for over 20 years and does not currently support agricultural crops or production. At this time, the City is not moving forward with the draft Escondido MHCP Subarea Plan; thus, there is no take coverage afforded under the draft Escondido MHCP Subarea Plan or the MHCP.

**City of Escondido Master Plan for Parks, Trails, and Open Space**

The *City of Escondido Master Plan for Parks, Trails and Open Space* (City of Escondido 1994) serves as a guide to developing a comprehensive and integrated open space system to achieve the quality of life standards set forth in the *City of Escondido General Plan* (General Plan). A conceptual wildlife corridor is identified in the plan that connects key habitat areas in a continuous link around the perimeter of the city. Tributary corridors also link undeveloped,

unincorporated County areas north and east of the city. The Master Plan proposes to work with property owners in these areas to set aside sufficient land for wildlife corridors when development plans are proposed. The Master Plan describes the information needed to assess a request to modify the width or location of a wildlife corridor, which includes preparation of detailed biological data from a qualified biologist. The City is responsible for monitoring the overall alignment of the corridor to ensure that development proposals maintain effective corridor connections.

**City of Escondido Zoning Ordinance**

The Flood Plain Overlay Zone identified in Article 4, Sections 33-50 through 33-56 of the City's Zoning Ordinance, provides land use regulations for property situated in the designated floodplain of a river, creek, stream, or water course and is applied as a supplement to the basic underlying land use zone. Development in the Flood Plain Zone that would cause stream channel alteration, affect the capacity of a floodway, or unduly increase flood heights is restricted.

The City's Open Space Development Standards (Article 5, Sections 33-70 through 33-77) provide regulations for development of land identified by the Community Open Space/Conservation Element as having open space value. Such land may contain slopes, vegetated conservation areas, and/or natural drainage courses not otherwise defined as floodways. Like the Flood Plain regulations, the requirements of this section are in addition to the property development standards of the underlying zone. Among other things, the section requires that natural features shall be protected and natural vegetation shall remain undisturbed except as necessary for approved construction. Prior to any disturbance or development, a development permit must be approved. The development permit must demonstrate that the proposed project conforms to the goals and objectives of the Community Open Space/Conservation Element of the existing General Plan. Decisions may be appealed to the Planning Commission and City Council.

The Excavation and Grading Ordinance (Article 55) ensures that development projects protect the natural topographic character and integrity of the environment. Submittal and review requirements detail the need to identify biological habitats, areas of disturbance, setbacks, and mitigation measures to reduce potential impacts. The article establishes a Hillside and Ridgeline Overlay (HRO) District, generally encompassing parcels with a slope of 15% or greater on any portion of the parcel, or those that are located in proximity to an identified intermediate or skyline ridge, and located in an area that has not been developed to its full potential. Development proposals in the HRO must identify sensitive species or habitats (indicating retention, relocation, or removal). Specific findings must be made prior to approval of projects in the HRO, including findings that the development respects and preserves the natural landform, vegetation, and wildlife of the project site. For a vegetation removal permit, findings must be made that the clearing is in conformance with applicable state and federal

requirements, that proper environmental review has been completed, and that the proposed clearing or grading is not premature with regard to future discretionary actions and preservation options. The City may attach conditions to the vegetation removal permit. Protection and replacement standards include making every feasible effort to preserve sensitive biological habitat and species, recording deed restrictions to notify future property owners of responsibility for continued maintenance, and on-site or off-site mitigation at a ratio of 1:1 or higher.

The Environmental Quality Regulations (Article 47) implement the State CEQA Guidelines for development projects in the city. Article 47 lists specific activities that fall within certain classes of exemption, such as ministerial projects and categorical exemption projects. The article also states that, even though a project may otherwise be eligible for an exemption, no exemption will be granted in the following circumstances:

1. Grading or clearing activities that disturb, fragment, or remove habitats of state or federally listed species and archaeological and cultural resources.
2. Parcel maps, plot plans, and all other discretionary development projects that affect sensitive, threatened, or endangered species and their habitats; archaeological and cultural resources; wetlands; designated stream courses; unstable soils; and other factors requiring special review.

Article 47 requires reporting programs to ensure that all required mitigation measures for development projects are properly and fully implemented.

**City of Escondido Municipal Code – Tree Preservation**

Section 33-1069 of the City's Municipal Code includes vegetation and replacement standards for impacts on mature and/or protected trees. Section 33-1052 of the City's Municipal Code defines a mature tree as any self-supporting woody perennial plant, native or ornamental, with a single well-defined stem or multiple stems supporting a crown of branches. The single stem, or one of the multiple stems of any mature oak tree, shall have a diameter 4 inches or greater when measured at diameter at breast height (DBH) above the tree's natural grade. All other mature trees shall have a diameter of 8 inches DBH, or greater, for a single stem or one of the multiple stems. A "protected tree" is defined as any oak with a 10-inch or greater DBH, or any other species or individual specimen listed on the local historic register, or determined to substantially contribute to the historic character of a property or structure listed on the local historic register, pursuant to Article 40 of the Escondido Zoning Code. The project site supports numerous mature and protected trees.

Section 33-1068 of the City's Municipal Zoning Code establishes regulations and standards for the preservation, protection, and selected removal of mature and protected trees. A vegetation removal permit is required prior to clearing, pruning, or destroying vegetation and prior to any

encroachments by construction activities that disturb the root system within the dripline of mature trees. Issuance of a vegetation removal permit requires submittal of a tree survey and a tree replacement and/or protection plan.

Pursuant to Section 33-1069, the owner and developer must take every feasible effort and measure to avoid damage to existing trees that will remain on site during clearing, grading, and construction activities. If mature trees cannot be preserved on site, they must be replaced at a minimum ratio of 1:1. Protected oak trees must be replaced at a minimum ratio of 2:1. The number, size, and species of replacement trees can be determined on a case-by-case basis by the City's Director of Planning and Building.

### 3.3.3 Thresholds of Significance

The State CEQA Guidelines Appendix G (14 CCR 15000 et seq.) has identified significance criteria to be considered for determining whether a project could result in significant impacts on existing biological resources.

An impact would be considered significant if construction or operation of the proposed project would have any of the following consequences.

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

## 3.3.4 Project Impacts

### 3.3.4.1 Issue 1: Candidate, Sensitive, or Special-Status Species

**Residential Development**

***Plants***

Direct Impacts

No special-status plants were observed on the proposed project site during reconnaissance-level surveys; however, two special-status species have a moderate potential to occur on the site: San Diego ambrosia and smooth tarplant. These species are typically found within riparian habitats or disturbed areas with sandy soils. Because of the high level of disturbance on the project site and because habitat for these species would be outside the proposed project's direct impact area, implementation of the project would not result in significant impacts on special-status plant species. Therefore, direct impacts on special-status plant species would be less than significant.

Indirect Impacts

As described above, no special-status plant species were observed on the proposed project site. However, because two special-status plant species have a moderate potential to occur, there could be potential short-term and long-term indirect impacts on special-status plant species off site. Potential short-term indirect impacts on special-status plants would primarily result from construction activities and would include impacts resulting from the generation of fugitive dust, changes in hydrology, and the introduction of chemical pollutants.

Excessive dust during project construction could decrease the vigor and productivity of vegetation through effects on light, penetration, photosynthesis, respiration, transpiration, increased penetration of phytotoxic gaseous pollutants, and increased incidence of pests and diseases.

Construction could result in hydrologic and water-quality-related impacts adjacent to and downstream of the limits of grading. Hydrologic alterations include changes in flow rates and patterns in drainages and dewatering, which may affect adjacent and downstream (including off-site) aquatic, wetland, and riparian vegetation communities. Water quality impacts include chemical-compound pollution (from releases of fuel, oil, lubricants, paints, release agents, and other construction materials), erosion, and excessive sedimentation. Direct impacts can also remove native vegetation and increase runoff from roads and other paved surfaces, resulting in increased erosion and transport of surface matter into vegetation communities. Altered erosion, increased surface flows, and underground seepage can allow for the establishment of

non-native plants. Changed hydrologic conditions can also alter seed bank characteristics and modify habitat for ground-dwelling fauna that may disperse seed.

Erosion and chemical pollution (releases of fuel, oil, lubricants, paints, release agents, and other construction materials) may affect special-status vegetation communities. The use of chemical pollutants can decrease the number of plant pollinators, increase the existence of non-native plants, and cause damage to and destruction of native plants.

Potential long-term indirect impacts on special-status plant species would primarily result from construction activities and would include impacts resulting from non-native, invasive plant and animal species; increased human activity; and altered hydrology.

Invasive and non-native plant species that thrive in edge habitats have the potential to compete for light, water, and nutrients; and they form in thatches that block sunlight from reaching smaller native plants. Exotic plant species could alter habitats and displace native species over time, leading to extirpation of native plant species and unique vegetation communities. The introduction of non-native, invasive animal species could negatively affect native species that may be pollinators of or seed dispersal agents for plants within vegetation communities and special-status plant populations.

The residential development proposes construction of 55 residential units, which would increase human activity in the area and could result in the potential for trampling of vegetation and soil compaction outside of the development footprint, affecting the viability of plant communities. Trampling can alter an ecosystem; create gaps in vegetation; and allow exotic, non-native plant species to become established—leading to soil erosion. Trampling could also affect the rate of rainfall interception and evapotranspiration, soil moisture, water penetration pathways, surface flows, and erosion. An increased human population increases the risk for damage to vegetation communities and special-status plants. The project would include a fence along the proposed development area and trail in order to deter people from entering the proposed preserve area (see Project Description, Section 2.5.10). Thus, human intrusion impacts on biological habitat areas would be minimized.

Water used for landscaping purposes could alter the on-site hydrology. These changes could affect special-status vegetation communities and special-status plant communities. Altered hydrology could allow for the establishment of non-native plants and invasion by Argentine ants (*Linepithema humile*), which can compete with native ant species that could be seed dispersers or plant pollinators. However, the water, and associated runoff, used during landscaping activities would be contained within the project's development footprint; and long-term indirect impacts associated with altered hydrology are not expected.

The potential indirect impacts described above would be avoided through implementation of standard construction best management practices (BMPs) and project design features identified in Chapter 2, "Project Description." Therefore, indirect impacts on special-status plant species would be less than significant.

***Wildlife***

Direct Impacts

Although no special-status wildlife species were observed on the proposed project site during surveys, there is potential for special-status wildlife species to occur because of the native vegetation communities that provide foraging and nesting habitat for these species (i.e., southern coast live oak riparian forest and southern cactus scrub). During the on-site surveys, a coastal cactus wren was observed directly off site. While there is potential for this wren to use the cactus scrub on site, the cactus scrub would not be directly affected by construction of the project. Project development would affect only a small portion of the southern coast live oak riparian forest along Bear Valley Parkway. Because of the minor impact on these habitats, direct impacts on special-status wildlife species would not occur.

One raptor (red-shouldered hawk) was seen foraging on the proposed project site. Red-shouldered hawks are not considered a special-status species, and they are fairly common in Southern California. Raptors as a group, however, are considered special status; and Section 3503.5 of the California Fish and Game Code specifically prohibits the unauthorized take of raptors and raptor nests. If construction activities occur during the breeding season (typically February 1 through September 15), impacts on migratory birds or destruction of active migratory bird nests and/or eggs are considered a significant impact because they are protected under the MBTA.

Indirect Impacts

Short-term, construction-related indirect impacts on special-status wildlife species would primarily result from construction activities, including generation of fugitive dust, introduction of chemical pollutants, increased human activity, and introduction of non-native animal species. These impacts would be avoided through implementation of the project design features listed in Chapter 2, "Project Description." Potential short-term indirect impacts on nesting special-status birds or raptors from construction-related noise are considered a significant impact.

Potential long-term indirect impacts on special-status wildlife species would primarily be associated with introduction of chemical pollutants; introduction of non-native, invasive plant and animal species; increased human activity; and altered hydrology. These impacts would be avoided through implementation of the project design features listed in Chapter 2, "Project Description."

**Specific Alignment Plan Improvements**

***Plants***

Direct Impacts

No special-status plants were observed on the proposed SAP improvements site during reconnaissance-level surveys. One special-status species, San Diego ambrosia, has a moderate potential to occur on the site. Because of the high level of disturbance within the project boundary and because San Diego ambrosia would likely occur outside the impact area and was not observed during the visits during June and July, it is not expected that implementation of the SAP improvements would result in significant direct impacts on this or other special-status plant species.

Indirect Impacts

As described above, no special-status plant species were observed on the proposed SAP improvements site during surveys. Because one special-status plant species (San Diego ambrosia) has a moderate potential to occur, the potential exists for short-term and long-term indirect impacts on special-status plant species off site.

Potential short-term and long-term indirect impacts on special-status plants associated with the SAP improvements would be similar to those described for the proposed residential development earlier in this Section. Potential long-term impacts could affect adjacent native vegetation communities (i.e., southern coast live oak riparian forest) after construction. These impacts would be reduced to a less than significant level through implementation of the project design features listed in Chapter 2, “Project Description.”

***Wildlife***

Direct Impacts

Implementation of the proposed project is not expected to result in direct impacts on the special-status wildlife species with moderate to high potential to occur because these species occur within the native habitat found on site, such as southern coast live oak riparian forest, and the vast majority of project-related impacts are within disturbed areas.

No special-status wildlife species were detected on the proposed SAP improvements site. Two raptors, red-shouldered hawk and American kestrel (*Falco sparverius*), were detected foraging in the area. These species are not considered special status and are fairly common in Southern California. As noted above, raptors as a group are considered special status, and impacts on migratory birds or destruction of active migratory bird nests and/or eggs are considered a significant impact because they are protected under the MBTA.

Indirect Impacts

Short-term indirect impacts on special-status wildlife species with moderate or high potential to occur would be similar to those described above for the proposed residential development. These impacts would be avoided through implementation of the project design features listed in Chapter 2, "Project Description." Potential indirect impacts on nesting special-status birds or raptors from construction-related noise are considered a significant impact.

Based on the minimal use of the affected areas for wildlife movement through the proposed project site, habitat fragmentation would not be considered a significant impact.

### 3.3.4.2 Issue 2: Sensitive Habitats

**Residential Development**

***Direct Impacts***

Direct impacts on vegetation communities and sensitive habitats on the proposed residential development site would primarily result from construction activities. As identified in Table 3.3-5, the proposed residential development would directly affect 33.50 acres (32.61 acres on site and 0.89 acres off site) of vegetation communities and land covers, including southern coast live oak riparian forest, disturbed habitat, and developed land. As shown in Figure 3.3-3, the majority of the impacts would affect disturbed habitat and developed land, with minimal impact on native vegetation communities or sensitive habitats. However, the proposed residential development would affect a total of 0.67 acre of southern coast live oak riparian forest (0.40 acre on site and 0.27 acre off site) from construction of frontage improvements along Bear Valley Parkway consisting of curb, gutter, sidewalk, parkway, bike lane, and travel lane. Impacts on this sensitive habitat are considered significant.

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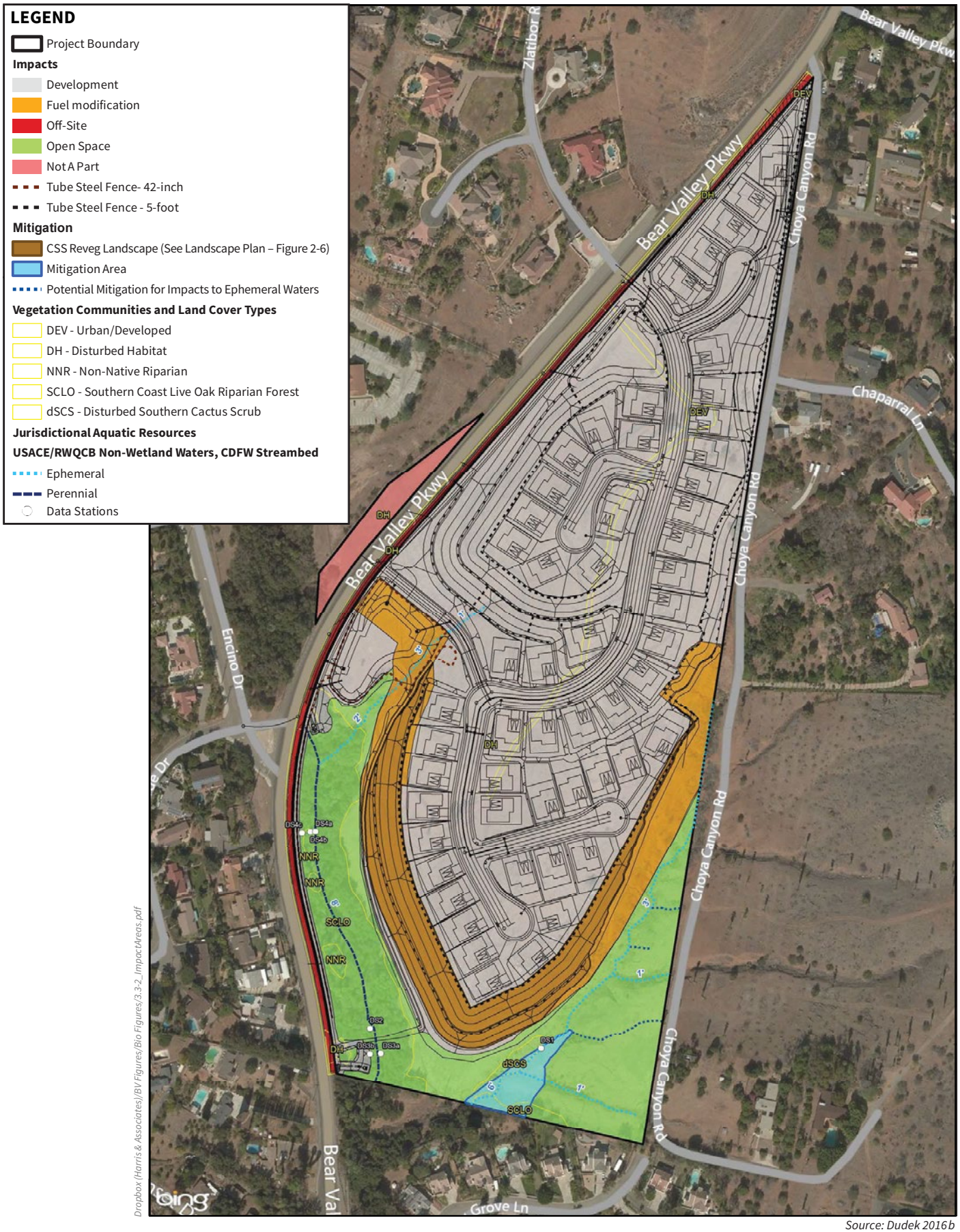


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*Source: Dudek 2016b*

Harris & Associates

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**Figure 3.3-3**
Biological Impact Areas on Proposed Residential Development Site

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**Table 3.3-5. Direct Impacts on Sensitive Habitats on the Proposed Residential Development Site**

| Habitat Type | Existing Onsite (acres) | Direct On-Site Impacts (acres) | Direct Off-Site Impacts (acres) | Proposed Open Space (Lot H) (acres) |
|---|---|---|---|---|
| Upland | | | | |
| Disturbed southern cactus scrub | 0.17 | -- | -- | 0.17 |
| *Subtotal* | *0.17* | -- | -- | *0.17* |
| Jurisdictional aquatic resources | | | | |
| Southern coast live oak riparian forest | 3.35 | 0.40 | 0.27 | 2.95 |
| Non-native riparian | 0.13 | -- | -- | 0.13 |
| *Subtotal* | *3.48* | *0.40* | *0.27* | *3.08* |
| Other land covers | | | | |
| Disturbed habitat | 36.43 | 31.67 | 0.59 | 4.76 |
| Developed land | 0.54 | 0.54 | 0.03 | 0.00 |
| *Subtotal* | *36.97* | *32.21* | *0.62* | *4.76* |
| **Total** | **40.62** | **32.61** | **0.89** | **8.01** |
| Source: Appendix C. | | | | |

***Indirect Impacts***

Indirect impacts on sensitive habitats in the residential development area would be similar to the indirect impacts on special-status plants described under Issue 1. As described under Issue 1, short-term indirect impacts would be less than significant with implementation of standard construction BMPs and construction-related minimization measures. Long-term indirect impacts on sensitive habitats would be less than significant due to implementation of the project design features described in Chapter 2, "Project Description."

**Specific Alignment Plan Improvements**

***Direct Impacts***

Direct impacts on vegetation communities and sensitive habitats would primarily result from construction activities. The proposed SAP improvements would directly affect 2.60 acres of vegetation communities and land covers, including developed land, disturbed habitat, and southern coast live oak riparian forest. The majority of impacts would affect developed land and disturbed habitat, with minimal impacts on native vegetation communities. However, the SAP improvements would affect 0.19 acre of southern coast live oak riparian forest (0.09 acre east of Bear Valley Parkway and 0.10 acre west of Bear Valley Parkway), which is considered a potentially significant impact.

***Indirect Impacts***

Potential short-term indirect impacts on southern coast live oak riparian forest within the boundary of the proposed SAP improvements would primarily result from construction activities, including impacts related to the generation of fugitive dust; changes in hydrology

resulting from construction, including sedimentation and erosion; and the introduction of chemical pollutants (including herbicides). Implementation of standard construction BMPs and construction-related minimization measures to control dust, erosion, and runoff would reduce these potential impacts to a less-than-significant level.

Long-term indirect impacts after construction could result from the proximity of the proposed SAP improvements to southern coast live oak riparian forest. Permanent indirect impacts that could affect southern coast live oak riparian forest include the introduction of chemical pollutants, altered hydrology, introduction of non-native invasive species, and increased human activity. Implementation of project design features listed in Chapter 2, "Project Description," would reduce these long-term indirect impacts to a less-than-significant level.
Issue 3: Jurisdictional Habitat

### 3.3.4.3 Issue 3: Jurisdictional Habitat

**Residential Development**

***Direct Impacts***

Short-term direct impacts on jurisdictional aquatic resources on the proposed residential development site would primarily result from construction activities. As identified in Table 3.3-6, non-native riparian areas under the jurisdiction of USACE/RWQCB and CDFW would not be directly affected. There would be direct impacts on 0.03 acre of unvegetated stream channels (including the ephemeral channel) under the jurisdiction of USACE/RWQCB and CDFW and 0.40 acre of impacts on southern coast live oak riparian forest under CDFW jurisdiction only. There would be off-site direct impacts to 0.27 acre of southern coast live oak riparian forest under CDFW jurisdiction only. There would be no off-site direct impact on ephemeral and perennial channels or areas under the jurisdiction of USACE/RWQCB. The proposed residential development would be required to obtain CWA Section 401 and 404 permits issued by the RWQCB and the USACE, respectively, for all project-related disturbances of non-wetland waters of the United States and/or associated wetlands and a Section 1602 Streambed Alteration Agreement issued by CDFW for all project-related disturbances of any streambed and associated riparian habitat. Direct impacts on these jurisdictional areas are considered significant.

***Indirect Impacts***

Potential short-term indirect impacts that could affect jurisdictional aquatic resources would be similar to those described under Issue 1. The use of chemical pollutants could decrease the number of plant pollinators, increase the existence of non-native plants, and cause damage to native plants.

Long-term (operation-related) indirect impacts could result from the proximity of the proposed residential development to jurisdictional aquatic resources after construction, including impacts

related to operation and maintenance. The proposed residential development includes a revegetation area adjacent to the wetlands that would provide native landscaping to avoid indirect impacts. The revegetation landscaping is not required as mitigation because impacts on uplands would not occur; however, the revegetation area would be composed of native plant species to provide a buffer between the proposed development and wetland areas. The revegetation area is shown in Figure 3.3-3 and discussed in detail on the landscape plan (Figure 2-6 in Chapter 2, "Project Description"). Operation and maintenance activities would occur within the impact footprint.

**Table 3.3-6. Impacts on Jurisdictional Aquatic Resources on the Proposed Residential Development Site**

| Jurisdictional Aquatic Resource | CDFW Riparian Area (acres) | | | USACE/RWQCB Wetland (acres) | | |
|---|---|---|---|---|---|---|
| | Existing | Impacts | Remaining | Existing | Impacts | Remaining |
| Southern coast live oak riparian forest | 3.35 | 0.40 | 2.95 | -- | -- | -- |
| Non-native riparian | 0.13 | -- | 0.13 | 0.13 | -- | 0.13 |
| *Total riparian/wetlands* | *3.48* | *0.40* | *3.08* | *0.13* | -- | *0.13* |
| **Jurisdictional Aquatic Resource** | **CDFW Streambed (acres)** | | | **USACE/RWQCB Non-Wetland Waters (acres)** | | |
| | **Existing** | **Impacts** | **Remaining** | **Existing** | **Impacts** | **Remaining** |
| Ephemeral stream channel | 0.14 | 0.03 | 0.11 | 0.14 | 0.03 | 0.11 |
| Perennial stream channel | 0.17 | 0.002 | 0.17 | 0.17 | 0.002 | 0.17 |
| *Total streambed/ non-wetland waters* | *0.31* | *0.03* | *0.29* | *0.31* | *0.03* | *0.29* |
| **Total jurisdictional area [a]** | **3.62** | **0.43** | **3.36** | **0.44** | **0.03** | **0.41** |

Source: Appendix C.

Notes:

Acreages may not total due to rounding.

[a] Ephemeral stream channels are an overlay within the disturbed habitat and southern coast live oak riparian forest vegetation communities. The perennial stream channel on site is within the understory of the oak canopy. To avoid double counting of resources, this channel and the portion of the ephemeral channel within the oak canopy are not counted toward the total jurisdictional area.

CDFW = California Department of Fish and Wildlife, RWQCB = Regional Water Quality Control Board, USACE = U.S. Army Corps of Engineers

Potential long-term indirect impacts related to chemical pollutants, changes in hydrology, introduction of invasive non-native plant and animal species, and increased human activities that could affect all the jurisdictional aquatic resources would be similar to those described under Issue 1 or described above. Potential short-term and long-term indirect impacts on jurisdictional aquatic resources would be avoided through implementation of the project design features listed in Chapter 2, Project Description. Therefore, indirect impacts on jurisdictional waters would be less than significant.

**Specific Alignment Plan Improvements**

***Direct Impacts***

Short-term direct impacts on jurisdictional aquatic resources on the proposed SAP improvements site would primarily result from construction activities, as described for the proposed residential development. Furthermore, implementation of the proposed SAP improvements would result in permanent, direct impacts on 0.19 acre of southern coast live oak riparian forest subject to CDFW jurisdiction. These impacts are considered significant.

***Indirect Impacts***

Short-term indirect impacts on jurisdictional aquatic resources in the proposed SAP improvements area would primarily result from construction activities, as described for the proposed residential development. Long-term indirect impacts, as described for the proposed residential development, could result from the proximity of the proposed project to adjacent jurisdictional aquatic resources after construction. Indirect impacts would be reduced to a less-than-significant level through the project design features listed in Chapter 2, "Project Description." Because the jurisdictional resources on site include only the edges of southern coast live oak riparian forest, potential indirect impacts associated with fragmentation from other jurisdictional resources are not considered significant.

### 3.3.4.4 Issue 4: Wildlife Movement Corridors and Nursery Sites

**Residential Development**

***Direct Impacts***

As described in Section 3.3.1.4, the proposed residential development site does not function as a core wildlife movement corridor or nursery site but likely serves as a local wildlife corridor for common terrestrial and avian species. The proposed project would directly affect movement for urban-adapted species that use the oak trees and disturbed areas (e.g., raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and coyote (*Canis latrans*)); however, these species can continue to use the areas outside of the project site for movement between habitat types. Wildlife species also tend to use drainages for movement, and the drainages on site would largely be avoided by project development. The patch of southern coast live oak riparian forest on the southwestern corner of the proposed residential development site could support wildlife movement into the Kit Carson Park and farther to Lake Hodges; however, minimal impacts would occur in this area. There would be no impacts on the perennial channel along the western site boundary or the ephemeral channel that runs along the eastern portion of the project boundary. Therefore, direct impacts on wildlife movement corridors and nursery sites would be less than significant.

***Indirect Impacts***

Short-term indirect impacts on wildlife movement corridors could result from increased human activity and lighting. Project construction would take place during the daytime and would not

affect wildlife species such as mammals that are most active in the evenings and nighttime. Wildlife species such as birds, rabbits, and lizards that are active in the daytime but use a variety of habitats could continue to use other areas within and adjacent to the proposed project site for wildlife movement. If nighttime construction does occur, nighttime lighting would be required, which would create new sources of light in the area. These short-term indirect impacts would be reduced to a less-than-significant level through implementation of standard construction BMPs, construction-related minimization measures and the project design features described in Chapter 2, Project Description. Therefore, indirect impacts on wildlife movement corridors and nursery sites would be less than significant.

**Specific Alignment Plan Improvements**

***Direct Impacts***

As described in Section 3.3.1.4, the proposed SAP improvement site does not function as a core wildlife movement corridor or nursery site but likely serves as a local wildlife corridor for common terrestrial and avian species. The proposed project would directly affect movement for urban-adapted species that use the oak trees and disturbed areas (e.g., raccoon, striped skunk, and coyote); however, these species can continue to use the areas outside of the proposed project for movement between habitat types. Wildlife species also tend to use drainages for movement. Impacts on the patches of southern coast live oak riparian forest would largely occur on the outer edges and canopy cover within the vegetation community, and potential impacts to wildlife movement and potential nursery sites would be minimal. The direct impacts on this minor local habitat linkage/wildlife corridor are considered less than significant.

***Indirect Impacts***

Short-term indirect impacts on habitat connectivity, wildlife corridors and potential nursery sites could result from lighting and increased human activity while potential long-term indirect impacts would include fencing of the project boundary and lighting. Significant short-term indirect impacts to the minor local habitat linkage/wildlife corridor and potential nursery site would be reduced to a less-than-significant level through standard construction BMPs and construction-related minimization measures. Project design features would reduce long-term indirect impacts to a less than significant level.

### 3.3.4.5 Issue 5: Local Policies and Ordinances

**Residential Development**

***Direct Impacts***

Section 33-1069 of the City's Municipal Code includes vegetation and replacement standards for impacts on mature and/or protected trees (see Section 3.3.2.3).

There are 489 trees representing 14 different species located on the proposed residential development site that meet the City's criteria as a mature tree. Only one species of trees on the site is native. Mature and protected native trees found on site consist of coast live oak. Approximately 67% of the trees on site (327 trees) are coast live oak. Non-native species include tree of heaven, red gum eucalyptus, common fig, Arizona ash, jacaranda, Chinese flame tree, crape myrtle, Chinaberry, Canary Island date palm, red willow, Peruvian pepper, Brazilian pepper, and Mexican fan palm.

Direct impacts would occur from tree removal or encroachment within the tree protected zone (canopy drip line plus 5 feet, or 15 feet from trunk, whichever is greater). Tree removal is generally required when the trunk is located inside or within 2 feet of the proposed limits of grading. Encroachment generally occurs when the soil and roots are disturbed within the tree protected zone. Table 3.3-7 summarizes the total number of trees by species expected to be subject to direct construction-related impacts. Figure 3.3-4 displays the locations of affected trees and impact type. A total of 110 trees (including 60 coast live oak) would be removed, and 39 trees (including 32 coast live oak) would be preserved in place with protections but encroached on by the proposed residential development. The remaining 340 trees on the proposed residential development site would be either preserved or indirectly impacted. The removal and encroachment of trees is considered a significant impact.

**Table 3.3-7. Summary of Direct Impacts on Trees on Proposed Residential Development Site**

| Scientific Name | Common Name | Removal | Encroachment |
|---|---|---|---|
| *Ailanthus altissima* | Tree of heaven | 1 | 0 |
| *Eucalyptus camaldulensis* | Red gum | 2 | 0 |
| *Jacaranda mimisifolia* | Jacaranda | 2 | 0 |
| *Koelreuteria bipinnata* | Chinese flame tree | 1 | 1 |
| *Lagerstroemia indica* | Crape myrtle | 3 | 0 |
| *Melia azedarach* | Chinaberry | 4 | 0 |
| *Phoenix canariense* | Canary Island date palm | 1 | 1 |
| *Quercus agrifolia* | Coast live oak | 60 (32) a | 32 (14) a |
| *Salix laevigata* | Red willow | 1 | 0 |
| *Schinus molle* | Peruvian pepper | 0 | 1 |
| *Schinus terebinthifolious* | Brazilian pepper | 13 | 0 |
| *Washingtonia robusta* | Mexican fan palm | 22 | 4 |
| **Total** | | **110 (32) [a]** | **39 (14) [a]** |

Source: Appendix D.

Notes:

[a] Number in parenthesis represents the quantity of removals that meet the City's criteria of a "protected tree" and is included in the total.

Trees are proposed to be planted in the proposed project's landscape areas as well as on the periphery of existing native tree stands. Of these species, only the coast live oak is a known host of the PSHB and KSHB. The other trees could become hosts once preferred host species are no longer available, but as of the date of this report, the other species proposed for planting are not known hosts. The project would plant native oaks as mitigation to comply with City requirements (see mitigation measure BIO-7). Other species have been selected based on their current exclusion to these pests' host lists.

The scale of the project's landscape plantings would be minimal compared to the known range of the shot hole borers. The PSHB may already be in the area of the project, but was not detected on the site during tree inventories. PSHB could spread into the area with or without implementation of the project. The project's potential impact on PSHB and KSHB spread is considered below the level of significance with the implementation of specific measures to minimize attracting or spreading shot hole borers. The best management practices to limit the spread of shot hole borers are described in mitigation measure BIO-5.

***Indirect Impacts***

Indirect impacts on trees are the result of changes to the site that could cause tree decline, even when the tree is not directly injured. Site-wide changes affecting trees include diverting runoff and storm water, creating retention and detention ponds, relocating streams or making improvements to streams, lowering or raising water tables, altering the capacity for soil moisture recharge, removing vegetation, and damming underground water. For the purposes of this report, indirect tree impacts would be expected for trees within 25 feet of the proposed project's limits of grading and not subject to removal or encroachment. Trees located in fuel modification zones also would be typically considered indirectly affected; however, no trees are located in proposed fuel modification zones that would not be otherwise affected (removal or encroachment).

Other potential indirect impacts could include firewood harvesting, vandalism, and deliberate or accidental wildfire ignition in oak-willow woodland drainage areas. These potential indirect impacts can be minimized by implementing woodland management and protection measures, including educational material provided to homeowners and long-term management of oak-willow-dominated habitat on the site. Table 3.3-8 presents the number and species of trees expected to be indirectly affected by the proposed residential development. A total of 81 trees (including 52 coast live oak) would be indirectly affected. These indirect impacts on trees are considered less than significant.

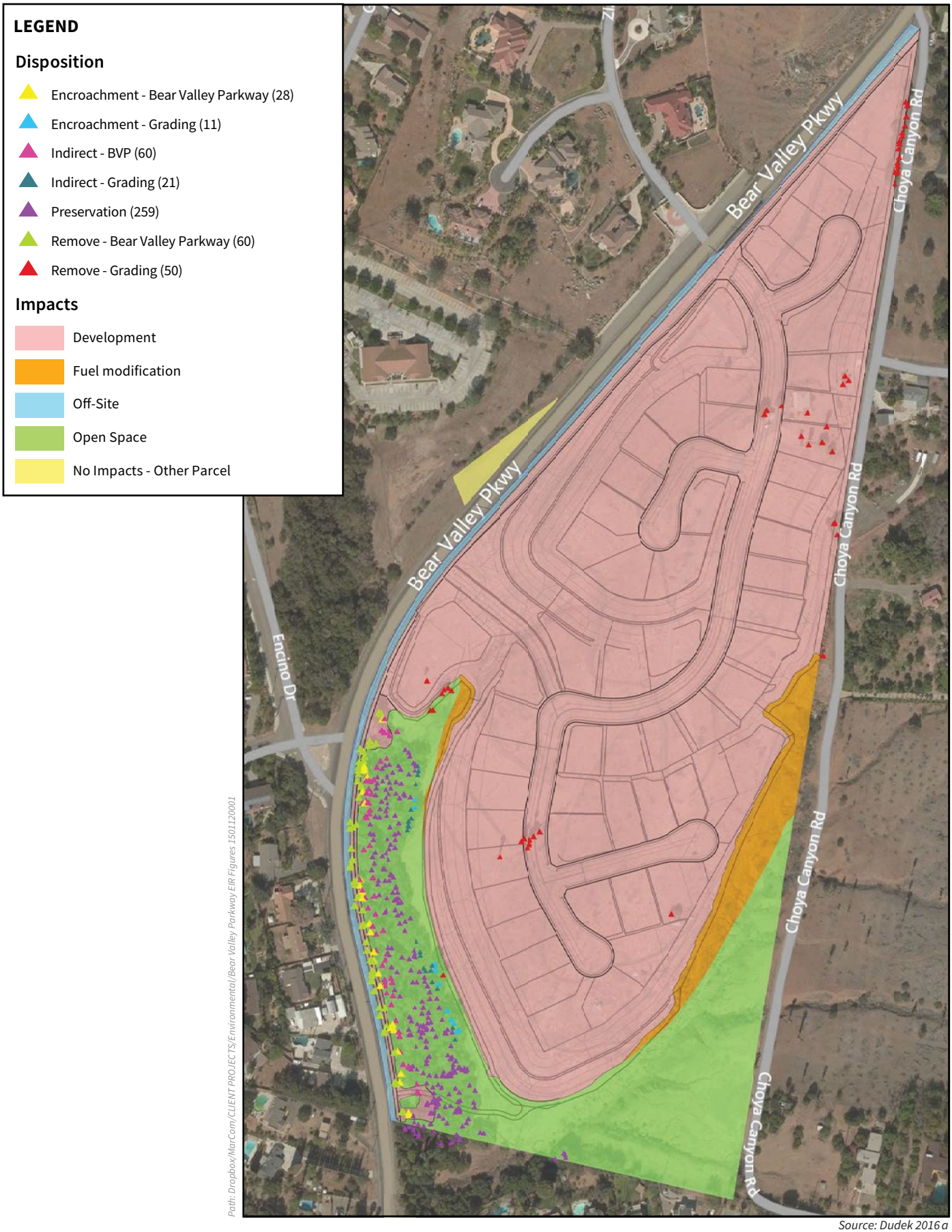
## Table 3.3-8. Summary of Indirect Impacts on Trees on Proposed Residential Development Site

| Scientific Name | Common Name | Indirect Impacts [a] |
|---|---|---|
| *Phoenix canariense* | Canary Island date palm | 5 |
| *Quercus agrifolia* | Coast live oak | 52 (14) a |
| *Salix laevigata* | Red willow | 4 |
| *Washingtonia robusta* | Mexican fan palm | 20 |
| **Total** | | **81** |

Source: Appendix D.

Notes:

a Number in parenthesis represents the quantity of removals that meet the City's criteria of a "protected tree" and is included in the total.




*Source: Dudek 2016 a*

Harris & Associates

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**Figure 3.3-4**
Tree Impacts on Proposed Residential Development Site

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**Specific Alignment Plan Improvements**

***Direct Impacts***

There are 56 trees representing nine different species within the tree survey area that meet the City's criteria for a mature or protected tree. One species, coast live oak, is native. Approximately 75% of the trees on site (42) are coast live oak.

Table 3.3-9 summarizes the total number of trees by species expected to be subject to direct impacts. Figure 3.3-5 displays the locations of affected trees and impact type. A total of 42 trees (including 28 coast live oak) would be removed, and 3 trees (all of which are coast live oak) would experience encroachment into the protected tree zone. Of the 42 trees identified for removal, 14 meet the criteria for classification as a protected tree, as defined by the City. Of the three encroached-upon trees, one meets the size criteria to be classified as a protected tree. The remaining trees on site would either be protected or indirectly impacted. The removal and encroachment of trees is considered a significant impact.

Trees proposed to be planted could become hosts for shot hole borers. The project would plant native oaks, which are known potential shot hole borer hosts, as mitigation to comply with City requirements (see mitigation measure BIO-8). The scale of the project's landscape plantings would be minimal compared to the known range of the shot hole borers. The PSHB may already be in the area of the project, but was not detected on the site during tree inventories. PSHB could spread into the area with or without implementation of the project. The project's potential impact on PSHB and KSHB spread is considered below the level of significance with the implementation of specific measures to minimize attracting or spreading shot hole borers. The best management practices to limit the spread of shot hole borers are described in mitigation measure BIO-9.

**Table 3.3-9. Summary of Direct Impacts on Trees on Proposed SAP Improvements Site**

| Scientific Name | Common Name | Removal | Encroachment |
|---|---|---|---|
| *Fraxinus sp.* | ash tree | 2 | 0 |
| *Grevillea robusta* | silk oak | 1 | 0 |
| *Jacaranda mimisifolia* | Jacaranda | 2 | 0 |
| *Juniperus chinensis* | Chinese juniper | 1 | 0 |
| *Phoenix canariense* | Canary Island date palm | 1 | 0 |
| *Quercus agrifolia* | Coast live oak | 28 (14) a | 3 (1) a |
| *Schinus terebinthifolious* | Brazilian pepper | 1 | 0 |
| *Syagrus romanzoffiana* | queen palm | 3 | 0 |
| *Washingtonia robusta* | Mexican fan palm | 3 | 0 |
| **Total** | | 42 (14) [a] | 3 (1) [a] |

Source: Appendix E.

Notes:

[a] Number in parenthesis represents the quantity of impacts that meet the City's criteria of a "protected tree" and is included in the total.

***Indirect Impacts***

A total of eight trees, all coast live oak, would be indirectly affected by the proposed SAP improvements. Of the eight trees, three are considered protected by the City. None of the ornamental trees are anticipated to be indirectly impacted by the proposed project. Figure 3.3-5 displays the locations of affected trees and impact type. These indirect impacts on trees are considered less than significant.

### 3.3.4.6 Habitat Conservation Plans and NCCPs

The proposed project site is located within the southeast portion of the draft Escondido MHCP Subarea Plan. Until the draft Escondido MHCP Subarea Plan is approved, the City follows MHCP subregional plan guidelines or regulatory guidance for projects within city limits.

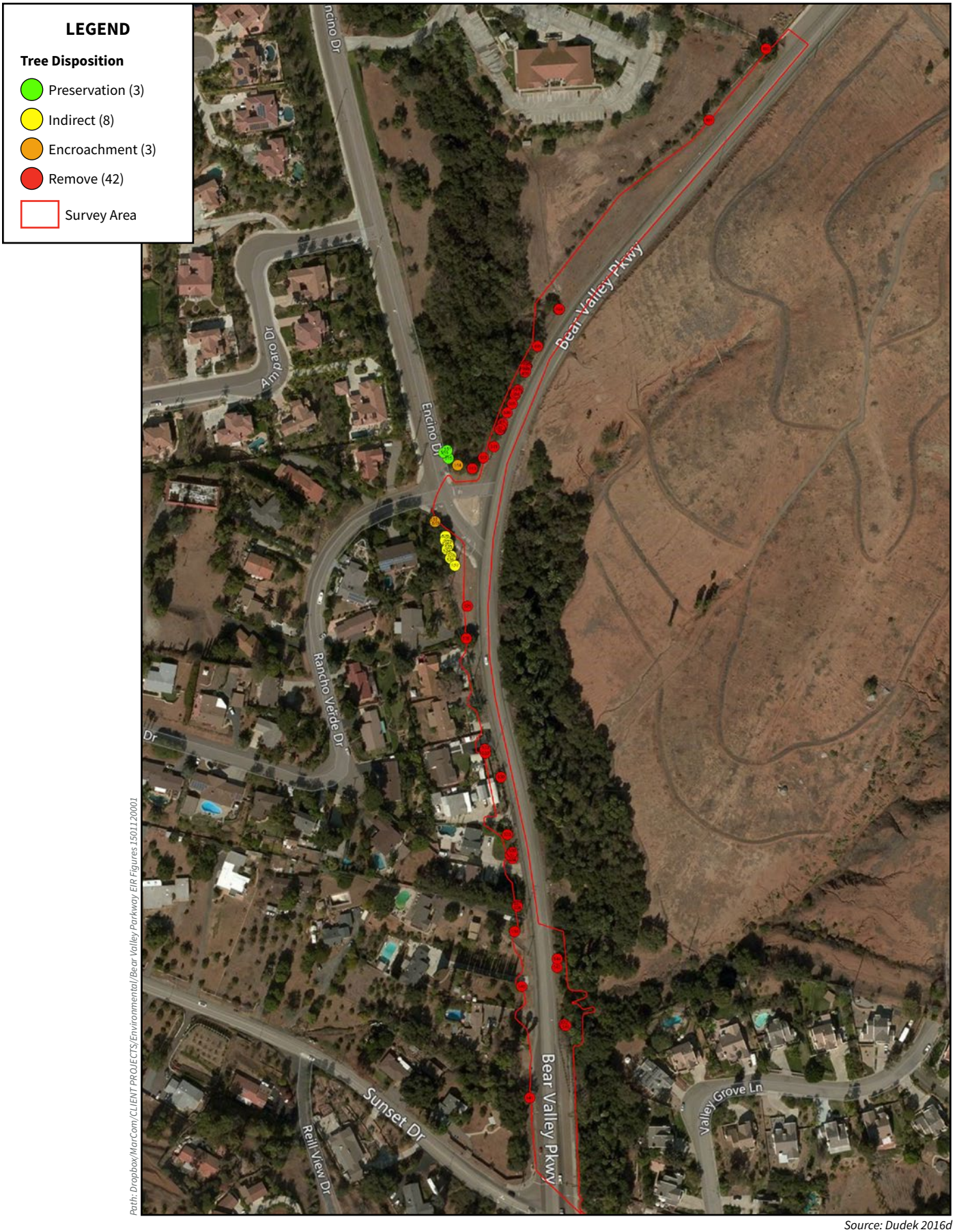
The MHCP identifies sensitive biological resources and provides mitigation guidelines for impacts on those resources. Figures 3-2 and 4-1 in the draft Escondido MHCP Subarea Plan identify Biological Core and Linkage Areas and FPAs, respectively. As described in Section 3.3.2.3, the proposed project site is not located within a Biological Core and Linkage Area or FPA. However, the stream channel that runs through the southern portion of the project site is designated as Constrained Lands (Wetlands) Outside the FPA.

## 3.3.5 Cumulative Impacts

The geographic scope for the biological resources cumulative analysis is the San Diego County region.

### 3.3.5.1 Issue 1: Candidate, Sensitive, or Special-Status Species

Cumulative projects located in the San Diego County region have the potential to affect special-status plant and wildlife species, including impacts related to loss of habitat. Adjacent jurisdictions, including incorporated cities, the County, and tribal governments, would be required to comply with applicable federal and/or state regulations that protect special-status plant and wildlife species, such as the federal ESA, the CESA, and the California NCCP Act. If significant impacts occur from particular cumulative projects, mitigation measures are usually implemented to reduce impacts to the extent feasible. However, without a comprehensive NCCP in place for the long-term protection of special-status plant and wildlife species for the entire San Diego County region, a cumulative loss of habitat supporting special-status plant and wildlife species would occur, even after mitigation has been implemented for individual projects. Implementation of mitigation measure BIO-1 (see Section 3.3.7.1) would reduce impacts on special-status species to a less-than-significant level. Therefore, the proposed project would not result in a cumulatively considerable contribution to special status species impacts.




*Source: Dudek 2016d*

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**Figure 3.3-5**
Tree Impacts on Proposed SAP Improvements Site

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### 3.3.5.2 Issue 2: Sensitive Habitats

Cumulative projects located in the San Diego County region have the potential to affect riparian habitat and other sensitive natural communities through direct and indirect loss or degradation. Adjacent jurisdictions, including incorporated cities, the County, and tribal governments, would be required to comply with applicable federal and/or state regulations such as the California NCCP Act. These programs provide protections for riparian and other sensitive habitats. In addition, many projects that affect riparian or other protected habitat types require approval from the USFWS and CDFW. If potentially significant impacts would occur from particular cumulative projects, mitigation measures would be implemented to reduce impacts to the extent feasible. However, without a comprehensive NCCP in place for the long-term protection of sensitive natural communities for the entire San Diego County region, a cumulative loss of riparian and other sensitive habitat would occur, even after mitigation has been implemented for individual projects. Implementation of mitigation measures BIO-2 and BIO-3 (see Section 3.3.7.2) would reduce potentially significant direct impacts to a less-than-significant level, and no net loss of riparian habitat or sensitive natural communities would occur. Therefore, proposed project impacts would not be cumulatively considerable.

### 3.3.5.3 Issue 3: Jurisdictional Habitat

Cumulative projects located in the San Diego County region have the potential to result in a cumulative impact associated with federally protected wetlands. Adjacent jurisdictions, including incorporated cities, the County, and tribal lands, would be required to comply with applicable federal and/or state regulations such as Section 401 and 404 of the CWA and Section 1600 of the California Department of Fish and Game Code. If potentially significant impacts would occur from particular cumulative projects, mitigation measures would be implemented to reduce impacts to meet the no-net-loss standard. Implementation of mitigation measures BIO-2, BIO-3, BIO-4, BIO-5, and BIO-6 (see Sections 3.3.7.2 and 3.3.7.3) would reduce impacts on jurisdictional habitat to a less-than-significant level. Furthermore, existing regulations would ensure that a significant cumulative impact associated with federally protected wetlands would not occur. Therefore, the proposed project, in combination with the other cumulative projects, would not contribute to a significant cumulative impact.

### 3.3.5.4 Issue 4: Wildlife Movement Corridors and Nursery Sites

Cumulative projects located in the San Diego County region have the potential to result in a cumulative impact associated with wildlife movement corridors and nursery sites. However, no local or regional wildlife corridors are identified on the proposed project site or in the immediate project vicinity. Therefore, cumulative impacts would not be considerable.

#### 3.3.5.5 Issue 5: Local Policies and Ordinances

Cumulative growth under the County and adjacent jurisdictions' general plans would be required to comply with applicable local policies and ordinances, such as zoning ordinances, an adopted MHCP, and MSCP subarea plans. Similar to the proposed project, mitigation measures would be required to bring cumulative projects into compliance with existing policies and ordinances. Even if local policies and ordinances similar to the City's Environmental Quality Regulations have not been adopted in adjacent jurisdictions, compliance with CEQA would require mitigation for biological impacts. Implementation of mitigation measure BIO-7 (see Section 3.3.7.5) would reduce significant direct impacts from the residential development to a less-than-significant level. Implementation of BIO-8 (see Section 3.3.7.5) would reduce significant direct impacts from the proposed SAP improvements to a less-than-significant level. Therefore, the proposed project, in combination with the other cumulative projects, would result in a less-than-significant cumulative impact associated with compliance with local policies and ordinances.

#### 3.3.5.6 Issue 6: Habitat Conservation Plans and NCCPs

The conservation plan applicable to the proposed project (the draft Escondido MHCP Subarea Plan) has not been adopted; therefore, there would be no impact related to HCPs and NCCPs, and no cumulative impact would occur.

### 3.3.6 Significance of Impacts prior to Mitigation

Potential impacts on biological resources from the proposed overhead power line relocation described in Section 2.5.1.6 were analyzed as part of this EIR and found to be less than significant.

#### 3.3.6.1 Issue 1: Candidate, Sensitive, or Special-Status Species

The proposed project would result in less-than-significant direct and indirect impacts on special-status plants. Therefore, no mitigation is necessary.

Prior to mitigation, tree removal and other construction-related activities have the potential to result in significant direct and indirect impacts on raptors and other nesting birds.

#### 3.3.6.2 Issue 2: Sensitive Habitats

Direct impacts on 0.67 acre of southern coast live oak riparian forest (0.40 acre on site and 0.27 acre off site) from the construction of frontage improvements along Bear Valley Parkway associated with the residential development would be significant. Direct impacts on 0.19 acre of on-site southern coast live oak riparian forest from the proposed SAP improvements would be significant.

The proposed project would result in less-than-significant indirect impacts on sensitive habitats. Therefore, no mitigation is necessary.

### 3.3.6.3 Issue 3: Jurisdictional Habitat

The proposed residential development would directly affect 0.03 acre of unvegetated stream channel and 0.67 acre of southern coast live oak riparian forest (0.40 acre on site and 0.27 acre off site). There would be no off-site impact on ephemeral and perennial channels or areas under the jurisdiction of USACE/RWQCB. The proposed SAP improvements would directly affect 0.19 acre of southern coast live oak riparian forest under jurisdiction of CDFW. Direct impacts on jurisdictional habitat would be significant.

Indirect impacts on jurisdictional habitat would be less than significant. Therefore, no mitigation is necessary.

### 3.3.6.4 Issue 4: Wildlife Movement Corridors and Nursery Sites

The proposed project would result in less-than-significant direct or indirect impacts associated with wildlife movement corridors and nursery sites. Therefore, no mitigation is necessary.

### 3.3.6.5 Issue 5: Local Policies and Ordinances

The proposed residential development would remove 110 trees (including 60 coast live oak). An additional 39 trees (including 32 coast live oak) would be preserved in place with protections but would be encroached on. This would be a significant impact. It is estimated that 81 trees (including 52 coast live oak) could be indirectly affected by the proposed residential development. This indirect impact would be less than significant and, therefore, no mitigation is required.

The proposed SAP improvements would remove 42 trees and encroach on 3 trees. These impacts would be significant. The proposed SAP would indirectly impact 8 trees. This impact would be less than significant and, therefore, no mitigation is required.

Trees planted in the proposed project's landscape areas and on the periphery of existing native tree stands could be potential hosts to shot hole borers. The proposed project's potential impact on PSHB and KSHB spread would be significant without incorporation of specific measures to minimize attracting or spreading PSHB and KSHB.

### 3.3.6.6 Issue 6: Habitat Conservation Plans and NCCPs

The conservation plan applicable to the proposed project (the draft Escondido MHCP Subarea Plan) has not been adopted. Until the draft Escondido MHCP Subarea Plan is approved, the City follows MHCP guidelines or regulatory guidance for projects within City limits. There would be no impact related to HCPs and NCCPs, and no mitigation is required.

## 3.3.7 Mitigation Measures

### 3.3.7.1 Issue 1: Candidate, Sensitive, or Special-Status Species

**Residential Development**

**BIO-1:** If construction activity occurs during the breeding season for raptors and other birds (typically ~~February~~January 1 through September 15), a one-time biological survey for nesting bird species shall be conducted within the proposed impact area and a 300-foot buffer within 72 hours prior to construction. This survey is necessary to ensure avoidance of impacts on nesting raptors (e.g., Cooper's hawk and red-tailed hawk) and/or birds protected by the federal MBTA. If any active nests are detected, the area shall be flagged and mapped on the construction plans along with a minimum of a ~~25~~300-foot buffer and up to a maximum of ~~300~~500 feet for raptors, as determined by the project biologist, and shall be avoided until the nesting cycle is complete. The project biologist may reduce the avoidance buffer if a reduced buffer maintains protection of the nesting cycle of the avian species.

**Specific Alignment Plan Improvements**

The same mitigation measure (BIO-1) would be required of the proposed SAP improvements.

### 3.3.7.2 Issue 2: Sensitive Habitats

**Residential Development**

**BIO-2:** To mitigate impacts on sensitive habitats from the proposed residential development, the project applicant shall establish or enhance at least 2.01 acres (a 3:1 ratio) of southern coast live oak riparian forest with establishment of 0.67 acre within an on-site mitigation area and enhancement of 1.34 acre within the open space area in general, including enhancing the 0.13 acre area of non-native riparian and enhancing the balance within the area mapped as southern coast live oak riparian forest that contains non-native and invasive species (Table 3.3-10). The mitigation shall occur within the open space lot (Lot H) totaling 8.0 acres. The mitigation area occurs along the ephemeral drainage that runs along the southern boundary of the proposed residential development site, as shown in Figure 3.3-3. A Conceptual ~~Wetland~~ Mitigation Plan shall be prepared as part of the permit application process (i.e., CWA Section 401/404 permit) described in mitigation measure BIO-5 by persons with expertise in southern California ecosystems and native plant revegetation techniques. The Conceptual Mitigation Plan shall include, at a minimum (a) the location of the mitigation site; (b) the plant species to be used, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.

**Table 3.3-10. Required On-Site Mitigation for Impacts on Sensitive Habitats in the Proposed Residential Development Area**

| Habitat Type | Direct On-Site Impacts | Direct Off-Site Impacts | Mitigation Ratio | Mitigation Acreage | Required On-Site Mitigation |
|---|---|---|---|---|---|
| Southern coast live oak riparian forest (CDFW-jurisdictional) | 0.40 | 0.27 | 3:1 | 2.01 | Establishment at 1:1 through revegetation within the mitigation area; enhancement at 2:1 in the open space area |
| Non-native riparian | -- | -- | 1:1 | -- | None |
| Disturbed southern cactus scrub | -- | -- | 1:1 | -- | None |
| Unvegetated stream channels [a] (USACE/RWQCB/CDFW jurisdictional) | 0.03 | -- | 1:1[b] | 0.03 | Establishment/enhancement within the mitigation area shown in Figure 3.3-3 and discussed under Issue 3 |
| Disturbed habitat | 31.67 | 0.59 | None | -- | None |
| Developed land | 0.54 | 0.03 | None | -- | None |
| *Total* [c] | *32.61* | *0.89* | - | *2.04* | |

Source: Appendix B.

Notes:

a Ephemeral stream channels are an overlay within the disturbed habitat and southern coast live oak riparian forest vegetation communities. The perennial stream channel on site is within the understory of the oak canopy and therefore, to avoid double counting of resources, this channel, and the portion of the ephemeral channel within the oak canopy, are not counted toward the total jurisdictional area.

b Mitigation ratios for this habitat type are 1:1 to 2:1 according to the Table 4-7 in the MHCP (SANDAG 2003, as cited in Appendix B). Because the project site lies outside Focused Planning Area, the on-site in-kind mitigation will enhance; impacts on unvegetated channels will be mitigated at 1:1.

c Acreage may not total due to rounding.

CDFW = California Department of Fish and Wildlife, RWQCB = Regional Water Quality Control Board, USACE = U.S. Army Corps of Engineers

**Specific Alignment Plan Improvements**

Direct impacts on southern coast live oak riparian forest will be mitigated through establishment or enhancement of riparian habitat or through a mitigation bank as follows.

**BIO-3**: To mitigate impacts on sensitive habitats in the proposed SAP improvements area, the SAP improvements applicant shall establish/enhance southern coast live oak riparian forest (or similar vegetation community) at a suitable location at a 1:1 to 3:1 mitigation ratio. If establishment or enhancement is unavailable or not practical, the SAP improvements applicant shall secure mitigation credits at an approved mitigation bank at a 1:1 to 3:1 mitigation ratio. Details will be finalized as part of the permit application process (i.e., ~~CWA~~CDFW Section ~~401/404 permit~~1602 Streambed Alteration Agreement) described in mitigation measure BIO-6.

### 3.3.7.3 Issue 3: Jurisdictional Habitat

**Residential Development**

Refer to Section 3.3.7.2 for the full text of mitigation measure BIO-2.

**BIO-4:** To mitigate impacts on jurisdictional habitat in the proposed residential development, the project applicant shall establish or enhance approximately 0.03 (1:1 mitigation ratio) acre of unvegetated stream channel (Table 3.3-11). The mitigation area occurs along the ephemeral drainage that runs along the southeastern boundary, as shown in Figure 3.3-3. The 0.03 acre plus the 2.01 acre from mitigation measure BIO-2 will result in establishment of 2.04 acres within the mitigation area. Details shall be provided in a Conceptual Mitigation Plan, which shall be prepared as part of the permit process (i.e., CWA Section 401/404 permit) described in mitigation measure BIO-5.

**Table 3.3-11. Required Mitigation for Aquatic Resources in the Proposed Residential Development Area**

| Habitat Type | Direct On-Site Impacts | Direct Off-Site Impacts | Mitigation Ratio | Mitigation Acreage | Required On-Site Mitigation |
|---|---|---|---|---|---|
| Southern coast live oak riparian forest (CDFW-jurisdictional) | 0.40 | 0.27 | 3:1 | 2.01 | Establishment at 1:1 through revegetation within the mitigation area; enhancement at 2:1 in the open space area |
| Non-native riparian | -- | -- | 1:1 | -- | None |
| Unvegetated stream channels [a] (USACE/RWQCB/CDFW jurisdictional) | 0.03 | -- | 1:1[b] | 0.03[a] | Establishment/enhancement within the mitigation area shown in Figure 3.3-3 |
| *Total* | *0.43* | *0.27* | - | *2.04* | |

Source: Appendix C.

Notes:

a Ephemeral stream channels are an overlay within the disturbed habitat and southern coast live oak riparian forest vegetation communities. The perennial stream channel on site is within the understory of the oak canopy and therefore, to avoid double counting of resources, this channel, and the portion of the ephemeral channel within the oak canopy, are not counted toward the total jurisdictional area.

b Mitigation ratios for this habitat type are 1:1 to 2:1 according to the Table 4-7 in the MHCP (SANDAG 2003, as cited in Appendix B). Because the project site lies outside Focused Planning Area the on-site in-kind mitigation will enhance, impacts to unvegetated channels will be mitigated at 1:1.

CDFW = California Department of Fish and Wildlife, RWQCB = Regional Water Quality Control Board, USACE = U.S. Army Corps of Engineers

**BIO-5:** To comply with the state and federal regulations for impacts on jurisdictional aquatic resources, the following agency permits are required, or verification that they are not required shall be obtained:

- A CWA, Section 401/404 permit issued by the RWQCB and the USACE for all project-related disturbances of non-wetland waters of the United States and/or associated wetlands.
- A Section 1602 Streambed Alteration Agreement issued by CDFW for all project-related disturbances of any streambed and associated riparian habitat. Permits are required to be obtained by the applicant prior to the impact on the resources.

As noted in mitigation measures BIO-2 and BIO-4, a Conceptual Mitigation Plan is required to provide compensatory mitigation for impacts. The on-site wetland preservation area and the proposed wetland mitigation area (Open Space, Lot H) shall be protected under a covenant of easement~~.~~ or conservation easement. A long-term management plan for the area shall be prepared and will include maintenance of the wetland functions and values of the existing and restored habitat in perpetuity by the Home Owners Association, underlying land owner, or an approved land manager.

The land manager shall be an entity approved by CDFW and USFWS according to a long-term management plan approved by these agencies. The responsible party shall deter access to the Open Space through the use of signage and/or barriers, which will also be placed along the proposed trail within the Open Space. The tasks in the long-term management plan shall provide for long-term monitoring; documentation of site conditions; and tasks such as removal of trash, repair of any vandalism, and control of invasive species. The long-term management plan shall also provide BMPs that help reduce the spread of Polyphagous and Kuroshio shot hole borers (SHBs). BMPs may include on-site worker education, reporting of infestations, equipment disinfection, pruning infected limbs, avoidance of transport of infected host tree materials, chipping potential infected material to less than one inch in size and solarizing prior to removal or composting, and solarizing or burning of cut material that is potentially infected.

The condition of the Open Space shall be documented annually by preparation of an annual report submitted to the City and resource agencies. The responsible party shall also be responsible for implementation of any remedial measures (e.g., planting native wetland plants) to repair damage or loss due to any of the above-mentioned factors. The long-term management plan shall be funded by a non-wasting endowment for which the amount can be determined via preparation of a Property Analysis Record or similar method.

**Specific Alignment Plan Improvements**

Impacts on jurisdictional aquatic resources associated with SAP improvements will be mitigated through establishment/enhancement of southern coast live oak riparian forest (or similar vegetation community) at a suitable location at a 1:1 to 3:1 mitigation ratio, or in an off-site mitigation bank as described in BIO-3.

Further, compliance with state regulatory agencies will be required, specifically through a CDFW Section 1602 Streambed Alteration Agreement as described in BIO-6, thus resulting in no net loss of acreage, function, or value of these resources.

**BIO-6:** To comply with the state and federal regulations for impacts on jurisdictional aquatic resources, the following agency permit is required, or verification that it is not required shall be obtained:

- A Section 1602 Streambed Alteration Agreement issued by CDFW for all project-related disturbances of any streambed and associated riparian habitat. Permits are required to be obtained by the applicant prior to the impact on the resources.

### 3.3.7.4 Issue 4: Wildlife Movement Corridors and Nursery Sites

The proposed project would result in less-than-significant direct and indirect impacts associated with wildlife movement corridors and nursery sites. Therefore, no mitigation is necessary.

### 3.3.7.5 Issue 5: Local Policies and Ordinances

**Residential Development**

**BIO-7:** Prior to the issuance of grading permits, the residential development applicant shall submit a Tree Mitigation Program to the City Community Development Department for review and approval. The Tree Mitigation Program shall focus on preservation, restoration, and enhancement of preserved oak trees/stands through sustainable tree plantings and native tree planting in the transition area between open space and development areas throughout the project site. Table 3.3-12 identifies the total number of plantings required to meet the intent of the City's tree protection and replacement requirements. A minimum of 195 trees (including coast live oak and other suitable native or ornamental species) shall be planted within the residential development landscape areas. The Tree Mitigation Program shall ensure that a minimum of 773 landscape trees are planted on the residential development site, as shown in Table 3.3-13.

**Table 3.3-12. Landscape Tree Replacement Calculation for the Proposed Residential Development**

| Tree Type | Trees Affected | Replacement Ratio | Replacement Species | Total Number Replacement Trees |
|---|---|---|---|---|
| Tree of heaven | 1 | 1:1 | Ornamental | 1 |
| Red gum | 2 | 1:1 | Ornamental | 2 |
| Jacaranda | 2 | 1:1 | Ornamental | 2 |
| Chinese flame tree | 2 | 1:1 | Ornamental | 2 |
| Crape myrtle | 3 | 1:1 | Ornamental | 3 |
| Chinaberry | 4 | 1:1 | Ornamental | 4 |
| Canary Island date palm | 2 | 1:1 | Ornamental | 2 |
| Coast live oak | 92 | 1:1 and 2:1 | Coast live oak | 138 |
| Red willow | 1 | 1:1 | Blue elderberry | 1 |
| Peruvian pepper | 1 | 1:1 | Ornamental | 1 |
| Brazilian pepper | 13 | 1:1 | Ornamental | 13 |
| Mexican fan palm | 26 | 1:1 and 2:1 | Ornamental | 26 |
| *Minimum required mitigation tree plantings* | | | | *195* |
| Source: Appendix D. | | | | |

**Table 3.3-13. Recommended Landscape Planting Quantities for the Proposed Residential Development**

| Tree Type | Common Name | Size | Replacement Quantity |
|---|---|---|---|
| *Cercidium* (desert museum) | Desert museum palo verde | 15 gallons | 4 |
| *Cercis occidentalis* | Western redbud | 15 gallons | 147 |
| *Metrosideros excels* | New Zealand Christmas tree | 24-inch box | 197 |
| *Pyrus calleryana (*Chanticleer*)* | Flowering pear | 24-inch box | 57 |
| *Sambucus mexicana* | Blue elderberry | 15 gallons | 144 |
| *Quercus agrifolia* | Coast live oak | 24-inch box | 224 |
| *Minimum proposed landscape plantings* | | | *773* |
| Source: Appendix D. | | | |

**Specific Alignment Plan Improvements**

**BIO-8:** To meet the City's mitigation planting requirements for the removal and encroachment of trees, 60 trees shall be planted along Bear Valley Parkway following completion of the proposed SAP improvements. Table 3.3-14 identifies the total number of plantings required to meet the intent of the City's tree protection and replacement requirements. A minimum of 60 trees (including coast live oak and other suitable native or ornamental species) shall be planted in areas along Bear Valley Parkway. Table 3.3-15 provides a list of species that are not invasive, are acceptable to fire agencies, and are anticipated to perform well along Bear Valley Parkway.

**Table 3.3-14. Landscape Tree Replacement Calculation for the Proposed SAP Improvements**

| Tree Type | Trees Affected | Replacement Ratio | Replacement Species | Total Number Replacement Trees |
|---|---|---|---|---|
| Ash tree | 2 | 1:1 | Ornamental | 2 |
| Silk oak | 1 | 1:1 | Ornamental | 1 |
| Jacaranda | 2 | 1:1 | Ornamental | 2 |
| Chinese juniper | 1 | 1:1 | Ornamental | 1 |
| Canary Island date palm | 1 | 1:1 | Ornamental | 1 |
| Coast live oak | 31 (15) | 1:1 and 2:1 | Coast live oak | 46 |
| Brazilian pepper | 1 | 1:1 | Ornamental | 1 |
| Queen palm | 3 | 1:1 | Ornamental | 3 |
| Mexican fan palm | 3 | 1:1 | Ornamental | 3 |
| *Minimum required mitigation tree plantings* | | | | *60* |
| Source: Appendix E. | | | | |

**BIO-9:** The following measures shall be implemented prior to, during, and following site activities to minimize PSHB and KSHB spread.

1. Provide education of on-site workers regarding shot hole borers and its spread (provided by the biological monitor)
2. Report sign of shot hole borer infestation to the CDFW and University of California Riverside's Eskalen Lab
3. Disinfect hand tools and machinery used to cut trees, chip trees, and process trees.
4. If infection is observed, remove infested/infected limbs to the extent feasible. If warranted, entire trees may require removal and would be coordinated with the City and or CDFW, as appropriate.
5. Avoid and minimize transportation of potential host tree materials.
6. Following tree felling for known host tree species within the disturbance area, the trees will be ground to less than one-inch diameter and solarized, prior to spreading on-site or delivering to a landfill.
7. Cut logs of known host species that are too large to be chipped/ground will be solarized before being removed from the site.
8. If acceptable, known host species material will be burned in lieu of other protective measures if determined to be preferred to chipping and solarization.
9. Post project landscapes will be maintained in good horticultural condition and trees will be provided necessary maintenance for establishment and growth.

**Table 3.3-15. Recommended Landscape Planting Quantities for the Proposed SAP Improvements**

| Tree Type | Common Name | Size | Replacement Quantity |
|---|---|---|---|
| *Parkinsonia* (Desert Museum) | Desert museum palo verde | 24-inch box | 3 |
| *Cercis occidentalis* | Western redbud | 24-inch box | 4 |
| *Metrosideros excels* | New Zealand Christmas tree | 24-inch box | 4 |
| *Pyrus calleryana (*Chanticleer*)* | Flowering pear | 24-inch box | 3 |
| *Quercus agrifolia* | Coast live oak | 24-inch box | 46 |
| *Minimum proposed landscape plantings* | | | *60* |
| Source: Appendix E. | | | |

### 3.3.7.6 Issue 6: Habitat Conservation Plans and NCCPs

The proposed project would result in less-than-significant direct and indirect impacts associated with adopted HCPs and NCCPs. Therefore, no mitigation is necessary.

## 3.3.8 Conclusion

### 3.3.8.1 Issue 1: Candidate, Sensitive, or Special-Status Species

The proposed project would not result in a significant direct or indirect impact on special-status plants. Therefore, mitigation is unnecessary.

Implementation of the proposed project has the potential to directly affect birds protected under the MBTA and raptors protected under California Fish and Game Code, and to indirectly affect off-site sensitive species. Implementation of mitigation measure BIO-1 would reduce impacts of both the proposed residential development and proposed SAP improvements to a less-than-significant level.

### 3.3.8.2 Issue 2: Sensitive Habitats

Implementation of the proposed project would result in direct impacts on riparian habitat and other sensitive natural communities. Mitigation measures BIO-2 and BIO-3 would require habitat enhancement and establishment, and would reduce the direct impact on sensitive habitats to a less-than-significant level. Portions of these habitat areas are under USACE/RWQCB and/or CDFW jurisdiction and would be further mitigated through jurisdictional resources described under Issue 3.

### 3.3.8.3 Issue 3: Jurisdictional Habitat

Implementation of the proposed project would result in direct impacts on habitat under the jurisdiction of regulatory agencies, including USACE, RWQCB, and/or CDFW. Mitigation measures BIO-2 and BIO-4 would require the residential development applicant to establish or enhance jurisdictional habitat. Mitigation measure BIO-3 would require the SAP improvements applicant to establish or enhance jurisdictional habitat. Further, mitigation measures BIO-5 and BIO-6 would ensure that the proposed residential development and SAP improvements secured the appropriate regulatory agency permits prior to construction. This significant impact on jurisdictional habitat would be reduced to a less-than-significant level with implementation of mitigation measures BIO-2 through BIO-6.

### 3.3.8.4 Issue 4: Wildlife Movement Corridors and Nursery Sites

The project would result in less-than-significant direct and indirect impacts associated with wildlife movement corridors and nursery sites. Therefore, no mitigation is necessary.

### 3.3.8.5 Issue 5: Local Policies and Ordinances

The proposed residential development would remove 110 trees (including 60 coast live oak). An additional 39 trees (including 32 coast live oak) would be preserved in place with protections but would be encroached on. The proposed SAP improvements would remove 42 trees and encroach upon 3 trees. Implementation of mitigation measures BIO-7 and BIO-8 would require replacement of affected trees to meet the intent of the City's tree protection and replacement requirements. Therefore, mitigation would reduce the impact to a less-than-significant level.

Tree removal and planting activities could lead to the spread of shot hole borer. Implementation of the management practices identified in mitigation measures BIO-5 and BIO-9 would reduce the impact to a less-than-significant level.

### 3.3.8.6 Issue 6: Habitat Conservation Plans and NCCPs

The conservation plan applicable to the proposed project (the draft Escondido MHCP Subarea Plan) has not been adopted. Until the draft Escondido MHCP Subarea Plan is approved, the City follows MHCP guidelines or regulatory guidance for projects within City limits. There would be no impact related to HCPs and NCCPs.

## 3.4 Cultural Resources

This section of the Environmental Impact Report (EIR) describes the existing cultural resources in the proposed project area. Cultural resources addressed include archaeological, historical, and tribal resources, as well as human remains. This section evaluates existing cultural resources, analyzes the potential impacts that may occur under the proposed project, recommends mitigation measures to reduce or avoid impacts on these resources, and examines levels of significance after mitigation.

General information in this section is taken from the *Escondido General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Final Environmental Impact Report* (General Plan Program EIR) (City of Escondido 2012b) unless otherwise referenced. Project-specific information is from the *Cultural Resources Survey and Evaluation of Built Environment for the Bear Valley Parkway Development, Escondido, California* (Appendix F) ,the *Cultural Resources Evaluation of Prehistoric Archaeological Site CA-SDI-21808 for the Bear Valley Parkway Development, Escondido, California* (Appendix G), and the *Additional Cultural Resources Survey for the Bear Valley Parkway Development, Escondido, California* (Appendix H)—prepared by ASM Affiliates in April 2016, June 2016, and September 2016, respectively.

### 3.4.1 Existing Conditions

The cultural environment consists of the remains of prehistoric- and historic-era human activities. The city contains numerous recorded resources, including prehistoric archaeological sites, historic archaeological sites, historic features relating to water storage and water conveyance, historic buildings and structures, and known cemeteries. The following discussion provides background information, as well as an inventory of the essential components that make up the project area's cultural environment.

#### 3.4.1.1 Local Background

Cultural resources are generally defined in terms of the tangible materials attributed to a culture. These include districts, sites, structures, artifacts, and other evidence of human use considered important to a culture or community for scientific, traditional, religious, or other reasons. Types of resources include archaeological resources, historic structures, historic districts, traditional cultural properties, and landscapes. Cultural resources may also consist of less tangible attributes, such as landscapes considered sacred to particular groups. These resources can provide clues about prehistoric- and historic-era human behaviors, and provide scientific, religious, and other valuable educational information about the cultural past.

Cultural resources are identified using standard protocols and are evaluated based on a variety of established criteria. There are four general types of designations for significant cultural resources within the project area. The system includes federal designation in the National Register of Historic Places (NRHP) for resources of importance and relevance to national

heritage, state-level designation in the California Register of Historical Resources (CRHR), County-level designation in the San Diego County Local Register of Historical Resources, and designation as Escondido Historical Landmarks for resources of importance to local history and culture. Each of these registers uses different criteria to determine whether a resource could be determined eligible for inclusion; these criteria are discussed below in Section 3.4.2, "Regulatory Framework." The integrity of the resource, its attributes, and it location are also key factors in establishing its significance.

As defined in this document, *cultural resources* consist of the remains of prehistoric- and historic-era human behaviors, including both archaeological and historic resources. Archaeological resources include artifacts and features found on both the ground surface or under the surface, and include both prehistoric and historic time periods. Historic resources refer to built environment features aged 50 years or older and include buildings, structures, and other features such as flumes, roads, bridges, and tunnels.

**Archaeological and Tribal Resources**

The Archaeological Resources setting is drawn from the Escondido General Plan Program EIR (City of Escondido 2012b) unless otherwise cited.

***Prehistoric Setting***

Archaeological evidence indicates that the San Diego County (County) region has a long cultural history beginning approximately 10,000 years ago. Recent scholarship on Native American (Pre-Contact) human occupation in the County recognizes the existence of at least two major cultural traditions identified as the Early Period/Archaic and Late Period by Gallegos (2007 as cited in City of Escondido 2012b). However, the prehistory of San Diego is also often divided into three chronological sequences based on material and cultural constituents: Paleo-Indian, Archaic, and Late Prehistoric periods (BFSA as cited in City of Escondido 2012b).

Early Period/Archaic

The Early Period/Archaic includes the time period spanning from approximately 10,000 to 1,300 years ago and includes the San Dieguito, La Jolla, and Pauma Complexes. The earliest accepted archaeological manifestation of human occupation in the San Diego area is the San Dieguito Complex, which dates to approximately 10,000 years ago. The San Dieguito Complex is chronologically equivalent to other Paleo-Indian complexes across North America. The material culture of the San Dieguito Complex is primarily characterized by a flaked or chipped stone component consisting of scrapers, scraper planes, choppers, drills, gravers, large lanceolate bifaces, and large foliate (leaf-shaped) projectile points. Various researchers recognized the regional similarity of such artifact assemblages and termed interior sites of the same age as either the Western Pluvial Lakes Tradition or the Western Lithic Co-Tradition. Tools and debitage made of fine-grained green metavolcanic material (felsite) were found at many sites that Rogers (1939 as cited in City of Escondido 2012b) identified as San Dieguito, lending to the

presence of felsite as a San Dieguito hallmark. There is an overall lack of milling stone equipment, suggesting that hard seeds may not have been an important part of the diet during this period. San Dieguito sites are typically found on or near former pluvial lake shores, marshes, and old stream channels; and coastal sites indicate that shellfish was an important dietary resource for peoples living near the Pacific Ocean. Sleeping circles, trail shrines (cairns), and rock alignments have also been associated with San Dieguito sites, helping to support the conclusion that San Dieguito peoples practiced a mobile hunting and gathering lifestyle based on terrestrial and aquatic resources.

The La Jolla and Pauma Complexes are often referred to as following the San Dieguito Complex. The La Jolla Complex is associated with shell midden sites on the coast; and the Pauma Complex is associated with inland sites, particularly located in valleys and sheltered canyons in northern San Diego County. Because the two complexes have similar artifact assemblages, it is believed that the Pauma Complex may represent an inland variation of the La Jolla Complex. Gallegos (2007 as cited in City of Escondido 2012b) notes that these complexes may represent a seasonal or geographic variation of an older and more general San Dieguito Complex. This is based on a pattern of observable cultural continuity exhibited in the material culture assemblages of Early/Archaic Period sites (2007 as cited in City of Escondido 2012b). Nonetheless, many researchers have focused on the proliferation of ground stone tools and an increased level of sedentism to differentiate the La Jolla and Pauma Complexes from the San Dieguito Complex.

The La Jolla and Pauma Complexes reflect subsistence patterns focused on gathering plant foods and small animals, including near-shore fish and shellfish. Ground stone milling equipment, including manos and metates, appear in large numbers and dominate their tool assemblages. In addition to manos and metates, assemblages contain discoidals (perforated rounded stones), cog stones (perforated rounded and grooved stones), finely worked small domed scrapers, flaked cobble tools, and large notched and stemmed dart points. Flexed burials with the head pointed northward under rock cairns, and often containing many broken tools, are also associated with these complexes.

Late Period

By the advent of the Late Period, which spans from 1,300 years ago to historic contact (1769), a material culture pattern similar to that of historic Native Americans becomes apparent in the archaeological record. Cultural change and social complexity reflect both an adaptation to variations in environmental conditions and an influence from outside groups. The results of these adaptations are shown through changes in material culture, subsistence patterns, and burial practices throughout the period, over time and space. The economic pattern during this period appears to be one of more intensive and efficient use of local resources. The prosperity of these highly refined economic patterns is well evidenced by the numerous Kumeyaay/Diegueño and Luiseño habitation sites scattered throughout the County. This increase in Late Period site density probably reflects both better preservation of the more

recent archaeological record and a gradual population increase within the region. Artifacts and cultural patterns reflecting this Late Period pattern include small projectile points, pottery, the establishment of permanent or semi-permanent seasonal village sites, a proliferation of acorn milling sites in the uplands, the presence of obsidian from the Imperial Valley source Obsidian Butte, and interment by cremation.

Luiseño occupation in northern San Diego County during the late Holocene has been viewed as an occupation that migrated from the desert to the coast, an incursion called "the Shoshonean Wedge." Late Period culture patterns were shared with groups along the northern and eastern periphery of San Diego County, incorporating many elements of their neighbors' culture into their own cultures. This transference and melding of cultural traits between neighboring groups makes positive association of archaeological deposits with particular ethnographically known cultures difficult. This is particularly true of the groups within this portion of the County. Although significant differences exist between Luiseño and Kumeyaay/Diegueño cultures (including linguistic stock), the long interaction of these groups during the Late Period resulted in the exchange of many social patterns. Archaeologists must rely heavily on ethnographic accounts of group boundaries as recorded during the historic period to inform ethnographic occupation of particular areas.

In 1925, ethnographer Alfred Kroeber placed the Kumeyaay/Diegueño and Luiseño boundary between Agua Hedionda and Batiquitos Lagoon (Kroeber 1925 as cited in City of Escondido 2012b). These lagoons are located approximately 13.5 miles east of the center of the City of Escondido, placing the Escondido area in a transitional area for the Diegueño and Luiseño groups. Diegueño is recognized as a member of the California-Delta Yuman division of the Yuman-Cochimi language family and includes three main dialects: Ipai, Kumeyaay, and Tipai (Luomala 1978 as cited in City of Escondido 2012b). The Ipai occupied the central portion of the County, while the Kumeyaay inhabited the southern portion of the County, including lands extending into the California portion of the Colorado Desert. The Tipai territory included the lands from Jamul southward into Baja California, south of Ensenada. Modern ethnographers tend to combine the Kumeyaay and the Tipai as a single, continuous social group. The Luiseño traditional use area is then mapped as extending from the Pacific Ocean inland to Lake Elsinore and Palomar Mountain in the east, and extending from Agua Hedionda in the south to Aliso Creek in the north (Bean and Shipek 1978 as cited in City of Escondido 2012b).

## Historic Resources

### *Historic Setting*

The Historic Setting is drawn from the Escondido General Plan Program EIR (City of Escondido 2012b) unless otherwise cited.

The historic era (Post-Contact) in southern California is commonly presented in terms of Spanish, Mexican, and American political domination. Certain themes are common to all periods, such as the development of transportation, military activities, settlement, and agriculture.

Spanish Period (1769–1821)

The history of modern San Diego County dates to early Spanish explorations in the area. In 1542, Juan Rodriguez Cabrillo claimed the bay for Spain, and named this place "San Miguel." Thereafter, the Spanish colonization of California was achieved through a program of military-civilian-religious conquest. Under this system, soldiers secured areas for settlement by suppressing native and foreign resistance, and established fortified structures (presidios) from which the colony would be governed. Civilians established towns (pueblos) and stock-grazing operations (ranchos) that supported the settlement and provided products for export. The missionary component of the colonization strategy was led by Spanish priests, who were charged with converting Native Americans to Catholicism, introducing them to Spanish culture, and training them as a labor force. Ultimately, four presidios and 21 missions were established in Spanish California between 1769 and 1821.

In the general vicinity of the proposed project area, the San Diego and San Luis Rey Missions were established along the Pacific coastline. However, the Escondido Valley was not under the jurisdiction of the San Diego or San Luis Rey Missions. Due to the relative remoteness of Escondido, early historic land use was limited to grazing, although scouting parties associated with the missions did come to the area in search of Native American laborers and religious converts.

Horses, cattle, agricultural foods, weed seeds, and a new architectural style and method of building construction were introduced during the Spanish period; and Spanish influence continued after 1821, when California became a part of Mexico. For a period of time under Mexican rule, the missions continued to operate as in the past, and laws governing the distribution of land were also retained.

Mexican Period (1821–1848)

Mexico achieved independence from Spain in 1821, and California became a distant outpost of the Mexican Republic. Under a law adopted by the Mexican congress in 1833, the former mission lands were secularized and subdivided into land grants. Cattle ranching prevailed over

agricultural activities, and the development of the hide and tallow trade increased during the early part of this period. In 1843, Juan Bautista Alvarado, a native of San Diego, received the land grant described as *El Rincon del Diablo Rancho* (Corner of the Devil). This grant was bestowed to Alvarado by Mexican Governor Manuel Micheltoren and consisted of a 12,633-acre tract including the majority of present-day Escondido. Alvarado built a large adobe house overlooking Escondido and raised cattle on his land. Beginning in the early 1840s, Mexico's hold on California was threatened by the steady overland migration of American settlers into the region. War between the United States and Mexico commenced in May 1846, and the Mexican Period ended in 1848, at the end of the Mexican-American War.

American Period (1848 to Present)

The American Period began in 1848 when Mexico ceded California to the United States under the Treaty of Guadalupe Hidalgo. Few Mexican ranchos remained intact because of legal costs and the difficulty of producing sufficient evidence to prove title claims, and much of the land that once constituted rancho holdings became available for settlement by immigrants to California. In the early 1850s, Alvarado and his wife died, and their descendants began to subdivide and sell their land. Judge Oliver S. Witherby of San Diego began buying portions of the El Rincon del Diablo Rancho, and it took him approximately 10 years to acquire the entire rancho. Witherby farmed his property extensively and increased the size of his cattle and sheep herds. In the early 1860s, Witherby began mining gold on his property and built a mill to grind ore under the auspices of the Rincon del Diablo and Escondido Mining Company. This was the first recorded use of the word "Escondido" in the area.

In 1886, the Escondido Land Company was formed and began dividing over 12,000 acres of prime Escondido real estate. The City of Escondido (City) was incorporated 2 years later in 1888. Construction commenced on a rail line extending from Oceanside to Escondido in 1887, and the first freight left Escondido via rail in January 1888. The advent of the railroad led to an increase in population, retail business, and the export of agricultural products. With the assistance of the railroad, the economic base of burgeoning Escondido became focused on agriculture, and was supported by gold mining and tourism. One event that brought tourists into Escondido via rail was Grape Day. This event was first held on September 9, 1908, and was meant to celebrate the annual grape harvest. Grape Day continued to be a very popular celebration until 1950, when a lack of grapes in the valley caused the festival to end. Grape Day was then officially revived in 1996, and continues to be celebrated in Grape Day Park in downtown Escondido to the present day.

In 1950, U.S. Highway 395 connected Escondido to San Diego, allowing for an easier and faster commute between the two areas. At this same time, numerous defense contracts relating to the Cold War and Korea conflicts existed in the County, and these contracts created a variety of new job opportunities. Collectively, increased travel efficiency and employment prospects led to a population increase in the Escondido area. Subdivisions were constructed to accommodate

the population influx, and these subdivisions replaced many of the vineyards and citrus groves on the east end of town. Thereafter, citrus production began to decline quickly, with groves converted to avocado production, and the area's largest packing house closed in 1960. These agricultural pursuits were replaced with industry and retail as important economic pursuits during the ensuing decades. Presently, the City boasts Palomar Medical Center, Escondido Auto Park, and Westfield Shopping Town North County as major employers and retail options.

### 3.4.1.2 Project Site

As indicated above, a project-specific *Cultural Resources Survey and Evaluation of Built Environment for the Bear Valley Parkway Development, Escondido, California* was prepared by ASM Affiliates in April 2016 (Appendix F). As a part of this effort, a records search, site history research, historic architectural survey, and archaeological survey were completed. The archaeological field survey and architectural history survey were conducted on March 25, 2016, by an archaeologist, historian, and Native American monitor. Subsequently, additional testing was completed for site CA-SDI-21808, and the results are included in Appendix G. The results of these site-specific cultural resource evaluations are described below. Refer to Appendices F and G for additional detail. Additionally, a Cultural Resources Survey was prepared for the Specific Alignment Plan (SAP) improvements. The results of this site-specific cultural resources evaluation are described below. Refer to Appendix H for additional detail.

**Records Search**

On March 21, 2016, a records search for the proposed project site and a 1-mile search radius was requested from the South Coastal Information Center (SCIC) of the California Historical Resources Information System (CHRIS) at San Diego State University. The records search included a search of all relevant site records and prior reports on file with the SCIC, as well as a search of the NRHP, the CRHR, and other local registers to determine whether significant archaeological or historical sites have previously been recorded within or near the proposed project site.

The records search identified a total of 53 previous cultural resource studies that address areas within a 1-mile radius of the proposed project site. Four of those reports address areas within the current proposed project area:

- Wade, Sue A. 1987. Results of an Archeological Archival and Field Survey of the Bear Valley Parkway/SR-78 General Plan Amendment EIR Project Area San Diego County, California.
- Affinis and M. Robbins-Wade, R. Alter. 1993. Cultural Resources Survey for the Bear Valley Parkway (South) Reconstruction. Activity No. Uj1194, Escondido, San Diego County, California.
- City of Escondido. 1980. Draft Environmental Impact Report for Expansion of Wastewater Treatment Facility.

- Dalope, Michelle and Susan Hector. 2008. The Westfield North County Expansion Offsite Improvements Project, City of Escondido, San Diego County, California.

The records search identified 27 previously recorded sites and isolates within a 1-mile search radius. One of those previously recorded sites, CA-SDI-12920, intersects the proposed project site. This site, a historic-period can scatter, is described in more detail below. Refer to Appendix F for a full list of all previously recorded sites and isolates within 1 mile of the proposed project site.

**Historical Resources**

***Site History***

The Escondido Land and Town Company acquired a portion of the Rancho Del Diablo that is the present-day project site. Ownership of the proposed project site changed hands a number of times. By 1904, a portion of the project site was deeded to John Becker, and another portion of the property to the Cleveland-Pacific Mining Company.

The Cleveland-Pacific Mining Company's Escondido Mine was located immediately west and north of the proposed project site. It is now underneath a subdivision off Bear Valley Parkway between Encino Drive and Eldorado Drive. According to the California Bureau of Mines, the Escondido mine area had been worked by early Spaniards and Mexicans, and sometime around 1868 Americans began working it with *arrastres*. By 1908, the Cleveland-Pacific Mining Company had discovered two deposits where rich ore was packaged for shipment. A small stamp mill was erected in June 1908. It operated until 1911, when the company encountered an abundance of pyrite ("fool's gold") and a rising water table that limited the depth of the shaft. At that time, the company used two steam hoists and a five-stamp mill with plates, a Wilfley table, and two 10-foot-tall cyanide tanks. In 1924, the Escondido mine was sold to B. F. Brough and Associates, who opened new workings 1,000 feet to the west with a new shaft. Old mining dumps in the area were reworked. In 1926, operations ceased permanently. While San Diego County was never one of the most productive counties, Escondido ranked third in the County's production.

The early uses of the proposed project site included some prospecting and exploratory mining south and west of the remaining residence. Ownership of the site changed hands and by 1922 was owned by Lawrence C. Spieth. Much of the property was unused at this time. In 1938, orange and avocado groves were planted on the project site, and both permanent and temporary irrigation was installed. A shed had been constructed years earlier (1925).

Oranges were produced for the Escondido Orange Association, and avocados were produced for Calavo. It was a private operation and was not one of most productive groves in the area. Some lemons and grapefruit were also grown on the property.

In February 1940, Spieth deeded half of the property to Burnet C. Wohlford. The extant house and detached garage was constructed in 1946. The wood-frame house was constructed with stucco and board-and-batten, with double-hung windows, a hip roof and gable porch, and composite shingles. A shed (now demolished) was also constructed. Several pumps were installed on the property. Burnet C. Wohlford was the son of Alvin Wohlford, who ran the Escondido Mutual Water Company and owned Escondido National Bank. Sometime after Alvin Wohlford died in 1924, Burnet sold his father's bank and put in 125 acres of oranges, lemons, grapefruit, and avocados in Escondido. Thereafter, he was well known for his leadership at the water company and for cultivating citrus and avocados.

In 1953, the entire property was cultivated with citrus and avocado groves that amounted to approximately 42 acres. The property was continuously used for production until at least 1979. Sometime between 1989 and 1995, the trees were removed from the property.

***Historic Resources Survey Results***

Three potential historic resources were identified onsite; the residence and garage constructed in 1946, a historic can scatter (CA-SDI-12920), and historic isolates associated with previous agricultural operations. These resources are described below.

Built Resources

The residence on the project site is a one-story, wood-framed building with a wood-framed open-front porch that provides entry into the building. The porch is concrete slab. The building is board-and-batten on the front façade and stucco around the other three sides of the building. It has sash windows and a hipped roof with exposed rafters and composite shingles. At the southeastern side of the building is another entrance with concrete steps and metal rolled awning. The majority of the exterior appears to retain original materials. Most of the exterior doors are not original, but most of the windows are original. The interior walls are original plaster with rounded edging at the door frames. Most of the interior doors have been replaced; but some original hardware, such as a bathroom knob, has been retained. The original inset ironing board still remains in the kitchen.

A detached garage was constructed in the same style as the residence without a finished interior. It is a one-story wood-frame garage with wood-frame rafters that are exposed on the exterior and interior. It also has a hipped roof and composite shingles. The exterior has been covered in stucco, and the original garage door has been replaced with a plywood door as it now functions as a shed.

Historic Can Scatter Site (CA-SDI-12920)

Mary Robbins-Wade of Affinis recorded this site in September 1992 during a survey for improvements to Bear Valley Parkway (Robbins-Wade and Alter 1993 as cited in Appendix F).

The site was recorded as consisting of metal cans and one glass milk bottle marked "Sunshine Dairy, Escondido." Robbins-Wade and Alter reported the location of the site as above the creek on the eastern side of Bear Valley Parkway, just south of the intersection with Encino Drive and Rancho Verde Drive. The site was reported as small, with no diagnostic material and likely the result of dumping along the road.

It is also noted that the nearest water was the creek approximately 10 meters east of the site. The currently defined boundary in the SCIC GIS database shows the site as much larger than suggested by Robbins-Wade and Alter, with the boundary crossing west of the creek into the current project site. The GIS data are most likely not accurate; during the survey, no historic cans were noted west of the creek within the drawn boundaries of the site.

The can scatter on the side of Bear Valley Parkway was not relocated due to vegetation coverage on the shoulder of the road.

Historic Isolates

Historic-period isolates and features associated with the previous agricultural grove on the property were noted across the site, including abandoned ceramic pipes, irrigation pipes, isolated bottle glass shards, and broken drainage pipes.

**Archaeological Resources**

***Residential Development Site***

One previously unrecorded bedrock milling site (CA-SDI-21808) and two ground stone isolates during the pedestrian survey were identified, as discussed further below.

Milling Slicks (CA-SDI-21808)

There are several granitic bedrock outcrops on the proposed project site. Two of the inspected outcrops each had one milling slick on their surfaces. The two outcrops are approximately 13 meters apart, with two larger granitic boulders between them and a large isolated palm just to the west. Both of the milling slicks are slightly exfoliated.

On June 1, 2016, additional evaluation of the site was conducted. Three standard test pits (STPs) were excavated to determine whether cultural deposits are present and, if so, the character and distribution of those deposits. The three STPs were positioned within and across the site, and were excavated to depths between 60 and 80 centimeters (cm) below surface. No samples yielded any cultural materials. Charred plant remains and modern refuse associated with farming were in the top 20 cm of the samples, including ferrous metal wire and fragmented oyster shell, likely present from past fertilizing activities on the project site.

No artifacts were noted within the immediate vicinity of the milling features during the pedestrian survey or the site evaluation, and the soils did not appear to contain any midden deposits. Evidence of previous burning in the area was noted, including some charred vegetation and some ash on the surface, but this is attributable to recent burns possibly associated with the agricultural activity in the area. Several baked earth patches were noted across the proposed project site, with a ring in the center of each the size of a palm tree trunk. The trees were likely burned in place, causing the ground around their base to harden.

A California Department of Parks and Recreation form describing the site was submitted to the SCIC, and the site was assigned the trinomial of CA-SDI-21808 on April 4, 2016.

Isolate Artifacts

Two isolate ground stone fragments were identified during the pedestrian survey, about 80 meters southwest of the newly recorded bedrock milling site. The two isolates were found just under 3 meters apart. Both ground stone fragments are granitic hand stones and show wear on both sides.

***Specific Alignment Plan Improvements***

A previously unrecorded small historic trash dump was observed immediately east of the proposed SAP improvements, just south of the residential development's boundary. The small trash dump consisted of seven clear glass bottle fragments, brown glass bottle fragments, a historic Ball mason jar, two cans, and two unidentifiable metal fragments. It also contained intrusive modern components. The historic component appeared to be eroding from the banks of a seasonal drainage. This site is located outside of the SAP improvement area of potential effects (APE) and was, therefore, not formally recorded.

**Tribal Resources**

Cultural resources include properties of traditional religious and cultural significance to groups or individuals, including local Native Americans. Such resources consist of archaeological resources or areas containing human remains, as well as landscapes or features in the natural environment important for their role in oral tradition or in existing religious tradition. These resources are often different than those detected by professional archaeological surveys or by the review of the existing archaeological record, and often pertain to other perspectives about the presence of Native Americans in the region beyond the prehistoric and historic setting presented above. As described by creation stories, Native Americans have been present in the region from the beginning of time. In accordance with this view, the distinction that is made between different archaeological cultures or periods, such as the La Jolla and San Dieguito, is not necessarily recognized. Instead, some groups or individuals believe that there is a continuum of ancestry, from the first people to the present Native American populations of San Diego County. To acknowledge this perspective, research on the presence or absence of known Native American resources is necessary to fully document existing conditions for cultural

resources. In addition, consultation with affected Native American communities can be beneficial to fully understand potential impacts on cultural resources.

Research on the presence of Native American resources is initially completed through a Sacred Lands File database search by the Native American Heritage Commission (NAHC). Thereafter, research is completed by obtaining responses or comments from contacts named by the NAHC as having knowledge about a particular project area. Formal consultation is then typically administered pursuant to Assembly Bill (AB) 52, described below in Section 3.4.2, "Regulatory Framework." The California NAHC was contacted to identify possible sacred lands within the proposed project site, and none were identified. The NAHC provided a list of contact information for local Native American representatives who may have an interest or concerns regarding the proposed project. All persons listed by the NAHC were contacted on March 24, 2016.

As of November 2016, responses from three of the tribal contacts were received. The Pauma Band of Luiseño Indians requested a copy of the cultural study once it is completed and that, if any sites are identified on the property, they be preserved. The Viejas Band of Kumeyaay Indians requested a copy of the cultural resources report so that they may make an informed decision and recommendation on the project. The Soboba Band of Luiseño Indians indicated that the Sobaba Band does not currently have any specific concerns regarding known cultural resources within the project area, but requested that the appropriate consultation continue to take place between concerned tribes, project proponents, and local agencies.

Pursuant to AB 52, the City notified the Rincon Band of Luiseño Indians, the San Luis Rey Band of Mission Indians, and the Soboba Band of Luiseño Indians regarding the proposed project in August 2015. The Rincon Band of Luiseño Indians and the San Luis Rey Band of Mission Indians both requested formal consultation. The Soboba Band of Luiseño Indians did not have any specific concerns regarding the proposed project and deferred to the Pauma Band of Luiseño Indians and the Rincon Band of Luiseño Indians. Copies of cultural resource studies for the proposed project were mailed to the Viejas Band of Kumeyaay Indians, the Pauma Band of Luiseño Indians, the Rincon Band of Luiseño Indians, and the San Luis Rey Band of Mission Indians on May 2, June 29, and September 21 2016. A record of correspondence with the Native American community is included in Appendix B to the Cultural Resources Survey (Appendix F).

**Human Remains**

Human remains can be considered cultural resources for a number of reasons. Some human remains are evidence of burial places that represent events, customs, or beliefs common to many cultures, locations, or time periods. Other human remains are unique representatives of specific people or events. Cemeteries and burial places traditionally have been regarded as sacred and inviolate, especially by those whose ancestors are buried there. The concern of Native Americans about appropriate and respectful disposition of burial remains and objects of their descendants has resulted in greater sensitivity toward those for whom a burial place has familial or cultural importance.

In addition to unearthed human remains that may have cultural significance, established cemeteries and burial places may be considered cultural resources. Cemeteries and burial places can often qualify for listing in registers of significant resources, and several cemeteries in unincorporated San Diego County are included on the San Diego County Historic Property Listing. Properties eligible for such listing include town cemeteries and burial grounds whose creation and continuity reflect the broad spectrum of the community's history and culture; family burial plots that contribute to the significance of a farmstead; beautifully designed garden cemeteries that served as places of rest and recreation; graveyards that form an important part of the historic setting for a church or other religious building being nominated; formal cemeteries whose collections of tombs, sculptures, and markers possess artistic and architectural significance; single or grouped gravestones that represent a distinctive folk tradition; graves or graveyards whose survival is a significant or the only reminder of an important person, culture, settlement, or event; and burial places whose location, grave markers, landscaping, or other physical attributes tell something important about the people who created them (NPS 2011 as cited in City of Escondido 2012b).

## 3.4.2 Regulatory Framework

### 3.4.2.1 Federal Regulations

**American Indian Religious Freedom Act**

The American Indian Religious Freedom Act, Title 42 United States Code, Section 1996, protects Native American religious practices, ethnic heritage sites, and land uses.

**National Historic Preservation Act and the National Register of Historic Places**

Federal regulations for cultural resources are primarily governed by Section 106 of the National Historic Preservation Act (NHPA) of 1966, which applies to actions taken by federal agencies. The goal of the Section 106 review process is to offer a measure of protection to sites that are listed or determined eligible for listing in the NRHP. The criteria for determining NRHP eligibility are found in 36 Code of Federal Regulations (CFR) Part 60. Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and affords the federal Advisory Council on Historic Preservation a reasonable opportunity to

comment on such undertakings. The Council's implementing regulations, "Protection of Historic Properties," are found in 36 CFR Part 800. The NRHP criteria (36 CFR 60.4) are used to evaluate resources when complying with Section 106 of the NHPA. Those criteria state that eligible resources comprise districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and any of the following:

a. Are associated with events that have made a significant contribution to the broad patterns of our history
b. Are associated with the lives of persons significant in our past
c. Embody the distinctive characteristics of a type, period, or method of construction, or that possess high artistic values, or that represent a significant distinguishable entity whose components may lack individual distinction
d. Have yielded or may be likely to yield, information important to history or prehistory

Eligible properties must meet at least one of the criteria and exhibit integrity. Historical integrity is measured by the degree to which the resource retains its historical attributes and conveys its historical character, the degree to which the original fabric has been retained, and the reversibility of changes to the property.

Historic districts derive their importance from being considered a unified entity, even though they are often composed of a variety of resources. The identity of a district results from the interrelationship of its resources, which can be an arrangement of historically or functionally related properties. A "district" is defined as a geographically definable area of land containing a significant concentration of buildings, sites, structures, or objects united by past events or aesthetically by plan or physical development. A district's significance and integrity should help determine the boundaries.

Within historic districts, resources are identified as contributing and noncontributing. A contributing building, site, structure, or object adds to the historic associations, historic architectural qualities, or archaeological values for which a district is significant because it was present during the period of significance, relates to the significance of the district, and retains its physical integrity; or it independently meets the criteria for listing in the NRHP.

Archaeological site evaluation assesses the potential of each site to meet one or more of the criteria for NRHP eligibility based on visual surface and subsurface evidence (if available) at each site location, information gathered during the literature and records searches, and the researcher's knowledge of and familiarity with the historic or prehistoric context associated with each site.

**Native American Graves Protection and Repatriation Act**

Enacted in 1990, the Native American Graves Protection and Repatriation Act conveys to American Indians of demonstrated lineal decent, the human remains and funerary or religious items that are held by federal agencies and federally supported museums, or that have been recovered from federal lands. It also makes the sale or purchase of American Indian remains illegal, whether or not they derive from federal or Indian lands.

**Secretary of the Interior's Standards**

The Secretary of the Interior (SOI) is the head of the U.S. Department of the Interior, which is the nation's principal conservation agency. The department oversees agencies including the Bureau of Land Management, the Bureau of Indian Affairs, and the National Parks Service.

***The Secretary of the Interior Standards and Guidelines for Archaeology and Historic Preservation***

The purpose of the SOI's Standards and Guidelines for Archaeology and Historic Preservation of 1983 is to (1) organize the information gathered about preservation activities; (2) describe results to be achieved by federal agencies, states, and others when planning for the identification, evaluation, registration, and treatment of historic properties; and (3) integrate the diverse efforts of many entities performing historic preservation into a systematic effort to preserve the nation's culture heritage.

***The Secretary of Interior Standards for Rehabilitation***

Developed in 1986, the SOI's Standards for Rehabilitation are 10 basic principles created to help preserve the distinctive character of a historic building and its site, while allowing for reasonable change to meet new needs.

***The Secretary of Interior Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings***

The SOI's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings were developed in 1995 to help protect the nation's irreplaceable cultural resources by promoting consistent preservation practices. The Standards are a series of concepts about maintaining, repairing, and replacing historic materials, as well as designing new additions or making alterations. As such, they cannot, in and of themselves, be used to make essential decisions about which features of a historic property should be saved and which might be changed. But once an appropriate treatment is selected, the Standards provide philosophical consistency to the work.

### 3.4.2.2 State Regulations

**California Environmental Quality Act and the California Register of Historical Resources**

Under the California Environmental Quality Act (CEQA), public agencies must consider the impacts of their actions on both historical resources and unique archaeological resources. Pursuant to Public Resources Code (PRC) Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." PRC Section 21083.2 requires agencies to determine whether proposed projects would have effects on unique archaeological resources.

"Historical resource" is a term with a defined statutory meaning (refer to PRC Section 21084.1 and State CEQA Guidelines, Section 15064.5[a] and [b]). The term applies to any resource listed in or determined to be eligible for listing in the CRHR. The CRHR includes California resources listed in or formally determined eligible for listing in the NRHP, as well as certain California Historic Landmarks and California Points of Historical Interest.

Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be historical resources for purposes of CEQA, unless a preponderance of evidence indicates otherwise (PRC Section 5024.1 and California Code of Regulations, Title 14, Section 4850). Unless a resource listed in a survey has been demolished, has lost substantial integrity, or there is a preponderance of evidence indicating that it is otherwise not eligible for listing, a lead agency should consider the resource to be potentially eligible for listing in the CRHR.

In addition to assessing whether historical resources potentially affected by a proposed project are listed in an inventory or have been identified in a survey process, lead agencies have a responsibility to evaluate the resources against the CRHR criteria prior to making a finding as to a proposed project's impacts on historical resources (PRC Section 21084.1 and State CEQA Guidelines Section 15064.5[a][3]). In general, a "historical resource," under this approach, is defined as any object, building, structure, site, area, place, record, or manuscript that:

a. Is historically or archeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political or cultural annals of California; and
b. Meets any of the following criteria:
    1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
    2. Is associated with the lives of persons important in our past;
    3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

4. Has yielded, or may be likely to yield, information important in prehistory or history.

Archaeological resources can sometimes qualify as historical resources (State CEQA Guidelines, Section 15064.5[c][1]). In addition, PRC Section 5024 requires consultation with the Office of Historic Preservation when a project may affect historical resources located on state-owned land.

For historic structures, State CEQA Guidelines Section 15064.5(b)(3) indicates that a project that follows the SOI's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, or the SOI's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings shall mitigate impacts to a level of less than significant. Potential eligibility also rests on the integrity of the resource. "Integrity" is defined as the retention of the resource's physical identity that existed during its period of significance. Integrity is determined through considering the setting, design, workmanship, materials, location, feeling, and association of the resource.

As noted above, CEQA also requires lead agencies to consider whether projects will affect unique archaeological resources. PRC Section 21083.2(g) states that "unique archaeological" resource means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

a. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
b. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
c. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Treatment options under PRC Section 21083.2 include activities that preserve such resources in place and in an undisturbed state. Other acceptable methods of mitigation under PRC Section 21083.2 include excavation and curation, or study in place without excavation and curation (if the study finds that the artifacts would not meet one or more of the criteria for defining a unique archaeological resource).

Advice on procedures to identify cultural resources, evaluate their importance, and estimate potential effects is given in several agency publications, such as the series produced by the Governor's Office of Planning and Research (OPR). The technical advice series produced by OPR strongly recommends that Native American concerns and the concerns of other interested persons and corporate entities—including, but not limited to, museums, historical commissions, associations, and societies—be solicited as part of the process of cultural resources inventory. In addition, California law protects Native American burials, skeletal remains, and associated

grave goods regardless of their antiquity and provides for the sensitive treatment and disposition of those remains.

State CEQA Guidelines Section 15064.5(e) requires that excavation activities be stopped whenever human remains are uncovered and that the County coroner be called in to assess the remains. If the County coroner determines that the remains are Native American, the NAHC must be contacted within 24 hours. At that time, the lead agency must consult with the appropriate Native Americans, if any, as timely identified by the NAHC. Section 15064.5 directs the lead agency (or project proponent), under certain circumstances, to develop an agreement with the Native Americans for the treatment and disposition of the remains.

**California Historical Landmarks**

The State Historical Landmarks Program places an emphasis on well-known places and events in California history. The goals of the program include the preservation and maintenance of registered landmarks, most of which include missions, early settlements, battle sites, and gold rush sites.

**California Native American Graves Protection and Repatriation Act**

The California Native American Graves Protection and Repatriation Act of 2001 conveys to American Indians of demonstrated lineal descent the human remains and funerary items that are held by state agencies and museums.

**California Points of Historical Interest Program**

The State Points of Historical Interest Program was established in the effort to accommodate local historic properties not able to meet the restrictive criteria of the State Historical Landmarks Program. The Points of Historical Interest Program requires the participation of local governmental officials, such as the chairperson of the Board of Supervisors, in the approval process.

**Government Code**

***Section 25373***

Government Code Section 25373 gives authority to local governments to acquire property for the preservation or development of a historical landmark. In addition, local governments may provide special conditions or regulations for the protection, enhancement, perpetuation, or use of places, sites, buildings, structures, works of art, and other objects having a special character or special historical or aesthetic interest or value.

***Section 27288.2***

Government Code Section 27288.2 requires the County Recorder to record a certified resolution establishing a historical resources designation issued by the State Historical

Resources Commission or a local agency. For previously designated properties, the county may record the certified resolution establishing the historical resources designation upon submission.

***Sections 50280-50290 – Mills Act***

The Mills Act provides for reduced property taxes on eligible historic properties in return for the property owner's agreement to maintain and preserve the historic property. Properties must be preserved in accordance with the standards and guidelines set forth by the SOI. In order to be designated, a building must meet qualifying criteria, such as significant architecture, association with a historically significant event or person, or location in an historic district.

**Health and Safety Code**

***Sections 18950-18961 – State Historic Building Code***

Health and Safety Code Sections 18950 through 18961 provide alternative building regulations and building standards for the rehabilitation, preservation, restoration (including related reconstruction), or relocation of buildings or structures designated as historic buildings. Such alternative building standards and building regulations are intended to facilitate the restoration or change of occupancy so as to preserve their original or restored architectural elements and features, to encourage energy conservation and a cost-effective approach to preservation, and to provide for the safety of the building occupants.

***Section 7050.5 – Human Remains***

Section 7050.5(b) of the California Health and Safety Code specifies protocol when human remains are discovered. The code states:

In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the PRC.

**Public Resources Code**

***PRC 5097-5097.6 – Archaeological, Paleontological, and Historical Sites***

PRC Section 5097-5097.6 outlines the requirements for cultural resource analysis prior to the commencement of any construction project on State lands. This section identifies that the unauthorized disturbance or removal of archaeological, historical, or paleontological resources located on public lands is a misdemeanor. It prohibits the knowing destruction of objects of antiquity without a permit (expressed permission) on public lands and provides for criminal sanctions. This section was amended in 1987 to require consultation with the NAHC whenever Native American graves are found. Violations for taking or possessing remains or artifacts are felonies.

PRC Section 5097.5(a) states, in part, that:

No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface, any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over the lands.

***PRC 5097.9-5097.991 – Native American Heritage***

PRC Section 5097.9-5097.991 identifies that no public agency, and no private party using or occupying public property or operating on public property, under a public license, permit, grant, lease, or contract made on or after July 1, 1977, shall in any manner whatsoever interfere with the free expression or exercise of Native American religion as provided in the U.S. Constitution and the California Constitution; nor shall any such agency or party cause severe or irreparable damage to any Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine located on public property, except on a clear and convincing showing that the public interest and necessity so require it. In addition, this section details the composition and responsibilities of the NAHC. The NAHC strives for the preservation and protection of Native American human remains, associated grave goods, and cultural resources. The NAHC has developed a strategic plan to assist the public, development community, local and federal agencies, educational institutions, and California Native Americans to better understand problems relating to the protection and preservation of cultural resources; and to serve as a tool to resolve these problems and create an awareness among lead agencies and developers of the importance of working with Native Americans (NAHC 2008). PRC Sections 5097.91 and 5097.98 were amended by AB 2641 in 2006. This bill authorizes the NAHC to bring an action to prevent damage to Native American burial grounds or places of worship and establishes more specific procedures to be implemented in the event that Native American remains are discovered.

**Assembly Bill 52**

Assembly Bill 52 (Chapter 532, Statutes of 2014) establishes a formal consultation process for California Native American tribes as part of CEQA, and equates significant impacts on "tribal cultural resources" with significant environmental impacts (new PRC Section 21084.2).

Effective July 1, 2015, AB 52 amended CEQA to mandate consultation with California Native American tribes during the CEQA process to determine whether a proposed project may result in a significant impact on a tribal cultural resource, and that this consideration be made separately from cultural and paleontological resources.

PRC Section 21073 defines "California Native American tribes" as "a Native American tribe located in California that is on the contact list maintained by the Native American Heritage Commission for the purposes of Chapter 905 of the Statutes of 2004." This includes both federally and non-federally recognized tribes.

PRC Section 21074(a) provides the following definition of "tribal cultural resources" for the purpose of CEQA.

a. Sites, features, places, cultural landscapes [geographically defined in terms of the size and scope], sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
    1. Included or determined to be eligible for inclusion in the California Register of Historical Resources.
    2. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Because criteria A and B also meet the definition of a historical resource under CEQA, a tribal cultural resource may also require additional consideration as a historical resource. Tribal cultural resources may or may not exhibit archaeological, cultural, or physical indicators.

Recognizing that California tribes are experts in their tribal cultural resources and heritage, AB 52 requires that CEQA lead agencies carry out consultation with tribes at the commencement of the CEQA process to identify tribal cultural resources. Furthermore, because a significant effect on a tribal cultural resource is considered a significant impact on the environment under CEQA, consultation is required to develop appropriate avoidance, impact minimization, and mitigation measures. Consultation is concluded (1) when the lead agency and tribes agree to appropriate mitigation measures to mitigate or avoid a significant effect; or (2) when a party,

acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC Section 21080.3.2[b]), whereby the lead agency uses its best judgement in requiring mitigation measures that avoid or minimize impact to the greatest extent feasible.

### 3.4.2.3 Regional/Local Regulations

**City of Escondido Municipal Code**

Article 40 of the City's Municipal Code (Historical Resources) establishes the City's Historic Preservation Committee, the Escondido Local Register of Historical Places, and the designation process for Escondido Local Landmarks. Any person may nominate a historical resource to the local register or for landmark designation; however, the application must be made to the planning division on forms provided by the City. In addition, requests for local landmark designation must include a letter signed by the property owner consenting to the initiation. Article 40 additionally establishes it as unlawful to tear down, demolish, construct, alter, remove or relocate any historical resource or any portion thereof that has been listed on the Escondido Historic Sites Survey, Local Register, designated as a Local Landmark, or located within a Historical Overlay District; or to alter any feature of without first obtaining a permit as outlined in Article 40, Section 33-798. This includes obtaining a Certificate of Appropriateness for any new construction, and/or alteration that would affect the exterior appearance of a historical resource listed on the local register, or located within an historical overlay district, including the back, sides, and street façade, even when a building permit is not otherwise required. Additional permits, as well as review by the planning commission, may also be required. Improvements and alterations to properties listed on the Escondido Historic Sites Survey outside an historical overlay district are also subject to staff administrative review to ensure that improvements and alterations do not preclude future listing in the local register. Further, Article 40 requires that all repairs, alterations, constructions, restorations or changes in use of applicable historical resources shall conform to the requirements of the State Historical Building Code and the SOI's Standards for Rehabilitation. Demolitions to such resources would require a permit acquired in accordance with Article 40, Sections 33-801, 33-802, and 33-803.

Article 55 of the City Municipal Code (Grading and Erosion Control) ensures that development occurs in a manner that protects the natural and topographic character and identity of the environment; the visual integrity of hillsides and ridgelines; sensitive species and unique geologic/geographic features; and the health, safety, and welfare of the general public by regulating grading on private and public property and providing standards and design criteria. Additionally, the article recommends that grading designs be sensitive to natural topographic, cultural, or environmental features, as well as mature and protected trees by ensuring the following features are preserved in permanent open space easements, or such other means: undisturbed steep slopes (over 35%); riparian areas, mitigation areas, and areas with sensitive vegetation or habitat; unusual rock outcroppings; other unique or unusual geographic features; and significant cultural or historical features.

Article 65 of the City Municipal Code provides guidance regarding the permitted principal uses and structures within the Old Escondido Neighborhood area, defined as being bounded on the north by 5th Avenue, Chestnut Street on the east, 13th Avenue on the south, and South Escondido Boulevard on the west, but excluding properties fronting Escondido Boulevard and including the north side of 5th Avenue from Juniper to Date Streets.

**Criteria for Local Register Listing or Local Landmark Designation**

Prior to granting a resource Local Register or Historical Landmark status, the City Council will consider the definitions for historical resources and historical districts and will find that the resource conforms to one or more of the criteria listed below. A structural resource proposed for the Local Register will be evaluated against criteria numbered 1 through 7 and must meet at least two of the criteria; signs proposed will meet at least 1 of the criteria numbered 8 through 10; landscape features will meet criterion number 11; and archaeological resources will meet criterion number 12. Local Register resources proposed for Local Landmark designation will be evaluated against criterion number 13. The criteria are as follows:

1. Escondido historical resources that are strongly identified with a person or persons who significantly contributed to the culture, history, prehistory, or development of the City of Escondido, region, state or nation;
2. Escondido building or buildings that embody distinguishing characteristics of an architectural type, specimen, or are representative of a recognized architect's work and are not substantially altered;
3. Escondido historical resources that are connected with a business or use that was once common but is now rare;
4. Escondido historical resources that are the sites of significant historic events;
5. Escondido historical resources that are 50 years old or have achieved historical significance within the past 50 years;
6. Escondido historical resources that are an important key focal point in the visual quality or character of a neighborhood, street, area or district;
7. Escondido historical building that is one of the few remaining examples in the city possessing distinguishing characteristics of an architectural type;
8. Sign that is exemplary of technology, craftsmanship or design of the period when it was constructed, uses historical sign materials and is not significantly altered;
9. Sign that is integrated into the architecture of the building, such as the sign pylons on buildings constructed in the Modern style and later styles;
10. Sign that demonstrates extraordinary aesthetic quality, creativity, or innovation;
11. Escondido landscape feature that is associated with an event or person of historical significance to the community or warrants special recognition due to size, condition, uniqueness or aesthetic qualities;
12. Escondido archaeological site that has yielded, or may be likely to yield, information important in prehistory;

13. Escondido significant historical resource that has an outstanding rating of the criteria used to evaluate local register requests. (Ord. No. 2000-23, § 4, 9-13-00; Ord. No. 2008-16, § 4, 7-16-08).

**Criteria for Historical District Designation**

The City Council may designate an area as a Historical District if it finds that the proposed historical district meets all of the following criteria:

1. The proposed historical district is a geographically definable area possessing a significant concentration or continuity of sites, buildings, structures, or objects unified by past events, or aesthetically by plan or physical development;
2. The collective historical value of the proposed historical district may be greater than that of each individual resource;
3. The proposed designation is in conformance with the purpose of the city's historic preservation provisions set forth on this article and the City's General Plan.

**San Diego County Local Register of Historical Resources**

The purpose of the San Diego County Local Register of Historical Places is to develop and maintain "an authoritative guide to be used by state agencies, private groups, and citizens to identify the County's historical resources and to indicate which properties are to be protected, to the extent prudent and feasible, from substantial adverse change." Sites, places, or objects that are eligible for listing in the NRHP or CRHR are automatically included in the San Diego County Local Register of Historical Places.

## 3.4.3 Thresholds of Significance

The State CEQA Guidelines Appendix G (14 California Code of Regulations 15000 et seq.) has identified significance criteria to be considered for determining whether a project could have significant impacts on existing cultural resources.

An impact would be considered significant if construction or operation of the proposed project would have any of the following consequences:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.
- Cause a substantial adverse change in the significance of a Tribal Cultural Resource defined in Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is;
    - Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Section 5020.1(k), or

  - A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in Section 5024.1(c). In applying the criteria set forth in Section 5024.1(c), the lead agency shall consider the significance of the resource to a California Native American tribe.
- Disturb any human remains, including those interred outside of dedicated cemeteries.

The Initial Study (Appendix A) determined that impacts of the proposed project related to paleontological resources would be less than significant; therefore, no further analysis of that issue is completed herein.

## 3.4.4 Project Impacts

### 3.4.4.1 Issue 1: Historical Resources

**Residential Development**

As described above, one residence with a detached garage and irrigation features is on the proposed residential development site. The residence and associated structures and the property were considered for eligibility for listing in the NHHP and CRHR (Appendix F). Based on evaluation of the history and resources on the project site, and consideration of the ability of those resources to reflect the historic contexts with which they are associated, the residence, detached garage, and irrigation features are recommended as not eligible as individual historic resources for listing in the NRHP, CRHR, and City of Escondido Local Register of Historic Places. The buildings and irrigation features are not considered historical resources for the purposes of CEQA, and impacts on historic resources would be less than significant. No mitigation is required.

**Specific Alignment Plan Improvements**

No historic resources are located within the APE of the SAP improvements. Therefore, there would be no impact on historic resources.

### 3.4.4.2 Issue 2: Archaeological Resources

**Residential Development**

As described above, one previously recorded historic trash scatter site (CA-SDI-12920) is located on the proposed residential development site. The site was not relocated during the archaeological survey and therefore was not formally evaluated for eligibility for listing in the NRHP or CRHR.

One prehistoric bedrock milling site (CA-SDI-21808) was identified during the survey that contained two separate bedrock milling features, each with a small milling slick. No surface artifacts were identified around the bedrock milling during the pedestrian survey or site evaluation, and no cultural materials were identified during the site evaluation. This site does

not meet the criteria for listing in the NRHP or CRHR due to its lack of association with important events such as migration, cultural adaptations, or trade routes and trails; and due to the lack of a subsurface archaeological component that could be useful in addressing a substantive research question.

Two isolated ground stone fragments were also identified on the proposed project site. These ground stone artifacts do not meet the criteria for listing in the NRHP or CRHR and do not require any additional archaeological work.

While much of the site has been disturbed by mining activity and then grove agriculture in the early to mid-20th century, there is some evidence of prehistoric activity within the project vicinity. The proposed project site is located just 350 meters west of site CA-SDI-5340, also known as the Dead Horse Canyon site. The site is a Late Prehistoric-period village site with several bedrock milling features, midden soils, pottery scatters, debitage, lithic tools including small projectile points, and various ground stone implements. The site has been heavily looted by local pothunters over the years. It is possible that the bedrock milling site identified during the current archaeological survey was associated with the occupation of the Dead Horse Canyon site. It is difficult to confirm this association, however, given that no diagnostic artifacts were encountered during the current investigation.

Because of the known archaeological resource sites on the project site and the proximity of the site to Dead Horse Canyon site, there is potential for project-related significant impacts on an archaeological resource.

**Specific Alignment Plan Improvements**

As described above, no cultural resources were identified within the proposed project area during the archaeological survey of the SAP improvements. However due to the varying ground surface visibility, restricted access, and highly disturbed nature of the road improvements and the identified presence of cultural resources in the vicinity, there is a potential for unidentified, buried cultural material within the APE of the proposed SAP improvements.

### 3.4.4.3 Issue 3: Tribal Resources

As described above, the Rincon Band of Luiseño Indians and the San Luis Rey Band of Mission Indians both requested formal consultation regarding the proposed project pursuant to AB 52. The Rincon Band of Luiseño Indians met with City representatives on September 1, 2015. They requested that a trained Native American monitor be onsite during all ground-disturbing activities and that human remains be buried where found; they prefer reburial of found materials to artifacts. The San Luis Rey Band of Mission Indians met with City representatives on August 28, 2015. They requested that a tribal cultural resource survey be conducted at the proposed project site and that a Luiseño Native American monitor be present during each survey. On March 25, 2016, a Luiseño tribal monitor accompanied the ASM Affiliates

archaeologists on a field survey. The Cultural Resources Surveys and Evaluations (Appendices F, G, and H) were sent to the tribes on May 2, June 19, and September 21, 2016, respectively. As of January 2017, none of the tribes had identified any significant tribal resources on the proposed project site.

As described under Issue 2, one previously unrecorded bedrock milling site (SDI-21808) and two ground stone isolates were identified during the field survey. Site SDI-12920, the historic trash scatter previously recorded within the proposed project area, was not re-located due to dense vegetation along the drainage on the eastern side of Bear Valley Parkway. Other historic-period isolates and features associated with the previous agricultural grove on the property were noted across the site, including abandoned ceramic pipes, irrigation pipes, isolated bottle glass shards, and broken drainage pipes. Furthermore, the project site is located just 350 meters west of site CA-SDI-5340, also known as the Dead Horse Canyon site. While no significant impacts on known tribal resources have been identified, there is potential for the proposed project to result in impacts on unknown subsurface tribal resources during grading.

#### 3.4.4.4 Issue 4: Human Remains

The NAHC was contacted to identify possible sacred lands within the proposed project site. No known sacred/burial sites have been identified on the project site (Appendices F, G, and H). Although unlikely, the discovery of unknown buried human remains during project construction is always a possibility. If human remains are encountered during construction, the find would be handled in accordance with California Health and Safety Code Section 7050.5, which states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. The County Coroner must be notified of the find immediately. If the human remains are determined to be prehistoric, the Coroner will notify the NAHC, which will determine and notify a most likely descendant. The most likely descendant shall complete the inspection of the site within 24 hours of notification, and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. Compliance with California Health and Safety Code Section 7050.5 would prevent potentially significant impacts in the unlikely event that human remains are encountered during construction. Therefore, impacts associated with the disturbance of human remains would be less than significant.

### 3.4.5 Cumulative Impacts

The geographic scope of the cumulative impact analysis for cultural resources varies depending on the type of resource with potential to be affected. Geographic scope can be the entire area within which the resource has the potential to occur. For the purpose of this EIR, the geographic scope for the cumulative analysis of cultural resources is the San Diego County region, including both incorporated and unincorporated areas.

### 3.4.5.1 Issue 1: Historical Resources

Cumulative projects in the San Diego County region have the potential to result in a cumulative impact associated with the loss of historical resources through the physical demolition, destruction, relocation, or alteration of a resource or its immediate surroundings such that the significance of a historical resource would be materially impaired. Projects occurring within the geographic scope of this analysis have the potential to result in adverse impacts on historical resources from development activities. These projects are regulated by federal, state, and local regulations, and would be required to comply with these regulations. Even with regulations in place, however, individual historical resources still could be affected or degraded from demolition, destruction, alteration, or structural relocation as a result of new private or public development, or redevelopment associated with cumulative projects.

The residence, detached garage, and irrigation features located on the project site are not considered historical resources. Therefore, the proposed project would not contribute to a cumulative impact on historical resources.

### 3.4.5.2 Issue 2: Archaeological Resources

Cumulative projects in the San Diego County region have the potential to result in a cumulative impact associated with the loss of archaeological resources through development activities that could cause a substantial adverse change in the significance of an archaeological resource. Any cumulative projects that involve ground-disturbing activities have the potential to result in significant impacts on archaeological resources. These projects would be regulated by applicable federal, state, and local regulations; however, the loss of archaeological resources on a regional level may not be adequately mitigated through the data recovery and collection methods specified in these regulations, as their value may also lie in cultural values and religious beliefs of applicable groups. Therefore, the cumulative destruction of significant archaeological resources from planned construction and development projects in the region would be cumulatively significant. Additionally, past projects involving development and construction have already affected archaeological resources in the region.

As described under Issue 2, because of the known archaeological resource sites on the proposed project site and the potential for impacts on unknown subsurface resources, there is potential for the proposed project to result in significant impacts on an archaeological resource. This significant impact would be mitigated to a level of less than significant with implementation of mitigation measures CR-1 through CR-8. Therefore, the proposed project would not significantly contribute to cumulative impacts on archaeological resources.

### 3.4.5.3 Issue 3: Tribal Resources

Cumulative projects located in the San Diego County region have the potential to result in a cumulative impact associated with the loss of tribal resources through development activities that could cause a substantial adverse change in the significance of a tribal resource. Any cumulative projects that involve ground-disturbing activities have the potential to result in significant impacts on tribal resources. These projects would be regulated by applicable federal, state, and local regulations; however, the loss of tribal resources on a regional level may not be adequately mitigated through the data recovery and collection methods specified in these regulations, as their value may also lie in cultural values and religious beliefs of applicable groups. Therefore, the cumulative destruction of significant tribal resources from planned construction and development projects in the region would be cumulatively significant. Additionally, past projects involving development and construction have already affected tribal resources in the region.

As described under Issue 3, although no tribal resources have been identified on the project, there is potential for the proposed project to result in significant impacts on an unknown subsurface tribal resource. This significant impact would be mitigated to a level of less than significant with implementation of mitigation measures CR-1 through CR-8. Therefore, the proposed project would not significantly contribute to cumulative impacts on tribal resources.

### 3.4.5.4 Issue 4: Human Remains

Cumulative projects in the San Diego County region have the potential to result in impacts associated with human remains due to grading, excavation, or other ground-disturbing activities. Projects that may result in significant impacts from ground-disturbing activities include the development of land uses as designated in the general plans of surrounding jurisdictions. If human remains are encountered during project development, cumulative projects would be required to comply with the Native American Graves Protection and Repatriation Act, PRC Section 5097.9 - 5097.991, the California Native American Graves Protection and Repatriation Act, and Health and Safety Code Section 7050.5. On a regional level, however, the disturbance of human remains that are also considered archaeological resources may not be adequately mitigated through methods specified in these regulations, as their value may also lie in cultural mores and religion beliefs of applicable groups. Therefore, the cumulative disturbance of human remains by construction and development within the region is considered a cumulatively significant impact. Additionally, past projects involving development and construction have already affected human remains within the region.

As discussed in Section 3.4.4.4, “Issue 4: Human Remains,” compliance with Health and Safety Code Section 7050.5 would prevent potentially significant impacts in the unlikely event that human remains are encountered during construction. Therefore, the contribution of the proposed project to this cumulative impact would not be considerable.

## 3.4.6 Significance of Impacts prior to Mitigation

Potential impacts on cultural resources from the proposed overhead power line relocation described in Section 2.5.1.6 were analyzed as part of this EIR and found to be less than significant.

### 3.4.6.1 Issue 1: Historical Resources

The proposed project would result in less-than-significant impacts on built historical resources.

### 3.4.6.2 Issue 2: Archaeological Resources

Because of the known archaeological resource sites on the project site and in the vicinity, there is potential for the proposed project to result in a significant impact on an unknown subsurface archaeological resource.

### 3.4.6.3 Issue 3: Tribal Resources

Because of the known archaeological resource sites on the project site and in the vicinity, there is potential for the proposed project to result in a significant impact on an unknown subsurface tribal resource.

### 3.4.6.4 Issue 4: Human Remains

The proposed project would result in less-than-significant impacts on human remains.

## 3.4.7 Mitigation Measures

### 3.4.7.1 Issue 1: Historical Resources

**Residential Development and Specific Alignment Plan Improvements**
The proposed project would result in less-than-significant impacts on built historical resources. Therefore, no mitigation is necessary.

### 3.4.7.2 Issue 2: Archaeological Resources

**Residential Development and Specific Alignment Plan Improvements**
The following mitigation measures shall be implemented to address potential impacts on unidentified and unknown tribal cultural resources within the proposed project disturbance areas.

- **CR-1** The City of Escondido Planning Division recommends the applicant enter into a Tribal Cultural Resource Treatment and Monitoring Agreement (also known as a pre-excavation agreement) with a tribe that is traditionally and culturally affiliated with the project location (TCA Tribe) prior to issuance of a grading permit. The purposes of the

agreement are (1) to provide the applicant with clear expectations regarding tribal cultural resources; and (2) to formalize protocols and procedures between the applicant and the TCA Tribe for the protection and treatment of, including but not limited to, Native American human remains; funerary objects; cultural and religious landscapes; ceremonial items; traditional gathering areas; and cultural items located and/or discovered through a monitoring program in conjunction with the construction of the proposed project, including additional archaeological surveys and/or studies, excavations, geotechnical investigations, grading, and all other ground disturbing activities.

- **CR-2** Prior to issuance of a grading permit, the applicant shall provide written verification to the City that a qualified archaeologist and a Native American monitor associated with a ~~tribe that is traditionally and culturally affiliated with the project location (TCA Tribe)~~TCA Tribe have been retained to implement the monitoring program. The archaeologist shall be responsible for coordinating with the Native American monitor. This verification shall be presented to the City in a letter from the project archaeologist confirming that the selected Native American monitor is ~~from~~associated with a TCA Tribe. Prior to any pre-construction meeting, the City shall approve all persons involved in the monitoring program.
- **CR-~~2~~3** The qualified archaeologist and a Native American monitor shall attend the pre-grading meeting with the grading contractors to explain and coordinate the requirements of the monitoring program.
- **CR-~~3~~4** During the initial grubbing, site grading, excavation, or disturbance of the ground surface, the qualified archaeologist and the Native American monitor shall be onsite full-time. If imported fill materials, or fill used from other areas of the project site, are to be incorporated at the project site, those fill materials shall be absent of any tribal cultural resources. The frequency of inspections shall depend on the rate of excavation, the materials excavated, and any discoveries of tribal cultural resources as defined in PRC Section 21074. Archaeological and Native American monitoring will be discontinued when the depth of grading and soil conditions no longer have the potential to contain cultural deposits. The qualified archaeologist, in consultation with the Native American monitor, shall be responsible for determining the duration and frequency of monitoring.
- **CR-~~4~~5** In the event that previously unidentified tribal cultural resources are discovered, the qualified archaeologist and the Native American monitor shall have the authority to temporarily divert or temporarily halt ground disturbance operations in the area of discovery to allow for evaluation of potentially significant cultural resources. Isolates and clearly non-significant deposits shall be minimally documented in the field and collected so that the monitored grading can proceed.
- **CR-~~5~~6** If a potentially significant tribal cultural resource is discovered, the archaeologist shall notify the City of said discovery~~.~~ and shall conduct consultation with TCA tribes to determine the most appropriate mitigation. The qualified archaeologist, in consultation with the City, the TCA Tribe, and the Native American monitor, shall determine the

significance of the discovered resource. A recommendation for treatment and disposition of the tribal cultural resource shall be made by the qualified archaeologist in consultation with the TCA Tribe and the Native American monitor, and shall be submitted to the City for review and approval.

- **CR-~~6~~7** The avoidance and/or preservation of the significant tribal cultural resource and/or unique archaeological resource must first be considered and evaluated under CEQA. Where any significant tribal cultural resources and/or unique archaeological resources have been discovered and avoidance and/or preservation measures are deemed to be infeasible by the City, a research design and data recovery program to mitigate impacts shall be prepared by the qualified archaeologist (using professional archaeological methods), in consultation with the TCA Tribe and the Native American monitor, and shall be subject to approval by the City. The ~~archaeological monitor~~qualified archaeologist, in consultation with the Native American monitor, shall determine the amount of material to be recovered for an adequate artifact sample for analysis. Before construction activities are allowed to resume in the affected area, the research design and data recovery program activities must be concluded to the satisfaction of the City.
- ~~**CR-7**~~**CR-8** In accordance with CEQA, all tribal cultural resources shall be treated with culturally appropriate dignity. If the qualified archaeologist elects to collect any tribal cultural resources, the Native American monitor must be present during ~~any testing or~~the collection and cataloging of those resources. Moreover, if the qualified archaeologist does not collect the tribal cultural resources that are unearthed during the ground-disturbing activities, the Native American monitor may, at their discretion, collect said resources and provide them to the TCA Tribe for respectful and dignified treatment in accordance with the tribe's cultural and spiritual traditions.

  ~~Any tribal cultural resources collected by the qualified archaeologist shall be repatriated to the TCA Tribe. Should the TCA Tribe or other traditionally and culturally affiliated tribe decline the collection, the collection shall be curated at the San Diego Archaeological Center. All other resources determined by the qualified archaeologist, in consultation with the Native American monitor, to not be tribal cultural resources shall be curated at the San Diego Archaeological Center.~~

  The project archaeologists shall document evidence that all cultural materials have been repatriated and/or curated as follows:

  (1) It is the preference of the City that all tribal cultural resources be repatriated to the TCA Tribe, as such preference would be the most culturally sensitive, appropriate, and dignified. Therefore, any tribal cultural resources collected by the qualified archaeologist shall be provided to the TCA Tribe. Evidence that all cultural materials collected have been repatriated shall be in the form of a letter from the TCA Tribe to

whom the tribal cultural resources have been repatriated identifying that the archaeological materials have been received.

OR

(2) Any tribal cultural resources collected by the qualified archaeologist shall be curated with its associated records at a San Diego curation facility or a culturally-affiliated Tribal curation facility that meets federal standards per 36 CFR Part 79, and, therefore, would be professionally curated and made available to other archaeologists/researchers for further study. The collections and associated records, including title, shall be transferred to the San Diego curation facility or culturally affiliated Tribal curation facility and shall be accompanied by payment of the fees necessary for permanent curation. Evidence that all cultural materials collected have been curated shall be in the form of a letter from the curation facility stating that the prehistoric archaeological materials have been received and that all fees have been paid.

**CR-~~8~~9** Prior to the release of the grading bond, a monitoring report and/or evaluation report, if appropriate, that describes the results, analysis, and conclusion of the archaeological monitoring program and any data recovery program on the project site shall be submitted by the qualified archaeologist to the City. The Native American monitor shall be responsible for providing any notes or comments to the qualified archaeologist in a timely manner, to be submitted with the report. The report will include California Department of Parks and Recreation Primary and Archaeological Site Forms for any newly discovered resources.

**CR-10** As specified by California Health and Safety Code Section 7050.5, if human remains are found on the project site during construction or during archaeological work, the person responsible for the excavation, or his or her authorized representative, shall immediately notify the San Diego County Coroner's office. Determination of whether the remains are human shall be conducted onsite and in situ where they were discovered by a forensic anthropologist, unless the forensic anthropologist and the Native American monitor agree to remove the remains to an offsite location for examination. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the Coroner has made the necessary findings as to origin and disposition. A temporary construction exclusion zone shall be established surrounding the area of the discovery so that the area would be protected, and consultation and treatment could occur as prescribed by law. In the event that the remains are determined to be of Native American origin, the Most Likely Descendant, as identified by the Native American Heritage Commission, shall be contacted in order to determine proper treatment and disposition of the remains in accordance with California Public Resources Code section 5097.98. The Native American remains shall be kept in situ, or in a secure location in close proximity to where they were found, and the analysis of the remains shall only occur onsite in the presence of a Native American monitor.

### 3.4.7.3 Issue 3: Tribal Resources

**Residential Development and Specific Alignment Plan Improvements**

Mitigation measures CR-1 through CR-8, described under Issue 2, would be required to reduce potential significant impacts on tribal resources. This mitigation requires a Native American monitor to be onsite during all times that the archaeological monitor(s) is onsite.

### 3.4.7.4 Issue 4: Human Remains

**Residential Development and Specific Alignment Plan Improvements**

Project impacts on human remains would be less than significant through compliance with Health and Safety Code Section 7050.5 and PRC Section 5097.98. Compliance with these regulations has been incorporated as a project feature and would be a condition of project approval.

## 3.4.8 Conclusion

### 3.4.8.1 Issue 1: Historical Resources

**Residential Development**

The existing structures on the proposed project site are not eligible for listing in the NRHP or CRHR and are not considered to be historic resources for the purposes of CEQA. Therefore, impacts associated with a substantial adverse change in the significance of a known historical resource would be less than significant.

**Specific Alignment Plan Improvements**

There are no structures in the SAP Improvements APE. Therefore, there would be no impacts on historical resources.

### 3.4.8.2 Issue 2: Archaeological Resources

**Residential Development**

Given the potential for buried archaeological resources within the grading envelope (previously recorded historic trash scatter site [CD-SDI-12920] and newly recorded prehistoric bedrock milling site [CA-SDI-21808]) and the proximity of the project site to Dead Horse Canyon (CA-SDI-5340), the proposed project has the potential to result in impacts on buried archaeological resources. This represents a potentially significant impact. Implementation of mitigation measures CR-1 through CR-8 would reduce this impact to a less-than-significant level.

**Specific Alignment Plan Improvements**

Due to the varying ground surface visibility, restricted access, and highly disturbed nature of the road improvements and the identified presence of cultural resources in the vicinity, there is a potential for unidentified, buried cultural material within the APE of the proposed SAP improvements. This represents a potentially significant impact. Implementation of mitigation measures CR-1 through CR-8 would reduce this impact to a less-than-significant level.

### 3.4.8.3 Issue 3: Tribal Resources

**Residential Development**

Given the potential for tribal resources within the grading envelope (previously recorded historic trash scatter site [CD-SDI-12920] and newly recorded prehistoric bedrock milling site [CA-SDI-21808]) and the proximity of the project site to Dead Horse Canyon (CA-SDI-5340), the proposed project has the potential to result in impacts on tribal resources. This represents a potentially significant impact. Implementation of mitigation measures CR-1 through CR-8 would reduce this impact to a less-than-significant level.

**Specific Alignment Plan Improvements**

Due to the varying ground surface visibility, restricted access, and highly disturbed nature of the road improvements and the identified presence of cultural resources in the vicinity, there is a potential for unidentified, buried cultural material within the APE of the proposed SAP improvements. This represents a potentially significant impact on tribal resources. Implementation of mitigation measures CR-1 through CR-8 would reduce this impact to a less-than-significant level.

### 3.4.8.4 Issue 4: Human Remains

**Residential Development and Specific Alignment Plan Improvements**

Compliance with Health and Safety Code Section 7050.5 would prevent potentially significant impacts in the unlikely event that human remains are encountered during construction. Compliance with these regulations has been incorporated as a project feature and would be a condition of project approval. Therefore, impacts associated with the disturbance of human remains would be less than significant.

# 3.5 Geology and Soils

This section of the Environmental Impact Report (EIR) describes the existing soils on the proposed project site and analyzed the potential physical environmental impacts to people and property related to underlying soil characteristics. General information in this section is taken from the *Escondido General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report* (General Plan Program EIR) (City of Escondido 2012b) unless otherwise referenced. Project-specific information is from the Geotechnical Investigation (2013), Geotechnical Update Report (2014), and Geotechnical Investigation: Proposed Roadway Improvements (2016) prepared by Vinje & Middleton Engineering, Inc. These reports are included as Appendices I-1, I-2, and J, respectively.

As described in the Initial Study prepared for the proposed project (Appendix A), the project would result in no impact or a less-than-significant impact related to seismic activity, liquefaction, landslides, soil erosion, and soils capable of supporting septic systems. Therefore, those topics are not described further in this section, and the analysis below focuses on soil stability and expansive soils.

## 3.5.1 Existing Conditions

### 3.5.1.1 Topography

**Residential Development**

The proposed residential development is characterized by a large hilltop and a north-south-trending ridgeline that enters the northeast area of the site and transitions into descending hillside terrain in the southern portion of the site. The proposed residential development site slopes upward from approximately 590 feet above mean sea level in the southern area of the site to 680 feet above mean sea level at the top of the hill, in the central area of the site.

**SAP Improvements**

The proposed Specific Alignment Plan (SAP) improvements area descends in a southerly direction, with approximately 135 feet in relief along the approximately 3,560-foot alignment. More recent improvements, including concrete curb and gutter and sidewalks, are present along a 500-foot section adjacent to Zlatibor Ranch Road.

### 3.5.1.2 Geotechnical Conditions

**Residential Development**

The proposed residential development site and surrounding hillside terrain is underlain by dark-colored gabbroic bedrock. Colluvial soils are present in the lower terrain and local hillside areas. The colluvium is the thickest in the southern portion of the residential development site where it is ancient, consolidated, and dense. Elsewhere, the colluvium soils are shallow and loose. Alluvium deposits are present in the southern portion of the proposed residential development

site. The alluvium is in a very loose condition and may be greater than 10 feet deep. Shallow topsoil deposits occur along ridgelines and hilltops on the residential development site. The topsoil consists of very loose silty sand. Minor fill deposits are associated with the existing building and hillside drainage terraces. More significant fill deposits could occur in the southwest portion of the site and covering or filling old mine excavations.

**SAP Improvements**

Northern portions of the SAP improvement area are characterized by natural nearly level to modest terrain underlain at depth by crystalline bedrock units and mantled by ancient colluvial soils. The central and southern portions of the roadway include over-steepened graded cuts and fills that generally approach 20 feet high. These areas are also expected to be underlain by crystalline bedrock units that are mantled by fills, ancient colluvium soil, and young alluvial soils. Landslides or areas of existing slope instability are not in evidence along the SAP improvements.

### 3.5.1.3 Soil Types

The following description of soils on the proposed residential development and SAP improvements sites is from the Biological Resources Technical Report and the Specific Alignment Plan Biological Technical Report (Appendices B and C).

Soils on the site are mapped as Fallbrook sandy loam, 9 to 15% slopes, eroded; Fallbrook sandy loam, 15 to 30% slopes, eroded; Ramona sandy loam, 2 to 5% slopes; Ramona sandy loam, 5 to 9% slopes; Ramona sandy loam, 9 to 15% slopes, eroded; and steep gullied land.

The Fallbrook series consists of deep, well-drained soils formed from weathered granitic rock. These soils occur on rolling hills and steeper slopes, and have a mean annual precipitation of approximately 15 inches. The Ramona series consists of mixed “fine-loamy” soils. Ramona soils are found on flat to moderately steep slopes, with an annual precipitation of approximately 20 inches. Steep gullied land is described as “strongly sloping to steep areas that are actively eroding into old alluvium or decomposed rock” and supporting sparse vegetation.

### 3.5.1.4 Soil Stability

**Expansive Soils**

There are minor quantities of potentially expansive clayey soils on the proposed residential development site. Representative samples of topsoil/colluvium (red brown clayey sand) and fill/topsoil (red brown clayey sand – sandy clay) were tested for expansion potential. The topsoil/colluvium has an expansion index of 38, meaning it has a low expansion potential. The fill/topsoil has an expansion index of 56, meaning it has a medium expansion potential.

**Geologic Hazards**

Per the Geotechnical Investigation (Appendix I-1), no natural geologic hazards exist on the proposed residential development site. However, previous exploratory mining completed on the site has resulted in potential geologic concerns. Based on a field investigation performed in 2013 (Appendix I-1), four known mining excavation locations are on the proposed project site. Additional mine-related excavations could be present on the proposed project site as evidenced by periodic filling of sinkholes that generally appear after periods of heavy or prolonged rain. The overall extent of the vertical shafts or horizontal adits is unknown. Methods used to destroy or backfill the shafts, other than filling with soil, are also unknown. All known mine excavation locations are described below and are referenced in accordance with the Geotechnical Investigation and Geotechnical Update Report (Appendices I-1 and I-2) for consistency purposes.

1. Test Pit 4: A mining excavation 4 to 6 feet below ground surface (bgs), below 1 foot of underlying bedrock. The mining excavation appears to be a nearly horizontal mine tunnel (adit) approximately 7 feet wide and 6 feet high. The extent of the mine tunnel is unknown, and no supports were present.
2. Test Pit 7: A horizontal mine shaft on the south side of the existing detached garage. The shaft excavation is approximately 9 feet square. The shaft extends beyond the 16-foot limit of a backhoe. A secondarily filled excavation was on the west side of the shaft, approximately 9 feet bgs. The nearly horizontal mine shaft and associated secondary mine excavations exposed at this location are located within a planned deep cut area and are expected to be completely removed as part of the cut grading operation.
3. Test Pit 9: A well-developed horizontal mine tunnel (adit) approximately 4 feet bgs. The hillside opening to this horizontal mine excavation is approximately 17 feet wide by 7 feet high and extends west into the hillside for 17 feet. At this point, the mine tunnel narrows to approximately 3 feet wide and continues for an estimated 50 to 60 feet west where it appears to trend northward. The entire mine tunnel was excavated into crystalline bedrock with no evidence of artificial support. The well-developed adit at this location is in a planned fill slope area.
4. Test Pit 15: A filled mine excavation approximately 7 feet bgs, and 7 feet high by 4 feet wide.

## 3.5.2 Regulatory Framework

### 3.5.2.1 Federal Regulations

**International Building Code**

The design and construction of engineered facilities in California must comply with the requirements of the International Building Code (International Code Council 2012) adopted by the State of California (refer to California Building Standards Code under Section 3.5.2.2).

### 3.5.2.2 State Regulations

**California Building Code**

The State's minimum standards for structural design and construction are given in the California Building Standards Code (CBC) (24 California Code of Regulations), located in Title 24 of the California Code of Regulations (CCR). The CBC is based on the International Building Code, which is used widely throughout the United States (generally adopted on a state-by-state or district-by-district basis) and has been modified for California conditions with numerous and more detailed or more stringent regulations. The CBC requires that "classification of the soil at each building site will be determined when required by the building official" and that "the classification will be based on observation and any necessary test of the materials disclosed by borings or excavations." In addition, the CBC states that "the soil classification and design-bearing capacity will be shown on the [building] plans, unless the foundation conforms to specified requirements." The CBC provides standards for various aspects of construction, including (i.e., not limited to) excavation, grading, and earthwork construction; fills and embankments; expansive soils; foundation investigations; and liquefaction potential and soil strength loss. In accordance with California law, certain aspects of the proposed project would be required to comply with all provisions of the CBC.

### 3.5.2.3 Regional/Local Regulations

**City of Escondido Grading and Erosion Control Ordinance**

Article 55 of the City of Escondido Municipal Code establishes the grading and erosion control regulations for the city. The purpose of this article is to ensure that development occurs in a manner that protects the natural and topographic character and identity of the environment; visual integrity of hillsides and ridgelines; sensitive species and unique geologic/geographic features; and the health, safety, and welfare of the general public. This article regulates grading on private and public property, and provides standards and design criteria to control storm water and erosion during construction activities. The ordinance sets forth rules and regulations to control excavation, grading, earthwork construction (including fills and embankments), and development on hillsides and along ridgelines; establishes the administrative procedures for the issuance of permits; and provides for approval of plans and inspection of grading construction in compliance with storm water management requirements.

## 3.5.3 Thresholds of Significance

The State CEQA Guidelines Appendix G (14 CCR 15000 et seq.) has identified significance criteria to be considered for determining whether a project could result in significant impacts on existing geology and soils. An impact would be considered significant if construction or operation of the proposed project would have any of the following consequences.

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.
  - Strong seismic ground shaking?
  - Seismic-related ground failure, including liquefaction?
  - Landslides?
- Result in substantial soil erosion or the loss of topsoil?
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?
- Be located on expansive soil, as defined in Table 18 1 B of the Uniform Building Code (1994), creating substantial risks to life or property?
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

As described in the Initial Study prepared for the proposed project (Appendix A), there would be a less-than-significant impact related to seismic activity (rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure including liquefaction, and landslides), and soil erosion and the loss of topsoil. There would be no impact related to septic tanks or alternative wastewater disposal systems. Therefore, impacts related to those thresholds have not been evaluated further.

## 3.5.4 Project Impacts

### 3.5.4.1 Issue 1: Soil Stability and Expansive Soils

**Residential Development**

At least four mine-related excavations are located on the proposed residential development site. The overall extent of the vertical shafts and horizontal adits, and the methods used to destroy or backfill the shafts are unknown. Some excavations and adit shafts were backfilled with loose soils. These excavations have resulted in unstable soils on the proposed residential development site. Additionally, existing fills, topsoil, alluvium, upper soft to loose deposits, and upper highly weathered bedrock on the residential development site are unsuitable to support new compact fills, embankments, or structures and other improvements. In addition, potentially expansive clayey soils, albeit in minor quantities, are found on the site. The proposed construction on a site with these existing soil stability and expansive soils conditions would result in the potential for substantial risks to life or property. This would be a significant impact.

**SAP Improvements**

The natural hillsides adjacent to the proposed SAP improvements are underlain by competent crystalline bedrock units that typically perform well in natural and graded slope conditions. Slope instability is not indicated along the natural hillside in the proposed SAP improvements areas. Over-steepened graded fill slopes associated with ground transitioning along (or across) the existing flow line are heavily overgrown and appear to be currently performing well, with no indication of instability. However, these fills are generally not deemed suitable for support of new transition walls and may need re-grading. Future graded cut embankments exposing crystalline bedrock are expected to be grossly stable to anticipated design heights. Existing loose fills and upper natural soils in planned improvement areas would need to be adequately regraded as part of project earthwork. Subsurface water was not encountered in test excavations for the proposed project. However, portions of the flow line adjacent to the SAP improvements site has intermittent surface flow. Storm water control would be critical to the stability of the proposed roadway improvements.

## 3.5.5 Cumulative Impacts

### 3.5.5.1 Issue 1: Soil Stability and Expansive Soils

The geographic scope of the cumulative impact analysis for geology is limited to the immediate area of the geologic constraint.

Cumulative projects have the potential to be located on geologic units or soils that are unstable, or that would become unstable as a result of a project, and potentially result in on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. Cumulative projects would be required to undergo analysis of geological and soil conditions applicable to the development site in question during CEQA environmental review and comply with all applicable regulations to reduce risks, including the CBC. Compliance of cumulative projects with applicable regulations would ensure that a significant regional cumulative impact would not occur. The proposed project, in combination with other cumulative projects, would not contribute to a potentially significant cumulative impact.

Cumulative projects would have the potential to be located on expansive soil which would potentially create substantial risks to life or property. Cumulative projects would be subject to construction standards that have been developed to ensure structures can withstand changes in the integrity of the soil. Therefore, cumulative projects in the region would not result in a significant cumulative impact. The project, in combination with other cumulative projects, would not contribute to a potentially significant cumulative impact.

## 3.5.6 Significance of Impacts prior to Mitigation

Potential impacts related to geology and soils from the proposed overhead power line relocation described in Section 2.5.1.6 were analyzed as part of this EIR and found to be less than significant.

### 3.5.6.1 Issue 1: Soil Stability and Expansive Soils

The proposed construction on a site with existing issues related to soil stability and expansive soil conditions would result in the potential for substantial risks to life or property. Thus, the proposed project would result in a potentially significant impact related to geology and soils.

## 3.5.7 Mitigation Measures

### 3.5.7.1 Issue 1: Soil Stability and Expansive Soils

**Residential Development**

**GEO-1**: To reduce impacts related to soil stability and expansive soils on the proposed residential development site, the tentative map grading plan shall include the recommendations contained in the Geotechnical Investigation (Appendix I-1) and the Geotechnical Update Report (Appendix I-2), or equivalent measures identified in a Final Geotechnical Report, prior to the issuance of grading permits. The recommendations regarding expansive soils and the existing known mine excavations are listed below.

a. Potentially expansive clayey soils, where encountered, shall be thoroughly mixed with an abundance of sandy granular soils available from the project site bedrock excavations to manufacture a very low expansive mixture. Alternatively, expansive clayey soils shall be selectively buried within deeper site fills and away from the finish fill slope faces, with the upper pad grades and embankment surfaces capped with good quality sandy soils, as recommended in the Geotechnical Investigation (Appendix I-1).
b. Mine related excavations with 10 feet minimum of competent bedrock overburden are determined not to be susceptible to future collapse (as inspected and approved by the project geotechnical consultant) and will be sealed and capped. The following procedures will be applied to the four known former mining shafts:
    1. Test Pit 4: Due to the shallow nature of the excavation, the mine tunnel shall be exposed in both directions with a large track hoe or suitable excavating equipment. The northern portion of the mine tunnel shall be exposed to its end and backfilled with 90% compacted soil. Should the north end of the mine excavation extend beyond the property line (and possibly beneath Bear Valley Parkway), the tunnel shall be exposed and backfilled with 90% compacted soil to the extent necessary or equivalent measure to provide soils stability on the residential development site and for proposed Bear Valley Parkway Frontage Improvements, as determined by a qualified geotechnical engineer in consultation with the City of Escondido engineering department. The south portion of the mine tunnel shall be continuously

exposed to its end or until a minimum of 10 feet of competent bedrock is exposed. The open mine excavation, if exposed with a minimum of 10 feet of competent bedrock, will be capped as outlined in the Geotechnical Investigation (Appendix I-1).

2. Test Pit 7: The nearly horizontal mine shaft and associated secondary mine excavations exposed at this location are located within a planned deep cut area and are expected to be completely removed as part of the cut grading operation. If the shaft continues below finish grade, it shall be completely excavated and backfilled with 90% compacted soil, as approved by the geotechnical engineer.
3. Test Pit 9: The well-developed horizontal mine tunnel (adit) at this location is in a planned fill slope area. The entrance to this mine excavation shall be exposed and the overburden removed until there is a minimum of 10 feet of competent bedrock above the mine excavation. The opening shall then be sealed as outlined in the Geotechnical Investigation (Appendix I-1).
4. Test Pit 15: The mine excavation exposed at this location is in a planned deep fill area. The entrance to this mine excavation shall be exposed and the overburden removed until there is a minimum of 10 feet of competent bedrock above the mine excavation. The excavation shall then be sealed as outlined in the Geotechnical Investigation (Appendix I-1).

**SAP Improvements**

**GEO-2:** To reduce project impacts related to soil stability and expansive soils on the proposed SAP improvements site, the tentative map grading plan shall include the recommendations contained in the Geotechnical Investigation for Proposed Roadway Improvements (Appendix J), or equivalent measures identified in a Final Geotechnical Report, prior to the issuance of grading permits. The recommendations include the following:

1. Over-excavation to suitable materials or ground stabilization shall be used.
2. Over-excavation for treatment of bearing soil under the proposed wall foundations shall be extended to well-compacted fills or dense native ground and placed back as a properly compacted fill.
3. To address surface drainage and storm water control, drainage swales shall be constructed along the top of all graded slopes and surface run-off shall be collected and directed to a selected location in a controlled manner.

## 3.5.8 Conclusion

### 3.5.8.1 Issue 1: Soil Stability and Expansive Soils

The proposed project would involve constructing residences on a site with existing soil instability and expansive soils conditions. Implementation of mitigation measures GEO-1 and GEO-2 would minimize the risks of unstable and expansive soil conditions on the proposed project site and potential impacts on life and property resulting from unstable soils would be less than significant.

## 3.6 Hazards and Hazardous Materials

This section of the Environmental Impact Report (EIR) describes the existing hazardous materials, wildland fire, and emergency response and evacuation plan conditions in the proposed project area. Information contained in the following section has been incorporated from the *Escondido General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Final Environmental Impact Report* (General Plan Program EIR) (City of Escondido 2012b). Additional hazardous material information below is based on project-specific studies, consisting of the following reports prepared by Vinje & Middleton Engineering, Inc.: Phase I Environmental Site Assessment (Appendix L-1), Phase I Environmental Site Assessment Addendum (Appendix L-2), Additional Phase I Environmental Site Assessment (2016) (Appendix L-3), Limited Phase II Environmental Site Assessment (Appendix M-1), Limited Phase II Environmental Site Assessment Addendum (Appendix M-2), and Report of Soil Removal Action (Appendix N). Information related to wildland fires has been drawn from the Fire Protection Plan prepared by Dudek in July 2015, which is included as Appendix K.

The Phase I environmental site assessments (ESAs) (Appendices L-1, L-2, and L-3) included a review of available information, as well as results of preliminary site reconnaissance. Specifically, the review of available information included (1) review of federal, state, and local environmental record sources within recommended American Society for Testing and Materials (ASTM) search distances; (2) review of topographic, geologic, and hydrogeologic information; historical aerial photographs; and historical fire insurance maps; and (3) interviews with the site owner/manager, occupants/tenants, local government officials, and others knowledgeable about past activities on the project site. Based on the Phase I report recommendations, a limited Phase II ESA (Appendices M-1 and M-2) was prepared that included soil testing to further address the potential subsurface impacts of the historical land uses.

### 3.6.1 Existing Conditions

#### 3.6.1.1 Project Site

The approximately 40.62-acre proposed residential development site is located on the east side of Bear Valley Parkway, approximately 0.7 mile south of the San Pasqual Road and Bear Valley Parkway intersection. An 1,120-square-foot, single-story residence with a 96-square-foot detached garage that was constructed in 1946 is serviced by a septic tank and leach line, a 250-gallon aboveground propane tank, overhead electrical, and City of Escondido water. Three hand-dug irrigation water wells are located along the west/southwest perimeter of the residential development site, with in-ground and aboveground irrigation piping. There is no active use on the majority of the site. Fill dirt was encroaching over the northeast property boundary adjacent to Choya Canyon Road resulting from illegal dumping from an unknown source. The fill was analyzed for hazardous materials and removed from the site in July 2015.

According to the County Recorder's Office and an interview with the current property manager, two aboveground storage tanks (ASTs) were installed on the residential development site in 1958. One AST was approximately 6,460 gallons and formerly contained oil; the second AST was 1,260 gallons and formerly contained diesel. Neither AST still exists on the residential development site. Dates of their removal are not available, and no surficial soil stains were observed at their former locations.

Historically, the residential development site was evaluated for its potential as a gold and silver mine prior to the beginning of the 20th century due to its proximity to actively mined properties on the west side of Bear Valley Parkway. Several mine shafts and adit locations (i.e., entrances to an underground mine) are located on the residential development site.

The residential development site was primarily used as a citrus and avocado grove from before 1946 until approximately 1998, but the site has not been farmed since approximately 1995. Dark surficial stains at regularly spaced intervals were observed during a site reconnaissance throughout the former grove areas. The soil exhibited a weathered petroleum hydrocarbon odor that is likely the result of overfilling or spilling diesel fuel at former smudge pot[2] locations.

Because of the former uses on the residential development site, a Phase II ESA (Appendices M-1 and M-2) was conducted to evaluate the potential for concentrations of organochlorine pesticides (OCPs), arsenic, petroleum hydrocarbons (i.e., diesel and oil), mercury, and cyanide. OCPs were evaluated because of the former agricultural use of the residential development site. OCPs are a type of pesticide that are persistent in the environment, have a long half-life, and are water insoluble. Arsenic was evaluated because it is both a naturally occurring metal and used in herbicides. Petroleum hydrocarbons were evaluated because of the known former ASTs on the residential development site and because of the surface stains in areas near the former smudge pots. Mercury and cyanide were evaluated because, although it cannot be confirmed whether gold/silver production was ever conducted on the residential development site, these hazardous chemicals are used in precious metal amalgamation and separation.

A total of 28 near-surface soil samples were collected and analyzed. Soil samples to evaluate for OCPs and arsenic were taken from the former grove areas. Soil samples to evaluate for petroleum hydrocarbons were taken from areas adjacent to the two former AST locations and the three former smudge pot locations in the grove. The soil samples for the mercury and cyanide were taken in areas of the former mine shafts.

The Phase II ESA confirmed that concentrations of OCPs and mercury and cyanide were either below the laboratory testing limit or non-detectable. Arsenic concentrations ranged between non-detectable and 3.5 micrograms per kilogram (µg/kg). Diesel concentrations ranged

[2] A smudge pot is an oil-burning device used to prevent frost on fruit trees.

between less than equipment detection limits (<5.0 milligrams per kilogram [mg/kg]) to 260 mg/kg. Oil concentrations ranged between <5.0 and 91 mg/kg.

Undocumented fill soils were located on the northeastern edge of the residential development site. Soil samples were collected in 2015 and analyzed for petroleum hydrocarbons, OCPs, semi-volatile organic compounds, and lead. Based on the results of the soil sampling, an area of lead-impacted soil was delineated and removed from the face of the slope of fill material on June 12, 2015. The material was then stockpiled onsite and covered with plastic, pending waste characterization. On July 6, 2015, 15.73 tons of lead-impacted soil were removed from the residential development site and transported to Philadelphia Recycling Mine in Mira Loma as a non-hazardous waste. No other contaminates of concern were identified at the site.

### 3.6.1.2 Hazardous Materials Database Results

During completion of the Phase I ESAs (Appendices L-1, L-2, and L-3), federal, state, and tribal environmental databases were reviewed to identify potential recognized environmental conditions on or within 1 mile of the proposed project site.

**On-Site Hazardous Materials**

The residential development site is not listed on any of the standard ASTM regulatory databases. The project site is listed on two non-ASTM regulatory databases: the Hazardous Materials Management Division (HMMD) and HAZNET. The permit under which the residential development site is listed in the HMMD database is inactive and expired in 1993.

The residential development site was also identified on the HAZNET database in 1998 (approximately the last time the site was used for agriculture). The site is on record for recycling approximately 4 tons of aqueous solution with less than 10% organic matter. This record implies that agricultural chemical amendments were applied to the site in the past when it was an active grove.

**Off-Site Hazardous Materials**

Three properties within between 0.5 and 1 mile of the project site were identified on the HAZNET database: Lift Station 3 (2045 S. Escondido Boulevard), Brotherton Plaza (2250 S. Escondido Boulevard), and Arco Gasoline Station (2306 S. Escondido Boulevard). Lift Station 3 and Arco Gasoline Station are listed on the database for storage of hazardous material and/or generation of hazardous waste. They have no record of unauthorized releases of hazardous substances or petroleum products. Brotherton Plaza is also listed on the Envirostor database and is listed for a release of hazardous substances to the soil only. These properties are not considered to be concerns to the proposed project site due to their distances from the site, orientations of the properties relative to the proposed project site, interpreted direction of groundwater flow, and/or regulatory case status information.

Two properties were identified in the San Diego County Department of Environmental Health-Site Assessment & Mitigation Division (DEH-SAM) online database. Both of these properties are within 0.3 mile upgradient of the proposed project site, and contain petroleum hydrocarbon fuel storage tanks. One is a closed system, and the other is exempt.

### 3.6.1.3 Lead and Asbestos

Lead and asbestos were commonly used in building construction prior to 1980, although construction materials after 1980 may still include asbestos. On-site structures in the proposed residential development project area were constructed in 1946. Thus, lead-based paint and asbestos-containing materials have potential to be present in the buildings onsite. Such materials may pose a health and safety risk if they are disturbed, and become airborne and inhalable.

### 3.6.1.4 Emergency Response and Evacuation Plans

Emergency response plans include elements to maintain continuity of government, emergency functions of governmental agencies, mobilization and application of resources, mutual aid, and public information. Emergency response plans are maintained at the federal, state, and local levels for all types of manmade and natural disasters. It is the responsibility of government to undertake an ongoing comprehensive approach to emergency management in order to avoid or minimize the effects of hazardous events. Local governments have the primary responsibility for preparedness and response activities.

To address disasters and emergency situations at the local level, the Unified Disaster Council is the governing body of the Unified San Diego County Emergency Services Organization. The Council is chaired by a member of the San Diego County Board of Supervisors and comprises representatives from the 18 incorporated cities in San Diego County, including Escondido.

Potential hazards or events that may trigger an emergency response action include earthquakes, tsunamis, floods, wildland fires, landslides, droughts, hurricanes, tropical storms, and freezes. Emergency response actions could also be triggered from a hazardous material incident; water or air pollution; major transportation accident; water, gas, or energy shortage; epidemic; nuclear accident; or terrorism. In the event of an emergency, emergency evacuation routes at or near the proposed project site are Bear Valley Parkway and San Pasqual Valley Road.

### 3.6.1.5 Wildland Fire Hazards

The proposed project site lies within in a local responsibility area “High” Fire Hazard Severity Zone (FHSZ) as statutorily designated by the Escondido Fire Department in cooperation with the California Department of Forestry and Fire Protection (CalFire). Fire hazard designations are based on topography, vegetation, and weather, among other factors, with more hazardous

sites including steep terrain, unmaintained fuels/vegetation, and wildland-urban interface locations. The nearest open space areas that include a very high fire hazard severity designation occur east of the project site toward the San Pasqual Valley area. The site is surrounded on three sides by existing, estate-type neighborhoods; a vacant parcel to the east; and a narrow strip of oak riparian forest (preserved open space) to the south. The proposed residential development site is currently undeveloped, and was disturbed and dominated by past agricultural use as an avocado orchard. One occupied residence is located in the middle of the site. The terrain on, and within the vicinity of, the proposed project site is characterized by flat to gently rolling land, with the steepest gradients reaching approximately 16%. The area, like all of San Diego County, is subject to seasonal weather conditions that can heighten the likelihood of fire ignition and spread. Considering the site's terrain and vegetation, however, the area would be expected to result in primarily a low- to moderate-intensity wildfire.

## 3.6.2 Regulatory Framework

### 3.6.2.1 Federal Regulations

**Chemical Accident Prevention Provisions**

When Congress passed the Clean Air Act Amendments of 1990, it required the U.S. Environmental Protection Agency (EPA) to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. These rules, which built upon existing industry codes and standards, require companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program.

**Comprehensive Environmental Response, Compensation, and Liability Act and the Superfund Amendment and Reauthorization Act of 1986**

Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, on December 11, 1980. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. The Superfund Amendments and Reauthorization Act (SARA) amended CERCLA on October 17, 1986. SARA stressed the importance of permanent remedies and innovative treatment technologies in cleaning up hazardous waste sites, required Superfund actions to consider the standards and requirements found in other state and federal environmental laws and regulations, provided new enforcement authorities and settlement tools, increased state involvement in every phase of the Superfund program, increased the focus on human health problems posed by hazardous waste sites, encouraged greater citizen participation in making decisions on how sites should be cleaned up, and increased the size of the trust fund to $8.5 billion.

**Federal Response Plan**

The Federal Response Plan of 1999 is a signed agreement among 27 federal departments and agencies, including the American Red Cross, that (1) provides the mechanism for coordinating delivery of federal assistance and resources to augment efforts of state and local governments overwhelmed by a major disaster or emergency; (2) supports implementation of the Robert T. Stafford Disaster Relief and Emergency Act, as well as individual agency statutory authorities; and (3) supplements other federal emergency operations plans developed to address specific hazards. The Federal Response Plan is implemented in anticipation of a significant event likely to result in a need for federal assistance or in response to an actual event requiring federal assistance under a Presidential declaration of a major disaster or emergency.

**Hazardous Materials Transportation Act**

The U.S. Department of Transportation regulates hazardous materials transportation under Title 49 of the Code of Federal Regulations (CFR). State agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and the California Department of Transportation. These agencies also govern permitting for hazardous materials transportation.

**International Fire Code**

The International Fire Code (IFC), created by the International Code Council, is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The IFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The IFC and the International Building Code use a hazard classification system to determine what measures are required to prevent fire and protect life safety. These measures may include construction standards, separation from property lines, and specialized equipment. To ensure that these safety measures are met, the IFC uses a permit system based on hazard classification. The IFC is updated every 3 years.

**National Emissions Standards for Hazardous Air Pollutants Program**

Under federal law, 188 substances are listed as Hazardous Air Pollutants (HAPs). Major sources of specific HAPs are subject to the requirements of the National Emissions Standards for Hazardous Air Pollutants (NESHAP) program. The EPA is establishing regulatory schemes for specific source categories and requires implementation of maximum achievable control technologies for major sources of HAPs in each source category. State law has established the framework for California's Toxic Air Contaminant Identification and Control Program, which is generally more stringent than the federal program, and is aimed at HAPs that are a problem in California. The State has formally identified more than 200 substances as toxic air contaminants and is adopting appropriate control measures for each. Once adopted at the state level, each air pollution control district will be required to adopt a measure that is equally or more stringent.

**Renovating, Repair and Painting Rule**

In 2008, EPA issued the Renovation, Repair and Painting Rule. This rule requires that firms performing renovation, repair, and painting projects that disturb lead-based paint in pre-1978 homes, child care facilities, and schools be certified by EPA and use certified renovators who are trained by EPA-approved training providers to follow lead-safe work practices. Individuals can become certified renovators by taking an 8-hour training course from an EPA-approved training provider. Contractors must use lead-safe work practices and follow these three simple procedures: (1) contain the work area; (2) minimize dust; and (3) clean up thoroughly.

**Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984**

Federal hazardous waste laws are generally promulgated under the Resource Conservation and Recovery Act (RCRA). These laws provide for the "cradle-to-grave" regulation of hazardous wastes. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed of. The Department of Toxic Substances Control (DTSC) is responsible for implementing the RCRA program as well as California's own hazardous waste laws, which are collectively known as the Hazardous Waste Control Law. Under the Certified Unified Program Agency program, California EPA (CalEPA) has in turn delegated enforcement authority to the County of San Diego (County) Department of Environmental Health (DEH) for regulating hazardous waste producers or generators.

### 3.6.2.2 State Regulations

**California Emergency Services Act**

The California Emergency Services Act was adopted to establish the State's role and responsibilities during manmade or natural emergencies that result in conditions of disaster and/or extreme peril to life, property, or the resources of the State. This Act is intended to protect health and safety by preserving the lives and property of the people of the state.

**California Human Health Screening Levels**

The California Human Health Screening Levels (CHHSLs) or "Chisels" are concentrations of 54 hazardous chemicals in soil or soil gas that CalEPA considers to be below thresholds of concern for risks to human health. The CHHSLs were developed by the Office of Environmental Health Hazard Assessment on behalf of CalEPA. The CHHSLs were developed using standard exposure assumptions and chemical toxicity values published by the EPA and CalEPA. The CHHSLs can be used to screen sites for potential human health concerns where releases of hazardous chemicals to soils have occurred. Under most circumstances, the presence of a chemical in soil, soil gas, or indoor air at concentrations below the corresponding CHHSL can be assumed to not pose a significant health risk to people who may live or work at the site. There are separate CHHSLs for residential and commercial/industrial sites.

**Emergency Response to Hazardous Materials Incidents**

California has developed an Emergency Response Plan to coordinate emergency services provided by federal, state, and local governments and private agencies. The Emergency Response Plan is administered by the California Emergency Management Agency (CalEMA) and includes response to hazardous materials incidents. CalEMA coordinates the response of other agencies, including CalEPA, the California Highway Patrol, California Department of Fish and Wildlife, the Regional Water Quality Control Boards (RWQCBs), San Diego Air Pollution Control District (APCD), City of San Diego Fire Department, and San Diego County Department of Environmental Health Hazardous Incident Response Team.

**Government Code Section 65962.5(a), Cortese List**

The Hazardous Waste and Substance Sites Cortese List is a planning document used by the state, local agencies, and developers to comply with the California Environmental Quality Act (CEQA) requirements in providing information about the location of hazardous materials release sites. Government Code Section 65962.5 requires CalEPA to develop at least annually an updated Cortese List. DTSC is responsible for a portion of the information contained in the Cortese List. Other state and local government agencies are required to provide additional hazardous materials release information for the Cortese List.

**Health and Safety Code Hazardous Materials Release Response Plans and Inventory**

Two programs found in the Health and Safety Code Chapter 6.95 are directly applicable to the CEQA issue of risk due to hazardous substances release. These two programs are referred to as the Hazardous Materials Business Plan Program and the California Accidental Release Prevention Program. County Department of Environmental Health is responsible for implementation of the Hazardous Materials Business Plan Program and the California Accidental Release Prevention Program in the San Diego region. The Hazardous Materials Business Plan and California Accidental Release Prevention Programs provide threshold quantities for regulated hazardous substances. When the indicated quantities are exceeded, a Hazardous Materials Business Plan or Risk Management Plan is required pursuant to the regulation. Congress requires the EPA Region 9 to make Risk Management Plan information available to the public through the EPA's Envirofacts Data Warehouse. Region 9 is the Pacific Southwest Division of the EPA, which includes Arizona, California, Hawaii, Nevada, Pacific Islands, and over 140 tribal nations. The Envirofacts Data Warehouse is considered the single point of access to select EPA environmental data.

**Senate Bill 1889, Accidental Release Prevention Law/California Accidental Release Prevention Program**

Senate Bill 1889 required California to implement a new federally mandated program governing the accidental airborne release of chemicals promulgated under Section 112 of the Clean Air Act. Effective January 1, 1997, the Accidental Release Prevention Law/California Accidental

Release Prevention Program replaced the previous California Risk Management and Prevention Program and incorporated the mandatory federal requirements. The California Accidental Release Prevention Program addresses facilities that contain specified hazardous materials, known as regulated substances that, if involved in an accidental release, could result in adverse off-site consequences. The California Accidental Release Prevention Program defines "regulated substances" as chemicals that pose a threat to public health and safety or the environment because they are highly toxic, flammable, or explosive.

**Health and Safety Code Section 25270, Aboveground Petroleum Storage Act**

The Aboveground Petroleum Storage Act requires registration and spill prevention programs for ASTs that store petroleum. In some cases, ASTs for petroleum may be subject to groundwater monitoring programs that are implemented by the RWQCBs and the State Water Resources Control Board. County Department of Environmental Health is the local administering agency for this program within the proposed project area.

**Title 22 of the CCR and Hazardous Waste Control Law, Chapter 6.5**

Under California Code of Regulations (CCR) Title 22, the term "hazardous substance" refers to both hazardous materials and hazardous wastes. Both of these are classified according to four properties: (1) toxicity; (2) ignitability; (3) corrosiveness; and (4) reactivity (CCR Title 22, Chapter 11, Article 3). A "hazardous material" is defined in Health and Safety Code Section 25501 as:

> Any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

Hazardous materials in various forms can cause death; serious injury; long-lasting health effects; and damage to buildings, homes, and other property. Hazards to human health and the environment can occur during production, storage, transportation, use, or disposal of hazardous materials.

The DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste under RCRA and the California Hazardous Waste Control Law. Both laws impose "cradle-to-grave" regulatory systems for handling hazardous waste in a manner that protects human health and the environment. CalEPA has delegated some of its authority under the Hazardous Waste Control Law to county health departments and other Certified Unified Program Agencies, including County Department of Environmental Health.

**Occupational Health and Safety Administration, Asbestos and Lead**

The EPA, CalEPA, and the California Occupational Health and Safety Administration (OSHA) regulate hazardous materials, including asbestos- and lead-containing materials. EPA banned several asbestos-containing products in the 1970s (see 40 CFR Part 61, Subpart M; 16 CFR Part 1305; and 16 CFR 1304). Per OSHA (29 CFR 1926.1101 and 29 CFR 1910.1001), insulation, surfacing, asphalt, and vinyl flooring material prior to 1980 should be assumed to be asbestos-containing materials and handled accordingly. EPA and OSHA require proper abatement and disposal of asbestos- and lead-containing materials to protect human health and safety. If the abatement activities involve over 100 square feet of asbestos-containing materials, then the asbestos abatement is required to be completed or overseen by a certified consultant (Title 8 CCR, Article 2.6, Section 341.15). On a local level, these regulations are implemented through the San Diego APCD and County Department of Environmental Health.

**State Fire Regulations**

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, which include regulations concerning building standards (as also set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training. The State Fire Marshal enforces these regulations and building standards in all state-owned buildings, state-occupied buildings, and state institutions throughout California.

**Title 14, Division 1.5 of the California Code of Regulations**

CCR Title 14, Division 1.5 establishes the regulations for CalFire and is applicable in all State Responsibility Areas where CalFire is responsible for wildfire protection. Development within State Responsibility Areas must comply with these regulations. Among other things, Title 14 establishes minimum standards for emergency access, fuel modification, property line setbacks, signage, and water supply.

**California Fire Code**

The California Fire Code (CFC) is provided in CCR Title 24, Chapter 9. It was created by the California Building Standards Commission and based on the IFC created by the International Code Council. The CFC is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The CFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The CFC and the California Building Code use a hazard classification system to determine what protective measures are required to protect fire and life safety. These measures may include construction standards, separation from property lines, and specialized equipment. To ensure that these safety measures are met, the CFC uses a permit system based on hazard classification. The CFC is updated every 3 years.

**California State Fire Plan**

The 2010 California State Fire Plan is the first statewide fire plan developed in concert between the State Board of Forestry and Fire Protection and CalFire. The central goals of the State Fire Plan include (1) improved availability and use of information on hazard and risk assessment; (2) land use planning, including general plans, new development, and existing developments; (3) shared vision among communities and the multiple fire protection jurisdictions, including county-based plans and community-based plans such as community wildfire protection plans; (4) establishing fire resistance in assets at risk, such as homes and neighborhoods; (5) shared vision among multiple fire protection jurisdictions and agencies; (6) levels of fire suppression and related services; and (7) post-fire recovery.

### 3.6.2.3 Regional/Local Regulations

**County of San Diego Consolidated Fire Code**

The County of San Diego, in collaboration with the local fire protection districts, created the first Consolidated Fire Code in 2001. The Consolidated Fire Code contains amendments to the California Fire Code. The purpose of consolidation of the County and local fire districts adoptive ordinances is to promote consistency in the interpretation and enforcement of the California Fire Code for the protection of public health and safety. The Consolidated Fire Code includes permit requirements for installation, alteration, or repair of new and existing fire protection systems, and penalties for violations of the code. The Consolidated Fire Code provides the minimum requirements for access, water supply and distribution, construction type, fire protection systems, and vegetation management. Additionally, the Consolidated Fire Code regulates hazardous materials and associated measures to ensure that public health and safety are protected from incidents related to hazardous substance releases.

**San Diego County, Site Assessment and Mitigation Program**

County Department of Environmental Health maintains the Site Assessment and Mitigation (SAM) list of contaminated sites that have previously undergone or are currently undergoing environmental investigations and/or remedial actions. The San Diego County SAM Program has a primary purpose of protecting human health, water resources, and the environment within San Diego County by providing oversight of assessments and cleanups in accordance with the California Health and Safety Code and the CCRs. The SAM's Voluntary Assistance Program also provides staff consultation, project oversight, and technical or environmental report evaluation and concurrence (when appropriate) on projects pertaining to properties contaminated with hazardous substances.

**San Diego County Multi-Jurisdictional Hazard Mitigation Plan**

The Multi-Jurisdictional Hazard Mitigation Plan was developed with the participation of all jurisdictions in the County of San Diego, including the City of Escondido. The plan includes an overview of the risk assessment process, hazards present in each jurisdiction, hazard profiles,

and vulnerability assessments. The plan also identifies goals, objectives, and actions for each jurisdiction.

Hazards profiled in the hazard mitigation plan include wildfire, structure fire, flood, coastal storms, erosion, tsunami, earthquakes, liquefaction, rain-induced landslide, dam failure, hazardous materials incidents, nuclear materials release, and terrorism. The plan sets forth a variety of objectives and actions based on a set of broad goals, including (1) promoting disaster-resistant future development; (2) increased public understanding and support for effective hazard mitigation; (3) building support of local capacity and commitment to become less vulnerable to hazards; (4) enhancement of hazard mitigation coordination and communication with federal, state, local, and tribal governments; and (5) reducing the possibility of damage and losses to existing assets, including people, critical facilities, or infrastructure, due to dam failure, earthquake, coastal storm, erosion, tsunami, landslides, floods, structural fire/wildfire, and manmade hazards.

**Operational Area Emergency Plan**

In San Diego County, there is a comprehensive emergency plan known as the Operational Area Emergency Plan (OAEP). The OAEP describes a comprehensive emergency management system that provides for a planned response to disaster situations associated with natural disasters, technological incidents, terrorism, and nuclear-related incidents. It delineates operational concepts relating to various emergency situations, identifies the components of a comprehensive emergency management system, and describes the overall responsibilities for protecting life and property and ensuring the overall well-being of the population. The OAEP is used by San Diego County and the 18 incorporated cities within the County to respond to major emergencies and disasters (City of Escondido 2012).

**City of Escondido Municipal Code, Chapter 7**

Chapter 7, Sections 7-1 through 7-8, of the City's Municipal Code provides for the preparation and carrying out of plans for the protection of persons and property within the city in the event of an emergency. It also discusses coordination of the emergency functions of the City with all other public agencies, corporations, organizations, and affected private persons. Chapter 7 of the Municipal Code requires the City of Escondido Disaster Council to be responsible for development of the City's Emergency Action Plan for City Employees, which provides for the effective mobilization of all the resources of the City, both public and private, to meet any condition constituting a local emergency, state of emergency, or state of war emergency; and the organization, powers and duties, services, and staff of the emergency organization.

**City of Escondido Weed and Rubbish Abatement Program**

Division 2 of Article 2 of Chapter 11 of the City's Municipal Code establishes the Weed and Rubbish Abatement Program. This ordinance designates the responsibility of owners of real property in the city in the elimination of the public nuisance created by weeds, rubbish, and

refuse on or around their property. This chapter of the Municipal Code declares the following as a public nuisance or fire hazard: all weeds growing on the streets, sidewalks, parking, and private property in the City of Escondido; and all rubbish on the streets, sidewalks, parking facilities, and private property in the City of Escondido. The Chief of the Escondido Fire Department, or any agent thereof, is vested with the authority to determine whether vegetation on private property results in a fire hazard and must be removed.

### 3.6.3 Thresholds of Significance

The State CEQA Guidelines Appendix G (14 CCR 15000 et seq.) identify the significance criteria to be considered for determining whether a project could have significant impacts on existing hazards and hazardous materials. An impact would be considered significant if construction or operation of the proposed project would have any of the following consequences.

- Create a significant hazard to the public or the environment though the routine transport, use, or disposal of hazardous material.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.
- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area.
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

As described in the Initial Study prepared for the proposed project (Appendix A), there would be no impact related to hazardous materials near a school, a hazardous site listing, or airport hazards. Therefore, impacts related to those thresholds are not evaluated further.

## 3.6.4 Project Impacts

### 3.6.4.1 Issue 1: Routine Transport, Use, or Disposal of Hazardous Materials

**Residential Development**

Construction of the proposed residential development would involve the use of common but potentially hazardous materials, including solvents, vehicle fuels, oils, grease, paints, caulking, cleaning materials, and caustic construction compounds. While these substances could pose a potential health risk to construction workers and to the general public during transport, handling of these common, potentially hazardous materials would occur in accordance with Cal OSHA guidelines and would be disposed of in accordance with DTSC and County regulations. Adherence to federal, state, and local regulations regarding the use and disposal of hazardous materials and wastes would reduce potential impacts on human health and safety from handling and transport of hazardous construction materials to a less-than-significant level.

Occupation of the proposed residential development would involve the use or storage of common hazardous materials, including cleaning solvents, pesticides and related chemicals associated with landscaping maintenance, and paints. Transport, use, and disposal of hazardous materials at the proposed residences would include relatively minor amounts of materials, would be similar to existing surrounding residential development, and would be intermittent and not considered routine. Compliance with all applicable regulations would reduce potential impacts to a less-than-significant level. Therefore, impacts associated with the routine transport, use, or disposal of hazardous materials related to residential development would be less than significant.

**Specific Alignment Plan Improvements**

Construction of the Specific Alignment Plan (SAP) improvements would involve the use of common but potentially hazardous materials, including solvents, vehicle fuels, oils, grease, paints, caulking, cleaning materials, and caustic construction compounds. While these substances could pose a potential health risk to construction workers and to the general public during transport, handling of these common, potentially hazardous materials would occur in accordance with Cal OSHA guidelines and would be disposed of in accordance with DTSC and county regulations. Adherence to federal, state, and local regulations regarding the use and disposal of hazardous materials and wastes would reduce potential impacts on human health and safety from handling and transport of hazardous construction materials to a less-than-significant level.

Operation of the SAP improvements are not expected to involve the routine transport, use, or disposal of hazardous materials. Therefore, there would be no impact.

### 3.6.4.2 Issue 2: Accidental Release of Hazardous Materials

**Residential Development**

As described under Issue 1, typical construction-related hazardous materials would be used during construction of the residential development including gasoline, oil, and other vehicle-related fluids; paints; solvents; and metals. It is possible that any of these substances could be released during construction activities. However, compliance with applicable Cal OSHA and DTSC regulations for handling of hazardous materials and spill cleanup procedures would prevent significant hazards to the public and the environment.

As described in Section 3.7.1, the historical use of the residential development site was primarily a citrus and avocado grove from before 1946 until approximately 1998. Prior to this agricultural use, the site was evaluated for its potential as a gold/silver mine. A Phase II ESA (Appendices M-1 and M-2) was conducted for the residential development site to evaluate the potential for concentrations of OCPs, arsenic, petroleum hydrocarbons (i.e., diesel and oil), mercury, and cyanide. The Phase II ESA concluded that concentrations of OCPs and mercury and cyanide were below the laboratory testing limit or non-detectable.

Arsenic concentrations ranged between non-detectable and 3.5 µg/kg. The CHHSL for arsenic is 0.07 µg/kg. Therefore, concentrations of arsenic in soil samples from the residential development site would exceed the CHHSL. However, as described in Appendix M-2, a DTSC evaluation of potential school sites in southern California determined that the upper range of average arsenic in soil is 12 mg/kg. The study suggests that this concentration can be used as the screening level for soil in southern California where residential land use is planned. The on-site soil concentrations are well below this DTSC screening level and deemed to be within the naturally occurring concentration in soils and not the result of a spill or legally applied herbicides. Arsenic concentrations are within the natural background range for southern California soil concentrations. The presence of arsenic in the natural background range does not have the potential to result in health risks to future residents at the residential development site. Therefore, impacts related to the accidental release of arsenic would be less than significant.

Diesel concentrations ranged between less than equipment detection limits (<5.0 mg/kg) and 260 mg/kg. Oil concentrations ranged between <5.0 and 91 mg/kg. In San Diego County, it is recommended that mitigation efforts be implemented if diesel and/or oil concentrations exceed 1,000 mg/kg in soil. The subject concentrations of diesel and oil occur within 9 inches of the surface and have not migrated vertically in the soil to an extent that would threaten groundwater. According to the Phase II ESA, it is likely that the soil samples indicate spills surrounding former smudge pot locations. They do not represent a human or environmental concern and represent a weathered fuel occurrence at concentrations that do not warrant mitigation effects. Given the shallowness and low level of the oil and diesel concentrations, impacts related to the accidental release of diesel and oil would be less than significant.

The proposed residential development would require removal of a single residence and detached garage constructed in 1946. Because of the age of the structure, it is likely that some building materials contain asbestos and lead-based paint. These have a potential to become airborne during demolition. Improper removal would have the potential to expose construction workers to a hazardous release of asbestos or lead. This is considered a potentially significant impact.

The three water supply/irrigation wells on the residential development site are not considered a significant environmental concern. Any water supply wells that are not intended to be used in the future would be properly abandoned in accordance with County of San Diego regulations.

Following construction, use of household hazardous products could result in minor upsets or spills, but it is not reasonably foreseeable that typical use of these products would create a significant hazard. Therefore, impacts associated with reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be less than significant.

In summary, compliance with regulations would preclude potentially significant impacts related to accidental release of hazardous materials, with the exception of lead and asbestos. The accidental release of lead and asbestos would be potentially significant.

**Specific Alignment Plan Improvements**

As described under Issue 1, typical construction-related hazardous materials would be used during construction of the SAP improvements including gasoline, oil, and other vehicle-related fluids; paints; solvents; and metals. It is possible that any of these substances could be released during construction activities. However, compliance with applicable Cal OSHA and DTSC regulations for handling of hazardous materials and spill cleanup procedures would prevent significant hazards to the public and the environment. No other accidental release of hazardous materials is anticipated during construction of the SAP improvements. Therefore, impacts associated with reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be less than significant.

Operation of the SAP improvements are not expected to involve the accidental release of hazardous materials. Therefore, there would be no impact.

### 3.6.4.3 Issue 3: Emergency Response and Evacuation Plans

**Residential Development**

Bear Valley Parkway is identified as an evacuation route in the Escondido General Plan Community Protection Element (2012). Construction of the residential development would include half-width improvements to Bear Valley Parkway, including an additional northbound

travel lane in addition to curb, gutter, sidewalk, parkway, and bike lane improvements. As described in Chapter 2, the width of the improvements would vary along the project frontage. At the southern end of the improvement area, the roadway would be widened by approximately 9 feet, and a 6.5-foot-wide sidewalk would be constructed. A security fence and retaining wall are also proposed along the southern sidewalk segment due to a change in elevation at the edge of the improvements. North of the proposed emergency access road, the widening of Bear Valley Parkway would add 12.5 feet of roadway, with an additional 5.5-foot-wide sidewalk. At the project entrance at Zlatibor Ranch Road, Bear Valley Parkway would be widened by 28.5 feet to accommodate a right-turn lane for site entry and would narrow to a 19-foot widening at the northern end of improvements. The 5.5-foot-wide sidewalk would continue to the northern end of the improvement area, along with a 4.5-foot-wide parkway. The improvements would be designed to transition to the existing roadway to the north and south. See Chapter 3.9 for further discussion of traffic hazards and emergency access.

Construction of the Bear Valley Parkway half-width improvements could require temporary closure of one or both lanes of traffic. Lane closures on roadways designated as evacuation routes have the potential to impair implementation of an adopted emergency evacuation plan. As a project feature, the project would include a traffic control and management plan to ensure that Bear Valley Parkway remains accessible during construction.

**Specific Alignment Plan Improvements**

Bear Valley Parkway is identified as an evacuation route in the Escondido General Plan Community Protection Element (2012). Construction of the SAP improvements would include full-width improvements to Bear Valley Parkway, including an additional travel lane, retaining wall, and raised median in addition to curb, gutter, sidewalk, parkway, and bike lane improvements. The SAP improvements would also enhance safety by providing improved intersection geometrics at the Bear Valley Parkway/Encino Drive intersection (see Chapter 3.9 for further details). Construction of the SAP full-width improvements could require temporary closure of lanes of traffic. Lane closures on roadways designated as evacuation routes have the potential to impair implementation of an adopted emergency evacuation plan. As a project feature, the project would include a traffic control and management plan to ensure that Bear Valley Parkway remains accessible during construction.

### 3.6.4.4 Issue 4: Wildland Fires

**Residential Development**

Wildfires could occur in wildland areas east of the project site and in the preserved on-site fuels in the southern portion of the site, but wildfires would not be significantly increased in frequency, duration, or size with construction of the proposed residential development. The proposed residential development includes fire-resistant landscaping, fuel modification areas, and ignition-resistant structures. The project would convert the proposed residential development site, which is currently dominated by flashy fuels, to ignition-resistant landscapes.

The types of potential ignition sources that currently exist in the area include vehicle and roadway, electrical transmission line, and off-site residential neighborhoods. The proposed residential development would introduce potential ignition sources but would include better access throughout the site, managed and maintained landscapes, more eyes and ears on the ground, and generally a reduction in the receptiveness of the area's landscape to ignition. Fires from off-site sources would not have the same spread potential due to a lack of continuous fuels across the proposed residential development site and therefore would be expected to burn around and/or over the site via spotting.

Preserved riparian vegetation southwest of the project is typically well hydrated, and the types of plants/trees are more resistant to ignition. However, these fuels can ignite and burn during extreme conditions. Burning vegetation embers could land on proposed project structures, but they are not likely to result in ignition based on ember decay rates and the types of noncombustible and ignition-resistant materials that would be used onsite. The proposed residential development would comply with applicable fire and building codes, and would include a layered fire protection system designed to current codes. Inclusion of additional site-specific prevention measures would result in a residential development that is less susceptible to wildfire than surrounding landscapes and that would facilitate fire fighter and medical aid response. Therefore, impacts related to wildland fires would be less than significant.

**Specific Alignment Plan Improvements**

The SAP improvements involve roadway improvements and would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands. Therefore, impacts would be less than significant.

## 3.6.5 Cumulative Impacts

The geographic scope of cumulative impact analysis for hazardous materials includes the area immediately surrounding the proposed project site.

### 3.6.5.1 Issue 1: Routine Transport, Use, or Disposal of Hazardous Materials

Cumulative projects within the proposed project area would result in new development, which would include facilities that use, store, dispose of, or transport of hazardous materials and potentially would increase hazards to the public or the environment. Cumulative projects would be required to comply with regulations applicable to the use, disposal, and transportation of hazardous materials, including the RCRA, CERCLA, Hazardous Materials Transportation Act, IFC, and CCRs Title 22 and Title 27. Any potentially significant impacts would be reduced to a less-than-significant level through compliance with applicable regulations, and cumulative projects would not result in a significant cumulative impact. Therefore, implementation of the proposed project would not contribute to a significant cumulative impact.

### 3.6.5.2 Issue 2: Accidental Release of Hazardous Materials

The implementation of various cumulative projects would increase the likelihood of hazards to the public or the environment through the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Generally, as the population increases, services and industries that commonly store, use and dispose of hazardous materials (e.g., dry cleaners and industrial manufacturing) would increase to service the expanding population. As the services and industries that use hazardous materials increase, the risk of accidental release associated with these services and industries would also increase. Cumulative projects would be subject to regulations regarding the handling of hazardous materials, such as the Chemical Accident Prevention Provisions, RCRA, Robert T. Stafford Disaster Relief and Emergency Assistance Act, California Health and Safety Code, CCR Title 23, Aboveground Petroleum Storage Act, CalARP, CalEMA Emergency Response Plan, and the California Emergency Services Act. These regulations, along with implementation of mitigation measures HAZ-1 and HAZ-2, which are described in Section 3.7.7, would reduce the risks associated with an accidental release of hazardous materials from cumulative projects, and a potentially significant cumulative impact would not occur. Therefore, implementation of the proposed project would not result in a cumulatively considerable contribution to hazardous materials releases.

### 3.6.5.3 Issue 3: Emergency Response and Evacuation Plans

Cumulative projects have the potential to impair existing emergency and evacuation plans. This could occur from any of the following: (1) an increase in population that is induced from cumulative projects which are unaccounted for in emergency plans; (2) an increase in population that emergency response teams are unable to service adequately in the event of a disaster; and (3) evacuation route impairment if multiple development projects concurrently block multiple evacuation or access roads. However, cumulative projects would be required to comply with applicable emergency response and evacuation policies outlined in regulations such as the Federal Response Plan, the California Emergency Services Act, local fire codes, and regional/jurisdictional emergency response and evacuation plans. The project includes a traffic control and management plan, which would address access during construction activities. Due to existing regulations and typical requirements for traffic control and management plans during construction, cumulative projects would not result in a significant cumulative impact associated with the implementation of emergency response and evacuation plans. Therefore, the proposed project, in combination with other cumulative projects, would not contribute to a significant cumulative impact.

### 3.6.5.4 Issue 4: Wildland Fires

The proposed project site is in an area considered a High FHSZ. Some cumulative projects would occur in areas that are considered High or Very High FHSZs. Growth occurring in the northern San Diego County region, implemented under various cumulative projects, would likely place

people and/or property within danger of wildland fires due to the widespread risk across the region. Implementation of the proposed residential development would convert ignitable fuels to a lower flammability landscape and would result in better access throughout the site, managed and maintained landscapes, more eyes and ears on the ground, and generally a reduction in the receptiveness of the area's landscape to ignition. Compliance with existing regulations and implementation of the project would reduce impacts to a less-than-significant level. Therefore, the project's contribution to a cumulative impact related to wildland fire would not be cumulatively considerable.

## 3.6.6 Significance of Impacts prior to Mitigation

Potential impacts related to hazards and hazardous materials from the proposed overhead power line relocation described in Section 2.5.1.6 were analyzed as part of this EIR and found to be less than significant.

### 3.6.6.1 Issue 1: Routine Transport, Use, or Disposal of Hazardous Materials

The proposed project would result in less-than-significant impacts related to the routine transport, use, or disposal of hazardous materials for both the residential development and SAP improvements.

### 3.6.6.2 Issue 2: Accidental Release of Hazardous Materials

**Residential Development**

Residential development would result in demolition of structures that could contain asbestos and/or lead-based paint. This is considered a potentially significant impact.

**Specific Alignment Plan Improvements**

The SAP improvements would result in less-than-significant impacts related to the accidental release of hazardous materials.

### 3.6.6.3 Issue 3: Emergency Response and Evacuation Plans

Both the proposed residential development and SAP improvements would result in less-than-significant impacts related to emergency response and evacuation plans.

### 3.6.6.4 Issue 4: Wildland Fires

Both the proposed residential development and SAP improvements would result in less-than-significant impacts related to wildland fires.

## 3.6.7 Mitigation Measures

### 3.6.7.1 Issue 1: Routine Transport, Use, or Disposal of Hazardous Materials

The proposed project would result in less-than-significant impacts related to the routine transport, use, or disposal of hazardous materials. Therefore, no mitigation is necessary for either the residential development or SAP improvements.

### 3.6.7.2 Issue 2: Accidental Release of Hazardous Materials

**Residential Development**

To reduce the residential development's potential impacts related to airborne release of lead and asbestos, the following shall be implemented:

HAZ-1 At least 10 days prior to demolition or removal of existing on-site structures, the project applicant shall submit an Asbestos Demolition or Renovation Operational Plan (Notice of Intention) to the City Community Development Department. This plan shall be prepared by an asbestos consultant licensed with the California State Licensing Board and certified by Cal OSHA to conduct an asbestos inspection in compliance with Asbestos NESHAP requirements. The Asbestos NESHAP, as specified under Rule 40, CFR 61, Subpart M, (enforced locally by the San Diego APCD, under authority, per Regulation XI, Subpart M - Rule 361.145), requires the owner of an establishment set for demolition to submit an Asbestos Demolition or Renovation Operational Plan at least 10 working days before any asbestos stripping or removal work begins (such as site preparation that would break up, dislodge or similarly disturb asbestos-containing material.)

- Removal of all asbestos-containing material or potential asbestos-containing material on the project site shall be monitored by the certified asbestos consultant and shall be performed in accordance with all applicable laws, including Title 8 CCR Section 1529, Asbestos; OSHA standards; and the San Diego County APCD Rule 361.145, Standard for Demolition and Renovation.
- HAZ-2 Demolition or removal of existing on-site structures constructed pre-1979 shall be performed by a Certified Lead Inspector/Assessor, as defined in Title 17, CCR Section 35005, and in accordance with all applicable laws pertaining to the handling and disposal of lead-based paint. Lead-based materials exposure is regulated by Cal OSHA. Title 8 CCR Section 1532.1 requires testing, monitoring, containment, and disposal of lead-based materials such that exposure levels do not exceed Cal OSHA standard.

**Specific Alignment Plan Improvements**

The SAP improvements would result in less-than-significant impacts related to the accidental release of hazardous materials. Therefore, no mitigation is necessary.

#### 3.6.7.3 Issue 3: Emergency Response and Evacuation Plans

The proposed project would result in less-than-significant impacts related to emergency response and evacuation plans. Therefore, no mitigation is necessary for either the residential development or SAP improvements.

#### 3.6.7.4 Issue 4: Wildland Fires

The proposed project would result in less-than-significant impacts related to wildland fires. Therefore, no mitigation is necessary for either the residential development or SAP improvements.

### 3.6.8 Conclusion

#### 3.6.8.1 Issue 1: Routine Transport, Use, or Disposal of Hazardous Materials

Implementation of the proposed project would result in an increase in the transport, use, and disposal of hazardous materials. Construction and future development would be required to comply with applicable federal, state, and local regulations related to hazardous materials. Required compliance with these regulations would ensure that the proposed project's impacts related to transport, use, and disposal of hazardous materials would be less than significant.

#### 3.6.8.2 Issue 2: Accidental Release of Hazardous Materials

Implementation of the residential development could result in accidental leaks or spills of hazardous materials that may occur during construction of the proposed project, which have the potential to expose the public or the environment to hazardous materials. Improper removal of existing structures would have the potential to expose construction workers to a hazardous release of asbestos or lead. Implementation of mitigation measures HAZ-1 and HAZ-2 would reduce the potential for upset and accident conditions during project construction to a less-than-significant level.

Following construction of the residential development, use of household hazardous products may result in minor upsets or spills, but typical use of these products would not create a significant hazard. Therefore, impacts associated with reasonably foreseeable upset and accident conditions in occupied residences involving the release of hazardous materials into the environment would be less than significant.

Implementation of the SAP improvements could result in accidental leaks or spills of hazardous materials that may occur during construction of the improvements, which have the potential to expose the public or the environment to hazardous materials. However, compliance with applicable Cal OSHA and DTSC regulations for handling of hazardous materials and spill cleanup procedures would prevent significant hazards to the public and the environment. No other accidental release of hazardous materials is anticipated during construction of the SAP

improvements. Therefore, impacts associated with reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be less than significant.

### 3.6.8.3 Issue 3: Emergency Response and Evacuation Plans

The proposed project includes installation of frontage improvements on Bear Valley Parkway, an identified evacuation route. The project would include a traffic control and management plan that would provide for continued access through Bear Valley Parkway during construction. The project would result in less-than-significant impacts related to emergency response and evacuation plans.

### 3.6.8.4 Issue 4: Wildland Fires

The proposed project would comply with applicable fire and building codes and would include a layered fire protection system designed to current codes. In addition, site-specific fire prevention measures would result in a project that would be less susceptible to wildfire than surrounding landscapes and that would facilitate fire fighter and medical aid response. Therefore, impacts related to wildland fires would be less than significant.

# 3.7 Land Use and Planning

This section of the Environmental Impact Report (EIR) describes the existing land use and zoning of the proposed project site and the surrounding area, and analyzes potential impacts related to the physical division of an established community, existing land use plans, and applicable habitat conservation plans (HCPs).

## 3.7.1 Existing Conditions

The following description of existing conditions is based on the *City of Escondido General Plan* (General Plan) (City of Escondido 2012a); the *Escondido General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report* (General Plan Program EIR) (City of Escondido 2012b); a Geotechnical Study prepared for the project by Vinje & Middleton Engineering, Inc. (2014) (Appendix I-1); and the project description in Chapter 2, unless otherwise noted.

### 3.7.1.1 On-Site Land Uses and Land Use Designations

The proposed residential development site is a 40.62-acre, tear-shaped property located at 661 Bear Valley Parkway. The site is currently undeveloped, except for a 1,120-square-foot (sf) single-family residence with a 96-sf detached garage and irrigation features located in the northern portion of the site. Topographically, the site is characterized by a large hilltop and a north-south-trending ridgeline that enters the northeast area of the property and transitions into descending hillside terrain in the southern reaches of the property. The property, which was used for mining exploration and agriculture in the past, is mostly disturbed vacant land. A riparian corridor runs along the southern and southwestern boundaries of the property.

In the area of the proposed Bear Valley Parkway full-width Specific Alignment Plan roadway improvements (SAP improvements), Bear Valley Parkway is currently a two-lane roadway. The majority of the existing roadway does not include full curb, gutter or sidewalk improvements. A guardrail is located on the east and west side of the roadway near the riparian corridor and the Encino Drive intersection. The General Plan identifies the ultimate buildout classification of this roadway to be Major Road.

The subject property is within the corporate boundaries of the City of Escondido (San Diego Local Agency Formation Commission 2011) and is under the jurisdiction of the General Plan. The General Plan designates the site as Estate II (Large Lot Single Family Residential, 1 dwelling unit [du] per 0.5, 1, or 20 acres depending on topography/slope categories) (City of Escondido 2012a, Figure II-1). The proposed residential development property is presently zoned Residential Estates with a minimum lot size of 20,000 sf (RE-20). Additional information regarding the land use designation and zoning is provided below in Section 3.8.2, “Regulatory Framework.”

### 3.7.1.2 Surrounding Land Uses and Land Use Designations

The site is generally bound by single-family residential uses, and vacant parcels to the north; Choya Canyon Road, rural residential uses, and vacant land to the east; single-family residential development and vacant parcels to the south; and single-family residential development, and a religious facility to the west. Regional access to the site is provided by Interstate 15, State Route 78, and Bear Valley Parkway. Adjacent parcels located immediately north, east, and west of the site are within unincorporated San Diego County (County), but within Escondido's Sphere of Influence (City of Escondido 2012b, Figure 4.10-1).

According to the General Plan, the land surrounding the site—including land within the unincorporated area of the County—is designated as Estate II. Land designated as Estate I is located east of the proposed project, within 0.25 mile of the site (City of Escondido 2012a, Figure II-1).

As previously mentioned, parcels to the north, east, and west of the site are within the unincorporated County. According to the *San Diego County General Plan*, regions north and southwest of the proposed project are designated as Village Residential (VR-2), areas east and west of the project site are designated as Semi-Rural Residential (SR-1), and west-southwest of the proposed project is designated as Village Residential (VR-4.3) (County of San Diego 2011, Figure LU-A-12). Village Residential (VR-2) allows a maximum density of two units per acre. Semi-Rural Residential (SR-1) allows a maximum density of one unit per acre for slopes less than 25%, one unit per 2 acres for slopes of 25 to 50%, or one unit per 4 acres for slopes greater than 50%. The maximum density allowed in Village Residential (VR-4.3) is 4.3 units per acre (County of San Diego 2011, Tables LU-1 and LU-2).

***Growth Trends***

According to the 2010 U.S. Census, Escondido's population was 143,911, which was an increase from 108,635 in 1990 and 133,559 in 2000. Between 2000 and 2010, the City's population increased by approximately 8%. During the same period, the population within the San Diego region increased by 10%. Escondido's population, as a proportion of the region's total population, decreased slightly from 5% in 2000 to 4.6% in 2010. More recently, the population of Escondido was estimated to be 151,451 in 2015, a 5.2% increase over the 2010 level and 4.7% of the population of San Diego County (U.S. Census Bureau 2016).

***Citywide Land Uses***

Growth over the past 125 years has transformed Escondido from a rural agricultural town to a bustling urban and suburban area offering a range of residential and employment opportunities. Development within the General Plan boundary is concentrated within the valley floor of Escondido, where Escondido's urbanized core surrounds the downtown area. The urban core and downtown encompass a variety of land uses, including new and established single- and multi-family neighborhoods and industrial and commercial developments. Western

Escondido forms the community's primary employment area, paralleling State Route 78. Many established neighborhoods surround the City's urbanized core area, with vacant or underdeveloped properties available for growth. Large areas of open space around Escondido's perimeter, such as Daley Ranch, San Dieguito River Valley, and Lake Wohlford, are adjacent to the community's urbanized areas and offer recreational activities with hiking and multi-use trails.

As of the publication of the General Plan in 2012, single- and multi-family residential uses represented the dominant land use, occupying 36,145 acres and 71% of the General Plan planning area. The majority of homes in the city are single-family residences (27,661 units), with other residences including apartments and condos (16,649 units) and mobile homes (3,736 units). The growth process also has brought master-planned neighborhoods and infill development; thoroughfares and freeways; major shopping centers; downtown revitalization, including a new city hall, and a joint police and fire headquarters; a regional medical center; employment centers; a main library; community centers; several neighborhood and community parks; a transit center with rail service; and a regional cultural and performing arts center.

## 3.7.2 Regulatory Framework

### 3.7.2.1 State Regulations

**California Planning and Zoning Law**

The legal framework in which California cities and counties exercise local planning and land use functions is provided in the California Planning and Zoning Law (Government Code Sections 65000 through 66499.58). Under State planning law, each city and county must adopt a comprehensive, long-term general plan. State law gives cities and counties wide latitude in how a jurisdiction may create a general plan, but there are fundamental requirements that must be met. These requirements include the inclusion of seven mandatory elements described in the Government Code. Each of the elements must contain text and descriptions setting forth objectives, principles, standards, policies, and plan proposals; diagrams and maps that incorporate data and analysis; and mitigation measures.

**Natural Community Conservation Planning Act of 1991**

The Natural Community Conservation Planning (NCCP) Act is designed to conserve natural communities at the ecosystem scale while accommodating compatible land uses. The California Department of Fish and Wildlife is the principal state agency implementing the NCCP Program. The NCCP Act established a process to allow for comprehensive, regional multi-species planning in a manner that satisfies the requirements of the state and federal Endangered Species Acts through a companion regional habitat conservation plan. The NCCP program has provided the framework for the state, local governments, and private interests to plan for the protection of regional biodiversity and ecosystems. The habitat conservation plans seek to ensure the long-

term conservation of multiple species, while allowing for compatible and appropriate economic activity to proceed.

**Senate Bill 375**

Senate Bill (SB) 375 was adopted in September 2008. SB 375 requires metropolitan planning organizations to develop a sustainable communities strategy to include in their regional transportation plans for the purposes of reducing greenhouse gas (GHG) emissions. The purpose of the bill is to align planning for transportation and housing, and it creates specified incentives for implementation of the strategy. SB 375 consists of five aspects: (1) creation of regional targets for reduction of GHG emissions tied to land use; (2) a requirement that regional planning agencies create a sustainable communities strategy to meet those targets, even if that plan is in conflict with local plans; (3) a requirement that regional transportation funding decisions be consistent with this new plan; (4) a requirement that the Regional Housing Needs Allocation numbers, established by the State Department of Housing and Community Development and allocated by the San Diego Association of Governments (SANDAG), must conform to the sustainable communities strategy; and (5) new California Environmental Quality Act (CEQA) exemptions and streamlining for projects that conform to the sustainable communities strategy.

### 3.7.2.2 Regional Regulations

**San Diego Association of Governments Plans and Programs**

***Regional Transportation Plan***

The 2050 *Regional Transportation Plan* (RTP) *and Sustainable Communities Strategy* (SCS) was adopted by SANDAG on October 28, 2011. The 2050 RTP mapped out a system designed to maximize transit enhancements, integrate biking and walking elements, and promote programs to reduce demand and increase efficiency. The RTP also identified a plan for investing in local, state, and federal transportation facilities in the region over the next 40 years. The SCS integrated land use and housing planning within the transportation plan. The SCS also addressed how the transportation system would be developed in such a way that the region would be able to reduce per-capita GHG emissions to State-mandated levels. Many of the capital improvement projects outlined in the original 2050 RTP are now in development.

***Congestion Management Plan***

State Proposition 111, passed by voters in 1990, established a requirement that urbanized areas prepare and regularly update a Congestion Management Program (CMP). The purpose of the CMP is to monitor the performance of the region's transportation system, develop programs to address near-term and long-term congestion, and better integrate transportation and land use planning. In October 2009, the San Diego region elected to be exempt from the State CMP and, since this decision, SANDAG has been abiding by 23 Code of Federal Regulations

450.320 to ensure the region's continued compliance with the federal congestion management process.

***San Diego Forward: The Regional Plan***

*San Diego Forward: The Regional Plan* was adopted by the SANDAG Board of Directors on October 9, 2015. It combines elements of the 2004 *Regional Comprehensive Plan* and the *2050 Regional Transportation Plan and Sustainable Communities Strategy* adopted in 2011. The San Diego Forward Plan provides a broad context for how the San Diego region will grow over the next 35 years. It focuses on creating a transportation network that will provide more choices to people in the region, which will indirectly protect the environment, create healthy communities, and stimulate economic growth. The California Air Resources Board and U.S. Department of Transportation completed reviews of the San Diego Forward Plan in December 2015. The plan will be updated every 4 years, with the next update due in 2019.

***Multiple Habitat Conservation Program and Draft Escondido Subarea Plan***

The Multiple Habitat Conservation Program (MHCP) is a multiple-jurisdiction comprehensive biological resource preserve system adopted by SANDAG in March 2003. This plan is designed to conserve adequate habitat in northwestern San Diego County to provide conservation of certain sensitive covered species in accordance with California's NCCP Act of 1991. The MCHP includes the Cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista. This plan, in conjunction with each City's subarea plan provides the cities with "take authorization" from the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife for covered species, as these plans identify areas for conservation and management directives that would adequately preserve the covered species. The MHCP identifies 47 species (32 animals and 15 plants) that occur or potentially occur in Escondido and therefore are evaluated for coverage under the *Public Review Draft Escondido Subarea Plan* (Ogden Environmental and Energy Services and Conservation Biology Institute 2001). The *Public Review Draft Escondido Subarea Plan* encompasses an area of approximately 24,624 acres and would preserve a total of 6,570 acres of natural habitats within the proposed preserve area. However, the City of Escondido has not yet adopted the *Public Review Draft Escondido Subarea Plan*.

**County of San Diego Plans, Programs, Policies, and Regulations**

While not applicable to the proposed project, information about the County General Plan is included herein for informational purposes because the surrounding area is within the unincorporated region of the County.

***San Diego County General Plan***

The County General Plan was updated and adopted on August 3, 2011. The General Plan establishes future growth and development patterns for the unincorporated areas of the county, including the North County Metro community adjacent to the City of Escondido. The plan focuses population growth in the western areas of the County where infrastructure and

services are available. The County General Plan update (County of San Diego 2011) improved the previous plan by balancing the need to accommodate growth with the needs to control traffic congestion, protect environmental habitat, and ease the strain on essential services such as water supplies and fire protection. The County General Plan contains numerous goals and policies aimed at respecting community character, climate change, infrastructure planning, and environmental preservation. The County General Plan's Land Use Element consists of maps, goals, and policies that guide the future pattern of development for the unincorporated County. The land use framework contains regional categories that broadly define land use designations that describe in greater detail land use types, housing densities, and development intensities. The County General Plan and use framework includes three regional categories: village, semirural, and rural lands. These categories broadly reflect the different character and land use development goals of the County's developed areas, from lower density residential and agricultural areas, to very low density or undeveloped rural lands. Higher density land use designations are concentrated in the western areas near the incorporated cities, including Escondido.

***North County Metro Subregional Plan***

Each planning area in the unincorporated County has a community or subregional plan, including North County Metro. Each community plan or subregional plan supplements the County General Plan by focusing on a particular planning area. Community and subregional plans contain information and policies concerning land use, housing, circulation, conservation, public facilities and services, recreation, and community character. Other issues may be addressed depending on the circumstances in a particular community. The North County Metro Community Planning Area covers the area surrounding the proposed project site.

According to the County General Plan and *North County Metropolitan Subregional Plan* (County of San Diego 2011), regions north and southwest of the proposed project are designated as Village Residential (VR-2), which allows a maximum density of two units per acre. An area west-southwest of the proposed project is designated as Village Residential (VR-4.3) where the maximum density allowed is 4.3 units per acre. Areas east and to the west of the proposed project site are designated as Semi-Rural Residential (SR-1), which allows a maximum density of one unit per acre for slopes less than 25%, one unit per 2 acres for slopes of 25 to 50%, or one unit per 4 acres for slopes greater than 50%.

The Village Residential designations are intended to accommodate single-family or multi-family housing types, depending on the density. Generally, residential densities of 10.9 dwelling units (du) per acre or higher require multi-family development. The Semi-Rural Residential category is meant to allow housing unit densities ranging from one unit per 0.5 acre to one unit per 10 acres. Semi-Rural areas comprise the majority of land within the unincorporated County and include low-density residential, agricultural, and recreation uses. These lands buffer and separate Village areas, and are expected to develop in a manner consistent with their natural

environment and rural character. The Village regional category accommodates the most intensive land uses in the unincorporated County and facilitates the use of compact development patterns.

***San Diego County Multiple Species Conservation Program***

The San Diego County Multiple Species Conservation Program (MSCP) is a long-term regional conservation plan designed to establish a connected preserve system that ensures the long-term survival of sensitive plant and animal species and protects the native vegetation found throughout the county. The MSCP addresses the potential impacts of urban growth, natural habitat loss, and species endangerment and creates a plan to mitigate the potential loss of sensitive species and their habitats. The MSCP covers 582,243 acres over 12 jurisdictions. Individual jurisdictions prepare subarea plans to implement the MSCP within their boundaries. The County has one adopted subarea plan under this program, the *South County MSCP Subarea Plan*, which was adopted in 1997. This subarea plan covers 252,132 acres in the southwestern portion of the unincorporated area. The County is currently developing a subarea plan for northern San Diego County. A draft of the *North County MSCP Plan* was released in February 2009 for public review, but has not yet been adopted. The draft plan covers 63 plant and animal species in a 294,849-acre area in northern San Diego County, ranging from Camp Pendleton and the Riverside County line in the north to the community of Ramona in the south.

### 3.7.2.3 Local Regulations

**City of Escondido Plans, Programs, Policies and Regulations**

The City of Escondido has numerous policies, programs, codes, and ordinances that regulate land use development. To simplify the volume and complexity of these regulations, this inventory focuses on policies that affect land use designations and zoning. Policies and regulations that indirectly affect land use planning, such as aesthetics, cultural resources, noise, hazards and hazardous materials, geology and soils, hydrology and water quality, air quality, and utilities and service systems regulations, are included in other sections in Chapter 3 of this EIR and in the Initial Study (Appendix A).

***General Plan***

California Government Code Section 65300 requires each planning agency to prepare and adopt a comprehensive, long-term General Plan for the physical boundaries that bear relationship to its planning area. The General Plan is a statement of long-range public policy to guide the use of private and public lands within a community's boundaries. The plan is both general and comprehensive in that it provides broad guidelines for development in the city while addressing a wide range of issues that will affect the city's desirability as a place to live, work, and play. The elements of the *City of Escondido General Plan* (General Plan) are Land Use and Community Form, Mobility and Infrastructure, Housing, Community Health and Services, Community Protection, Resource Conservation, Growth Management, Economic Prosperity, and Implementation Program.

As indicated above, the project site is designated as Estate II per the General Plan Land Use Element. The Estate designation allows for single-family homes on large lots, with clustering of units allowed per General Plan Residential Clustering Policies. The following information regarding Estate II is excerpted from the General Plan:

- General Description of Uses: Spaced single family development on relatively large lots and properties that transition between more intensive suburban development and Estate I areas.
- Recommended Urban Form Characteristics: Large residential lots with low building coverage; Units set back from the street with extensive on-site landscaping; Semi-formal streets.
- Maximum densities allowed on the following slope categories: 0-25% - 2 du/1 ac; 25-35% - 1 du/1 ac; and 35%+ - 1 du/20 ac. Min lot size: 20,000 sf. Building Height: 1-2 stories. Zoning: Residential Estate (R-E).

Estate II differs from Estate I in that the Recommended Urban Form Characteristics for Estate I include informal streets with rustic character and could include agricultural properties.

The General Plan Mobility and Infrastructure element identifies the ultimate buildout condition of Bear Valley Parkway between Via Rancho Parkway and Valley Parkway as Major Road (City of Escondido 2012a, Figure III-6). According to the General Plan, a Major Road is defined as having four to six travel lanes, controlled access, no parking, and raised or landscaped medians for added safety and efficiency in providing protected left turns at selected locations. Major Roads provide intra-city, and sub-regional service. Four-lane Major Roads have an 82- to 102-foot right-of-way (City of Escondido 2012a).

***Master Plan for Parks, Trails, and Open Space***

The *City of Escondido Master Plan for Parks, Trails and Open Space* (City of Escondido 1994) serves as a guide to developing a comprehensive and integrated open space system to achieve quality of life standards set forth in the General Plan. The plan identifies the potential locations of parks, trails, and open spaces; and establishes recommendations for obtaining land for new facilities and protecting existing resources.

***Zoning Ordinance***

The City's Zoning Ordinance, provided in Chapter 33 of the Municipal Code, is the primary way that the City administers the General Plan. The General Plan identifies general land use designations, while the Zoning Ordinance identifies specific uses and development standards within these land use designations. The purpose of the Zoning Ordinance is to serve the public health, safety, comfort, convenience, and general welfare by:

a. Regulating the use of buildings, structures, and land uses as between agriculture, industry, business, residence and other purposes;

b. Regulating signs and billboards;
c. Regulating the location, height, bulk, number of stories and size of buildings and structures; the size and use of lots, yards, courts and other open spaces; the percentage of a lot that may be occupied by a building or structure; and the intensity of land use;
d. Establishing requirements for off-street parking and loading;
e. Establishing and maintaining building setback lines;
f. Creation of civic districts around civic centers, public parks, public buildings or public grounds and establishing related regulations;
g. Establishment of general provisions and standards of development with the aim of preserving a wholesome, serviceable and attractive community; and
h. Establishing standards for landscaping and irrigation for commercial, industrial and residential development.

The Zoning Ordinance establishes development regulations for specific land uses, identified by zones, as well as overlay areas established in the General Plan, such as open space and floodplain areas. Additionally, some portions of the Municipal Code apply to all areas of the City, regardless of zone, such as *Article 55, the Grading and Erosion Control Ordinance*. The purpose of this article is to ensure that development occurs in a manner that protects the natural and topographic character and identity of the environment; the visual integrity of hillsides and ridgelines; sensitive species and unique geologic/geographic features; and the health, safety, and welfare of the general public by regulating grading on private and public property and providing standards and design criteria implementing best management practices to control storm water and erosion during all construction activities for all development.

Specific Zoning Ordinances that are related to the land use development process are listed below. Zoning Ordinance sections that pertain to specific environmental issues such as aesthetics, air quality, geology and soils, and hydrology and water quality are addressed in other sections of Chapter 3 of this EIR and in the Initial Study (Appendix A).

Article 47, Environmental Quality

Article 47, "Environmental Quality," implements the requirements of CEQA by applying the provisions and procedures contained in CEQA to development projects proposed within the city. The ordinance lists the criteria that would exempt a project from CEQA, establishes mitigation and reporting requirements, and establishes criteria that coordinate CEQA requirements with the City's quality of life standards to clarify how impacts identified for a project would affect its CEQA significance determinations. These criteria include air quality screening level thresholds for criteria pollutants, traffic level of service standards, and limits on allowable noise increases.

Article 64, Design Review

Article 64, "Design Review," requires design review of new development and modifications to existing development in order to preserve the natural charm, integrity, and quality of the built environment in the city. Article 64 also ensures that development is consistent with or exceeds the high quality of the development projects currently built in the city. Project applications subject to design review (e.g. development projects involving new construction; city-initiated public facilities projects; certain signs; proposed development standards for specific plans and overlay districts; and architectural modifications to certain industrial, commercial and multifamily residential developments) are reviewed by City Planning Division staff or at a regularly scheduled planning commission meeting at which the applicant is present. For discretionary projects which require public hearing, City Planning Division staff submit recommendations to the Planning Commission and/or City Council, which then consider the report in making its decision. On the other hand, for administrative projects that require Planning Division review, staff submit recommendations to the planning director. The elements of design consideration include site development, circulation, grading, setbacks, exterior appearance of buildings, structures, signs, lighting, street furniture, landscaping and other outdoor appurtenances.

Article 8, Residential Estates (R-E) Zone

The City of Escondido's Zoning Code identifies the proposed project site as Residential Estates (R-E) with minimum lot size of 20,000 sf (RE-20). This zone is intended to "provide for single-family dwellings in a rural setting." Allowed uses include detached single-family dwellings, mobile homes alone on the parcel, and small day care centers. Truck crops, orchards, and horticultural specialties are allowed in the RE zone but are not specifically encouraged in the RE-20 zoned regions. An average lot width of 100 feet applies to the RE-20 zone, and buildings are generally not allowed to be higher than 35 feet. Industrial and commercial uses and multi-family dwelling units are prohibited in the R-E zone. Population density is restricted to not more than one single-family dwelling per lot or parcel of land in the R-E zone.

Article 19, Planned Development (P-D) Zone

The proposed residential development proposes to change the zoning of the site to Proposed Development (P-D); thus, this zone is described herein. The P-D zone is designed to achieve the following:

…Encourage the planned development of parcels sufficiently large to permit comprehensive site planning and building design; to provide a more flexible regulatory procedure by which the basic public purposes of the Escondido General Plan and the Escondido Zoning Code may be accommodated; to encourage creative approaches to the use of land through variation in siting of buildings and the appropriate mixing of several land uses, activities and dwelling types; to enhance the appearance and livability of the community through encouragement of creative approaches to the use of land and the design of facilities, etc….

## 3.7.3 Thresholds of Significance

Based on the State CEQA Guidelines Appendix G and existing City policies and regulations, a project would result in a significant land use impact if it would:

- Physically divide an established community, create a new land use barrier, disrupt the physical arrangement of the surrounding community, impact the existing street and sidewalk pattern of the neighborhood, or preclude the development of parcels surrounding the proposed land use.
- Conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.
- Conflict with an applicable HCP or NCCP.

## 3.7.4 Project Impacts

### 3.7.4.1 Issue 1: Divide an Established Community

**Residential Development**

***Physical Division of an Established Community***

A project could result in impacts related to the physical division of a community if new or widened Circulation Element roads would traverse an established community. The proposed residential development is located in a vacant parcel of land, bounded by Bear Valley Parkway, Choya Canyon Road, undeveloped land, and residential development. The Tentative Map proposes to subdivide the property into 65 lots, including 55 residential lots, 2 private street lots, 7 open space lots, and 1 recreation lot. The residential development would add an additional northbound lane to the existing two-lane Bear Valley Parkway along the residential development frontage. All project roadways and improvements would be within existing rights-of-way or dedicated from the residential development property. As the proposed residential development consists of development of a largely vacant property, and new roads and road improvements would be within the vacant lot and existing rights-of-way, the residential development would result in less-than-significant impacts related to the physical division of an established community.

***New Land Use Barriers***

Impacts related to new land use barriers could occur if new development would block existing connections with an established community. The proposed residential development site is surrounded by existing residential land use and vacant land, and would be served by existing major roads. As shown in Figures 2-5a to 2-5d, the residential development proposes to add sidewalks on the east side of Bear Valley Parkway. In addition, the residential development would allow for pedestrian access and use of the site through the provision of pedestrian walkways and internal pedestrian crossings. As a result, the proposed residential development

would reduce land use barriers, and impacts associated with the creation of new land use barriers would be less than significant.

***Disruption of Physical Arrangement***

Impacts associated with the disruption of physical arrangement could occur when redevelopment disrupts the physical arrangement of existing communities by shifting existing development from one land use to another. The 40.62-acre proposed residential development site has been vacant, except for a single residential structure, for approximately 20 years. As such, it would not shift existing development to a different location. Rather than causing a disruption, the proposed residential structures associated with the project would be compatible with the residential development bordering the project site. Thus, this land use change would not result in a significant impact relative to disruption of the existing physical arrangement.

***Existing Street and Sidewalk Pattern Impact***

Potential impacts could occur when a project impacts the existing street and sidewalk patterns of existing neighborhoods. The proposed residential development would have one public access point along Bear Valley Parkway, similar to the existing condition. A gated emergency vehicle access would also be provided along Bear Valley Parkway (Figure 2-4). The proposed residential development would include enhancements to the Bear Valley Parkway and Zlatibor Ranch Road intersection, including signalization, a right-turn lane for site access, and an entry monument sign. The proposed residential development would add sidewalk, curb, gutter, and other road improvements to Bear Valley Parkway where it borders the property. To accomplish the frontage improvements, the residential development would dedicate additional rights-of-way along the residential development site frontage, ranging from 7 to 28 feet. The site and surrounding area would continue to be accessible from public transit bus stops serviced by North County Transit District (Line 350) with implementation of the residential development. While the residential development proposes enhancements to existing streets and sidewalks, it would not impair existing patterns; therefore, no significant impacts would occur.

***Preclude Development of Surrounding Parcels***

A project has the potential to preclude the development of parcels surrounding the site if the proposed uses would be incompatible with those uses in proximity. As discussed in Chapter 2, "Project Description," the surrounding parcels are comprised of residential development, a place of worship, and vacant land. The proposed uses (low-density residential development, open space lots, and a pocket park) would be compatible with the surrounding land uses.

The surrounding land use designations and zoning allow for additional residential uses within the city, and residential and agricultural uses within the County areas. The proposed residential development's potential impact on surrounding allowed agricultural uses is addressed in Section 3.2, "Agricultural Resources." As discussed in that section, the proposed residential development would result in a less-than-significant indirect impact on surrounding agricultural

resources considering that residences are already present in the area and conversion of adjacent agriculturally significant sites in the city would be consistent with long-range planning policies.

As analyzed in Section 3.1, "Aesthetics," the proposed residential development's architectural style is consistent with that of the surrounding developments. The proposed residential development overall would be of similar character to the land uses in proximity. Refer to Section 3.1, "Aesthetics," for additional visual analysis.

Overall, the proposed residential development would not preclude the development of surrounding parcels.

**Specific Alignment Plan Improvements**

***Physical Division of an Established Community***

The proposed SAP improvements would largely occur in the existing Bear Valley Parkway right-of-way, although an additional six-tenths of one acre would be dedicated to the City of Escondido in the future. The proposed roadway widening would traverse the existing residential land uses surrounding the proposed SAP improvements site. However, the SAP improvements are designed to facilitate current and future travel to and from the surrounding community. As the proposed roadway widening would occur largely within the existing right-of-way, the proposed SAP improvements would result in less-than-significant impacts related to the physical division of an established community.

***New Land Use Barriers***

As shown in Figures 2-8a through 2-8d, the SAP improvements would add sidewalks to the west side of Bear Valley Parkway that would connect with existing sidewalks near Encino Drive and Zlatibor Ranch Road. The bike lanes on Bear Valley Parkway would remain. The proposed roadway improvements would build Bear Valley Parkway to a 4-lane road, allowing freer-flowing access to nearby established communities. Furthermore, the SAP improvements would improve the intersection alignment at Bear Valley Parkway and Encino Drive. As a result, the proposed SAP improvements would reduce land use barriers, and impacts associated with the creation of new land use barriers would be less than significant.

***Disruption of Physical Arrangement***

The proposed SAP improvements would involve six-tenths of one acre currently designated as Estate II (Large Lot Single Family Residential, 1 du per 0.5, 1, 20 acres) to be acquired by others and dedicated to the City of Escondido in the future. Most of this land identified for future dedication to accommodate the proposed SAP improvements is vacant; however, a portion of it would be acquired from existing residential land use. This minimal shift in six-tenths of one acre of land use from residential to roadway is considered less than significant.

***Existing Street and Sidewalk Pattern Impact***

As described in Chapter 2, "Project Description," the proposed SAP improvements would improve the pattern of the intersection of Bear Valley Parkway and Encino Drive, as well as add sidewalk on the west side of Bear Valley Parkway. The sidewalk would be extended to connect to existing sidewalks at Zlatibor Ranch Road and Encino Drive. While the SAP improvements propose enhancements to existing streets and sidewalks, they would not impair existing patterns; therefore, no significant impacts would occur.

***Preclude Development of Surrounding Parcels***

As discussed in Chapter 2, "Project Description," the surrounding parcels are comprised of the proposed residential development, existing residential land uses, a place of worship, and vacant land. The proposed uses (roadway widening and improvements) would serve and be compatible with existing and future surrounding land uses. Overall, the proposed SAP improvements would not preclude the development of surrounding parcels.

### 3.7.4.2 Issue 2: Conflict with an Applicable Land Use Plan

**Residential Development**

***General Plan***

The General Plan designates the proposed residential development site as Estate II. Maximum densities allowed on the following slope categories are: two du per 1 acre on 0 to 25% slopes; 1 du per 1 acre on 25 to 35% slopes; and 1 du per 20 acres on slopes greater than 35%. This designation is intended to accommodate detached single-family homes of one to two stories where the minimum lot size is 20,000 sf. The designation is designed to promote housing units on large residential lots, set back from the street, with extensive on-site landscaping and semi-formal streets. Development is to be located and designed to transition between more intensive suburban development and more rural single-family lots. Consistent with the General Plan land use designation, the 55 homes associated with the residential development would be one to two stories, and the net project density would be 1.38 du per acre. The lot sizes of the proposed residential development would range from 10,000 to 24,500 sf; therefore, some of the proposed residential lots would be smaller than the minimum 20,000 sf envisioned by the Estate II land use designation. However, as discussed further below, changing the zoning to Proposed Development (P-D), would address this issue.

***Zoning Ordinance***

The City's Zoning Code identifies the proposed residential development site as Residential Estates with a minimum lot size of 20,000 sf (RE-20). This zone is intended to "provide for single-family dwellings in a rural setting." The residential development proposes to change the zoning of the site to Proposed Development (P-D). This zone is designed to accomplish the following:

> …Encourage the planned development of parcels sufficiently large to permit comprehensive site planning and building design; to provide a more flexible regulatory procedure by which the basic public purposes of the Escondido

> General Plan and the Escondido Zoning Code may be accommodated; to encourage creative approaches to the use of land through variation in siting of buildings and the appropriate mixing of several land uses, activities and dwelling types; to enhance the appearance and livability of the community through encouragement of creative approaches to the use of land and the design of facilities, etc….

The proposed development of 55 single-family homes, residential streets, open space lots, and a pocket park would be consistent with the P-D zoning. The residential development would design buildout of the site comprehensively, at the scale of the entire 40.62 acres, and would avoid piece-meal development.

Overall, the residential development would be consistent with the General Plan land use designation and with the goals of the Zoning Ordinance. No significant impacts would occur.

**Specific Alignment Plan Improvements**

The General Plan Mobility and Infrastructure element identifies the ultimate buildout classification of the stretch of Bear Valley Parkway where the SAP improvements are proposed to be Major Road. The SAP improvements, which would include extension of the right-of-way to accommodate four vehicle travel lanes, bike lanes, sidewalks, retaining walls, raised median, curbs and gutters, street trees, a vegetated swale, and relocated street lights, would be consistent with the General Plan goals. Overall, the SAP improvements would be consistent with the General Plan goals and no significant impacts would occur.

### 3.7.4.3 Issue 3: Conflict with a Habitat Conservation Plan

**Residential Development**

The City of Escondido is located within SANDAG's MHCP and the *Public Review Draft Escondido Subarea Plan* boundaries. The riparian corridor on the proposed project site was identified in the *Public Review Draft Escondido Subarea Plan* as Constrained Lands (Wetlands) Outside the Focused Planning Area (Ogden Environmental and Energy Services and Conservation Biology Institute 2001, as cited in Appendix B). As discussed in Section 3.3, "Biological Resources," the proposed residential development would mitigate all significant impacts on biological resources. The proposed project is also bordered by the *North County MSCP Plan* of the San Diego County MSCP. However, the North County Plan Habitat Evaluation Model found that the area around the proposed project site is either developed or used for intensive agriculture, and therefore not quality habitat. Both the *Public Review Draft Escondido Subarea Plan* and the *North County MSCP Plan* have not been formally adopted. In conclusion, the residential development would not conflict with an HCP.

**Specific Alignment Plan Improvements**

As discussed in Section 3.3, "Biological Resources," the proposed SAP improvements would mitigate all significant impacts on biological resources. For this reason, the SAP improvements would not conflict with an HCP.

## 3.7.5 Cumulative Impacts

The geographic scope of the cumulative impact analysis for land use is the northern San Diego County region, including jurisdictions adjacent to the County General Plan boundary.

### 3.7.5.1 Issue 1: Physical Division of an Established Community

As indicated in Section 3.7.4, "Project Impacts," the proposed project would not physically divide an established community. Further, the project would not create any new land use barriers, disrupt existing physical arrangements, nor preclude development of adjacent parcels. As of the fall of 2016, the County was completing roadway improvements on Bear Valley Parkway north of San Pasqual Valley Road, similar to the ones proposed by the SAP improvements. Construction of the two projects would not occur simultaneously. Similar to impacts of the proposed project, cumulative impacts would be less than significant.

### 3.7.5.2 Issue 2: Conflict with an Applicable Land Use Plan

As discussed in Section 3.7.4, "Project Impacts," the proposed residential development and SAP improvements would be consistent with the General Plan and Zoning Ordinance. Therefore, the project would not result in a significant cumulative impact relative to potential conflicts with a land use plan.

### 3.7.5.3 Issue 3: Conflict with a Habitat Conservation Plan

The project site is not within an adopted conservation subarea plan. Therefore, the project would not contribute to any significant cumulative impacts with respect to conflicts with an HCP.

## 3.7.6 Significance of Impacts prior to Mitigation

The proposed project would not result in potentially significant impacts associated with physical division of an established community, conflicts with a land use plan, or conflicts with a HCP. Potential impacts related to land use from the proposed overhead power line relocation described in Section 2.5.1.6 were analyzed as part of this EIR and found to be less than significant.

## 3.7.7 Mitigation Measures

The project would not physically divide an established community, conflict with an applicable land use plan, or conflict with an HCP. Thus, no associated land use mitigation is necessary.

## 3.7.8 Conclusion

The project would result in a less-than-significant impact related to land use.

# 3.8 Noise

This section of the Environmental Impact Report (EIR) describes the existing ambient noise environment, including the sources of noise, in the project area in relation to noise-sensitive land uses. In addition, relevant local noise standards and guidelines are described. This section is based on the Acoustical Site Assessment and Construction Vibration Assessment prepared for the residential development (Investigative Science and Engineering, Inc. 2016a and 2016b), (Appendices O and Q), as well as the Noise Letter prepared for the Bear Valley Parkway Full-Width Specific Alignment Plan (Appendix P). Background information is from the *Escondido General Plan Update, Downtown Specific Plan Update, and Climate Action Plan Environmental Impact Report* (General Plan EIR) (City of Escondido 2012b), unless otherwise referenced.

## 3.8.1 Existing Conditions

### 3.8.1.1 Characteristics of Noise and Vibration

**Fundamentals of Noise**

Noise is typically defined as unwanted sound. Sound pressure magnitude is measured and quantified using a logarithmic ratio of pressures, the scale of which gives the level of sound in decibels (dB). Sound pressures in the environment have a wide range of values and the sound pressure level was developed as a way to describe this range of sound. The sound pressure level is the logarithm of the ratio of the unknown sound pressure to an agreed upon reference quantity of the same kind. To account for the pitch of sounds and the corresponding sensitivity of human hearing to them, the raw sound pressure level is adjusted with an A-weighting scheme based on frequency that is stated in units of decibels (A-weighted decibels [dBA]). Typical A-weighted noise levels are listed in Table 3.8-1.

A given level of noise would be more or less tolerable depending on the sound level, duration of exposure, character of the noise sources, time of day during which the noise is experienced, and activity affected by the noise. For example, noise that occurs at night tends to be more disturbing than that which occurs during the day because sleep has the potential to be disturbed. Additionally, rest at night is a critical requirement in the recovery from exposure to high noise levels during the day. In consideration of these factors, different measures of noise exposure have been developed to quantify the extent of the effects anticipated from these activities. For example, some indices consider the 24-hour noise environment of a location by using a weighted average to estimate its habitability on a long term basis.

The most commonly used indices for measuring community noise levels are the equivalent energy level ($L_{eq}$), the community noise equivalent level (CNEL), and the day-night average noise level ($L_{dn}$).

- **$L_{eq}$** is the average acoustical or sound energy content of noise, measured during a prescribed period, such as 1 minute, 15 minutes, 1 hour, or 8 hours. It is the decibel

sound level that contains an equal amount of energy as a fluctuating sound level over a given period of time.

**Table 3.8-1. Typical A-Weighted Decibel Noise Levels**

| Common Outdoor Activities | Noise Level (dBA) | Common Indoor Activities |
|---|---|---|
| | -- 110 -- | Rock band |
| Jet flyover at 1,000 feet | | |
| | -- 100 -- | |
| Gas lawnmower at 3 feet | | |
| | -- 90 -- | |
| Diesel truck at 50 miles per hour at 50 feet | | Food blender at 3 feet |
| | -- 80 -- | Garbage disposal at 3 feet |
| Noisy urban area, daytime | | |
| Gas lawnmower at 100 feet | -- 70 -- | Vacuum cleaner at 10 feet |
| | | Normal speech at 3 feet |
| Commercial area heavy traffic at 300 feet | -- 60 -- | |
| | | Large business office |
| Quiet urban area, daytime | -- 50 -- | Dishwasher in next room |
| Quiet urban area, nighttime | -- 40 -- | Theater, large conference room (background) |
| Quiet suburban area, nighttime | | |
| | -- 30 -- | Library |
| Quiet rural area, nighttime | | Bedroom at night, concert hall (background) |
| | -- 20 -- | |
| | | Broadcast/recording studio |
| | -- 10 -- | |
| | -- 0 -- | Lowest threshold of human hearing |

Source: California Department of Transportation 2009.

- **CNEL** is the average equivalent A-weighted sound level over a 24-hour period. This measurement applies weights to noise levels during evening and nighttime hours to compensate for the increased disturbance response of people at those times. CNEL is the equivalent sound level for a 24-hour period with a +5 dBA weighting applied to all sound occurring between 7:00 p.m. and 10:00 p.m. and a +10 dBA weighting applied to all sound occurring between 10:00 p.m. and 7:00 a.m.
- **$L_{dn}$** is a 24-hour average $L_{eq}$ with a +10 dBA weighting applied to noise during the hours of 10:00 p.m. to 7:00 a.m. $L_{dn}$ and CNEL are typically within one dBA of each other and, for most intents and purposes, are interchangeable.

The decibel level of a sound decreases (or attenuates) exponentially as the distance from the source of that sound increases. For a single point source such as a piece of mechanical equipment, the sound level normally decreases by about 6 dBA for each doubling of distance from the source. Sound that originates from a linear, or "line" source such as a heavily traveled

traffic corridor, attenuates by approximately 3 dBA per doubling of distance, provided that the surrounding site conditions lack ground effects or obstacles that either scatter or reflect noise. Noise from roadways in environments with major ground effects due to vegetation and loose soils would either absorb or scatter the sound yielding attenuation rates as high as 4.5 dBA for each doubling of distance. Other contributing factors that affect sound reception include meteorological conditions, natural topography, and the presence of manmade obstacles such as buildings and sound barriers.

**Noise Effects**

Noise has a significant effect on the quality of life. An individual's reaction to a particular noise depends on many factors such as the source of the noise, its loudness relative to the background noise level, and the time of day. The reaction to noise can also be highly subjective; the perceived effect of a particular noise can vary widely among individuals in a community. Because of the nature of the human ear, a sound must be about 10 dBA greater than the reference sound to be judged as twice as loud. In general, a three decibel change in community noise levels is perceivable, while one to two decibel changes generally are not noticed. A five decibel increase is generally perceived as a distinctly noticeable increase. Although a community's reaction to changes in noise levels would vary by the individual, it is generally accepted that noise is a significant component of the environment, and excessively noisy conditions can affect an individual's health and well-being. The effects of noise are often only transitory, but adverse effects can be cumulative with prolonged or repeated exposure. The effects of noise on a community can be organized into six broad categories: sleep disturbance; permanent hearing loss; human performance

**Noise-Sensitive Land Uses**

Noise-sensitive land uses are generally defined as locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Noise-sensitive land uses typically include residences, hospitals, schools, guest lodgings, libraries, and certain types of passive recreational uses, such as parks to be used for reading, conversation, and meditation (Federal Transit Administration 2006).

**Ground-Borne Vibration**

Vibration is generally defined as any oscillatory motion induced in a structure or mechanical device as a direct result of some type of input excitation. Vibration consists of waves transmitted through solid material (Federal Transit Administration 2006). There are several types of wave motion in solids, unlike in air, including compressional, shear, torsional, and bending. The solid medium can be excited by forces, moments, or pressure fields. This leads to the terminology of "structure-borne/ground-borne" vibration.

Vibration energy spreads out as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. Soil properties also affect the propagation of vibration. When ground-borne vibration interacts with a building there is usually a ground-to-foundation coupling loss, but the vibration can also be amplified by the structural resonances of the walls and floors. Vibration in buildings is typically perceived as rattling of windows or items on shelves or the motion of building surfaces. The vibration of building surfaces can also be radiated as sound and heard as a low-frequency rumbling noise, known as ground-borne noise.

Ground-borne vibration is expressed in terms of the peak particle velocity (PPV) in inches per second and in vibration in decibels relative to 1 micro-inch per second. The particle velocity is the velocity of the soil particles resulting from a disturbance. The PPV descriptor correlates well with structural damage; however, PPV does not generally evaluate human response to vibration. The ground motion caused by vibration can be expressed in decibel notation, referenced as vibration decibels (VdB), to describe vibration relative to human annoyance (Federal Transit Administration 2006). The general human response to different levels of ground-borne vibration levels is described in Table 3.8-2.

**Table 3.8-2. Human Response to Different Levels of Ground-Borne Vibration**

| Vibration | Human Reaction |
|---|---|
| 65 VdB | Approximate threshold of perception for many people |
| 75 VdB | Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable. |
| 85 VdB | Vibration acceptable only if there are an infrequent number of events per day. |
| Source: Federal Transit Administration 2006.<br>VdB = vibration decibels | |

### 3.8.1.2 Existing Noise and Vibration

Two noise monitoring locations were selected within the residential development site to determine the ambient baseline community noise levels during normal free-flow weekday traffic conditions. Monitoring location 1 (ML 1) was located near the proposed northern residential development site entrance from Bear Valley Parkway and monitoring location 2 (ML 2) was located near proposed lot 46, near the center of the site. As shown in Table 3.8-3, the hourly average sound level ($L_{eq-h}$) recorded over the monitoring period ranged between 54 and 66 dBA and was observed entirely due to the traffic noise along Bear Valley Parkway and the relative separation distance from the roadway. Refer to Appendix O for detailed results of the noise monitoring. There were no existing sources of vibration on the proposed residential development site.

**Table 3.8-3. Measured Ambient Sound Levels**

| Location | Start Time | One-Hour Noise Level Descriptors in dBA | | | | |
|---|---|---|---|---|---|---|
| | | $L_{eq}$ | $L_{max}$ | $L_{min}$ | $L_{10}$ | $L_{90}$ |
| ML 1 | 12:00 p.m. | 66.0 | 77.1 | 37.5 | 69.6 | 48.7 |
| ML 2 | 11:56 a.m. | 54.2 | 61.4 | 43.0 | 56.7 | 49.3 |

Source: Appendix O
Notes:
ML 1: Monitoring Location 1 near proposed project entrance
ML 2: Monitoring Location 2 near proposed lot 46
$L_{eq}$ = equivalent sound level, $L_{max}$ = maximum sound level, $L_{min}$ = minimum sound level, $L_{10}$ and $L_{90}$ = statistical indicators

## 3.8.2 Regulatory Framework

### 3.8.2.1 Federal Regulations

**Federal Highway Administration Standards**

Code of Federal Regulations Title 23, Part 772 sets procedures for abatement of highway traffic noise and construction noise. Title 23 is implemented by the Federal Highway Administration. The purpose of this regulation is to provide procedures for noise studies and noise abatement measures to help protect the public health and welfare, to supply noise abatement criteria, and to establish requirements for information to be given to local officials for use in the planning and design of highways. All highway projects that are developed in conformance with this regulation shall be deemed to be in conformance with the Federal Highway Administration Noise Standards. Title 23 establishes 67 dBA as the worst-case hourly average noise level standard for impacts of federal highway projects on land uses, including residences, recreational uses, hotels, hospitals, and libraries (23 Code of Federal Regulations Chapter 1, Part 772, Section 772.19).

**Federal Transit Administration Standards and Federal Railroad Administration Standards**

Although the Federal Transit Administration (FTA) standards are intended for federally funded mass transit projects, the impact assessment procedures and criteria included in the FTA *Transit Noise and Vibration Impact Assessment Manual* (May 2006) are routinely used for projects proposed by local jurisdictions. The FTA and Federal Railroad Administration have published guidelines for assessing the impacts of ground-borne vibration associated with rail projects, which have been applied by other jurisdictions to other types of projects. The FTA measure of the threshold of architectural damage for conventional sensitive structures from ground-borne vibration is 0.2 inch/second (in/sec) PPV.

### 3.8.2.2 State Regulations

**California Noise Control Act of 1973**

Sections 46000 through 46080 of the California Health and Safety Code, known as the California Noise Control Act, finds that excessive noise is a serious hazard to public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic

damage. It also finds that there is a continuous and increasing bombardment of noise in urban, suburban, and rural areas. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the state to provide an environment for all Californians that is free from noise that jeopardizes their health or welfare.

**California Noise Insulation Standards**

In 1974 the California Commission on Housing and Community Development adopted noise insulation standards for multi-family residential buildings (Title 24, Part 2, California Code of Regulations [CCR]). Title 24 establishes standards for interior room noise (attributable to outside noise sources). Title 24 requires that multi-family dwellings, hotels, and motels located where the CNEL exceeds 60 dBA require an acoustical analysis showing that the proposed design will limit interior noise to less than 45 dBA CNEL for all residential spaces. Worst-case noise levels, with existing or future, must be used. The City of Escondido (City) has adopted the CCR Title 24 regulations for all types of residential dwellings.

### 3.8.2.3 Local Regulations

**City of Escondido General Plan**

The existing City General Plan Community Protection Element establishes noise and land use compatibility standards, and outlines goals and policies to achieve these standards. New projects in the city are required to meet the Noise Compatibility Guidelines listed in Table 3.8-4 to determine the compatibility of land uses when evaluating proposed development projects (Noise Policy E1.1). A land use located in an area identified as “normally acceptable” indicates that standard construction methods would attenuate exterior noise to an acceptable indoor noise level and that people can conduct outdoor activities with minimal noise interference. Land uses that fall into the “conditionally acceptable” noise environment should prepare an acoustical study that considers the type of noise source, the sensitivity of the noise receptor, and the degree to which the noise source has the potential to interfere with sleep, speech, or other activities characteristic of the land use. For land uses where the exterior noise level falls within the “conditionally unacceptable” range, new construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made with noise insulation features included in the design. For land uses where the exterior noise levels fall within the “clearly unacceptable” range, new construction generally should not be undertaken. General Plan Noise Policy 5.2 establishes a CNEL of 60 dB or less for single-family housing as a goal where outdoor use is a major consideration (back yards and single-family housing developments, and recreation areas in multifamily housing developments); however, it recognizes that such levels may not necessarily be achievable in all residential areas. Noise Policy 5.4 requires noise attenuation when interior noise in a new noise sensitive land use may exceed 45-dBA CNEL.

## Table 3.8-4. Land Use Compatibility Standards

| Land Use Category | Exterior Noise Level (CNEL) | | | | | | |
|---|---|---|---|---|---|---|---|
| | 55 | 60 | 65 | 70 | 75 | 80 | 85 |
| Residential – single-family, duplex, mobile home | | | | | | | |
| Residential – multi-family, residential mixed use | | | | | | | |
| Transient lodging, motels, hotels | | | | | | | |
| Schools, Libraries, Churches, Hospitals, Nursing Home | | | | | | | |
| Auditoriums, Concert Halls, Amphitheaters | | | | | | | |
| Sports Arena, Outdoor Spectator Sports | | | | | | | |
| Playgrounds, Parks | | | | | | | |
| Golf Courses, Riding Stables, Water Recreation, Cemeteries | | | | | | | |
| Office Buildings, Business Commercial, Professional | | | | | | | |
| Industrial, Manufacturing, Utilities, Agriculture | | | | | | | |

| | |
|---|---|
| Normally Acceptable | Specified land use is satisfactory, based upon the assumption that buildings involved are of normal conventional construction, without any special noise insulation requirements |
| Conditionally Acceptable | New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will usually suffice. |
| Normally Unacceptable | New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made with noise insulation features included in the design. |
| Clearly Unacceptable | New construction or development should generally not be undertaken. |

Source: City of Escondido 2012a.

The Community Protection Element also establishes standards for permanent increases in ambient noise levels at noise sensitive land uses. Noise Policy 5.5 requires construction projects and new development to ensure acceptable vibration levels at nearby vibration-sensitive uses based on FTA criteria. The Community Protection Element establishes criteria for acceptable vibration levels, consistent with the vibration criteria established by the FTA in the Transit Noise Impact and Vibration Assessment (2006). The FTA Noise Impact and Vibration Assessment stipulates an impact criterion for ground-borne vibration of 0.3 in/sec PPV at engineered concrete and masonry structures and 0.2 in/sec PPV at non-engineered timber and masonry buildings. It also stipulates an impact criterion for ground-borne vibration at residences or buildings where people normally sleep of 80 VdB for infrequent events and 75 VdB for occasional events.

**City of Escondido Municipal Code Noise Ordinance**

The City's Municipal Code Chapter 17, Article 12, Noise Abatement and Control (Noise Ordinance) establishes prohibitions for disturbing, excessive or offensive noise, and provisions such as sound level limits for the purpose of securing and promoting the public health, comfort, safety, peace, and quiet for its citizens. Table 3.8-5 shows the allowable noise levels at any point on or beyond the boundaries of the property on which the sound is produced, and corresponding times of day for each zoning designation. The noise standards apply to each property or portion of property substantially used for a particular type of land use reasonably similar to the land use types shown in Table 3.8-5. Where two or more dissimilar land uses occur on a single property, the more restrictive noise limits apply.

**Table 3.8-5. City of Escondido Exterior Sound Limit Levels**

| Zone | Time | Applicable Limit One-Hour Average Sound Level (decibels) |
|---|---|---|
| Residential zones | 7:00 a.m. to 10:00 p.m. | 50 |
| | 10:00 p.m. to 7:00 a.m. | 45 |
| Multi-residential zones | 7:00 a.m. to 10:00 p.m. | 55 |
| | 10:00 p.m. to 7:00 a.m. | 50 |
| Commercial zones | 7:00 a.m. to 10:00 p.m. | 60 |
| | 10:00 p.m. to 7:00 a.m. | 55 |
| Light industrial/Industrial park zones | Anytime | 70 |
| General Industrial zones | Anytime | 75 |
| Source: City of Escondido Municipal Code. | | |

Environmental noise is measured by the $L_{eq}$ for the hours as specified in Table 3.8-5. If the noise is continuous, the $L_{eq}$ for any hour will be represented by any lesser time period within that hour. If the noise is intermittent, the $L_{eq}$ for any hour may be represented by a time period typical of the operating cycle, but the measurement period must be 15 minutes or longer. If the measured ambient level exceeds the permissible noise level, the allowable noise exposure

standard is the ambient noise level. Noise restrictions are listed in Sections 17-230 through 17-241 of the Noise Ordinance, such as specific regulations pertaining to motor vehicles and burglar alarms. Additional sections of the Noise Ordinance applicable to this analysis are listed below.

***Section 17-234 (Construction Equipment)***

Except for emergency work, the following applies to all construction equipment operating in the city:

a) It shall be unlawful for any person, including the City of Escondido, to operate construction equipment at any construction site, except on Monday through Friday during a week between the hours of 7:00 a.m. and 6:00 p.m. and on Saturdays between the hours of 9:00 a.m. and 5:00 p.m., and provided that the operation of such construction equipment complies with the requirements of subsection (d) of this section.

b) It shall be unlawful for any person, including the City of Escondido, to operate construction equipment at any construction site on Sundays and on days designated by the President, Governor or City Council as public holidays.

c) A person may operate construction equipment at his/her residence or for the purpose of constructing or modifying a residence for himself/herself on Monday through Friday of a week between the hours of 7:00 a.m. and 6:00 p.m., and on Saturdays, Sundays, and holidays between the hours of 9:00 a.m. and 5:00 p.m.; provided, that such operation of construction equipment is not carried on for profit or livelihood and complies with the requirements of subsection (d) of this section.

d) No construction equipment or combination of equipment, regardless of age or date of acquisition, shall be operated so as to cause noise in excess of a one-hour average sound level limit of 75 dB at any time, unless a variance has been obtained in advance from the City Manager.

e) Persons engaged in construction for profit or as a business shall post signs at conspicuous places on a construction site, indicating hours of work as prescribed by this article or authorized by permit and the applicable noise level limit.

***Section 17-237 (Landscape Equipment)***

It shall be unlawful for any person, including the City of Escondido, to use any motorized landscape equipment, including but not limited to power blowers and vacuums, which causes a disturbing, excessive or offensive noise as defined under Section 17-227(k) of the Noise Ordinance.

Disturbing, excessing or offensive noise refers to any sound or noise exceeding the noise standards in the Noise Ordinance (see Table 3.8-5).

***Section 17-238 (Grading)***

a) It shall be unlawful for any person, including the City of Escondido, to do any authorized grading at any construction site, except on Mondays through Fridays during a week between the hours of 7:00 a.m. and 6:00 p.m. and, provided a variance has been obtained in advance from the City Manager, on Saturdays from 10:00 a.m. to 5:00 p.m.
b) For the purpose of this section, "grading" shall include, but not be limited to, compacting, drilling, rock crushing or splitting, bulldozing, clearing, dredging, digging, filling and blasting.
c) In addition, any equipment used for grading shall not be operated so as to cause noise in excess of a one-hour sound level limit of 75 dB at any time when measured at or within the property lines of any property that is developed and used in whole or in part for residential purposes, unless a variance has been obtained in advance from the City Manager.

***Section 17-240 (General Noise Regulations)***

Section 17-240 includes additional general noise regulations. This section states that it is unlawful for any person to make, continue or cause to be made or continued, any disturbing, excessive or offensive noise that causes discomfort or annoyance to reasonable persons of normal sensitivity. Noises declared to be disturbing, excessive and offensive include stereo equipment, animal noise, and loading and unloading of vehicles that disturbs neighboring receptors. This section also establishes the following requirements for pile driving activities: No person shall operate between the hours of 6:00 p.m. and 7:00 a.m. on weekdays, or on Saturdays, Sundays, or any legal holidays, any pile driver, pneumatic hammer, derrick, or other similar appliance, the use of which is attended by loud or unusual noise, unless a variance has been obtained in advance from the City Manager. Section 17-242 of the Noise Ordinance exempts agricultural operations from the standards in Table 3.8-5 provided that agricultural operations meet equipment standards and limit their hours of operation.

**City of Escondido Municipal Code Environmental Quality Regulations**

The City's Municipal Code Environmental Quality Regulations in Chapter 33, Article 47 implement the California Environmental Quality Act (CEQA) and the State CEQA Guidelines (guidelines) by applying the provisions and procedures contained in CEQA to development projects proposed within the city. Section (a)(2) pertains to noise impacts, specifically noise impacts related to the widening of Mobility and Infrastructure Element streets. According to this section, the following incremental noise increases are generally not considered significant:

a) Short- or long-term increases, regardless of the extent, that do not result in noise increases in excess of general plan standards,
b) Short- or long-term increases that result in a 3 dBA or less incremental increase in noise beyond the general plan's noise standards.

### 3.8.3 Thresholds of Significance

The State CEQA Guidelines Appendix G (14 CCR 15000 et seq.) has identified significance criteria to be considered for determining whether a project could have significant impacts on the existing noise environment.

An impact would be considered significant if construction or operation of the proposed project would have any of the following consequences.

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels.
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?
- For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

As described in the Initial Study prepared for the project (Appendix A), the closest airports to the project site are the Ramona and McClellan-Palomar Airports, both of which are located more than 2 miles away. The project site is not located within the Airport Influence Area of these airports (San Diego Regional Airport Authority 2011a and 2011b). The northwestern boundary of the site is located within 2 miles of the downtown Palomar Hospital heliport, but the heliport is not anticipated to generate significant noise levels at the project site considering the distance from the site and intermittent use of the heliport. Thus, the project would have no impact related to airport noise, and these topics are not analyzed further.

### 3.8.4 Project Impacts

#### 3.8.4.1 Issue 1: Excessive Noise Levels

For informational purposes and to ensure consistency with City policies, a discussion of the potential for the proposed project to be exposed to excessive noise levels, as determined by the City's Noise Compatibility Standards and City's General Plan Community Protection Element, from the surrounding areas has been included. CEQA is intended to protect the existing environment from impacts that would result from the project, not impacts of the environment on the project. CEQA does not consider impacts of the existing environment on a proposed land use to be significant (South Orange County Wastewater Authority v. City of Dana

Point [2011]; *City of Long Beach v Los Angeles Unified Sch. Dist.* [2009] 176 CA4th 889; *Ballona Wetlands Land Trust v. City of Los Angeles* [2011] 201 CA 4th 455; and *Baird v County of Contra Costa* [1995] 32 CA 4th 1464). However, in order to ensure consistency with the City's Noise Compatibility Standards and City's General Plan Community Protection Element for siting of new development, noise levels at the proposed project site have been evaluated.

**Residential Development**

The proposed residential development has the potential to generate noise levels in excess of established standards by increasing human activity throughout the site. This section addresses the potential for sensitive receptors to be exposed to excessive noise levels from the proposed residential development. The potential for a permanent increase in noise levels that would occur as a result of increased traffic on roadways is addressed under Issue 3.

***Impacts on Off-Site Uses***

A total of 55 single-family residences would be developed throughout the proposed residential development site. Noise generated from residential uses is generally described as nuisance noise. Nuisance noise is defined as intermittent or temporary neighborhood noise from sources such as amplified music and barking dogs that may be disturbing to other residents. Section 17-240 of the Escondido Municipal Code prohibits nuisance noise at any time that causes discomfort or annoyance to reasonable persons of normal sensitivity. Compliance with the noise ordinance would limit exposure to excessive nuisance noise. The Escondido Police Department enforces the nuisance noise provisions of the noise ordinance. Additionally, nuisance noises would be different from each other in kind, duration, and location, so that the overall effects would be separate and in most cases would not affect the receptors at the same time. Instances of nuisance noise would be addressed on an individual case basis by the Escondido Police Department. Furthermore, nuisance noise from the proposed residential development would be similar to existing nuisance noise from the existing residential development surrounding the project site. Therefore, nuisance noise from the proposed residences would not result in a significant impact.

Regular maintenance would be necessary in the residential neighborhood and maintained open space areas. Maintenance activities would include the use of gasoline-powered mowers, trimmers, and blowers, which would result in intermittent short-term temporary noise increases. Individual pieces of landscaping equipment can generate noise levels up to 95 dBA at the source, or 71 dBA at 50 feet. Section 17-237 of the City's Noise Ordinance (Landscape Equipment) establishes requirements for operation of landscaping equipment. Use of any motorized landscape equipment that causes a disturbing, excessive, or offensive noise, defined as noise exceeding the noise standards established in the Noise Ordinance (see Table 3.8-5), is prohibited. As stated in the noise ordinance, landscaping equipment cannot exceed an hourly average noise level of 50 dBA at nearby receptors. Landscape maintenance activities on the residential development site would be required to comply with this ordinance, which also is

enforced by the Escondido Police Department. Landscaping equipment would be similar to the noise generated in adjacent, offsite residential areas. Maintenance equipment would not operate at any one location for more than a few minutes, and it is unlikely that several pieces of equipment would operate simultaneously in one location. Due to the limited amount of time equipment would be operating in one location, and enforcement by the Escondido Police Department of any violations of the noise ordinance, operation of landscape equipment would generally not exceed the hourly noise level limit at a particular receptor. Therefore, landscape maintenance activities would result in a less-than-significant noise impact.

The open space areas on the site are proposed for passive recreational use. No play fields or other noise-generating uses are proposed in these areas. Noise from the open space areas would generally be limited to normal conversation and would not generate noise levels with the potential to exceed the City's noise level limits. A significant noise impact would not occur from noise generated in the open space areas.

As described above, the proposed project would not result in new sources of noise that would expose surrounding land uses to noise levels in excess of the standards identified in the City's noise ordinance. Impacts would be less than significant.

***Impacts on On-Site Uses***

**Surface Roadways.** Traffic noise is the main source of noise on the residential development site. The residential development's contribution to the future increase in noise levels from project-generated traffic is addressed in Section 3.8.4.3. Based on traffic volumes provided in the traffic impact analysis (Appendix R), surface street traffic along Bear Valley Parkway would generate noise levels above the normally acceptable noise compatibility standard of 60 dBA CNEL for residences on lots 2 through 5 (located along Bear Valley Parkway at the north end of the project site).

Additionally, as described above, the City has adopted Title 24 requirements for all types of residential developments. For residences where the CNEL is expected to exceed 60 dBA, an acoustical analysis is required to show that the proposed design will limit interior noise to less than 45-dBA CNEL for all residential spaces. According to the Acoustical Site Assessment (Appendix O), the CNEL would exceed 60 dBA at the second floor levels of 13 of the proposed residences (lots 1–6, 40–42, 49, 52, 53, and 55).

**Surrounding Land Uses**. In addition to roadways, the residential development site is surrounded by other, existing residential development. Residential uses are not sources of substantial operational noise and would not expose the proposed residences to excessive noise levels. Occasional nuisance noise may result from residences and parking lots, such as loud music or car alarms. Nuisance noise does not generate excessive noise levels, and impacts

resulting from surrounding land uses would not result in noise levels incompatible with the proposed residential land use.

**Specific Alignment Plan Improvements**

***Impacts on Off-Site Uses***

The proposed Specific Alignment Plan (SAP) improvements are not expected to generate new vehicle trips and related excessive noise levels. Maintenance may include occasional street sweeping; however the street sweeper would not operate in one location for an extended period and noise from such maintenance activities would be enforced by the Escondido Police Department. The SAP improvements would result in a less-than-significant excessive noise impact on surrounding land uses.

***Impacts on On-Site Uses***

The SAP improvements would be surrounded by residential development. As previously explained, residential uses are not sources of substantial operational noise and would not expose the proposed roadway improvements to excessive noise levels. Occasional nuisance noise may result from residences and parking lots, such as loud music or car alarms. Nuisance noise does not generate excessive noise levels, and on-site impacts resulting from surrounding land uses would not result in significant noise levels incompatible with the roadway land use.

### 3.8.4.2 Issue 2: Excessive Ground-Borne Vibration

**Residential Development**

Proposed construction activities include demolition, grading, building construction, and paving. These construction activities may result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and construction activities taking place.

Caltrans guidelines state, “In most cases, vibration induced by typical construction equipment does not result in adverse effects on people or structures. Noise from the equipment typically overshadows any meaningful ground vibration effects on people. Some equipment, however, including vibratory rollers and crack-and-seat equipment, can create high vibration levels” (California Department of Transportation 2004).

The proposed residential development is not anticipated to include activities known to cause significant vibration impacts such as pile driving or blasting. However, residential development construction activities, such as the use of jackhammers, other high-power or vibratory tools, compactors, and tracked equipment, can generate substantial vibration in the immediate vicinity. In particular, construction of the half-width frontage improvements on Bear Valley Parkway associated with the residential development would occur in the vicinity of residential units on the west side of Bear Valley Parkway.

An assessment of ground-borne vibration was prepared for the SAP improvements (Appendix P). That analysis has been relied on here to assess the potential for ground-borne vibration impacts from construction of the residential development, due to the similarities in site conditions and equipment needed to complete the half-width frontage improvements to Bear Valley Parkway. According to that analysis, construction equipment would not exceed the 0.2 in/sec PPV vibration significance criteria for building damage effects at a distance of 40 feet. However, a distance of 75 feet between the heaviest piece of equipment (vibratory roller) and sensitive receptors would be required before ground-borne vibration would fall below the significance criterion for human annoyance of 80 VdB. During construction, equipment would likely be distributed throughout the construction site and would not be used simultaneously such that ground-borne vibration in one location would not be constant. Therefore, these estimated impacts are conservative.

Construction of the half-width frontage improvements on Bear Valley Parkway have the potential to occur within 75 feet of existing residences (Figures 2-5b, 2-5c, and 2-5d). As required by the City's Municipal Code, construction of the residential development would only occur between the hours of 7:00 a.m. and 6:00 p.m. on Monday through Friday and between the hours of 9:00 a.m. and 5:00 p.m. on Saturdays, and thus would comply with local standards and regulations. As such, construction activities that produce vibration would only take place during hours with limited potential to cause annoyance or sleep disruption. However, adjacent residences could still experience significant temporary annoyance impacts during the day as a result of construction of the residential development.

**Specific Alignment Plan Improvements**

The proposed SAP improvements would involve construction activities that could generate substantial vibration in the immediate vicinity. The nearest residences would be located approximately 40 feet from SAP construction activities on Bear Valley Parkway (Figures 2-8b, 2-8c, and 2-8d). At this distance, construction equipment would not exceed the 0.2 in/sec PPV vibration significance criteria for building damage effects. Therefore, no structural damage impacts to nearby residences are anticipated to result from implementation of the SAP improvements (Appendix P).

However, at 40 feet from the proposed construction activities, construction equipment including large dozers and rollers would have the potential to generate vibration which exceeds the 80 VdB vibration significance criteria for human annoyance. A distance of 75 feet between the heaviest piece of equipment (vibratory roller) and sensitive receptor would be required before ground-borne vibration would fall below the significance criteria. During SAP construction, equipment would likely be distributed throughout the construction site and would not be used simultaneously such that ground-borne vibration in one location would not be constant. Therefore, these impacts are considered a worst-case analysis. Construction

related to the proposed SAP improvements would result in significant, temporary ground-borne vibration impacts.

### 3.8.4.3 Issue 3: Permanent Increase in Ambient Noise Levels

**Residential Development**

The proposed residential development would increase traffic volumes on local roadways. Traffic volumes provided in the traffic impact analysis (Appendix R) prepared for the residential development were used to analyze project-related traffic noise increases. The potential for the residential development to permanently increase traffic noise was addressed under two scenarios: existing plus project and near-term plus project. The near-term condition consists of the existing conditions plus the cumulative growth anticipated over the next 5 years. Growth in the area is anticipated to range from 2 to 5% a year for the future 2014 to 2035 period. The near-term-plus-project condition incorporates the residential development proposed improvements and associated trips generated.

A shown in Tables 3.8-6 and 3.8-7, the worst-case traffic noise condition in each scenario would occur on Encino Drive, west of Bear Valley Road. However, implementation of the residential development would not exceed the applicable incremental noise impact standard (3 dBA) on any roadway in either scenario. Therefore, the residential development would not result in a potentially significant traffic noise impact and impacts associated with a permanent increase in ambient noise levels would be less than significant.

## Table 3.8-6. Existing and Existing-Plus-Project Traffic Noise Levels and Increases

| Roadway | Segment | Existing Noise Level (dBA CNEL)[1] | Existing-Plus-Project Noise Level (dBA CNEL) [a] | Increase |
|---|---|---|---|---|
| Bear Valley Parkway | Eldorado Drive to Zlatibor Ranch Road | 73.6 | 73.6 | 0 |
| | Zlatibor Ranch Road to Encino Drive | 73.5 | 73.6 | 0.1 |
| | Encino Drive to Sunset Drive | 73.8 | 73.9 | 0.1 |
| | Sunset Drive to Las Palmas Avenue | 75.3 | 75.3 | 0 |
| | Las Palmas Avenue to Mary Lane | 74.8 | 74.8 | 0 |
| | Mary Lane to San Pasqual Avenue | 75.1 | 75.1 | 0 |
| Encino Drive | West of Bear Valley Parkway | 58.6 | 59.0 | 0.4 |
| Sunset Drive | West of Bear Valley Parkway | 67.0 | 67.1 | 0.1 |

Source: Appendix O.
Notes:
a All noise levels at 50 feet from the roadway centerline.
dBA CNEL = 24-hour average noise levels in decibels

## Table 3.8-7. Near-Term and Near-Term-Plus-Project Traffic Noise Impacts

| Roadway | Segment | Near-Term Noise Level (dBA CNEL)[1] | Near Term-Plus-Project Noise Level (dBA CNEL) [a] | Increase |
|---|---|---|---|---|
| Bear Valley Parkway | Eldorado Drive to Zlatibor Ranch Road | 73.6 | 74.6 | 1.0 |
| | Zlatibor Ranch Road to Encino Drive | 73.5 | 74.3 | 0.8 |
| | Encino Drive to Sunset Drive | 73.8 | 74.6 | 0.8 |
| | Sunset Drive to Las Palmas Avenue | 75.3 | 75.8 | 0.5 |
| | Las Palmas Avenue to Mary Lane | 74.8 | 75.5 | 0.7 |
| | Mary Lane to San Pasqual Avenue | 75.1 | 75.9 | 0.8 |
| Encino Drive | West of Bear Valley Parkway | 58.6 | 60.1 | 1.5 |
| Sunset Drive | West of Bear Valley Parkway | 67.0 | 67.2 | 0.2 |

Source: Appendix O.
Notes:
a All noise levels at 50 feet from the roadway centerline.
dBA CNEL = 24-hour average noise levels in decibels

**Specific Alignment Plan Improvements**

The purpose of the SAP is to increase roadway capacity by widening Bear Valley Parkway and improving intersections along it. Therefore, development of the SAP would not be expected to result in increased traffic (Appendix S) and traffic-related noise. Permanent ambient noise levels would be less than significant.

### 3.8.4.4 Issue 4: Temporary Increase in Ambient Noise Levels

**Residential Development**

Construction of the proposed residential development would include demolition, grading/excavation, building construction, and paving/utility activities. The noisiest of these activities is typically demolition and grading/excavation, when heavy equipment would be used. Building construction includes framing and interior work. Framing involves the use of pneumatic tools such as nail guns and hand tools such as hammers and saws. Interior work tends to be less intrusive because the noise occurs indoors.

Noise associated with construction activities would potentially result in short-term impacts on surrounding properties. A variety of noise-generating equipment would be used during construction of the residential development, such as dozers, scrapers, graders, water trucks, and excavators, and others. The exact number and pieces of construction equipment required are not known at this time. In the absence of specifics, it was assumed that the loudest noise levels would occur during grading activities based on typical conditions. As identified in Section 3.8.2.3, the Noise Ordinance limits construction noise to 75 dB, grading noise to 75 dB at residential receivers, and limits construction and grading operations to specific daytime hours.

Proposed residential development construction activities could result in temporary elevated noise levels at adjacent noise-sensitive land uses including the single-family homes to the northeast and southwest of the site. The estimated construction noise levels would be 80.2 dBA $L_{eq-h}$ at 50 feet. At 150 feet from the construction activity centroid, noise levels would be approximately 68.3 dBA $L_{eq-h}$. The estimated construction noise level reflects a worst-case scenario where the seven loudest pieces of equipment were assumed to operate simultaneously. In reality, construction activities would likely be intermittent; therefore, actual noise levels could be somewhat lower than what was estimated (Appendix O).

The proposed residential development would comply with local construction and grading noise regulations. Construction would only occur between the hours of 7:00 a.m. and 6:00 p.m. on Monday through Friday and between the hours of 9:00 a.m. and 5:00 p.m. on Saturdays. Grading would be similarly limited, except on Saturdays when it would be limited to between 10:00 a.m. and 5:00 p.m. However, considering that the closest residences would be located as close as 50 feet from the half-width frontage improvements on Bear Valley Parkway, construction noise generated on-site could be greater than 75 dBA $L_{eq}$ at the surrounding

sensitive receptors. Thus, residential development construction noise levels would be significant.

**Specific Alignment Plan Improvements**

Construction of the proposed SAP improvements would involve demolition, grading/excavation, paving, and roadway element construction activities. Adjacent noise-sensitive land-uses, including the single-family homes surrounding the project, could be impacted by the temporary elevated noise levels. The exact number and pieces of construction equipment required for the road widening are not known at this time. Therefore, to assess a worst-case scenario, it was assumed that the loudest noise levels would occur during grading activities based on typical conditions and default equipment. Typically, grading involves the heaviest equipment use with the greatest noise potential.

The nearest residences would be located approximately 40 feet from the proposed SAP construction area. The worst-case calculated $L_{eq}$ of construction activities associated with simultaneous operation of the three potentially noisiest construction equipment types would be 86.1 dBA at 40 feet from construction activities. This worst-case assumption is conservative because construction equipment would typically be dispersed over the construction area and would not operate simultaneously in a single location. The worst-case calculated $L_{eq}$ of construction activities associated with the SAP improvements would be 80.6 dBA at a distance of 75 feet from construction activities and 74.9 dBA at a distance of 145 feet.

As required by City Noise Ordinance Section 17-234, construction activities would occur only between the hours of 7 a.m. and 6 p.m. on weekdays, and no nighttime construction would occur. However, temporary construction noise from the proposed SAP improvements have the potential to exceed the City's 75 dBA $L_{eq\text{-}h}$ threshold at nearby sensitive receptors. Impacts would be significant.

## 3.8.5 Cumulative Impacts

The geographic scope of the cumulative impact analysis for noise is limited to areas surrounding noise-generating sources, such as roadways or industrial uses, because noise impacts are localized.

### 3.8.5.1 Excessive Noise Levels

Noise is a localized phenomenon and is progressively reduced as the distance from the source increases; specifically, noise levels from stationary noise sources decrease by approximately 6 dB for every doubling of distance. Therefore, the geographic limit that would be considered for the noise cumulative analysis would include only those projects in proximity to the proposed project site. No approved, planned, or foreseeable projects in the area of the project site would introduce a new stationary source noise to the area. The proposed project would not generate excessive noise levels. Therefore, the proposed project, in combination with other cumulative

projects, would not generate excessive noise levels. A significant cumulative impact would not occur.

### 3.8.5.2 Excessive Ground-Borne Vibration

Similar to noise effects, vibration is a localized phenomenon and is progressively reduced as the distance from the source increases. Therefore, the area of projects considered for the vibration cumulative analysis were those projects that would be close to the proposed project site.

No approved, planned, or foreseeable projects adjacent to the proposed project site would generate similar vibration. Therefore, vibration generated by construction on the proposed project site and other sites would not combine to generate cumulative vibration impacts. Once constructed, the proposed land use would not generate a significant source of vibration during normal operation. Therefore, a significant cumulative vibration impact would not occur.

### 3.8.5.3 Permanent Increase in Ambient Noise Levels

Buildout of the residential development, along with future cumulative growth in Escondido, would result in increases in traffic that would cumulatively increase traffic noise. The cumulative analysis compares future noise levels to existing conditions to determine if a significant impact would occur. A significant cumulative impact would occur if cumulative projects would cause a roadway to exceed the incremental noise impact standard applicable to the existing noise level. Table 3.8-8 compares future traffic noise levels with existing conditions. As shown, noise levels on Encino Drive west of Bear Valley Parkway would increase by 3.7 dBA CNEL over existing conditions. This exceeds the 3-dBA CNEL threshold and represents a significant cumulative impact. However, the residential development's contribution would be 0.2 dBA, or approximately 5%. Because the residential development's contribution to this cumulative impact would be substantially less than the 3-dBA threshold, the proposed project's contribution would not be cumulatively considerable.

**Table 3.8-8. Cumulative Traffic Noise Impacts**

| Roadway | Segment | Existing Noise Level (dBA CNEL)[1] | Future-Plus-Project Noise Level (dBA CNEL)[1] | Increase over Existing | Project-Related Increase over Existing |
|---|---|---|---|---|---|
| Bear Valley Parkway | Eldorado Drive to Zlatibor Ranch Road | 73.6 | 76.0 | 2.4 | 0.1 |
| | Zlatibor Ranch Road to Encino Drive | 73.5 | 76.2 | 2.7 | 0.0 |
| | Encino Drive to Sunset Drive | 73.8 | 77.0 | 3.2 | 0.0 |
| | Sunset Drive to Las Palmas Avenue | 75.3 | 77.0 | 1.7 | 0.0 |
| | Las Palmas Avenue to Mary Lane | 74.8 | 76.9 | 2.1 | 0.0 |
| | Mary Lane to San Pasqual Avenue | 75.1 | 77.5 | 2.4 | 0.0 |
| Encino Drive | West of Bear Valley Parkway | 58.6 | 62.3 | 3.7 | 0.2 |
| Sunset Drive | West of Bear Valley Parkway | 67.0 | 67.5 | 0.5 | 0.0 |
| dBA CNEL = 24-hour average noise levels in decibels | | | | | |

### 3.8.5.4 Temporary Increase in Ambient Noise Levels

Construction noise impacts are localized in nature because they are limited to the construction site where construction equipment is operating. As discussed in Appendix O, sound levels from project construction would be up to 68.3 dBA $L_{eq-h}$ at approximately 150 feet from construction activity centroids. Future projects and the project would be subject to the Escondido construction noise ordinance, which limits construction noise to 75 dBA at the nearest residence. Compliance with the Escondido noise ordinance would reduce impacts to a less-than-significant level. Therefore, a significant cumulative impact would not occur.

## 3.8.6 Significance of Impacts prior to Mitigation

Potential noise impacts from the proposed overhead power line relocation described in Section 2.5.1.6 were analyzed as part of this EIR and found to be less than significant.

### 3.8.6.1 Issue 1: Excessive Noise Levels

**Residential Development**

Nuisance noise from the proposed residential development would be similar to existing nuisance noise from the existing land uses surrounding the project site. Operation of landscape equipment would generally not exceed the hourly noise level limit at a particular receptor. The open space areas on the site are proposed for passive recreational uses. The proposed residential development would not result in new sources of noise that would expose

surrounding land uses to noise levels in excess of the standards identified in the City's noise ordinance. Impacts on off-site areas would be less than significant.

Noise levels from Bear Valley Parkway would exceed the normally acceptable noise compatibility standard of 60 dBA CNEL for proposed residences on lots 2 through 5 and would exceed the Title 24 threshold of 60 dBA for 13 residences. Therefore, impacts on on-site areas would be significant.

**Specific Alignment Plan Improvements**

The proposed SAP improvements are designed to accommodate existing vehicle travel and would not, themselves, generate new sources of vehicular noise. Impacts on off-site areas would be less than significant. The SAP improvements site itself would not be significantly affected by nuisance noise from the existing residential land uses surrounding the proposed project site. Therefore, no impact would result.

### 3.8.6.2 Issue 2: Excessive Ground-Borne Vibration

**Residential Development**

Construction of the proposed residential development would generate temporary ground-borne vibration caused by construction activities and equipment. In particular, construction of the half-width frontage improvements on Bear Valley Parkway could occur close enough to existing residential units to cause a significant ground-borne vibration impact.

**Specific Alignment Plan Improvements**

Construction of the proposed SAP improvements would generate temporary ground-borne vibration as close as 40 feet from existing residential structures. At this distance, ground-borne vibration may be greater than the 80-VdB threshold for significant human annoyance. Therefore, the impact would be significant.

### 3.8.6.3 Issue 3: Permanent Increase in Ambient Noise Levels

Implementation of the proposed project would not exceed the applicable incremental noise impact standard on any roadway. Therefore, the project would not result in a potentially significant traffic noise impact. Impacts associated with a permanent increase in ambient noise levels would be less than significant.

### 3.8.6.4 Issue 4: Temporary Increase in Ambient Noise Levels

**Residential Development**

Construction of the proposed residential development would generate noise that could expose nearby noise-sensitive receptors to elevated noise levels that may disrupt communication and routine activities. The magnitude of the impact would depend on the type of construction activity, equipment, duration of the construction phase, distance between the noise source and

receiver, and intervening structures. Based on a worst-case assumption, estimated construction noise levels would be 80.2 dBA $L_{eq-h}$ at 50 feet from construction. This would exceed the City of Escondido Noise Ordinance threshold of 75 dBA $L_{eq-h}$, and impacts would be significant.

**SAP Improvements**

Construction of the proposed SAP improvements would generate temporary construction-related noise as close as 40 feet from existing residential structures. At this distance, construction-related noise has the potential to exceed the City's 75 dBA $L_{eq-h}$ threshold at nearby sensitive receptors. Therefore, impacts would be significant.

## 3.8.7 Mitigation Measures

### 3.8.7.1 Issue 1: Excessive Noise Levels

**Residential Development**

The following mitigation measures would reduce excessive noise levels on the residential development site to a less than significant level.

**NOI-1:** Prior to approval of final project designs, the residential development applicant shall incorporate a perimeter block noise wall, or similar noise-attenuating structure, that fronts proposed lots 1–5 into the residential development design. The noise wall shall be approximately 552 feet in length and 5 feet high in front of lots 1–4 and 6 feet high in front of lot 5. Refer to Figure 3.8-1 for the location and heights of the noise wall.

**NOI-2**: Prior to construction, a qualified acoustical consultant shall review final site plans, building elevations, and floor plans to calculate expected interior noise levels, as required by state noise regulations. Project-specific acoustical analyses are required by Title 24 to confirm that the design results in interior noise levels reduced to 45 dBA or lower. The specific determination of what noise insulation treatments are necessary shall be completed on a unit-by-unit basis. Results of the analysis, including the description of the necessary noise control treatments, shall be submitted to the City along with the building plans, and shall be approved prior to issuance of a building permit.

Building sound insulation requirements may include the provision of forced-air mechanical ventilation for residential units as recommended by the qualified acoustical consultant, so that windows can be kept closed at the occupant's discretion to control noise.

Special building techniques (e.g., sound-rated windows and building façade treatments) shall be implemented as recommended by the qualified acoustical consultant to maintain interior noise levels at or below acceptable levels. These treatments may include, but are not limited to, sound-rated windows and doors, sound-rated wall constructions, acoustical caulking, and protected ventilation openings.

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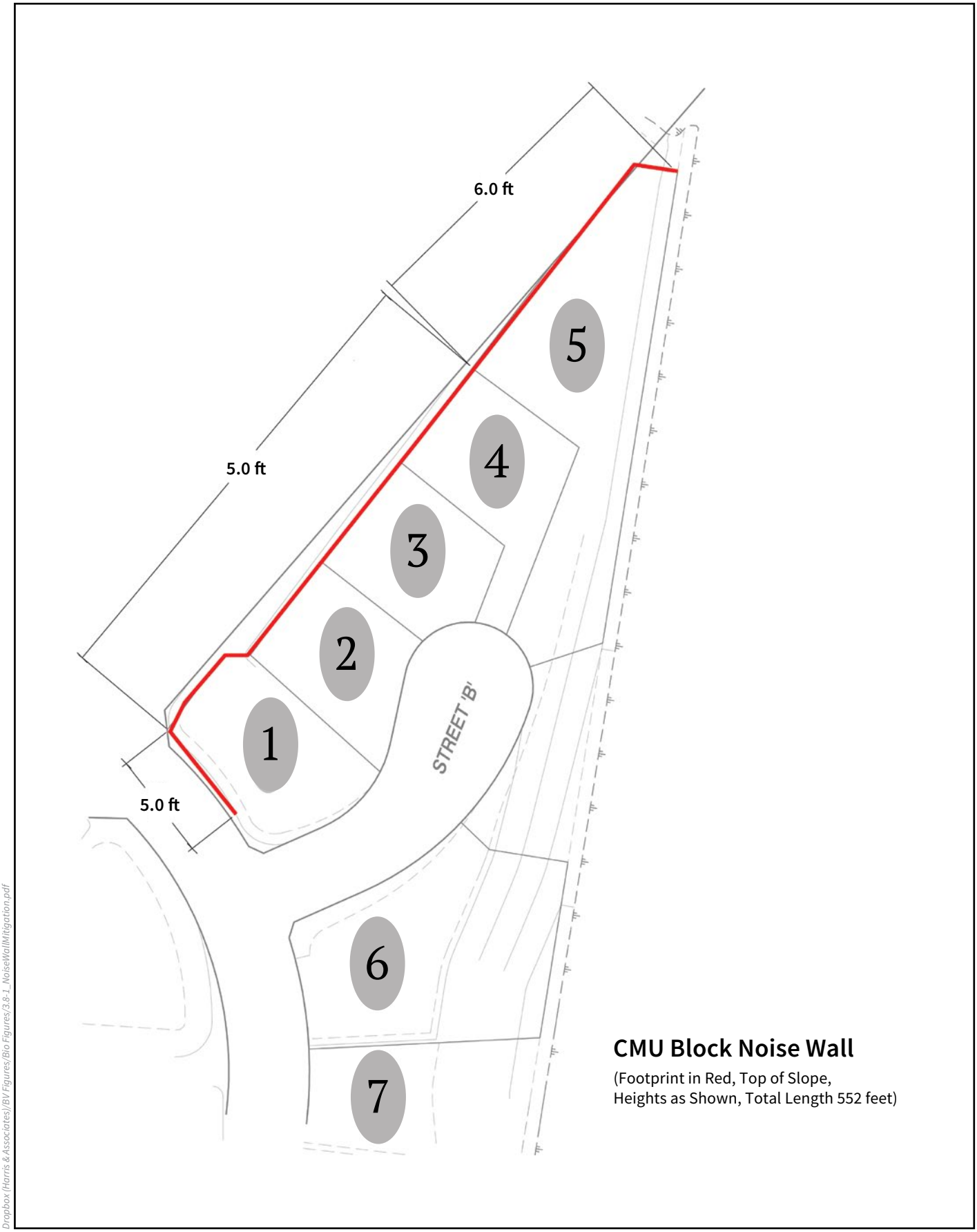


*Source: Investigative Science and Engineering, Inc. 2016*

Harris & Associates

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Note: Figure is not to scale.

**Figure 3.8-1**
Noise Wall Mitigation

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### 3.8.7.2 Issue 2: Excessive Ground-Borne Vibration

**Residential Development**

**NOI-3:** At least 3 weeks prior to the start of construction activities, the construction contractor shall provide written notification to all residences located within 75 feet of the proposed construction activities informing them of the estimated start date and duration of daytime vibration-generating construction activities. This notification shall include information about the potential for nuisance vibration. The City shall provide a phone number for the affected residences to call if they have concerns about construction-related vibration. If additional houses are built within 75 feet of the proposed development site prior to completion of proposed construction, written notification shall be provided to these residences as well.

**NOI-4:** For construction activities within 75 feet of residences on Bear Valley Parkway, the construction contractor shall implement the following measures during construction:

1. Stationary sources, such as temporary generators, shall be located as far from nearby vibration-sensitive receptors as possible.
2. Trucks shall be prohibited from idling along streets serving the construction site where vibration-sensitive receptors are located.
3. Demolition, earthmoving, and ground-disturbing operations shall be phased so as not to occur in the same time period.

If additional houses are built within 75 feet of the proposed development site prior to completion of proposed construction, the measures shall be implemented for these residences as well.

**Specific Alignment Plan Improvements**

Implementation of mitigation measures NOI-3 and NOI-4 would minimize temporary ground-borne vibration impacts from construction activities for the proposed SAP improvements at adjacent residences.

### 3.8.7.3 Issue 3: Permanent Increase in Ambient Noise Levels

The proposed project would not result in a potentially significant direct impact associated with a permanent increase in ambient noise levels; therefore, no mitigation is required.

### 3.8.7.4 Issue 4: Temporary Increase in Ambient Noise Levels

**Residential Development**

Implementation of mitigation measures NOI-3 through NOI-5 would minimize noise from construction activities such that noise levels would not exceed an hourly average noise level of 75 dBA at an adjacent residence. With implementation of mitigation measures NOI-3, NOI-4

and NOI-5, impacts from implementation of the proposed residential development would be less than significant.

**NOI-5:** Prior to grading activities, the construction contractor shall implement and monitor the noise reduction measures described below to the extent necessary to reduce construction noise levels to below an hourly average noise level of 75 dBA at any residential property line. Noise reduction measures are required for all construction within 145 feet of a residence. Any one or a combination of measures can be used as necessary. Typical measures that may be implemented include the following, as necessary, to achieve compliance with the City's noise ordinance:

- Use "quiet" gasoline-powered compressors or other electric-powered compressors, and use electric-powered rather than gasoline- or diesel-powered forklifts for small lifting.
- Locate stationary noise sources, such as temporary generators, as far from nearby receptors as possible.
- Use the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) for construction equipment and trucks.
- Muffle and enclose stationary noise sources within temporary sheds or incorporate insulation barriers.
- Limit simultaneous operation of construction equipment or limit construction time within an hour to reduce hourly average noise level.
- Implement temporary noise barriers, such as sound blankets, of a sufficient height and thickness around the perimeter of the construction area to minimize construction noise to 75 dBA as measured at the applicable property lines of the adjacent uses.

To ensure compliance with the City's Noise Ordinance, noise monitoring shall be conducted on the first day of typical construction. A 1-hour noise measurement shall be conducted in accordance with Section 17-228 of the City's Noise Ordinance at 50 feet from the most intensive construction activity. If it is determined that construction would have the potential to exceed the hourly construction noise level limit at any residential property, additional noise control measures shall be implemented as necessary and an additional noise measurement will be conducted to confirm compliance.

**Specific Alignment Plan Improvements**

Implementation of mitigation measures NOI-3, NOI-4 and NOI-5 would minimize temporary construction-related impacts from construction activities at adjacent residences. No additional mitigation is necessary.

## 3.8.8 Conclusion

### 3.8.8.1 Issue 1: Excessive Noise Levels

Nuisance noise from the proposed residential development would be similar to existing nuisance noise from the existing residential development surrounding the project site. Operation of landscape equipment would generally not exceed the hourly noise level limit at a particular receptor. The open space areas on the proposed site are proposed for passive recreational use. As described above, the proposed residential development and SAP improvements would not result in new sources of noise that would expose surrounding land uses to noise levels in excess of the standards identified in the City's noise ordinance. Impacts on off-site areas would be less than significant.

Implementation of mitigation measures NOI-1 and NOI-2 would reduce noise impacts on on-site residences because they require the construction of a noise wall, or similar noise-attenuating structure, and require calculation of interior noise levels based on final site plans. With implementation of mitigation measures NOI-1 and NOI-2, impacts on on-site residences would be less than significant.

### 3.8.8.2 Issue 2: Excessive Ground-borne Vibration

Construction of the proposed project would generate temporary ground-borne vibration caused by construction activities and equipment as close as 40 feet from residential structures. Implementation of mitigation measures NOI-3 and NOI-4 would mitigate excessive ground-borne vibration impacts on nearby sensitive receptors. With implementation of mitigation measures NOI-3 and NOI-4, impacts from the proposed residential development and SAP improvements would be less than significant.

### 3.8.8.3 Issue 3: Permanent Increase in Ambient Noise Levels

Implementation of the proposed project would not exceed the applicable incremental noise impact standard on any roadway. Therefore, the project would not result in a potentially significant traffic noise impact. Impacts associated with a permanent increase in ambient noise levels would be less than significant, and no mitigation is required.

### 3.8.8.4 Issue 4: Temporary Increase in Ambient Noise Levels

Construction of the proposed project would generate noise that could expose nearby noise-sensitive receptors to elevated noise levels that may disrupt communication and routine activities. The magnitude of the impact would depend on the type of construction activity, equipment, duration of the construction phase, distance between the noise source and receiver, and intervening structures. With implementation of mitigation measures NOI-3, NOI-4 and NOI-5, impacts from the proposed residential development and SAP improvements would be less than significant.

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# 3.9 Transportation and Traffic

This section of the Environmental Impact Report (EIR) analyzes the proposed project impacts on transportation and traffic, including the project's conformance with the City's regulatory policies regarding effectiveness of the performance of the circulation system, conformance with an applicable congestion management plan, traffic hazards and emergency access, and consistency with alternative transportation policy. The Initial Study (Appendix A) determined that air traffic pattern impacts of the project would be less than significant; therefore, no further analysis of that issue is completed herein. This section is based on (1) a Traffic Impact Analysis report prepared by Linscott, Law & Greenspan Engineers on January 18, 2017, which is included as Appendix R to this EIR; and (2) an addendum to the Traffic Impact Analysis prepared by Linscott, Law & Greenspan Engineers on January 18, 2017, which is included as Appendix S to this EIR.

## 3.9.1 Existing Conditions

### 3.9.1.1 Roadways

**Roadway Network**

There are five roadways within the traffic impact study area, as shown in Figure 3.9-1 and described further below.

**Bear Valley Parkway** is a north/south facility that is located directly west of the project site. This road is currently constructed as a two-lane undivided roadway and classified as Major Road from north of San Pasqual Valley Road to Las Palmas Avenue. Between Eldorado Drive and Zlatibor Ranch Road, there is currently a two-way left-turn lane. From Las Palmas Avenue to Beethoven Drive, Bear Valley Parkway is constructed as a four-lane divided roadway and classified as a Super Major Road. The posted speed limit within the study area is 50 miles per hour (mph), with the exception of a 25-mph school zone in the vicinity of Las Palmas Avenue. Curbside parking is prohibited. Bear Valley Parkway provides Class II bicycle lanes from its southern end to San Pasqual Valley Road.

The proposed residential development project component would dedicate additional right-of-way to accommodate full half-width improvements along the residential site's frontage on Bear Valley Parkway. The improvements would provide a third, northbound lane along the project extents. In addition, a separate Specific Alignment Plan (SAP) is proposed for the two-lane portion of Bear Valley Parkway along the project's frontage, through Bear Valley Parkway's intersection with Encino Drive. This would allow Bear Valley Parkway to be improved to four-lanes, but with requisite design exceptions needed to preserve sensitive riparian habitat located between the residential site and the roadways. The frontage improvements proposed for the project would be consistent with, and a subset of, the overall improvements shown on the SAP.

**San Pasqual Valley Road (State Route [SR] 78)** is classified as a Major Road. It is constructed as a two-lane undivided roadway with a posted speed limit of 45 mph. No bicycle facilities are provided, although Class II bicycle lanes are proposed per the City's Mobility Element. SR 78 intersects Bear Valley Parkway at a signalized intersection.

**Encino Drive** is classified as a Local Collector. It is currently constructed as a two-lane undivided roadway with a two-way left-turn lane on a short segment immediately adjacent to the southern end of the roadway. The posted speed limit is 35 mph, and curbside parking is not allowed. No bicycle facilities currently exist, although Class II bicycle lanes are proposed per the City's Mobility Element. The unsignalized Encino Drive and Bear Valley Parkway intersection has an atypical configuration due to the angles at which the roadways intersect. Currently, there are two departure lanes on Encino Drive from Bear Valley Parkway: one serving left turns from the northbound direction, and one serving right turns from the southbound direction. A small triangular island is provided to allow southbound Bear Valley Parkway traffic additional radius to turn onto northbound Encino Drive.

**Sunset Drive** is classified as a Local Collector. It is currently constructed as a two-lane undivided roadway with a posted speed limit of 40 mph. Curbside parking is prohibited. Sunset Drive intersects Bear Valley Parkway at a signalized intersection.

**Las Palmas Avenue** is an unclassified residential road. It is currently constructed as a two-lane undivided road, with a two-way left-turn lane in the immediate vicinity of Bear Valley Middle School, just west of Bear Valley Parkway. The posted speed limit is 25 mph, and curbside parking is prohibited. Las Palmas Avenue is signalized at its intersection with Bear Valley Parkway. In addition to the Bear Valley Middle School, LR Green Elementary School and the Classical Academy are located in the vicinity of this intersection.

***Level of Service***

To determine the operation levels of the roadways within the study area, the City of Escondido's *Traffic Impact Analysis Guidelines* (2013, as cited in Appendix R) were used.[3] These guidelines were based on the *SANTEC/ITE's Guidelines for Traffic Impact Studies in the San Diego Region* (as cited in Appendix R). This analysis method assigns roadways and intersection operations a level of service (LOS) operating level, where LOS A represents free-flowing traffic and LOS F represents severely congested traffic conditions. The intersection LOS is determined by the seconds of delay per vehicle experienced at the intersection. The roadway LOS is assigned by determining the roadway volume to capacity (V/C) ratio, with the volume based on

[3] It is noted that a portion of the study area is located in the County of San Diego. In this case, the City's criteria were used because they are more restrictive than the County's thresholds. See Appendix R (page 14) for additional information.

the average daily traffic on the roadway and the capacity based on the roadway classification capacity identified in the General Plan Circulation Element. The baseline roadway operations are then compared to the baseline-plus-project operations to determine the project impact. As shown in Table 3.9-3 (see Section 3.9.3), a project would have a significant intersection impact if it increased the delay at an intersection operating at LOS D, E, or F by 2 seconds. A significant roadway segment impact would occur if the project increased the V/C ratio by 0.02 at a segment operating at LOS D, E, or F.

**Roadway Operations**

As shown in Table 3.9-1, all study area roadway segments currently operate at acceptable LOS D or better, with the exception of the following four segments of Bear Valley Parkway:

- Bear Valley Parkway, Eldorado Drive to Zlatibor Ranch Road (LOS F)
- Bear Valley Parkway, Zlatibor Ranch Road to Encino Drive (LOS F)
- Bear Valley Parkway, Encino Drive to Sunset Drive (LOS F)
- Bear Valley Parkway, Sunset Drive to Las Palmas Avenue (LOS F)

**Table 3.9-1 Existing Conditions – Roadway Segments**

| Study Area Roadway Segment | Existing Classification | LOS E Capacity | ADT | V/C Ratio | LOS |
|---|---|---|---|---|---|
| Bear Valley Parkway | | | | | |
| 1. Eldorado Drive to Zlatibor Ranch Road | Two-lane Collector | 15,000 | 20,600 | 1.373 | **F** |
| 2. Zlatibor Ranch Road to Encino Drive | Two-lane Collector | 15,000 | 20,110 | 1.341 | **F** |
| 3. Encino Drive to Sunset Drive | Two-lane Collector | 15,000 | 21,770 | 1.451 | **F** |
| 4. Sunset Drive to Las Palmas Avenue | Two-lane Collector | 15,000 | 30,600 | 2.040 | **F** |
| 5. Las Palmas Avenue to Mary Lane | Four-lane Major | 37,000 | 27,300 | 0.738 | C |
| 6. Mary Lane to San Pasqual Road | Four-lane Major | 37,000 | 29,430 | 0.795 | D |
| Encino Drive | | | | | |
| 7. West of Bear Valley Parkway | Two-lane Collector | 15,000 | 1,420 | 0.095 | A |
| Sunset Drive | | | | | |
| 8. West of Bear Valley Parkway | Two-lane Collector | 15,000 | 7,450 | 0.497 | B |

Source: Appendix R.
**Bold** = Unacceptable level of service, ADT = average daily traffic, V/C = volume to capacity, LOS = level of service

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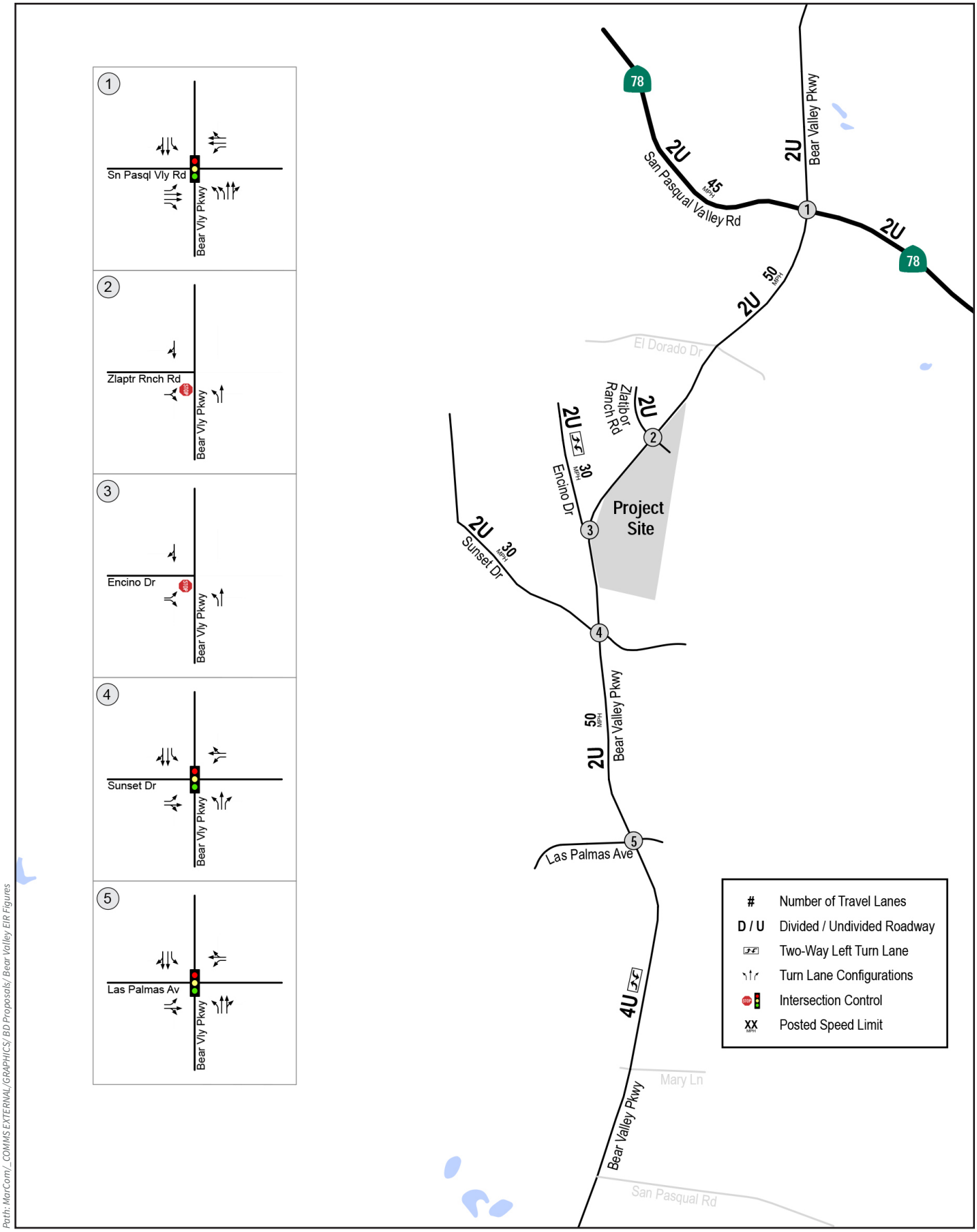


Path: MarCom/_COMMS EXTERNAL/GRAPHICS/ BD Proposals/ Bear Valley EIR Figures

*Source: Linscott, Law & Greenspan 2016*

Harris & Associates

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*Not to scale*

**Figure 3.9-1**
Existing Roadway Network

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### 3.9.1.2 Intersections

There are five intersections in the study area (see Figure 3.9-1). Intersection operations are evaluated based on the seconds of delay experienced per vehicle at the intersection, which is then converted to an LOS A to F rating. Similar to the roadway analysis, the City considers LOS A to D as acceptable operations while LOS E and F are considered unacceptable operations. As shown in Table 3.9-2, all study area intersections operate at acceptable levels of service during peak hours, except the following one:

- Intersection #4: Bear Valley Parkway / Sunset Drive (LOS F – AM)

**Table 3.9-2 Existing Conditions – Intersections**

| Study Area Intersection | Control | Peak Hour | Existing | |
|---|---|---|---|---|
| | | | Delay | LOS |
| 1. Bear Valley Parkway / San Pasqual Valley Road (SR 78) | Signal | AM | 38.8 | D |
| | | PM | 43.1 | D |
| 2. Bear Valley Parkway / Zlatibor Ranch Road | OWSC | AM | 17.7 | C |
| | | PM | 15.8 | C |
| 3. Bear Valley Parkway / Encino Drive | OWSC | AM | 30.5 | D |
| | | PM | 20.4 | C |
| 4. Bear Valley Parkway / Sunset Drive | Signal | AM | 121.6 | **F** |
| | | PM | 41.6 | D |
| 5. Bear Valley Parkway / Las Palmas Avenue | Signal | AM | 44.5 | D |
| | | PM | 6.7 | A |

Source: Appendix R.
**Bold**= Unacceptable level of service, Delay = seconds of delay per vehicle, LOS =level of service, OWSC = one-way, stop-controlled intersection

### 3.9.1.3 Pedestrian Facilities

Pedestrian facilities in the project vicinity are limited. Most roadways in the area do not include sidewalks, including Bear Valley Parkway along the project frontage. Segments along Encino Drive, Ranchito Drive, and Valley Grove Lane have sidewalks along one side; and Amparo Drive includes sidewalks on both sides of the street.[4] Pedestrian access connections to the site are currently limited, with the only existing connection from the neighborhood to the south being at the southern end of the project site.

### 3.9.1.4 Bikeways

Designated bikeways in the project vicinity are located on public roadways. More specifically, the General Plan identifies Bear Valley Parkway as an existing Class II bikeway. Proposed Class II

[4] Ranchito Drive and Valley Grove Lane are located south of the proposed project. Amparo Drive is located west of the proposed project, opposite Bear Valley Parkway.

bikeways are identified along Encino Drive and Juniper Street.[5] Class II bikeways are defined as 5- to 6-feet-wide bike lanes that are stripped and marked for one-way travel on a street.

#### 3.9.1.5 Transit

The North County Transit District (NCTD) operates the bus and rail network throughout northern San Diego County and within the City of Escondido. The General Plan identifies nearby bus routes along Sunset Drive and on Bear Valley Parkway south of Sunset Drive. NCTD provides the following routes within the 0.5-mile vicinity of the proposed project:

- Bear Valley Parkway/Sunset Drive: Route 350
- San Pasqual Valley Road: Flex Route 371

Both of these routes connect to the Escondido Transit Center, which can be used to connect to other transit routes in the city and the region.

### 3.9.2 Regulatory Framework

#### 3.9.2.1 Federal Regulations

**Highway Capacity Manual**

The *Highway Capacity Manual 2000* (HCM 2000), prepared by the federal Transportation Research Board (2000), is the result of a collaborative multiagency effort between the Transportation Research Board, Federal Highway, and American Association of State Highway and Transportation Officials. The HCM 2000 contains concepts, guidelines, and procedures for computing the capacity and quality of service of various highway facilities—including freeways, signalized and unsignalized intersections, and rural highways—and the effects of transit, pedestrians, and bicycles on the performance of these systems

**Title 23, Code of Federal Regulations**

Title 23 Code of Federal Regulations, Section 450.220, "Highways," requires each state to carry out a continuing, comprehensive, and intermodal statewide transportation planning process. This planning process must include development of a statewide transportation plan and transportation improvement program that facilitates the efficient, economical movement of people and goods in all areas of the state. In the San Diego region, compliance with this federal regulation is provided though the San Diego Association of Governments' (SANDAG's) *San Diego Forward: The Regional Plan* (2016).

[5] Juniper Street is located approximately 0.5 mile west of the proposed project.

### 3.9.2.2 State Regulations

**Statewide Transportation Improvement Program**

As indicated above, "Highways" in the Code of Federal Regulations, requires statewide transportation plans. Pursuant to this requirement, California adopted the California 2010 Statewide Transportation Improvement Program. The STIP is prepared by Caltrans in cooperation with the Metropolitan Planning Organizations (MPO) and the regional transportation planning agencies. In San Diego County, the MPO and regional transportation planning agency is SANDAG. The STIP contains all capital and non-capital transportation projects or identified phases of transportation projects for funding under the Federal Transit Act and Title 23 of the CFR, including federally funded projects.

### 3.9.2.3 Regional/Local Regulations

The site is located in the City of Escondido, but areas adjacent to the project are located in the County of San Diego (County). Although the proposed project site is not subject to County regulations, County regulations are included for informational purposes.

**Regional Transportation Plans and Programs**

SANDAG serves as the forum for decision making on regional issues such as growth, transportation, land use, economy, environment, and criminal justice. SANDAG builds consensus, makes strategic plans, obtains and allocates resources, and provides information on a broad range of topics pertinent to the region's quality of life. SANDAG is governed by a Board of Directors composed of mayors, council members, and supervisors from each of the San Diego region's 19 local governments. As the MPO and regional transportation planning agency for the San Diego region, SANDAG has produced the following documents that identify transportation plans and policies in the San Diego area.

***San Diego Forward: The Regional Plan***

SANDAG adopted the S*an Diego Forward: The Regional Plan* on October 9, 2015. This regional transportation plan combines the *Regional Comprehensive Plan*, and the *Regional Transportation Plan and Its Sustainable Communities Strategy*. The future focus is on smart growth and sustainable development, with the provision of transportation choices. This planning effort combines land use planning with transportation goals and state-mandated greenhouse gas reduction targets.

***2014 Regional Transportation Improvement Program***

The *Regional Transportation Improvement Plan* (RTIP) (SANDAG 2014) is a multi-year program of proposed major highway, arterial, transit, and bikeway projects. The 2014 RTIP is a prioritized program designed to implement the region's regional transportation plan, which is the *San Diego Forward: The Regional Plan*. The plan covers fiscal years 2014/2015 to

2018/2019. The 2014 RTIP was approved on September 26, 2014, by SANDAG and received federal approval on December 15, 2014.

**County of San Diego Consolidated Fire Code**

The County of San Diego created the Consolidated Fire Code in 2001. The Consolidated Fire Code contains amendments to the California Fire Code. Emergency ingress/egress is established by the Consolidated Fire Code. Ingress/egress is necessary for both citizen evacuation and to provide access for emergency vehicles in the event of a fire or other emergency. Section 902.2 of the Consolidated Fire Code dictates minimum design standards for "fire apparatus access roads" and includes minimum road standards, secondary access requirements, and restrictions for gated communities. Road standard requirements for emergency vehicles specify a minimum 12-foot-wide paved lane or 24-foot-wide travel-way.

**County of San Diego Regulatory Ordinances, Sections 77.201 – 77.220, Transportation Impact Fee**

The San Diego County Transportation Impact Fee Ordinance, as amended in February 2008, requires assessment and collection of fees for roadway impacts as a condition of approval of a subdivision map or prior to issuance of a development permit, including a building permit by the County. The County Transportation Impact Fee Ordinance defrays the actual or estimated costs of constructing planned transportation facilities necessary to accommodate increased traffic generated by future development consistent with Section 66000 et seq. of the California Government Code (Mitigation Fee Act). Application of this fee within the County jurisdiction includes, but is not limited to, development for residential, commercial, and industrial land uses. The fees are collected to fund identified transportation facilities, or portions thereof, that provide increased road capacity necessitated by the cumulative impacts of future development.

**City of Escondido Bicycle Master Plan**

The City of Escondido's *Bicycle Master Plan* identifies existing circulation patterns for bicyclists, and problem areas and safety concerns; it also develops a master system to further the implementation of bikeways throughout Escondido. The *Bicycle Master Plan* includes California Department of Transportation bikeway standards, conceptual designs for bicycle paths and trails, maps of existing and proposed bicycle facilities, a phasing plan for improvements, funding sources, and an implementation plan. The plan identifies a bicycle facility network, both on the road (Classes II and III) and off-road (Class I). Upon full implementation, the plan will create a comprehensive network of bicycle lanes, routes, and paths. The City of Escondido's 2011 *Bicycle Master Plan* was adopted on October 17, 2012.

**Chapter 23 City of Escondido Municipal Code**

Chapter 23 of the City's Municipal Code establishes street and sidewalk standards for areas within the city. This chapter defines standards for public dedication of rights-of-way, arrangement for relocation of public utility facilities within sidewalks or streets, and issuance of

building permits for construction in setback areas and rights-of-way. Additionally, this chapter identifies standards for locating pumps, tanks, and fire hydrants within sidewalks, streets, or rights-of way.

**City of Escondido General Plan**

The *City of Escondido General Plan* (City of Escondido 2012a) includes several transportation and traffic policies. Relevant policies are identified below.

- **Complete Streets Policy 2.1:** Ensure that the existing and future transportation system is interconnected and serves multiple modes of travel, such as walking, biking, transit, and driving for safe and convenient travel.
- **Complete Streets Policy 2.4:** Evaluate access, safety, and convenience of various transportation modes for the following eight user groups for every project: pedestrians, children, disabled individuals, seniors, bicyclists, transit riders, motorists, and goods and services
- **Complete Streets Policy 2.5:** Design streets in a manner that is sensitive to the local context and recognizes that the needs vary between mixed use, urban, suburban, and rural settings.
- **Pedestrian Network Policy 3.3:** Maintain a pedestrian environment accessible to all that is safe, attractive, and encourages walking.
- **Bicycle Network Policy 4.3:** Promote bicycling as a common mode of transportation and recreation to help reduce traffic congestion and improve public health.
- **Transit System Policy 5.8:** Require that new developments incorporate transit-supporting facilities into the project design, where appropriate.
- **Street Network Policy 7.1:** Plan, design, and regulate roadways in accordance with the street classification in the Circulation Element Diagram.
- **Street Network Policy 7.3:** Strive to maintain LOS C or better throughout the city except for within the urban core. Establish LOS D as the threshold for determining significant impacts and appropriate mitigation. Due to physical design characteristics, implementation of pedestrian-oriented "smart growth" and Complete Streets design improvements, high density infill areas, environmental resource considerations, existing development, freeway interchange impacts, and incomplete system improvements, alternative levels of service may be appropriate for isolated areas as determined by the city.
- **Circulation Element Diagram Street Network Policy 7.7:** Require new development projects to analyze traffic impacts on the regional transportation system, and pay a fair-share contribution to regional transportation improvements.
- **Street Network Policy 7.8:** Require new development projects to analyze traffic impacts on the regional transportation system, and pay a fair-share contribution to regional transportation improvements.

- **Street Network Policy 7.11:** Enhance the safety and efficiency of accessing the public street network from private properties by: a) Controlling driveway access locations on Prime Arterials and Major Roads; b) Installing medians and access controls on Collector Roads and higher classifications; c) Maintaining minimum distances from intersections for accessing Prime Arterials, Major Roads, and Collector streets; d) Consolidating driveway access; and, e) Encouraging interconnected parking lots.

### 3.9.3 Thresholds of Significance

To address the potential transportation and traffic impacts of the project, the following State CEQA Guidelines Appendix G issue questions were considered:

a. Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths and mass transit (or conflict with applicable traffic thresholds specified in City of Escondido Zoning Code Article 47)?
b. Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?
c. Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
d. Would the project result in inadequate emergency access?
e. Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

The Initial Study (Appendix A) determined that air traffic pattern impacts of the project would be less than significant; therefore, no further analysis of that issue is included herein.

## 3.9.4 Project Impacts

### 3.9.4.1 Issue 1: Circulation System Operations

**Residential Development**

As mentioned under the existing conditions, the City of Escondido's *Traffic Impact Analysis Guidelines* (2013, as cited in Appendix R) were used to complete the roadway operations analysis for this project. To determine the project impact and associated significance, the baseline operations were compared to the baseline-plus-project conditions. The change in operations then were evaluated per the significance thresholds identified in Table 3.9-3. As shown in Table 3.9-3, a project would have a significant intersection impact if it increased the delay at an intersection operating at LOS D, E, or F by 2 seconds. A significant roadway segment impact would occur if the project increased the V/C ratio by 0.02 at a segment operating at LOS D, E, or F.

**Table 3.9-3 City of Escondido Traffic Impact Significance Thresholds**

| Level of Service with Project | Allowable Change due to Project Impact | | |
|---|---|---|---|
| | Roadway Segments | | Intersections |
| | V/C Ratio | Speed Reduction (miles per hour) | Seconds of Delay |
| D, E, and F | 0.02 | 1 | 2 |
| Source: Appendix R.<br>V/C = volume to capacity | | | |

Trip Generation

The residential development would generate daily vehicle trips through the proposed 55 single-family residences. As the proposed recreational land uses associated with the residential development (i.e. pocket park, trails) are intended to serve only the proposed residential development, no external trips would be generated by the proposed recreational uses. The proposed residential trips would generate approximately 10 trips per unit per day based on the SANDAG's *(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region* (2002, as cited in Appendix R), which would equate to 550 trips per day overall from the residential development. While one residence exists currently onsite that generates approximately 10 ADT, removal of this residence and associated 10 ADT was not subtracted from the project trip generation to be conservative. These proposed trips were distributed on the roadway system using a SANDAG Select Zone Assignment traffic model. Based on the distribution analysis, approximately 78% of traffic would travel south from the project driveway, and 22% would travel north. Refer to Appendix R for additional distribution information.

***Existing and Existing-Plus-Project Conditions***

The existing-plus-project conditions reflect the addition of the residential development to the existing roadway network, including proposed roadway improvements and additional traffic generated. As the project would signalize the site entrance at Bear Valley Parkway/Zlatibor Ranch Road, the existing-plus-project conditions analysis assumes the signalization of this intersection. The existing-plus-project scenario also incorporates the additional northbound lane that would be constructed as a feature of the Bear Valley Parkway half-width frontage improvements.

Roadways

Under the existing-plus-project conditions, the Encino Drive and Sunset Drive segments would continue to operate at acceptable levels (Table 3.9-4). However, all Bear Valley Parkway segments would operate at LOS D to F, as follows:

- Bear Valley Parkway, Eldorado Drive to Zlatibor Ranch Road (LOS F)
- Bear Valley Parkway, Zlatibor Ranch Road to Encino Drive (LOS F)
- Bear Valley Parkway, Encino Drive to Sunset Drive (LOS F)
- Bear Valley Parkway, Sunset Drive to Las Palmas Avenue (LOS F)
- Bear Valley Parkway, Las Palmas Avenue to Mary Lane (LOS D)
- Bear Valley Parkway, Mary Lane to San Pasqual Road (LOS D)

**Table 3.9-4 Existing and Existing-Plus-Project Conditions – Roadway Segments**

| Study Area Roadway Segment | LOS E Capacity | Existing Conditions | | | Existing-Plus-Project Conditions | | | Change in V/C Ratio | Significant Impact? |
|---|---|---|---|---|---|---|---|---|---|
| | | ADT | V/C Ratio | LOS | ADT | V/C Ratio | LOS | | |
| **Bear Valley Parkway** | | | | | | | | | |
| 1. Eldorado Drive to Zlatibor Ranch Road | 15,000 | 20,600 | 1.373 | F | 20,721 | 1.381 | F | 0.008 | No |
| 2. Zlatibor Ranch Road to Encino Drive | 15,000/ 15,500 | 20,110 | 1.341 | F | 20,539 | 1.325 | F | (0.016) | No |
| 3. Encino Drive to Sunset Drive | 15,000/ 15,500 | 21,770 | 1.451 | F | 22,073 | 1.424 | F | (0.027) | No |
| 4. Sunset Drive to Las Palmas Avenue | 15,000 | 30,600 | 2.040 | F | 30,793 | 2.053 | F | 0.013 | No |
| 5. Las Palmas Avenue to Mary Lane | 37,000 | 27,300 | 0.738 | C | 27,465 | 0.742 | D | 0.004 | No |
| 6. Mary Lane to San Pasqual Road | 37,000 | 29,430 | 0.795 | D | 29,595 | 0.800 | D | 0.004 | No |
| **Encino Drive** | | | | | | | | | |
| 7. West of Bear Valley Parkway | 15,000 | 1,420 | 0.095 | A | 1,547 | 0.103 | A | 0.008 | No |
| **Sunset Drive** | | | | | | | | | |
| 8. West of Bear Valley Parkway | 15,000 | 7,450 | 0.497 | B | 7,560 | 0.504 | B | 0.007 | No |

Source: Appendix R.
ADT = average daily traffic, V/C = volume to capacity, LOS = level of service

Intersections

With the addition of the proposed residential development to the existing conditions, the following four intersections would continue to operate at LOS D, E, or F (Table 3.9-5):

- Bear Valley Parkway / San Pasqual Valley Road (SR 78) (LOS D – AM/PM)

- Bear Valley Parkway / Encino Drive (LOS D – AM)
- Bear Valley Parkway / Sunset Drive (LOS F/D – AM/PM)
- Bear Valley Parkway / Las Palmas Avenue (LOS D – AM)

**Table 3.9-5 Existing and Existing-Plus-Project Conditions – Intersections**

| Study Area Intersection | Control | Peak Hour | Existing Conditions | | Existing-Plus-Project Conditions | | Change in Delay | Signifi-cant Impact? |
|---|---|---|---|---|---|---|---|---|
| | | | Delay | LOS | Delay | LOS | | |
| 1. Bear Valley Parkway / San Pasqual Valley Road (SR 78) | Signal | AM | 38.8 | D | 38.8 | D | 0.0 | No |
| | | PM | 43.1 | D | 43.1 | D | 0.0 | No |
| 2. Bear Valley Parkway / Zlatibor Ranch Road | OWSC* | AM | 17.7 | C | 6.5 | A | (11.2) | No |
| | | PM | 15.8 | C | 18.1 | B | 2.3 | No |
| 3. Bear Valley Parkway / Encino Drive | OWSC | AM | 30.5 | D | 32.0 | D | 1.5 | No |
| | | PM | 20.4 | C | 24.4 | C | 4.0 | No |
| 4. Bear Valley Parkway / Sunset Drive | Signal | AM | 121.6 | F | 121.7 | F | 0.1 | No |
| | | PM | 41.6 | D | 42.0 | D | 0.4 | No |
| 5. Bear Valley Parkway / Las Palmas Avenue | Signal | AM | 44.5 | D | 45.5 | D | 1.0 | No |
| | | PM | 6.7 | A | 6.8 | A | 0.1 | No |

Source: Appendix R.
Delay = seconds of delay per vehicle; LOS = level of service; OWSC = one-way, stop-controlled intersection; * = the project proposes to put a signal at intersection

***Near-Term and Near-Term-Plus-Project Conditions***

The near-term condition consists of the existing conditions plus the cumulative growth that will add traffic to the local circulation system in the near future (over the next 5 years). Growth in the area is anticipated to range from 2 to 5% a year for the future 2014 to 2035 period. The near-term-plus-project condition incorporates the project proposed improvements, including signalization at Zlatibor Ranch Road/Bear Valley Parkway and the additional northbound access lane, and associated trips generated.

Roadways

Under the near-term conditions, five Bear Valley Parkway roadway segments would operate at unacceptable LOS E or F, and the remaining segments would operate at LOS D or better (Table 3.9-6). With the addition of the project, the six Bear Valley Parkway segments would continue to operate at LOS D to F, and the remaining segments would continue to operate acceptably.

**Table 3.9-6 Near-Term and Near-Term-Plus-Project Conditions – Roadway Segments**

| Study Area Roadway Segment | LOS E Capacity | Near-Term Conditions | | | Near-Term-Plus-Project Conditions | | | Change in V/C Ratio | Signifi-cant Impact? |
|---|---|---|---|---|---|---|---|---|---|
| | | ADT | V/C Ratio | LOS | ADT | V/C Ratio | LOS | | |
| **Bear Valley Parkway** | | | | | | | | | |
| 1. Eldorado Drive to Zlatibor Ranch Road | 15,000 | 25,880 | 1.725 | F | 26,001 | 1.733 | F | 0.008 | No |
| 2. Zlatibor Ranch Road to Encino Drive | 15,000/ 15,500 | 24,040 | 1.603 | F | 24,469 | 1.579 | F | (0.024) | No |
| 3. Encino Drive to Sunset Drive | 15,000/ 15,500 | 25,810 | 1.721 | F | 26,113 | 1.685 | F | (0.036) | No |
| 4. Sunset Drive to Las Palmas Avenue | 15,000 | 34,340 | 2.289 | F | 34,533 | 2.302 | F | 0.013 | No |
| 5. Las Palmas Avenue to Mary Lane | 37,000 | 31,670 | 0.856 | D | 31,835 | 0.860 | D | 0.004 | No |
| 6. Mary Lane to San Pasqual Road | 37,000 | 34,920 | 0.944 | E | 35,085 | 0.948 | E | 0.004 | No |
| **Encino Drive** | | | | | | | | | |
| 7. West of Bear Valley Parkway | 15,000 | 1,890 | 0.126 | A | 2,017 | 0.134 | A | 0.008 | No |
| **Sunset Drive** | | | | | | | | | |
| 8. West of Bear Valley Parkway | 15,000 | 7,650 | 0.510 | B | 7,760 | 0.517 | B | 0.007 | No |
| Source: Appendix R.<br>ADT = average daily traffic, V/C = volume to capacity, LOS = level of service | | | | | | | | | |

Intersections

Four intersections would operate at unacceptable LOS E or F under the near-term conditions. With the addition of the proposed residential development to the near-term conditions, the following four intersections would operate at LOS D, E, or F (Table 3.9-7):

- Bear Valley Parkway / San Pasqual Valley Road (SR 78) (LOS D/E – AM/PM)
- Bear Valley Parkway / Encino Drive (LOS F/E – AM/PM)
- Bear Valley Parkway / Sunset Drive (LOS F/E – AM/PM)
- Bear Valley Parkway / Las Palmas Avenue (LOS E – AM)

**Table 3.9-7 Near-Term and Near-Term-Plus-Project Conditions – Intersections**

| Study Area Intersection | Control | Peak Hour | Near-Term Conditions | | Near-Term-Plus-Project Conditions | | Change in Delay | Signifi-cant Impact? |
|---|---|---|---|---|---|---|---|---|
| | | | Delay | LOS | Delay | LOS | | |
| 1. Bear Valley Parkway / San Pasqual Valley Road (SR 78) | Signal | AM | 42.3 | D | 42.3 | D | 0.0 | No |
| | | PM | 65.0 | E | 65.0 | E | 0.0 | No |
| 2. Bear Valley Parkway / Zlatibor Ranch Road | OWSC / Signal | AM | 19.7 | C | 9.7 | A | (10.0) | No |
| | | PM | 18.2 | C | 27.6 | C | 9.4 | No |
| 3. Bear Valley Parkway / Encino Drive | OWSC | AM | 57.2 | F | 61.1 | **F** | **3.9** | **Yes** |
| | | PM | 28.7 | D | 35.4 | **E** | **6.7** | **Yes** |
| 4. Bear Valley Parkway / Sunset Drive | Signal | AM | 135.1 | F | 135.8 | F | 0.7 | No |
| | | PM | 61.4 | E | 62.4 | E | 1.0 | No |
| 5. Bear Valley Parkway / Las Palmas Avenue | Signal | AM | 61.2 | E | 62.4 | E | 1.2 | No |
| | | PM | 8.9 | A | 9.1 | A | 0.2 | No |
| Source: Appendix R.<br>**Bold** = significant impact; Delay = seconds of delay per vehicle; LOS = level of service; OWSC = one-way, stop-controlled intersection | | | | | | | | |

***Buildout and Buildout-Plus-Project Conditions***

The cumulative circulation system operations analysis was based on the year 2035 buildout conditions. Year 2035 conditions were forecasted per the SANDAG Series 12 traffic model Year 2035. Refer to Appendix R for additional details.

Roadways

Under buildout conditions, all six study area Bear Valley Parkway segments would operate at unacceptable LOS D or better with the exception of Bear Valley Parkway (Mary Lane to San Pasqual Road), which operates at LOS E (Table 3.9-8).The remaining Encino Drive and Sunset Drive segments would operate at acceptable levels (LOS A and B, respectively). No change in LOS operations would occur with the addition of the project to buildout conditions. As such, the following roadway segments would operate at LOS C, D, or E, under the buildout-plus-project scenario:

- Bear Valley Parkway, Eldorado Drive to Zlatibor Ranch Road (LOS C)
- Bear Valley Parkway, Zlatibor Ranch Road to Encino Drive (LOS C)
- Bear Valley Parkway, Encino Drive to Sunset Drive (LOS C)
- Bear Valley Parkway, Sunset Drive to Las Palmas Avenue (LOS D)
- Bear Valley Parkway, Las Palmas Avenue to Mary Lane (LOS D)
- Bear Valley Parkway, Mary Lane to San Pasqual Road (LOS E)

**Table 3.9-8 Buildout and Buildout-Plus-Project Conditions – Roadway Segments**

| Study Area Roadway Segment | Adopted Circulation Element LOS E Capacity | Buildout Conditions | | | Buildout-Plus-Project Conditions | | | Change in V/C Ratio | Signifi-cant Impact? |
|---|---|---|---|---|---|---|---|---|---|
| | | ADT | V/C Ratio | LOS | ADT | V/C Ratio | LOS | | |
| Bear Valley Parkway | | | | | | | | | |
| 1. Eldorado Drive to Zlatibor Ranch Road | 37,000 | 23,400 | 0.632 | C | 23,521 | 0.636 | C | 0.004 | No |
| 2. Zlatibor Ranch Road to Encino Drive | 37,000 | 23,400 | 0.632 | C | 23,829 | 0.644 | C | 0.012 | No |
| 3. Encino Drive to Sunset Drive | 37,000 | 24,400 | 0.659 | C | 24,703 | 0.668 | C | 0.009 | No |
| 4. Sunset Drive to Las Palmas Avenue | 50,000 | 39,600 | 0.792 | D | 39,793 | 0.796 | D | 0.004 | No |
| 5. Las Palmas Avenue to Mary Lane | 50,000 | 39,900 | 0.798 | D | 40,065 | 0.801 | D | 0.003 | No |
| 6. Mary Lane to San Pasqual Road | 50,000 | 42,800 | 0.856 | E | 42,965 | 0.859 | E | 0.003 | No |
| Encino Drive | | | | | | | | | |
| 7. Amparo Drive to Bear Valley Parkway | 15,000 | 2,200 | 0.147 | A | 2,327 | 0.155 | A | 0.008 | No |
| Sunset Drive | | | | | | | | | |
| 8. Reill View Drive to Bear Valley Parkway | 15,000 | 6,000 | 0.400 | B | 6,110 | 0.407 | B | 0.007 | No |
| Source: Appendix R.<br>ADT = average daily traffic, V/C = volume to capacity, LOS = level of service | | | | | | | | | |

***Summary***

Under the existing-plus-project conditions, near-term-plus-project conditions, and buildout-plus-project conditions, all six Bear Valley Parkway study area segments would operate at LOS C

to F. In addition, four intersections along Bear Valley Parkway would operate at LOS D to F under the existing-plus-project and near-term-plus-project conditions.

**Specific Alignment Plan Improvements**

The SAP improvements would increase roadway capacity by widening Bear Valley Parkway and improving intersections along it. Specifically, the SAP proposes to widen and improve Bear Valley Parkway to four lanes from the northern project boundary to the existing four-lane segment just north of the Bear Valley Parkway/Sunset Drive intersection; and to signalize and realign the Bear Valley Parkway/Encino Drive unsignalized intersection. The full improvement to four lanes would not occur in the near-term condition. However, additional right-of-way acquisition south of the site and the corresponding increase in the second northbound lane would result in an increased capacity of 18,000 ADT, which is greater than the 15,500 ADT provided with the roadway and frontage improvements associated with the residential development.

The study area for the SAP improvements encompasses one intersection and three roadway segments of Bear Valley Parkway. The other four intersections and five roadways analyzed for the residential development component were not included in the SAP improvements study area.

Roadways

Under near-term conditions, including both the proposed residential development component and cumulative growth in the area over the next 5 years, LOS F operations are forecasted to remain with an improved V/C ratio with implementation of the SAP improvements on the street segments in the SAP improvements study area (Table 3.9-9).

**Table 3.9-9 Near-Term Conditions with Residential Development and Near-Term Conditions with Residential Development Plus Specific Alignment Plan – Roadway Segments**

| Roadway Segment | Near-Term Conditions with Residential Development | | | | Near-Term Conditions with Residential Development Plus Specific Alignment Plan | | | | Change in V/C Ratio | Signifi-cant Impact? |
|---|---|---|---|---|---|---|---|---|---|---|
| | Capacity | ADT | V/C Ratio | LOS | Capacity | ADT | V/C Ratio | LOS | | |
| Bear Valley Parkway | | | | | | | | | | |
| 1. Eldorado Drive to Zlatibor Ranch Road | 15,000 | 26,001 | 1.733 | F | 18,000 | 26,001 | 1.445 | F | (0.288) | No |
| 2. Zlatibor Ranch Road to Encino Drive | 15,500 | 24,469 | 1.579 | F | 18,000 | 24,469 | 1.359 | F | (0.220) | No |
| 3. Encino Drive to Sunset Drive | 15,500 | 26,113 | 1.685 | F | 18,000 | 26,113 | 1.451 | F | (0.234) | No |

Sources: Appendix S and Appendix R.
ADT = average daily traffic, V/C = volume to capacity, LOS = level of service

Intersections

LOS C or better operations are forecasted to occur with addition of the SAP improvements to near-term conditions, including the residential development, for the Bear Valley Parkway/Encino Drive intersection (Table 3.9-10).

**Table 3.9-10 Near-Term Conditions with Residential Development and Near-Term Conditions with Residential Development Plus Specific Alignment Plan – Intersections**

| Intersection | Peak Hour | Near-term Conditions with Residential Development | | | Near-Term Conditions with Residential Development Plus Specific Alignment Plan | | | Change in Delay | Signifi-cant Impact? |
|---|---|---|---|---|---|---|---|---|---|
| | | Control | Delay | LOS | Control | Delay | LOS | | |
| 1. Bear Valley Parkway / Encino Drive | AM | OWSC | 61.1 | F | Signal | 30.7 | C | (30.4) | No |
| | PM | | 35.4 | E | | 8.2 | A | (27.2) | No |
| Sources: Appendix S and Appendix R.<br>OWSC = One-way, stop controlled intersection; LOS=level of service; delay = seconds of delay per vehicle | | | | | | | | | |

## 3.9.4.2 Issue 2: Traffic Hazards and Emergency Access

**Residential Development**

Traffic hazards or emergency access issues could result from roadway design, incompatible traffic, or inadequate emergency access. The project would include internal roadways, improvements to Bear Valley Parkway, and changes in site access.

The proposed internal, private roadways would allow for vehicular circulation on the project site. Pedestrian walkways would be provided and separated from the vehicle traffic. The internal private roadways would include 28 feet of unobstructed roadway, which would exceed the 24-foot minimum requirement identified in the Consolidated Fire Code. The proposed Bear Valley Parkway frontage improvements include an additional northbound lane, bike lane striping, a concrete curb and gutter, and a sidewalk. The design of the roadways and associated sidewalks would be provided to the satisfaction of the City of Escondido's traffic engineer and would adhere to published standards where practical. As such, these roadway additions and improvements are not expected to create safety hazards.

The residential development does not propose improvements to the Bear Valley Parkway/Encino Drive intersection, but the residential development would make a fair-share contribution toward improvements at this intersection (see mitigation measure TR-1). The residential development would include a signalized main driveway on Bear Valley Parkway at Zlatibor Ranch Road, as well as a secondary emergency access entrance on Bear Valley Parkway in the southern area of the site. The proposed driveways would be consistent with the City's and County's emergency access widths. In addition, the gated emergency access would include a key switch at both ends of the roadway to allow emergency access to the site.

Traffic generated by the residential development would consist of standard vehicle trips, which would be compatible with the traffic on the surrounding roadways. As the project would mitigate all circulation system operations impacts, the project would not lead to congestion-related hazards or emergency access issues.

**Specific Alignment Plan Improvements**

The SAP improvements would address roadway network deficiencies along Bear Valley Parkway from the project's northern boundary (just south of Choya Canyon Road) to the intersection of Bear Valley Parkway/Sunset Drive, south of the southern project boundary. The SAP would enhance safety by providing improved intersection geometrics at the Bear Valley Parkway/Encino Drive intersection. As shown in the SAP (Figure 2-8c), the realigned intersection would include one departure lane and one approach lane. The existing median and curb would be replaced with a smaller median, as Encino Drive would be realigned such that it intersects Bear Valley Parkway at closer to a 90-degree angle. Overall, the SAP would create safer travel conditions at this intersection.

The SAP improvements also propose addition of a southbound travel lane on Bear Valley Parkway, improving congestion. The SAP improvements would not add vehicle trips to the roadway network. As such, the proposed SAP would not create hazardous conditions with respect to roadway design, incompatible traffic, or inadequate emergency access.

### 3.9.4.3 Issue 3: Alternative Transportation

**Residential Development**

The City of Escondido includes policies to promote complete streets and multi-modal transportation, as identified in Section 3.9.2, "Regulatory Framework." Currently, a Class II bicycle lane is on Bear Valley Parkway from its southern end to San Pasqual Valley Road to serve alternative transportation and non-motorized travel. Development of the proposed residential development will result in frontage improvements from the site's southern boundary to just south of Choya Canyon Road. These improvements would maintain the northbound bike lane, and add dedications and sidewalks along the frontage to benefit pedestrians. The proposed residential development would also improve the intersection at Bear Valley Parkway and Zlatibor Ranch Road by connecting proposed sidewalks with existing ones and adding pedestrian crosswalks. On-site measures in the residential development that would encourage bicycling and walking include 5-foot-wide sidewalks on all on-site roadways, landscaped parkways between the streets and sidewalks, and a trail system that would connect the internal pedestrian system to the public sidewalk near the southwest corner of the residential development site. In conclusion, the proposed residential development would not conflict with the City's transportation policies, and alternative transportation impacts would be less than significant.

**Specific Alignment Plan Improvements**

Implementation of the SAP improvements would involve adding sidewalks along the western side of Bear Valley Parkway and maintaining the southbound bike lane. The intersection at Bear Valley Parkway and Encino Drive would be realigned; and the existing sidewalks on Encino Drive would be connected to the proposed sidewalks on Bear Valley Parkway, making the roadways safer for pedestrians. As such, the alternative transportation impacts from the proposed SAP improvements would be less than significant.

## 3.9.5 Cumulative Impacts

The geographic scope of cumulative impacts for traffic impacts includes the study area evaluated in the Traffic Impact Analysis (Appendix R and Appendix S).

### 3.9.5.1 Issue 1: Circulation System Operations

**Residential Development**

The cumulative circulation system operations impacts of the residential development are addressed in Section 3.9.4.1. The near-term analysis includes the cumulative near-term growth anticipated over the next 5 years, while the buildout conditions analysis addresses the anticipated buildout conditions through year 2035. As indicated in the analysis above, all six Bear Valley Parkway study area segments would operate at LOS D to F in the near-term-plus-residential development conditions and LOS C to E in the buildout-plus-residential development conditions. In addition, four intersections along Bear Valley Parkway would operate at LOS D to F under the near-term-plus-residential development conditions: Bear Valley Parkway/San Pasqual Valley Road, Bear Valley Parkway/Encino Drive, Bear Valley Parkway/ Sunset Drive, and Bear Valley Parkway/ Las Palmas Avenue. The significance of the residential development impacts on these roadway segments and intersections is addressed further in Section 3.9.6.1.

**Specific Alignment Plan Improvements**

The cumulative impacts of the SAP improvements are addressed in Section 3.9.4.1. The near-term analysis includes the cumulative near-term growth over the next 5 years, including the proposed residential development. As explained above, the three Bear Valley Parkway roadway segments in the SAP improvements study area would have slightly increased capacity, but will still operate at LOS F with an improved V/C ratio in the near-term-plus-SAP improvements conditions. The Bear Valley Parkway/Encino Drive intersection would operate at LOS C or better under the near-term-plus-SAP improvements conditions. The significance of the SAP component impacts is addressed in Section 3.9.6.1.

### 3.9.5.2 Issue 2: Traffic Hazards and Emergency Access

**Residential Development**

The traffic hazards and emergency access analysis in Section 3.9.4.2 considers the project in conjunction with buildout traffic conditions. Thus, the analysis above addresses cumulative

traffic hazard and emergency access impacts. The proposed residential development would provide adequate emergency access and would not contribute to a cumulative emergency access impact. The proposed roadway additions and improvements would not create hazardous conditions. No cumulative traffic hazards or emergency access impact would occur with implementation of the proposed residential development.

**Specific Alignment Plan Improvements**

Likewise, the intersection and roadway improvements proposed under the SAP improvements would not create inadequate emergency access or transportation hazards. No cumulative traffic hazards or emergency access impact would occur with implementation of the SAP.

### 3.9.5.3 Issue 3: Alternative Transportation

**Residential Development**

The alternative transportation analysis provided in Section 3.9.4.3 addresses the cumulative impacts of the proposed residential development on bicycling, walking and public transit. The proposed residential development would be consistent with the City's alternative transportation policies. Given the maintenance of existing bike lanes and addition of pedestrian facilities, the proposed residential development would result in a less-than-significant cumulative alternative transportation impact.

**Specific Alignment Plan Improvements**

As described in Section 3.9.4.3, the SAP improvements propose to improve pedestrian access in the area by adding sidewalks and connecting them to existing ones. It also proposes to maintain the southbound bike lane on Bear Valley Parkway. Taken into consideration with other developments in the near term and in the future, the SAP improvements would result in a less-than-significant impact on the performance and safety of alternative transportation facilities.

## 3.9.6 Significance of Impacts prior to Mitigation

Potential transportation and traffic impacts from the proposed overhead power line relocation described in Section 2.5.1.6 were analyzed as part of this EIR and found to be less than significant.

### 3.9.6.1 Issue 1: Level of Service Operations

**Residential Development**

***Direct Impacts (Existing-Plus-Project Conditions)***

Roadway Segments

As identified above, all six segments of Bear Valley Parkway would operate at unacceptable LOS D or F under the existing-plus-project conditions. However, the direct project impact on the

Eldorado Drive to Zlatibor Ranch Road, Sunset Drive to Las Palmas Avenue, Las Palmas Avenue to Mary Lane, and Mary Lane to San Pasqual Road segments would be less than significant, as the proposed residential development would add less than 0.02 to the V/C ratio. Furthermore, as the proposed residential development would reduce the V/C ratio to the other two segments, Zlatibor Ranch Road to Encino Drive and Encino Drive to Sunset Drive, the proposed residential development would result in less-than-significant roadway impacts.

Intersections

Four intersections along Bear Valley Parkway would operate at LOS D to F under the existing-plus-project conditions: Bear Valley Parkway /San Pasqual Valley Road, Bear Valley Parkway/ Encino Drive, Bear Valley Parkway/ Sunset Drive, and Bear Valley Parkway/ Las Palmas Avenue. All proposed residential development intersection impacts under the existing-plus-project conditions would be less than significant, as the proposed residential development would add less than 2 seconds of delay to the intersections currently operating at LOS D to F.

***Cumulative Impacts (Near-Term-Plus Project Conditions and Buildout-Plus-Project Conditions)***

Roadway Segments

As identified above, all six segments of Bear Valley Parkway would operate at unacceptable LOS D, E, or F under the near-term-plus-project conditions. However, the cumulative project impact on the Eldorado Drive to Zlatibor Ranch Road, Sunset Drive to Las Palmas Avenue, Las Palmas Avenue to Mary Lane, and Mary Lane to San Pasqual Road segments would be less than significant, as the proposed residential development would add less than 0.02 to the V/C ratio. As the proposed residential development would reduce the V/C ratio on the other two segments, Zlatibor Ranch Road to Encino Drive and Encino Drive to Sunset Drive, the proposed residential development would result in less-than-significant cumulative impacts on roadway segments under near-term-plus-project conditions.

While there are no significant impacts to any of these street segments, the City of Escondido Traffic Impact Analysis Guideline (2013, as cited in Appendix R) states that projects adding traffic to LOS F-operating locations should contribute towards improvements, regardless of the formal findings of significance. The project is providing frontage improvements (second northbound lane and signal at Zlatibor Ranch Road) that will positively affect operations on the Eldorado Drive to Zlatibor Ranch Road, Zlatibor Ranch Road to Encino Drive, and Encino Drive to Sunset Drive segments; thus no additional fair share contribution is required for these locations. However, a fair share contribution shall be applied for the Sunset Drive to Las Palmas Avenue segment. This is not a mitigation measure, but shall be a condition of project approval.

Under the buildout-plus-project conditions, five of the six segments of Bear Valley Parkway would operate at an acceptable LOS C or D. One of the six segments of Bear Valley Parkway, Mary Lane to San Pasqual Road, will continue to operate at unacceptable LOS E. Because the

proposed residential development would add less than 0.02 to the V/C ratio on this roadway segment, less-than-significant cumulative impacts on roadway segments would result under the buildout-plus-project conditions.

Intersections

Four intersections along Bear Valley Parkway would operate at LOS D to F under the near-term project conditions: Bear Valley Parkway/San Pasqual Valley Road, Bear Valley Parkway/Encino Drive, Bear Valley Parkway/Sunset Drive, and Bear Valley Parkway/Las Palmas Avenue. Impacts on three of the intersections operating at LOS D/E/F under the near-term-plus-project conditions would be less than significant, as the proposed residential development would add less than 2 seconds of delay to these intersections. However, the proposed residential development would add more than 2 seconds of delay to the Bear Valley Parkway/Encino Drive intersection. Thus, the proposed residential development would result in a significant cumulative impact on this intersection under the near-term conditions.

While there are no significant impacts to the other three intersections, the City of Escondido Traffic Impact Analysis Guideline (2013, as cited in Appendix R) states that projects adding traffic to LOS F-operating locations should contribute towards improvements, regardless of the formal findings of significance. The project adds traffic to the Bear Valley Parkway/ Sunset Drive intersection, which operates at LOS F. Therefore, a fair share contribution shall be applied for this intersection. This is not mitigation, but shall be a condition of project approval.

***Summary***

In summary, the proposed residential development would result in a significant cumulative impact on the Bear Valley Parkway/Encino Drive intersection and; therefore, require a fair share contribution as mitigation (see Section 3.9.7.1). Further, a fair share contribution shall be applied to the project as a condition of approval for the non-significant impacts to the Bear Valley Parkway/ Sunset Drive intersection, per City policy.

**Specific Alignment Plan Improvements**

The SAP proposes to widen and improve Bear Valley Parkway to four lanes from the northern project boundary to the existing four-lane segment just north of the Bear Valley Parkway/Sunset Drive intersection, and to signalize and realign the Bear Valley Parkway/Encino Drive unsignalized intersection. The full improvement to four lanes would not occur in the near-term condition. However, additional right-of-way acquisition south of the site and the corresponding increase in the second northbound lane would result in an increased capacity of 18,000 ADT, which is greater than the 15,500 ADT provided with the existing two-lane roadway and the improved frontage associated with the residential development. Generally, traffic impacts can be expected when traffic volumes exceed a roadway network's capacity. Therefore, development of the SAP improvements would not be expected to result in traffic impacts.

As mentioned in Section 3.9.4.1, the SAP improvements would maintain the LOS on the roadways in the SAP study area to level F with improved V/C ratio under near-term-plus-project conditions. The LOS at the intersection in the SAP improvements study area would be improved to level C or better under near-term-plus-project conditions. In summary, the proposed SAP improvements would result in less-than-significant direct and cumulative impacts on roadways and the intersection in the project study area.

### 3.9.6.2 Issue 2: Traffic Hazards and Emergency Access

As the proposed project roadway improvements and access would comply with the City's roadway standards, both components of the project would result in less-than-significant impacts related to traffic hazards.

### 3.9.6.3 Issue 3: Alternative Transportation

The proposed project would not conflict with the City's transportation policies. Thus, project impacts related to alternative transportation would be less than significant.

## 3.9.7 Mitigation Measures

### 3.9.7.1 Issue 1: Level of Service Operations

**Residential Development**

The roadway network with mitigation measures and other project contributions are illustrated in Figure 3.9-2.

***Cumulative Impacts***

Intersections

To mitigate the residential development's cumulative impact on the intersection at Bear Valley Parkway and Encino Drive, the proposed residential development shall implement the following:

**TR-1**: To address operating deficiencies, a fair-share contribution will be made to realignment and signalization of the unsignalized intersection. It is proposed that the intersection be realigned such that Encino Drive is simplified to include one approach lane and one departure lane. Also, the median separating the approach and departure lanes is proposed to be reduced as Encino Drive is realigned to intersect with Bear Valley Parkway at a 90-degree angle. These proposed improvements are consistent with the designs shown in the SAP.

Table 3.9-11 shows that implementation of this mitigation measure would result in LOS C or better during peak-hour operations. Figure 3.9-2 shows the proposed mitigation measures and post-mitigation conditions.

**Table 3.9-11 Post-Mitigation Intersection Operations**

| Intersection | Control Type *(Mitigation)* | Peak Hour | Existing Conditions | | Existing Conditions-Plus Cumulative Projects Plus Proposed Project *(with Mitigation)* | |
|---|---|---|---|---|---|---|
| | | | Delay | LOS | Delay | LOS |
| 3. Bear Valley Parkway / Encino Drive | OWSC *(Signal)* | AM | 30.5 | D | 30.7 | C |
| | | PM | 20.4 | C | 8.2 | A |

Source: Appendix R.
Delay=seconds of delay per vehicle; LOS=level of service; OWSC=One-way, stop controlled intersection. Minor street left-turn delay is reported.

**Specific Alignment Plan Improvements**

The proposed SAP improvements would result in a less-than-significant impact related to circulation and level of service. Thus, no mitigation is required.

### 3.9.7.2 Issue 2: Traffic Hazards and Emergency Access

The project would result in a less-than-significant impact related to emergency access and transportation hazards. Thus, no mitigation is required.

### 3.9.7.3 Issue 3: Alternative Transportation

The project would result in a less-than-significant impact related to alternative transportation, such as transit, bikeways, and pedestrian paths. Thus, no mitigation is required.

## 3.9.8 Conclusion

The proposed residential development would result in significant impacts on transportation facility operations. The proposed SAP improvements would result in a less-than-significant impact on transportation facility operations. Both the residential development and SAP improvements would result in less-than-significant impacts on alternative transportation and traffic hazards and emergency access. A summary of the proposed project's significant impacts, mitigation, and significance after mitigation is provided below.

A fair share contribution not associated with a significant impact and not categorized as a mitigation measure will be applied to the project for traffic contributions at LOS F-operating roadway segments and intersections. This will be a condition of project approval.

### 3.9.8.1 Mitigated Significant Impacts

To mitigate traffic operation impacts, the residential development would implement mitigation measure TR-1 (see Table 3.9-9 and Figure 3.9-2). With implementation of this measure, all level of service operations impacts from the residential development would be reduced to a less-than-significant level (refer to Appendix R, Table 12-1 and Figure 12-1). More specifically, the mitigation would reduce the residential development's contribution to delays at the affected intersection (Bear Valley Parkway/Encino Drive) to below 2 seconds.

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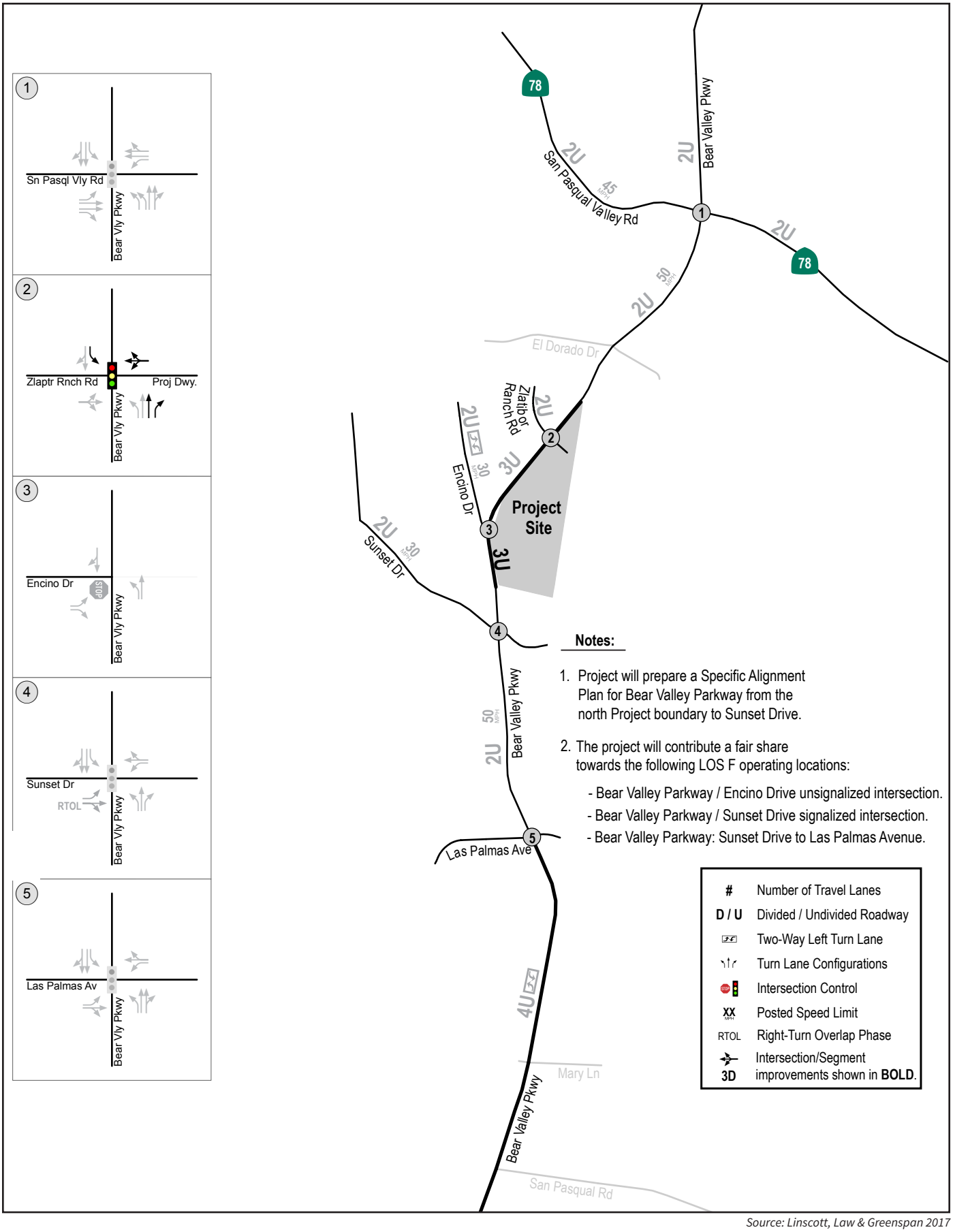


*Source: Linscott, Law & Greenspan 2017*

Harris & Associates

N

*Not to scale*

**Figure 3.9-2**
Roadway Network with Project Contributions

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# Chapter 4. Other CEQA Considerations

Section 15126 of the California Environmental Quality Act (CEQA) Guidelines requires that all aspects of a project be considered when evaluating its impact on the environment, including planning, acquisition, development, and operation. As part of this analysis, the EIR must identify the following four components, which are addressed in this chapter:

- Growth-inducing impacts of the project (Section 4.1)
- Effects found not to be significant as a result of project implementation (Section 4.2)
- Significant irreversible environmental effects that would be involved in the project should it be implemented (Section 4.3)
- Significant environmental effects that cannot be avoided if the project is implemented (Section 4.4)

## 4.1 Growth-Inducing Impacts

As required by the State CEQA Guidelines, an Environmental Impact Report (EIR) must include a discussion of the ways in which the proposed project could directly or indirectly foster population growth or economic development, and how that growth would, in turn, affect the surrounding environment (State CEQA Guidelines Section 15126.2[d]). According to State CEQA Guidelines Section 15126.2(d), "it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment."

A project can have direct and/or indirect growth inducement potential. Direct growth inducement can result from the construction of new housing that would result in new residents moving to an area. Indirect growth can be induced in a number of ways, including the stimulation of economic activity within the region that would result in the need for additional housing and services to support the new employment demand, or through the elimination of obstacles to growth, including both physical and regulatory obstacles. These topics are discussed in Sections 4.1.1 through 4.1.3.

Growth inducement has the potential to result in an adverse impact if the growth is not consistent with or accommodated by the land use plans and growth management plans and policies for the area affected. Since the general plan of a community defines the location, type and intensity of growth, it is the primary means of regulating development and growth in that community.

Growth under the proposed project would be consistent with the growth identified in the City of Escondido (City) General Plan, which anticipates new estate housing on the project site. Further, the project would act as infill for and consistent with the existing residential development surrounding the proposed project. The proposed project would not extend roads or sewer lines beyond the subdivision boundary.

### 4.1.1 Direct Population Growth

The proposed project would directly influence population in Escondido by providing 55 new single-family residences on the project site. According to the City, there is an average of 3.12 persons per household in Escondido. Using this number, and assuming a net increase of 54 units on the project site (there is one existing residence), the project would increase the City's existing population of 151,451 (U.S. Census Bureau 2016) by about 168 persons, to approximately 151,619, or by 0.001%. This population increase would be very small and would not be likely to adversely affect the City or its services. The physical environmental impacts associated with the proposed project's construction and operation as a residential development are analyzed in Sections 3.1 through 3.9 of this report.

### 4.1.2 Economic Growth

The project would involve residential development and would not include any commercial or industrial development. Other than the short-term construction activities, the project would not directly generate jobs or economic activity. Based on a factor of 3.12 persons per dwelling unit (City of Escondido 2013), the 55-unit proposed project would be expected to add 55 homes (a 54 unit increase as there is one existing residence) with approximately 168 residents to the City's population. These new residents would incrementally increase activity in nearby commercial establishments and may generate demand for such services as landscaping, gardening, and home maintenance and repair. Project residents would be expected to draw on existing retail and commercial services already available in the area rather than inducing new service providers to relocate to the area. As a result, no significant physical effects are anticipated to result from economic growth generated by the proposed project. The proposed project would, however, have minor beneficial economic effect on local retailers and service providers.

### 4.1.3 Removing Obstacles to Growth

The elimination of either physical or regulatory obstacles to growth is considered to be a growth inducing impact. A physical obstacle to growth typically involves the lack of public service infrastructure. The project would trigger growth if it would result in infrastructure with excess capacity or if it would remove an obstacle to growth in an area, such as providing infrastructure that was previously not available. Implementation of the project would result in the introduction of residential land use to a site that currently has one vacated residential unit. All utility infrastructure and services are available to the project site.

The residential development component of the project proposes to improve the east side of Bear Valley Road adjacent to the project site. The residential development component would involve the installation of a traffic signal at the intersection of Encino Drive and Bear Valley Road. The Specific Alignment Plan full-width improvements component of the project proposes to improve the west side of Bear Valley Road from the City boundary to Sunset Drive and the

east side of Bear Valley Road from the southern project boundary to Sunset Drive. The improvements would include additional travel lanes, bike lane, retaining wall, raised median, sidewalk, and curb and gutters. These are improvements to an existing roadway that would improve safety but would not encourage additional traffic volumes. As such, the Bear Valley Road roadway improvements would not trigger growth in the area.

## 4.2 Effects Found Not to be Significant

State CEQA Guidelines Section 15128 requires that an EIR contain a brief statement disclosing the reasons why various possible significant effects of a proposed project were found not to be significant and; therefore, not discussed in detail in the EIR. The issues found not to be significant are described in detail in the Initial Study, included as Appendix A.

## 4.3 Significant Irreversible Changes

Section 15126.2(c) of the State CEQA Guidelines requires a discussion of any significant irreversible environmental changes that would be caused by a proposed project. Specifically, Section 15126.2(c) states:

> Uses of nonrenewable resources during the initial and continued phases of a project may be irreversible, since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Generally, a project would result in significant irreversible environmental changes if:

- The primary and secondary impacts would generally commit future generations to similar uses;
- The project would involve a large commitment of nonrenewable resources;
- The project involves uses in which irreversible damage would result from any potential environmental accidents associated with the project; or
- The proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

Development of the proposed project would result in the commitment of the project site to a residential use. Restoration of the project site to pre-developed conditions would not be feasible given the degree of disturbance, urbanization of the area, and level of capital investment that would result from implementation of the project.

Resources that would be permanently and continually consumed by implementation of the project include water, electricity, natural gas, and fossil fuels; however, the amount and rate of consumption of these resources would not result in significant environmental impacts or the unnecessary, inefficient, or wasteful use of resources. Construction activities related to the project, though previously analyzed, would result in the irretrievable commitment of nonrenewable energy resources, primarily in the form of fossil fuels (including fuel oil), natural gas, and gasoline for automobiles and construction equipment.

With respect to operational activities of the proposed project, compliance with all applicable building codes and EIR mitigation measures would ensure that all natural resources are conserved to the maximum extent practicable. It also is possible that new technologies or systems would emerge, or would become more cost-effective or user-friendly, to further reduce the proposed project's reliance on nonrenewable energy resources.

The State CEQA Guidelines also require an EIR to include a discussion of the potential for irreversible damage caused by an accident associated with the project. Development of the project site would not involve the use, transport, storage, or disposal of hazardous wastes. Everyday household hazardous wastes, such as cleaners, paints, and fertilizers would be used and disposed of in accordance with applicable regulations and laws. Therefore, the potential for the proposed project to cause significant irreversible environmental damage from an accident or upset of hazardous material would be less than significant.

## 4.4 Significant Unavoidable Impacts

In accordance with State CEQA Guidelines Section 15126.2 (b), any significant unavoidable impact of a proposed project, including those impacts that can be mitigated but not reduced to below a level of significance despite the applicant's willingness to implement all feasible mitigation measures, must be identified in the EIR. Sections 3.1 through 3.9 of this EIR provide a comprehensive identification of the project's potentially significant adverse environmental effects and any necessary mitigation measures, as well as the level of significance both before and after mitigation. The project's identified significant impacts would all be reduced to less-than-significant impacts with implementation of the specific mitigation measures applied to associated environmental effects. Therefore, there would be no significant irreversible environmental changes resulting from implementation of the proposed project.

# Chapter 5. Alternatives

Section 15126.6 of the CEQA Guidelines requires that an EIR describe a range of reasonable alternatives to the proposed project or to the proposed project location that would feasibly attain most of the project objectives but would avoid or lessen any significant environmental impacts. An EIR should evaluate the environmental impacts of the alternatives compared to the proposed project. This chapter of the EIR describes and evaluates alternative project site land uses and is intended to implement the requirements set forth in the CEQA Guidelines. This chapter also identifies the Environmentally Superior Alternative as required by CEQA Guidelines Section 15126.6(e)(2). The requirements of Section 15126.6 of the CEQA Guidelines pertaining to the alternatives analysis are summarized below.

The following discussion covers a reasonable range of feasible alternatives that focuses on avoiding or substantially lessening any significant effects of the project, even if these alternatives would not attain all of the project objectives or would be more costly, and is designed to foster meaningful public participation and informed decision-making. The discussion focuses on alternatives to the project that are capable of meeting most of the project objectives listed below in Section 5.1, Project Objectives.

According to the CEQA Guidelines, there are many factors that may be taken into account when addressing the feasibility of alternatives, such as environmental impacts, site suitability as it pertains to various land use designations, economic viability, availability of infrastructure, regulatory limitations, and jurisdictional boundaries. Also, the alternatives analysis need not be as detailed as that conducted for the project. A No Project Alternative is required to be included in the range of alternatives. An EIR need not consider an alternative whose effects cannot be reasonably identified, whose implementation is remote or speculative, or one that would not achieve most of the basic project objectives. Finally, the Environmentally Superior Alternative shall be identified and if it is the No Project Alternative, the next Environmentally Superior Alternative shall be identified.

The alternatives analysis below meets the requirements of CEQA Guidelines Section 15126.6. The analysis includes sufficient information about each alternative to provide meaningful evaluation, analysis, and comparison with the project.

## 5.1 Project Objectives

The following project objectives have been identified for the proposed project:

1. Provide a residential development that is consistent with the General Plan policies while maximizing single-family residential units to assist in fulfilling the City's Regional Housing Needs Allocation and to maximize tax generation revenues.

2. Design the project to appeal to the area's growing demand for high quality one and two story single-family residential housing, while also providing compatibility with the surrounding single-family uses.
3. Cluster residential lots to minimize impacts to jurisdictional waters and other biological resources, resulting in the preservation of approximately 50 percent of the site as permanent open space.
4. Design project grading and construction to generally reflect the existing landform.
5. Maintain the existing drainage crossing near the southern property line as a pedestrian linkage to public sidewalks.
6. Establish a Specific Alignment Plan for full-width improvements to Bear Valley Parkway consistent with the major road classification identified in the City's General Plan Mobility and Infrastructure Element.

**Table 5-1 Comparison of Alternatives – Environmental Impacts**

| Issue Areas | Proposed Project | | Alternatives | |
|---|---|---|---|---|
| | Without Mitigation | With Mitigation | No Project | Reduced Project |
| **3.1 Aesthetics** | | | | |
| Scenic Vistas | LTS | N/A | ˅ | -- |
| Scenic Resources | LTS | N/A | ˅ | -- |
| Visual Character and Quality | LTS | N/A | ˅ | -- |
| Light and Glare | LTS | N/A | ˅ | |
| **3.2 Agricultural Resources** | | | | |
| Direct Conversion of Agricultural Resources | LTS | N/A | ˅ | -- |
| Land Use Conflicts | N | N/A | -- | -- |
| Indirect Conversion of Agricultural Resources | LTS | N/A | ˅ | -- |
| **3.3 Biological Resources** | | | | |
| Candidate, Sensitive, or Special-Status Species | S | LTS | ˅ | -- |
| Sensitive Habitats | S | LTS | ˅ | -- |
| Jurisdictional Habitat | S | LTS | ˅ | -- |
| Wildlife Movement Corridors and Nursery Sites | LTS | N/A | ˅ | -- |
| Local Policies and Ordinances | S | LTS | ˅ | -- |
| **3.4 Cultural Resources** | | | | |
| Historical Resources | LTS | N/A | ˅ | -- |
| Archaeological Resources | S | LTS | ˅ | -- |
| Tribal Resources | S | LTS | ˅ | -- |
| Human Remains | LTS | N/A | ˅ | -- |
| **3.5 Geology and Soils** | | | | |
| Soil Stability and Expansive Soils | S | LTS | ˅ | -- |
| **3.6 Hazards and Hazardous Materials** | | | | |
| Routine Transport, Use or Disposal of Hazardous Materials | LTS | N/A | ˅ | -- |
| Accidental Release of Hazardous Materials | | | | |
| *Residential Development* | S | LTS | ˅ | -- |
| *SAP Improvements* | LTS | N/A | ˅ | -- |
| Emergency Response and Evacuation Plans | LTS | N/A | -- | -- |
| Wildland Fires | LTS | N/A | -- | -- |
| **3.7 Land Use and Planning** | | | | |

| Issue Areas | Proposed Project | | Alternatives | |
|---|---|---|---|---|
| | Without Mitigation | With Mitigation | No Project | Reduced Project |
| Divide an Established Community | LTS | N/A | ˅ | -- |
| Conflict with an Applicable Land Use Plan | LTS | N/A | ^ | -- |
| Conflict with a Habitat Conservation Plan | LTS | N/A | ˅ | -- |
| **3.8 Noise** | | | | |
| Excessive Noise Levels | | | | |
| *Residential Development* | S | LTS | ˅ | -- |
| *SAP Improvements* | LTS | N/A | ˅ | -- |
| Excessive Ground-Borne Vibration | S | LTS | ˅ | -- |
| Permanent Increase in Ambient Noise Levels | LTS | N/A | ˅ | ˅ |
| Temporary Increase in Ambient Noise Levels | S | LTS | ˅ | -- |
| **3.9 Transportation and Traffic** | | | | |
| Level of Service Operations | | | | |
| *Residential Development* | S | LTS | ˅ | ˅ |
| *SAP Improvements* | LTS | N/A | ^ | -- |
| Traffic Hazards and Emergency Access | LTS | N/A | ˅ | -- |
| Alternative Transportation | LTS | N/A | ^ | -- |

N = No Impact; LTS = Less than Significant Impact; S = Significant Impact; S/U = Significant Unmitigated Impact; S/M = Significant Mitigated Impact; N/A = Not Applicable.

˅ Alternative is likely to result in lesser impacts to issue when compared to proposed project and impacts would be less than significant and not require mitigation.

-- Alternative is likely to result in similar impacts to issue when compared to proposed project.

^ Alternative is likely to result in greater impacts to issue when compared to proposed project. However, impacts would still be less than significant and not require mitigation.

## Table 5-2 Comparison of Alternatives – Proposed Project Objectives

| Proposed Project Objectives | Ability of Alternative to Meet Project Objective | | |
|---|---|---|---|
| | Proposed Project | No Project | Reduced Project |
| 1. Provide a residential development that is consistent with the General Plan policies while maximizing single-family residential units to assist in fulfilling the City's Regional Housing Needs Allocation and to maximize tax generation revenues | YES | NO | NO |
| 2. Design the project to appeal to the area's growing demand for high quality one and two story single-family residential housing, while also providing compatibility with the surrounding single-family uses | YES | NO | YES |
| 3. Cluster residential lots to minimize impacts to jurisdictional waters and other biological resources, resulting in the preservation of approximately 50 percent of the site as permanent open space | YES | YES | YES |
| 4. Design project grading and construction to generally reflect the existing landform | YES | YES | YES |
| 5. Maintain the existing drainage crossing near the southern property line as a pedestrian linkage to public sidewalks | YES | YES | YES |
| 6. Establish a Specific Alignment Plan for full-width improvements to Bear Valley Parkway consistent with the major road classification identified in the City's General Plan Mobility and Infrastructure Element | YES | NO | YES |

## 5.2 Alternatives Considered but Rejected

CEQA Guidelines state that the EIR needs to examine in detail only a reasonable range of alternatives that the lead agency determines could feasibly attain most of the basic objectives of the project. Further, the EIR should identify any alternatives that were considered by the lead agency but were rejected and briefly explain the reasons underlying the lead agency's determination. Among factors used to eliminate alternatives from detailed consideration in the EIR is the failure to meet most of the basic project objectives or inability to avoid significant environmental effects (CEQA Guidelines 15126.6[c]).

The alternatives that can be considered for the proposed project, which address the future growth of the project area, are countless. However, as a result of the comprehensive planning process for the project, two alternatives that are "reasonable" for analysis were defined by the City and are discussed below in Section 5.3, Alternatives Analyzed. The following section describes alternatives or alternative concepts that were given consideration by the City but rejected from further analysis in the EIR.

***Development of More Residential Units***

The proposed change in the zoning of the site to Proposed Development (P-D) could allow for more than 55 residential units to be developed on site. However, buildout of the project site with more than 55 units would exacerbate significant impacts related to traffic congestion and noise. It could also intensify significant impacts on biological resources, cultural resources, soil stability, and hazardous materials. This alternative would conflict with the third project objective to minimize impacts to jurisdictional waters and other biological resources and preserve approximately 50 percent of the site as permanent open space. Additionally, inclusion of substantially more residential units could have required a General Plan amendment and referendum, which were not of interest to the project applicant or the City. As this alternative would not reduce or avoid a significant project impact, this alternative was rejected from detailed consideration.

***Alternative Location***

In accordance with CEQA Guidelines Section 15126.6(f)(2), an alternative project site should be considered if development of another site is feasible and if development of another site would avoid or substantially lessen significant impacts of the project. Factors that may be considered when identifying an alternative site location include: the size of the site; its location relative to major transportation corridors, employment centers, and the availability of services (including commercial services along with public services, such as fire protection, libraries and schools); the General Plan (or Community Plan) land use designations, and availability of infrastructure. CEQA Guidelines Section 15126.6(f)(2)(A) states that a key question in looking at an off-site alternative is ". . . whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location."

The location of the project within an area designated Estate II for development of single-family homes on large lots is important to meet the first and second project objectives. Also, to meet the sixth project objective, it makes sense for the project to be located adjacent to Bear Valley Parkway. Development of a site similar to the proposed project site is likely to yield similar potentially significant impacts associated with biological and cultural resources, hazardous materials, noise, and traffic. While the use of another site has potential to avoid the project's significant impacts related to soil stability, this impact could also be avoided through the No Project Alternative. Ultimately, the proposed project would mitigate all potential impacts to below a level of significance. Therefore, the EIR contains an adequate range of alternatives to reduce biological, cultural, soil stability, hazardous materials, noise and traffic impacts, and it is not necessary to include a detailed Alternative Location analysis.

Further, the applicant already owns the project site and cannot reasonably acquire an alternative site. Thus, in accordance with CEQA Guidelines Section 15126.6(f), the acquisition of an alternative location would be considered infeasible.

## 5.3 Alternatives Analyzed

The following section presents an evaluation of the alternatives to the project: a No Project Alternative and a Reduced Project Alternative. For each alternative, a brief description is provided, followed by a summary impact analysis relative to the project, and an assessment of the degree to which the alternative would meet the project's objectives. Table 5-1 provides a comparison of the significant direct impacts of the project and considered alternatives. Table 5-2 provides a summary of the ability of the considered project alternatives to meet the project objectives.

### 5.3.1 No Project Alternative

CEQA requires a No Project Alternative to be addressed in an EIR. Under the No Project Alternative, the existing on-site land uses could continue, and the one single-family house would remain. The project site would remain as vacant, disturbed land surrounded by single family residential land uses and, to a lesser extent, other vacant properties. Existing, on-site landforms, biological resources and the drainage crossing near the southern property line would remain unchanged. Half-width frontage improvements on Bear Valley Parkway (e.g. bike lane, gutter, curb, sidewalk, additional north-bound turn/acceleration lane, retaining wall, safety fence, and vegetated swale) associated with the proposed residential development would not be constructed. Similarly, the Specific Alignment Plan for full-width improvements to Bear Valley Parkway consistent with the City's General Plan definition for a major road would not be established. The current layout of the Encino Drive-Bear Valley Parkway intersection would remain unchanged.

The No Project Alternative is addressed to compare the environmental effects of the property remaining in its existing state against the environmental effects which would occur if the proposed project is approved. Pursuant to CEQA Guidelines Section 15126.6(e)(3)(B), "If the project is other than a land use or regulatory plan, … the 'no project' alternative is the circumstance under which the project does not proceed."

### 5.3.1.1 Impact Analysis

**Aesthetics**

Because no new development or construction would occur under this alternative, no change to the existing visual setting would result. There would be no change to existing scenic vistas. Scenic resources on the site, including rock outcroppings and riparian drainages, would not be disturbed. This alternative would have no impact on existing neighborhood character because the site would remain undeveloped. Because no new development or construction would occur under this alternative, there would be no new sources of light or glare. Impacts of the No Project Alternative, therefore, would be less than the proposed project and less than significant.

**Agricultural Resources**

Implementation of the No Project Alternative may allow for a continuation of the current land uses on the project site. The property was historically used for agricultural activities, but those activities are no longer on the project site. Although implementation of the No Project Alternative would eliminate the conversion of approximately 40 acres of land that is classified as Farmland of Local Importance by the California Department of Conservation Farmland Mapping and Monitoring Program, preservation of the project site for agricultural purposes would be inconsistent with the objectives of adopted local policies. The site has an Estate II land use designation and is zoned Residential Estate. The City of Escondido recognizes that residential use is a more desirable long-term objective for the project site rather than continued agriculture. Agricultural resources are conserved regionally through the General Plan. Furthermore, the surrounding area has largely transitioned over a number of years from agriculture to residences. Therefore, the No Project Alternative would result in less-than-significant impacts on agricultural resources and impacts would be less than the proposed project.

**Biological Resources**

Implementation of the No Project Alternative may result in a continuation of the current use of the project site, with no disturbance of the existing on-site biological resources. As no development activities are proposed under this alternative, there would be no significant effects on sensitive plant or wildlife species, vegetation communities, wetlands, or wildlife corridors from clearing, grading, or construction activities as a result of the No Project Alternative. However, there would be no establishment or enhancement of on-site or off-site

riparian habitat under The No Project Alternative. Biological resource impacts under the No Project Alternative would be less than the proposed project and less than significant.

**Cultural Resources**

Archaeological resources were found during surveys and the site may have been associated with the Dead Horse Canyon site. Unknown tribal resources and the discovery of unknown buried human remains during project construction are a possibility. However, the existing buildings and irrigation features on the proposed project site are not considered historical resources for the purposes of CEQA. The No Project Alternative would retain all existing on-site structures and no demolition, grading, excavation, or land disturbance would be completed. Identified on-site cultural resources would not be affected. Thus, this alternative would have lesser impacts than the proposed project on historical, archaeological and tribal cultural resources, as well as human remains. Cultural resource impacts would be less than significant.

**Geology and Soils**

Historical mine-related excavations have resulted in unstable soils on the proposed residential development site. Existing loose fills on the proposed SAP improvements site are generally not deemed suitable to support new transition walls. The No Project Alternative does not propose construction on the site and would therefore not introduce a risk to life or property. Therefore, impacts of the No Project Alternative related to hazards would be less than the proposed residential development and full-width SAP improvements and, overall, would be less than significant.

**Hazards and Hazardous Materials**

No construction activities would occur with the No Project Alternative, and there would be no resultant potential for impacts associated with construction-related use, disposal, or routine transport of hazardous materials. The potential asbestos- and lead-based paint-containing existing structures would not be demolished. Similar to the proposed project, the No Project Alternative would be required to comply with the existing applicable federal, state, and local regulations related to hazardous materials. Both the No Project Alternative and the proposed project would have a less than significant impact related to hazardous materials, but impacts related to the No Project Alternative would be less than the proposed project.

The No Project Alternative would not introduce people or structures to a significant wildfire risk. However, fires from off-site sources would have a greater potential to spread due to more continuous fuels across the site under the No Project Alternative. The No Project Alternative would comply with emergency access requirements. Overall, both this alternative and the proposed project would have a less than significant impact related to wildfires and emergency response.

**Land Use**

Under the No Project Alternative, no construction would occur on- or off-site. Therefore, there would be no impacts relative to the physical division of an established community; new land use barriers; disruption of physical arrangement; street and sidewalk pattern impacts; and development of surrounding parcels.

The City of Escondido General Plan designates the proposed residential development site as Estate II, which is designed to promote housing units on large residential lots with extensive on-site landscaping and semi-formal streets. Furthermore, the General Plan Mobility and Infrastructure element identifies the ultimate buildout classification of the stretch of Bear Valley Parkway where the SAP improvements are proposed to be Major Road. Because the No Project Alternative would not make any modifications to the current use of the proposed residential development site and would not make any modifications to Bear Valley Parkway, this alternative would conflict with the General Plan more than the proposed project. Nonetheless, impacts are considered less than significant.

The No Project Alternative would result in no changes to existing land use and therefore would not cause new impacts on biological resources. Thus, like the proposed project, the No Project Alternative would not conflict with a habitat conservation plan.

**Noise**

Under the No Project Alterative, no new noise sensitive land uses would be constructed. The current, minimal noise generation within the project site would remain as-is; no new traffic-related noise would be generated. No construction would occur and, therefore, there would be no construction-related noise or vibration generated. Noise impacts under the No Project Alternative would be less than the proposed project and less than significant.

**Transportation and Traffic**

Under the No Project Alternative, the project site would continue to generate the existing level of traffic trips from the existing land use. Additional trips would not be added to study area roadway segments or intersections, as they would under the proposed project. However, improvements to Bear Valley Parkway, including additional travel lanes, would not occur under the No Project Alternative. Overall, circulation system operations under the No Project Alternative would be less than the proposed project and less than significant.

Significant impacts related to emergency access would not occur under the No Project Alternative, as there would be disruption to existing traffic flow. Although the No Project Alternative would maintain existing bike lanes and the pedestrian crossing over the riparian drainage, it would not involve the additional sidewalks and sidewalk connections proposed by the project. Even so, the No Project Alternative would have less-than-significant impacts on biking, walking and alternative forms of transportation.

#### 5.3.1.2 Ability to Accomplish Project Objectives

The No Project Alternative would not meet the first or second project objectives, as no development of the site would occur. The site would continue to be used for the existing single-family residence and vacant, disturbed land with minimal impacts on jurisdictional waters and other biological resources; existing landforms; and the existing drainage crossing. Thus, this alternative would meet the third, fourth and fifth project objectives. Finally, the No Project Alternative would not meet the sixth project objective, as it would not implement the Specific Alignment Plan for full-width roadway improvements to Bear Valley Parkway.

### 5.3.2 Reduced Project Alternative

This alternative reduces the development intensity in order to reduce traffic impacts. Development under the Reduced Project Alternative would be limited to 31 houses in the same development footprint as the proposed project (see Figure 5-1). Removal of 24 houses would correspondingly reduce the number of daily trips generated by the project. The Specific Alignment Plan for full-width roadway improvements to Bear Valley Parkway would be implemented under the Reduced Project Alternative with no differences from the improvements proposed by the project.

#### 5.3.2.1 Impact Analysis

**Aesthetics**

Implementation of the Reduced Project Alternative would result in the same footprint of development, but with fewer residential units than that proposed under the project. Like the proposed project, the Reduced Project Alternative would partially block scenic vistas of distant intermediate ridgelines and mountains. It could also impact nearby views of rock outcroppings and riparian drainages. However, like the proposed project, the impact of these partial view obstructions would not be significant. Impacts on trees and other scenic resources within the Bear Valley Parkway viewshed from development of the Reduced Project Alternative would also be similar to the proposed project and less than significant. The scale and architectural style of houses developed under the Reduced Project Alternative would be similar in visual character and quality to the proposed project. Nighttime exterior lighting, including streetlights and wall-mounted residential lights, would also be similar. Impacts of the Reduced Project Alternative on visual character and light and glare would be less than significant.

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Path: MarCom/_COMMS EXTERNAL/GRAPHICS/ BD Proposals/ Bear Valley EIR Figures

*Source: Hunsaker & Associates 2016e*

Harris & Associates

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**Figure 5-1**
Reduced Project Alternative

*Note: All drawings are approximate.*

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**Agricultural Resources**

The Reduced Project Alternative would develop 31 residential lots within the same development footprint as the proposed project. Thus, similar to the proposed project, this alternative would convert approximately 40 acres considered to be Farmland of Local Importance to non-agricultural use. For the reasons detailed in Chapter 3.2, impacts related to the direct and indirect conversion of farmland to non-agricultural use are considered less than significant. The Reduced Project Alternative, similar to the proposed project, would not result in agricultural land use conflicts.

**Biological Resources**

The Reduced Project Alternative would have the same development footprint as the proposed project. Therefore, it would impact the same amount of acres of sensitive and jurisdictional habitat as the proposed project. This alternative would also, therefore, have a similar impact on trees and the City's tree protection ordinance. These impacts could potentially be significant. Construction and operation of the Reduced Project Alternative would be similar to the proposed project and, therefore, would have a similar, potentially significant impact on sensitive species. Implementation of mitigation measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7 and BIO-8 would reduce potential impacts to a less-than-significant level.

**Cultural Resources**

As the development footprint for the Reduced Project Alternative is similar to that of the proposed project, potential impacts associated with this alternative would likely be the same. Because of the known archaeological resource sites on the proposed project and Reduced Project Alternative site and the proximity of the site CA-SDI-5340, also known as the Dead Horse Canyon, there is potential for project-related significant impacts on an archaeological resource. While no significant impacts on known tribal resources have been identified, there is potential for the proposed project to result in impacts on unknown subsurface tribal resources during grading. Mitigation measures CR-1 through CR-8 would reduce potential impacts to less than significant.

**Geology and Soils**

Similar to the proposed project, the Reduced Project Alternative would encounter potentially significant impacts related to soil stability. Vertical shafts and horizontal adits from historical mine-related excavations, as well as existing fills, pose a soil stability hazard on the residential development site. Over-steepened graded fill slopes and existing loose fills on the SAP improvements site may need re-grading. Mitigation measures GEO-1 and GEO-2 would reduce potential impacts to a less-than-significant level.

**Hazards and Hazardous Materials**

Hazards and hazardous materials impacts associated with the proposed project would be similar to the Reduced Project Alternative. Compliance with all applicable regulations would reduce potential impacts related to the routine transport, use or disposal of hazardous

materials during construction and operation to a less-than-significant level. The existing structures on-site have the potential to contain asbestos and lead. As such, like the project, demolition under this alternative could result in lead- and asbestos-containing materials becoming airborne and inhalable. Like the proposed project, the Reduced Project Alternative would implement mitigation measures HAZ-1 and HAZ-2 to reduce these impacts. Similar to the proposed project, the Reduced Project Alternative is expected to have less-than-significant impacts related to emergency response and wildland fires.

**Land Use**

The Reduced Project Alternative would be similar to the proposed project, but have 31 housing units instead of 55. Like the proposed project, it would be located on a largely vacant property and new roads and roadway improvements would be within existing rights-of-way. Most of this land identified for future dedication to accommodate the proposed SAP improvements is vacant. Therefore, like the project, this alternative would not result in significant impacts relative to the physical division of an established community; land use barriers; disruption of the physical arrangement of the area, or preclusion of development on surrounding parcels.

Like the proposed project, the Reduced Project Alternative would be consistent with the General Plan Land Use Designation, Zoning Ordinance, and with the goals of the General Plan Mobility Element. It would not conflict with an HCP. Impacts would be less significant, similar to the project.

**Noise**

As with the project, excessive noise impacts on off-site land uses from the Reduced Project Alternative would not exceed any City noise ordinance limits. Impacts would be less than significant and incrementally less than the project.

Similar to the project, the Reduced Project Alternative would place residences along Bear Valley Parkway at a distance that could result in a significant excessive noise impact (i.e. greater than 60 dBA CNEL) from traffic noise. Although the Reduced Project Alternative would construct fewer houses within the area of the project site that would be impacted by Bear Valley Parkway roadway noise, the Reduced Project Alternative would still need to adopt mitigation measures NOI-1 and NOI-2 to reduce excessive noise impacts to a less-than-significant level.

The Reduced Project Alternative would entail similar construction activities as the proposed project. Construction activities would generate temporary ground-borne vibration close enough to existing off-site residences for impacts to be significant. Construction of the Reduced Project Alternative has the potential to generate temporary construction-related noise greater than the City's significance threshold (75 dBA) at off-site existing residences. The Reduced Project Alternative would need to implement mitigation measures NOI-3, NOI-4 and NOI-5 to reduce construction noise and vibration impacts to less-than-significant levels.

As with the project, the Reduced Project Alternative would generate new traffic on surrounding local roadways. However, this alternative would generate fewer trips than would the project. The proposed project would not result in a potentially significant traffic noise impact and neither would the Reduced Project Alternative.

**Transportation and Traffic**

As with the proposed project, the Reduced Project Alternative would generate new traffic on surrounding local roadways. However, this alternative would generate fewer trips than would the proposed project. Direct and cumulative circulation system impacts on surrounding local roadways and intersections would be less under this alternative than for the proposed project.

While not required by CEQA, an analysis of cumulative circulation system impacts was completed for a reduced project alternative (Linscott Law & Greenspan 2016a) for informational purposes. As shown in Table 5-3, a project alternative could construct up to 37 residential units on the project site before it would start to have an LOS impact on the Bear Valley Parkway / Encino Drive intersection.[6] This hypothetical alternative can be referred to as the "No Impact Alternative." Thus, the Reduced Project Alternative, which proposes 31 residential units on the project site, would avoid the project's significant impacts on nearby circulation systems.

**Table 5-3 Reduced Project Alternative Intersection Operation**

| Intersection | Peak Hour | Existing + Cumulative | | Existing + Cumulative + Proposed Project (55 Units) | | | Existing + Cumulative + No Impact Alternative (37 Units) | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Delay | LOS | Delay | LOS | Δ | Delay | LOS | Δ |
| Bear Valley Parkway / | AM | 57.2 | F | 61.1 | F | 3.9 | 59.2 | F | 2.0 |
| Encino Drive | PM | 28.7 | D | 35.4 | E | 6.7 | 30.6 | D | 1.9 |

Source: Linscott Law & Greenspan 2016a.
LOS=level of service; delay = seconds of delay per vehicle; Δ = residential development project-related increase in delay

Furthermore, the Reduced Project Alternative would include the full-width Bear Valley Parkway SAP improvements. As described in Chapters 2 and 3, the SAP improvements would signalize and realign the Bear Valley Parkway / Encino Drive intersection. This improvement would reduce the delay time at this intersection to LOS C in the AM peak hour and LOS A in the PM peak hour (see Section 3.9). Therefore, the Reduced Project Alternative would have a less-than-significant circulation system impact and would be less than the proposed project.

Similar to the proposed project, the Reduced Project Alternative would result in a less-than-significant impact related to emergency access and transportation hazards, as well as alternative transportation.

[6] The City of Escondido's significance threshold for intersections is a maximum of 2.0 seconds of delay added by the project during peak hour operations, if the intersection operates at Level of Service (LOS) D or worse.

#### 5.3.2.2 Ability to Accomplish Project Objectives

Although the Reduced Project Alternative would provide a residential development that is consistent with the General Plan policies, it would not maximize single-family residential units to assist in fulfilling the City's Regional Housing Needs Allocation and to maximize tax generation revenues. Therefore, the Reduced Project Alternative would not meet the first project objective. This alternative would, however, meet the other project objectives because it would be designed to appeal to the area's growing demand for high quality one and two story single-family residential housing; the site plan footprint would minimize impacts to jurisdictional waters and other biological resources; and existing landforms and the existing drainage crossing would be maintained. The Specific Alignment Plan for full-width roadway improvements to Bear Valley Parkway would be implemented under the Reduced Project Alternative with no differences from the improvements proposed by the project.

## 5.4 Environmentally Superior Alternative

According to Section 15126.6(e)(2) of the CEQA Guidelines, an EIR is required to identify the environmentally superior alternative, which is the alternative having the potential for the fewest significant environmental impacts, from among the range of reasonable alternatives that are evaluated in the EIR. Table 5-1, Comparison of Alternatives – Environmental Impacts, provides a summary comparison of the alternatives evaluated in this EIR with the purpose of highlighting whether the alternative would result in a similar, greater, or lesser impact compared to the proposed project.

As shown in the table, the No Project Alternative would be the environmentally superior alternative because it avoids potentially significant impacts related to biological resources, cultural resources, geology and soils, hazards and hazardous materials, noise, and transportation/traffic. However, the No Project Alternative would not accomplish the first, second or sixth project objectives.

CEQA Section 15126.6(e)(2) also states that "the EIR shall also identify an environmentally superior alternative among the other alternatives" if the environmentally superior alternative is the "no project" alternative. The other environmentally superior alternative would be the Reduced Project Alternative, as it would avoid the potentially significant traffic impact at the Bear Valley Parkway / Encino Drive intersection related to the proposed residential development. The Reduced Project Alternative would only avoid the significant traffic impacts, and would not avoid the project's potentially significant impacts related to biological resources, cultural resources, geology and soils, hazardous materials, or noise. Furthermore, the Reduced Project Alternative would not accomplish the first project objective which calls for maximizing the single-family residential units on the project site to assist in fulfilling the City's Regional Housing Needs Allocation and to maximize tax generation revenues.

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# Chapter 7. Preparers

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**Drainage Study – Hunsaker & Associates**
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**Priority Development Project SWQMP – Hunsaker & Associates**
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**Limited Phase II Environmental Site Assessment – Vinje & Middleton Engineering, Inc.**
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**Addendum to Limited Phase II Environmental Site Assessment – Vinje & Middleton Engineering, Inc.**
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**Report of Soil Removal Action – Vinje & Middleton Engineering, Inc.**
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**Acoustical Site Assessment – Investigative Science and Engineering, Inc.**
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**Construction Vibration Assessment – Investigative Science and Engineering, Inc.**
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**Noise Memo for SAP Project Component – Harris & Associates**
Sharon Toland, Project Manager
Haley Johnson, Environmental Analyst

**Traffic Impact Analysis – Linscott, Law & Greenspan, Engineers**
Chris Mendiara, Associate Principal

**Reduced Project Alternative Memorandum – Linscott, Law & Greenspan, Engineers**
Chris Mendiara, Associate Principal

**Traffic Supplemental Memo for SAP – Linscott, Law & Greenspan, Engineers**
Chris Mendiara, Associate Principal

## Plans

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**Landscape Plans – gmp Landscape Architecture & Planning**
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# Appendices included on separate flash drive or CD

# Appendix A Notice of Preparation and Responses

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Bill Martin, AICP
Director of Community Development
Planning Division
201 North Broadway, Escondido, CA 92025
Phone: 760-839-4671 Fax: 760-839-4313

November 28, 2016

TO: Interested Agencies

SUBJECT: Notice of Preparation of a Draft Environmental Impact Report

Project Title: 661 Bear Valley Parkway Residential Project

Project Applicant: Speith & Wohlford, Inc.

The City of Escondido will be the Lead Agency and will prepare an Environmental Impact Report (EIR) for the project identified above. We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

The project description, location and potential environmental effects are contained in the following Notice of Preparation (NOP). An Initial Study is provided in an attachment to the NOP.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to Ann Dolmage, Associate Planner, (760) 839-4548; adolmage@escondido.org at the address shown below. We will need the name of a contact person in your agency.

Sincerely,

Bill Martin, AICP
Director of Community Development
City of Escondido Planning Division
201 North Broadway
Escondido, CA 92025
(760) 839-4671

Sam Abed, Mayor Michael Morasco, Deputy Mayor Olga Diaz Ed Gallo John Masson

# NOTICE OF PREPARATION

# ENVIRONMENTAL IMPACT REPORT
# 661 BEAR VALLEY PARKWAY PROJECT

## SUMMARY

The proposed project consists of the 661 Bear Valley Parkway Residential Development located on 40.62 acres on the southeast corner of the intersection of Bear Valley Parkway and Encino Drive in the City of Escondido, California (Figure 1). The property is presently undeveloped except for one single-family residential structure with an associated driveway (Figure 2). The remaining area primarily consists of land disturbed from previous agricultural activities, and a riparian corridor along the southern boundary. The residential development would consist of entitlements to subdivide the site into 55 single-family residential lots, seven open space lots, one recreation lot, and two private street lots (Figure 3). Off-site improvements include frontage improvements along Bear Valley Parkway consisting of curb, gutter, sidewalk, parkway, bike lane, and a full travel lane with transitions that would connect with existing improvements to the north and south of the project site. These improvements are collectively referred to as the residential development component (residential development) of the proposed project. Required project approvals include a Tentative Map; Preliminary/Master/Precise Development Plan; a rezone from RE-20 (Residential Estates, 20,000-square-foot minimum lot size) to PD-R (Planned Development Residential); Grading Exemptions; roadway Design Standard Waivers and a Specific Alignment Plan for half-width frontage improvements to Bear Valley Parkway adjacent to the residential site.

A full-width Specific Alignment Plan (SAP) for improvements to Bear Valley Parkway is an additional, separate component of the project, referred to as the SAP improvements. The SAP improvements would address goals in the City's General Plan Mobility Element such as bicycle and pedestrian access, and would add elements to Bear Valley Parkway that would make it compliant with infrastructure requirements for classification as a Major Road, including a median, bike lanes and sidewalks. The SAP would also improve the geometry of the intersection at Bear Valley Parkway and Encino Drive and consist of widening and improving Bear Valley Parkway adjacent to the proposed residential development between the intersection with Sunset Drive/Ranchito Drive to the south and the City boundary to the north. The SAP improvements would convert Bear Valley Parkway into a four-lane Major Road and realign the intersection of Bear Valley Parkway with Encino Drive (Figures 4a, 4b, 4c and 4d). Design exceptions are required to preserve sensitive riparian habitat located between the site and the roadways.

Under the requirements of the California Environmental Quality Act (CEQA) and its Guidelines, the City of Escondido is the Lead Agency for environmental review and must evaluate the potentially significant effects of the proposed project. An Environmental Impact Report (EIR) will be prepared to assess the proposed project's effects on the environment, identify potentially significant impacts, and identify feasible mitigation measures to reduce or eliminate potentially significant impacts.

This Notice of Preparation (NOP), and accompanying Initial Study, are being circulated pursuant to California Resources Code Section 21153(a) and CEQA Guidelines Section 15082. Public agencies and the public are invited to comment on the proposed scope and content of the environmental information to be included in the EIR. The Initial Study is available online at: https://www.escondido.org/planning.aspx

**A 30-day comment period is provided for the public to send written comments to the City. The comment period begins on November 28, 2016, and ends on December 30, 2016. All comments must be received by 5:00 p.m. on December 30, 2016, and be directed to:**

Ann Dolmage
Associate Planner
City of Escondido Planning Division
201 North Broadway
Escondido, CA 92025
(760) 839-4548
adolmage@escondido.org

## ENVIRONMENTAL SETTING

The project site is an approximately 41-acre, tear-shaped site located in the eastern part of the City of Escondido. The property is addressed 661 Bear Valley Parkway. The site is currently undeveloped with the exception of a single-family home and associated driveway located in the northern portion of the site. The site is generally bound by Bear Valley Parkway, single-family residential uses, and vacant parcels to the north; Choya Canyon Road, single-family residential uses, and vacant land to the east; single-family residential uses and vacant parcels to the south; and Bear Valley Parkway, single-family residential uses, and a church to the west. Regional access to the site is provided by Interstate 15, State Route 78 (SR-78), and Bear Valley Parkway. The adjacent areas located immediately north and east of the site are located within unincorporated San Diego County.

## PROJECT DESCRIPTION

### 661 Bear Valley Parkway Residential Development Component

The residential development would entitle a new single-family residential subdivision consisting of 55 residential lots ranging from approximately 10,000 square feet to 24,500 square feet. The one- or two-story homes would include a minimum of 1,000 square feet of living space in accordance with the minimum size requirements established in the Escondido Zoning Ordinance (Chapter 33 of the City's Municipal Code). With the exclusion of the Bear Valley Parkway dedication area, the project net density would be 1.38 units per acre.

The residential development also includes eight open space lots (Open Space Lots "A" to "H") that total 20.02 acres. Seven of these open space lots would remain undeveloped and would consist of HOA slopes, basins or fuel modification areas. Open Space Lot "E" would be developed into a 0.24-acre pocket park or other similar recreational use.

Residential access to and from the residential development site would be provided via a single driveway extending east from the existing Zlatibor Ranch Road and Bear Valley Parkway intersection. The intersection would be signalized as part of the residential development and would include an entry monument sign. A secondary emergency access driveway would be provided off of Bear Valley Parkway at the southwestern portion of the project site. Interior private streets would be compliant with American Association of State Highway and Transportation Officials (AASHTO) standards, although design exceptions may be needed from the City to allow alternative street center line radiuses.

The residential development would provide half-width frontage improvements on the eastern side of Bear Valley Parkway which would include adding a north-bound travel lane for approximately 2,600 feet as well as a curb, gutter, sidewalk, parkway, and bike lane. The proposed improvements would be designed to transition to the existing roadway facilities to the north and south.

Project construction would require grading approximately 33 acres of the site and the off-site improvement area, with cut and fill balanced on site. Cut would extend up to 38 feet and the maximum fill would be 58 feet, with grading exemptions required for four proposed grading areas. Slope inclination of cut slopes would not exceed two-to-one (2:1). The residential development site would be landscaped with a combination of trees, shrubs, plants, groundcover, turf and hardscape elements. The landscape design would encourage use of drought-tolerant plants, drip irrigation and micro spray systems, use of reclaimed water, and minimal use of turf.

Project utilities construction would include the extension of gas and electric transmission facilities, sewer and water pipelines, and communications facilities from the immediate vicinity on to the project site. Project runoff would be directed toward two proposed bioretention basins on site.

The project is anticipated to be developed over a number of phases, with the construction schedule ultimately being determined by market demand. It is expected that construction activities would include demolition of the existing residential structure, site preparation and grading, construction, paving, and architectural coating application. The preliminary construction phase would include grading and off-site public improvements, followed by construction of homes in one or more phases. Overall, construction is anticipated to take three years.

**Bear Valley Parkway Full-Width Specific Alignment Plan Component**

The Specific Alignment Plan (SAP) identifies full-width improvements for Bear Valley Parkway from Sunset Drive to the City boundary, including the reconfiguration of the Bear Valley Parkway/Encino Drive intersection. The residential development would include the widening improvements on the east side of Bear Valley Parkway along the proposed development frontage, as described above. In addition, the SAP identifies improvements to the south of the proposed residential development to Sunset Drive and along southbound Bear Valley Parkway.

Recommended SAP improvements include extension of the right of way to include another travel lane, bike lane, sidewalk, retaining wall, raised median, curb and gutter, and relocated utility poles, fences, and hardscape. Existing curb and sidewalk on both sides of Zlatibor Ranch Road would be matched. Runoff from the SAP improvements would be captured in a vegetated swale, a rain garden, and street trees.

**DISCRETIONARY ACTIONS**

According to Sections 15050 of the CEQA Guidelines, the City of Escondido is designated as the Lead Agency for the project and, as such, will be responsible for the approval or denial of the discretionary actions associated with the project under the jurisdiction of the City. The major discretionary actions of the residential development component of the project are:

- Tentative Map Approval
- Preliminary/Master/Precise Development Plan
- Rezone from RE-20 (Residential Estates, 20,000-square-foot minimum lot size) to PD-R (Planned Development Residential)
- Grading Exemptions for four areas would be required per Escondido Municipal Code, Chapter 33, Article 55, Grading and Erosion Control, Section 33-1066, Design Criteria.
- Roadway Design Standard Waivers
- Specific Alignment Plan for half-width improvements to Bear Valley Parkway

The major discretionary actions of the SAP component of the project are:

- Development Agreement
- Specific Alignment Plan for full-width improvements to Bear Valley Parkway

Additionally, the following agencies must take the associated discretionary actions for the proposed project's completion:

San Diego Regional Water Quality Control Board (RWQCB)

- National Pollutant Discharge Elimination System (NPDES) Construction Activities Storm Water General Permit
- Clean Water Act Section 401 Water Quality Certification

U.S. Army Corps of Engineers (USACE)

- Clean Water Act Nationwide 39 Section 404 Permit

California Department of Fish and Wildlife (CDFW)

- California Fish and Game Code Section 1602 Streambed Alteration Agreement

**TOPICS TO BE ANALYZED IN THE EIR**

An Initial Study was prepared for the project in accordance with Section 15063 of the CEQA Guidelines and is included as Attachment A to this NOP. As stated in Section 15063(c)(3), one of the purposes of an Initial Study is to focus the EIR on potentially significant impacts of the project. Based on the results of the attached Initial Study, the EIR will address potential direct and cumulative impacts associated with the environmental issues listed below.

- Aesthetics
- Agriculture Resources
- Biological Resources
- Cultural Resources (Including Tribal Resources)
- Geology and Soils
- Hazards and Hazardous Materials
- Land Use and Planning
- Noise
- Transportation and Traffic

Detailed analysis will be conducted to ascertain that proposed project's effects on the environment and the relative degree of impact prior to implementation of mitigation measures. Mitigation measures will be prescribed for those impacts determined to be significant with the purpose of eliminating the impact or reducing the impact to the maximum extent feasible. Analysis of alternatives to the proposed project, including the No Project Alternative, will be included in the EIR.

**RESPONSIBLE AND TRUSTEE AGENCIES**

Responsible agencies are those agencies that are not the Lead Agency, but also have discretionary approval authority over one or more discretionary actions involved with the development of a proposed project. Trustee agencies are state agencies that have jurisdiction by law over natural resources affected by a proposed project that are held in trust for the people of the State of California. The proposed project's responsible and trustee agencies identified at this time are listed below.

San Diego Regional Water Quality Control Board (RWQCB)

U.S. Army Corps of Engineers (USACE)

California Department of Fish and Wildlife (CDFW)

## ENVIRONMENTAL PROCEDURES

The NOP for the proposed project will be submitted to the State Clearinghouse, which will forward it to potential Responsible Agencies and Trustee Agencies. Other interested parties that may have permit authority or have specifically requested notification of the project also will receive a copy of the NOP.

After the 30-day review period for the NOP is complete and all comments are received, a draft EIR will be completed in accordance with CEQA, as amended (California Code of Regulations Section 15000 et seq.). Once the Draft EIR is complete, it will be made available for public review and comment. Copies of the Draft EIR will be mailed directly to those agencies commenting on the NOP and also will be available for review at the City of Escondido Planning Division, 201 North Broadway, Escondido, California.

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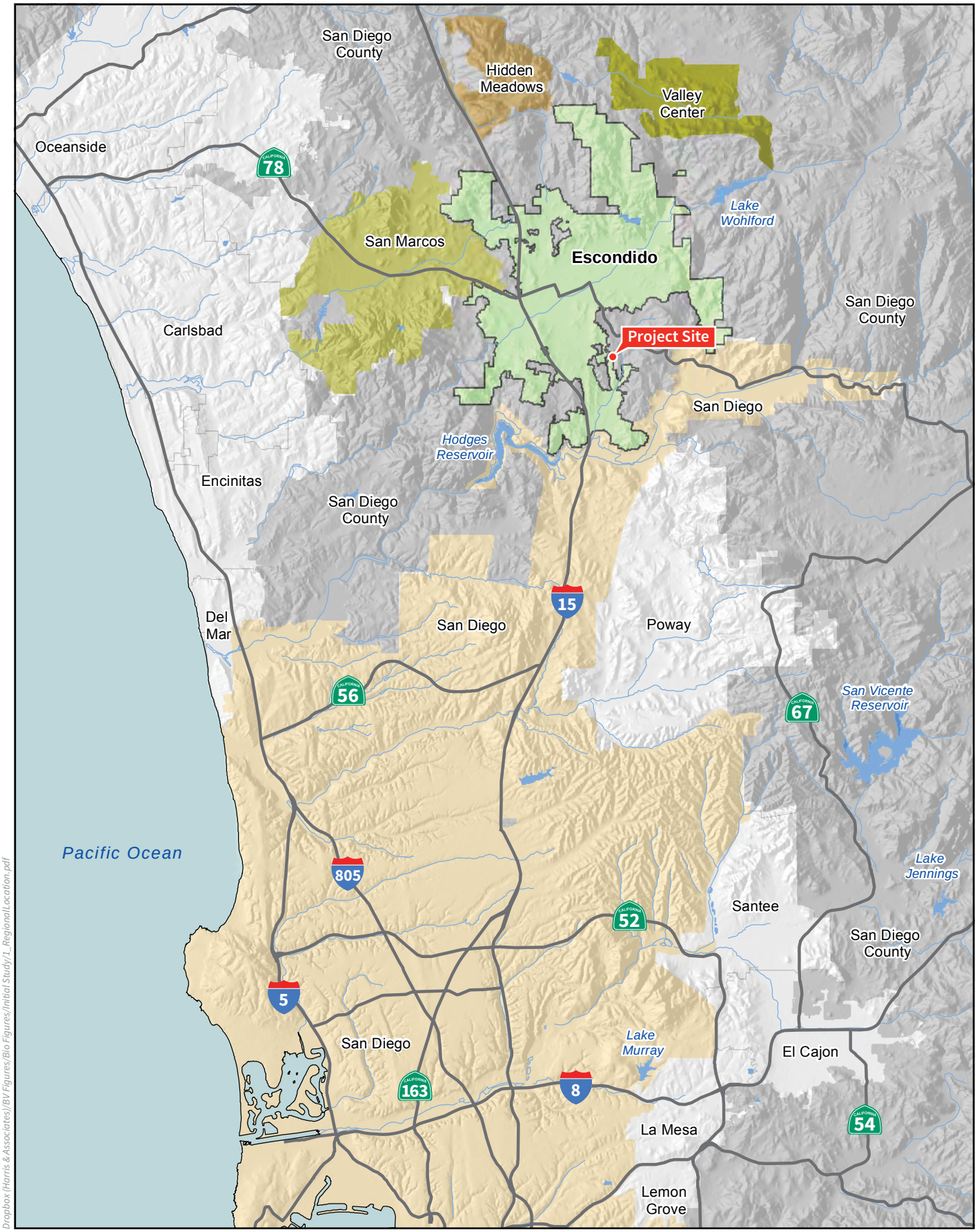


Source: City of Escondido 2012

Harris & Associates

**Figure 1**
Regional Location

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*Source: Google Earth 2016*

Harris & Associates

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**Figure 2**
Project Vicinity

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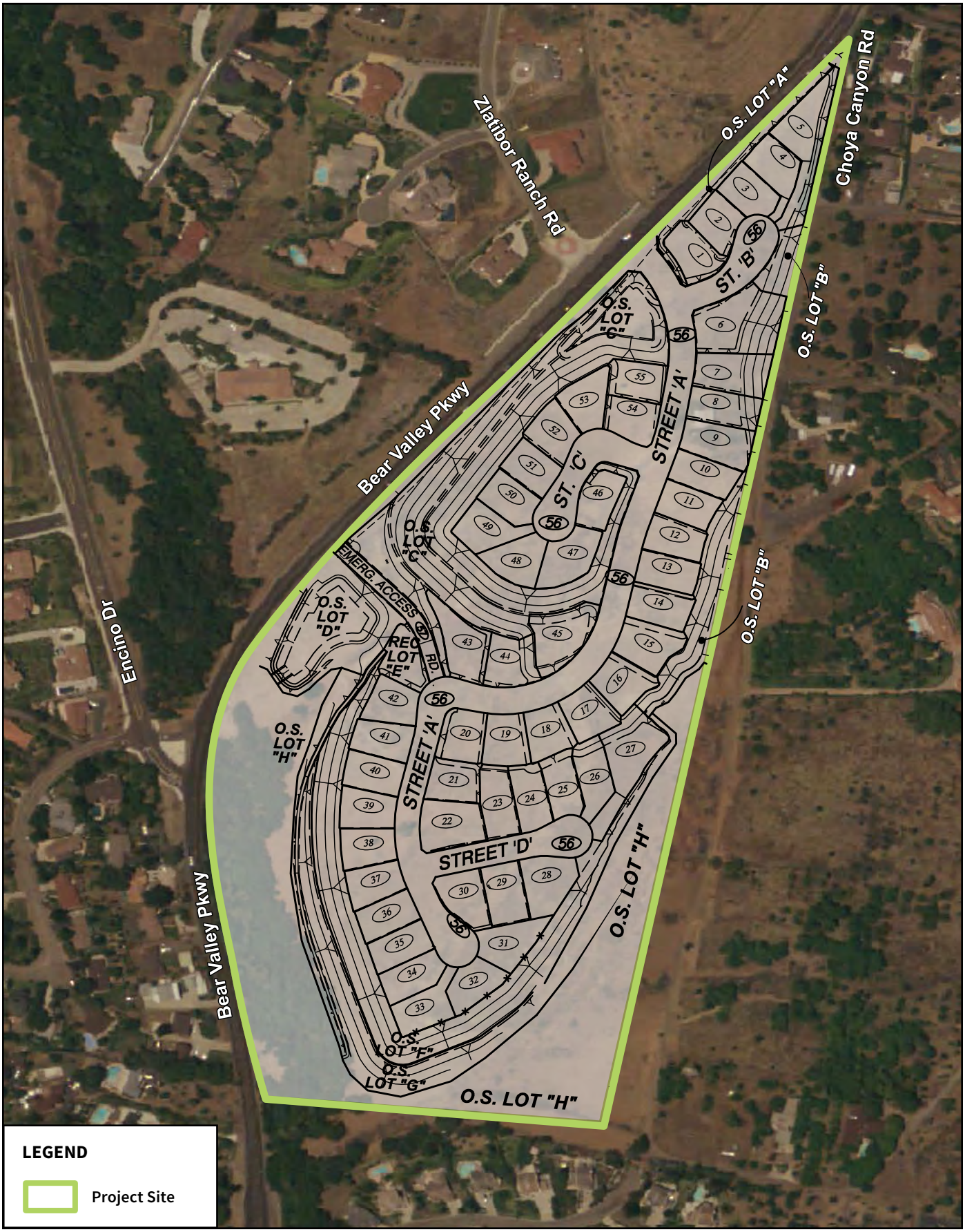


Source: Hunsaker & Associates 2016a

Harris & Associates

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**Figure 3**
Residential Development Site Plan

*Note: All drawings are approximate.*

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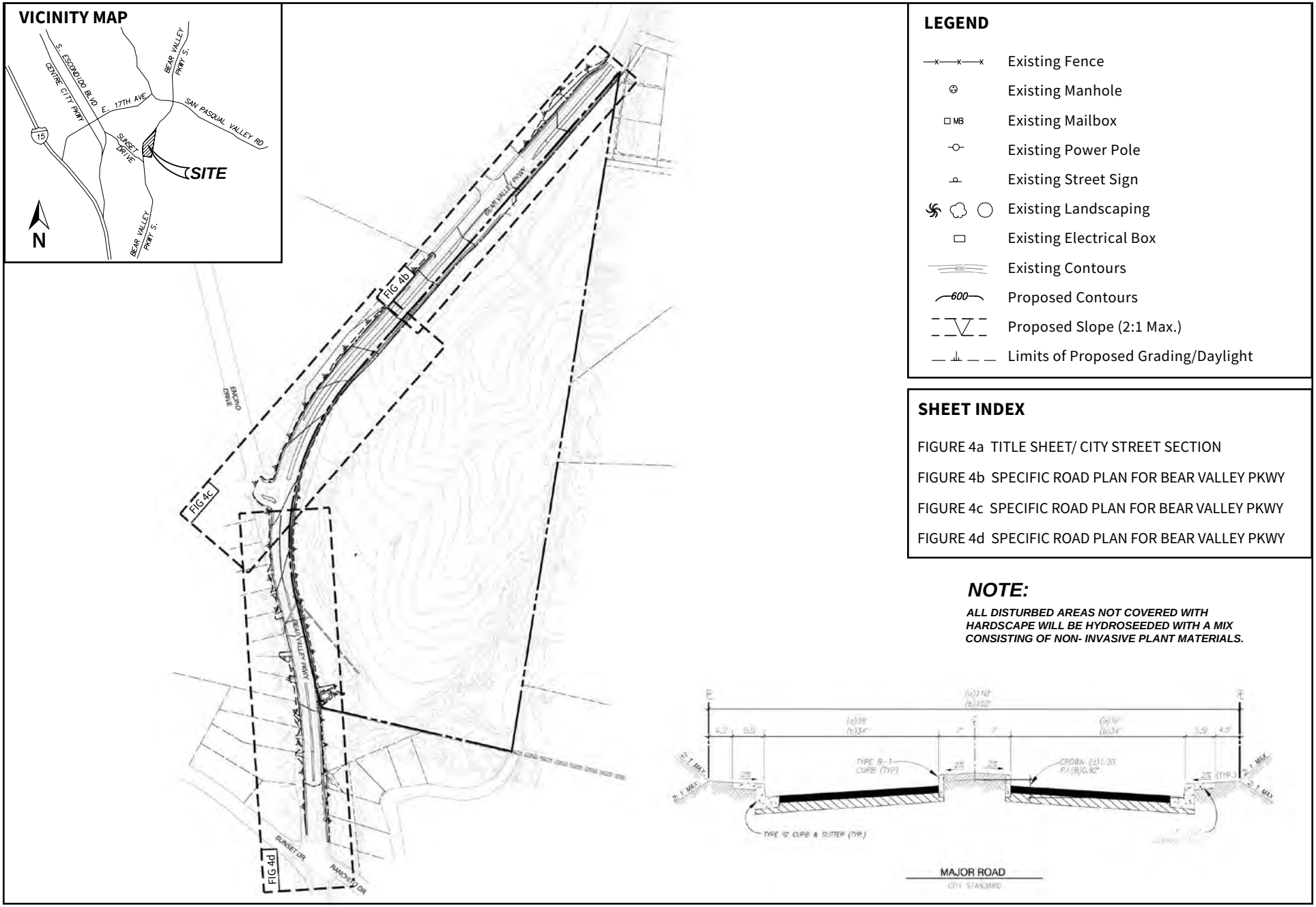


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**Figure 4a**
Bear Valley Parkway Full-Width SAP Improvements

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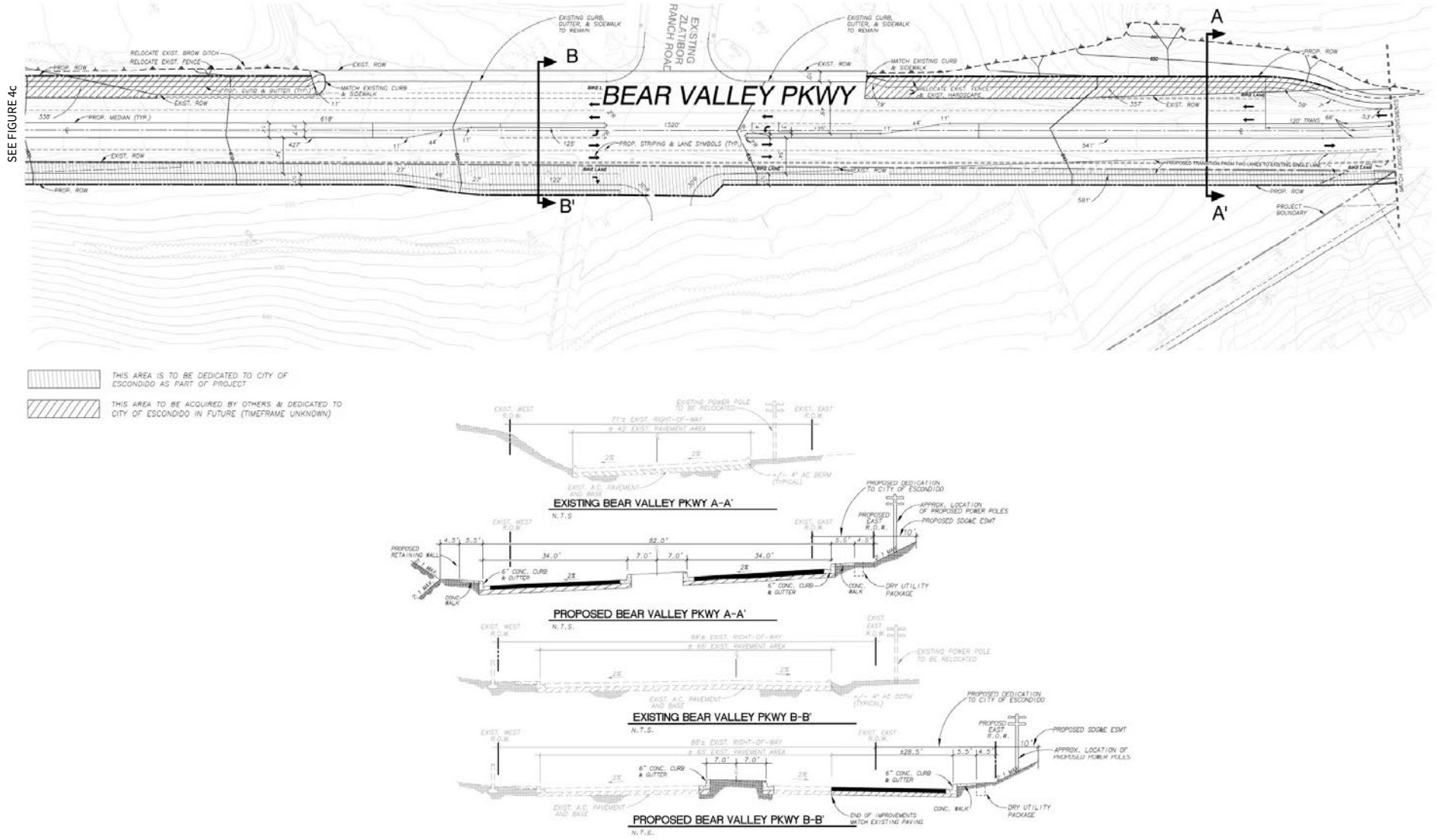


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**Figure 4b**
Bear Valley Parkway Full-Width SAP Improvements

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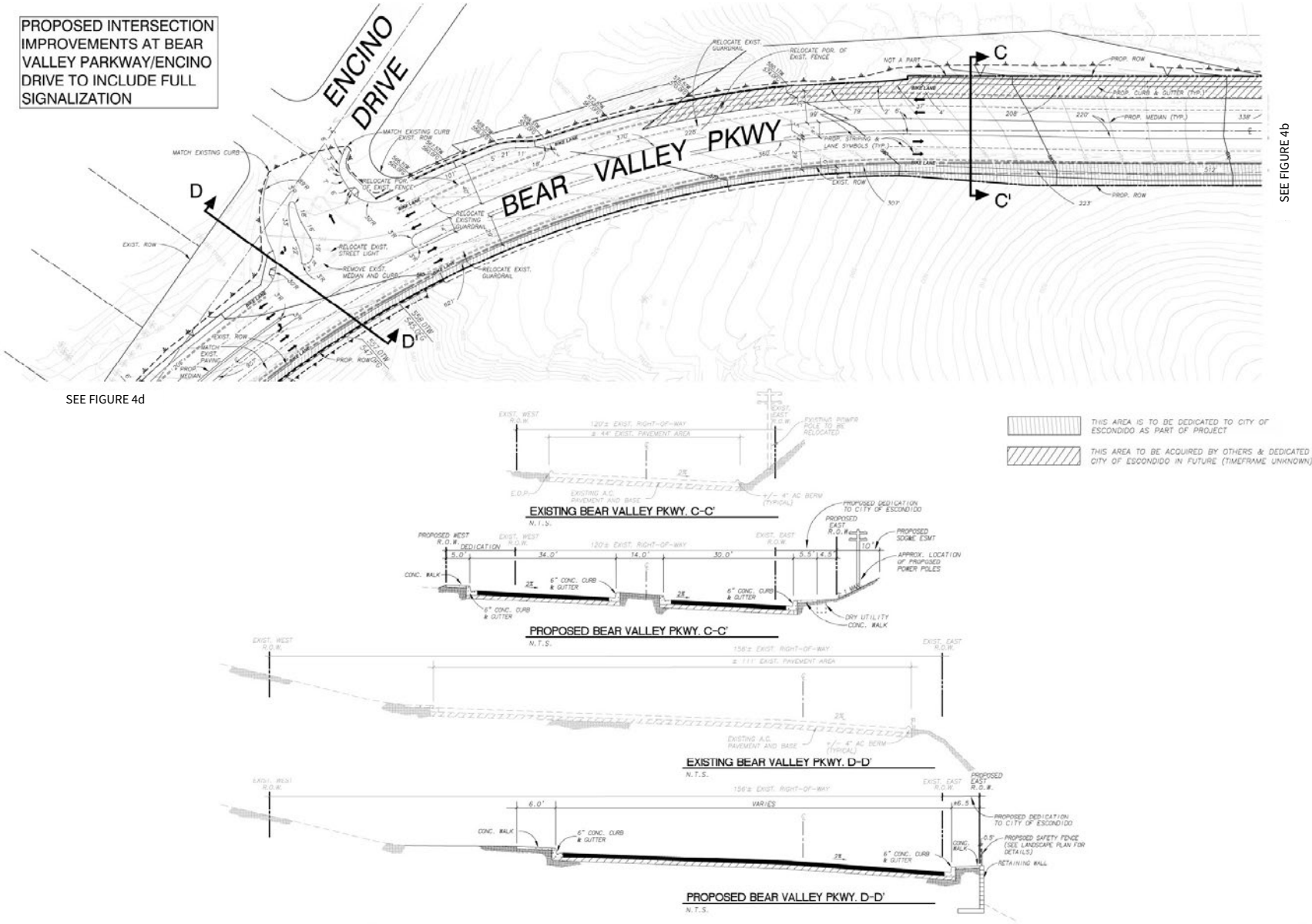


*Data/Departments/MarCom/_COMMS EXTERNAL/GRAPHICS/BD Proposals/Bear Valley EIR Figures*

*Source: City of Escondido 2016*

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**Figure 4c**
Bear Valley Parkway Full-Width SAP Improvements

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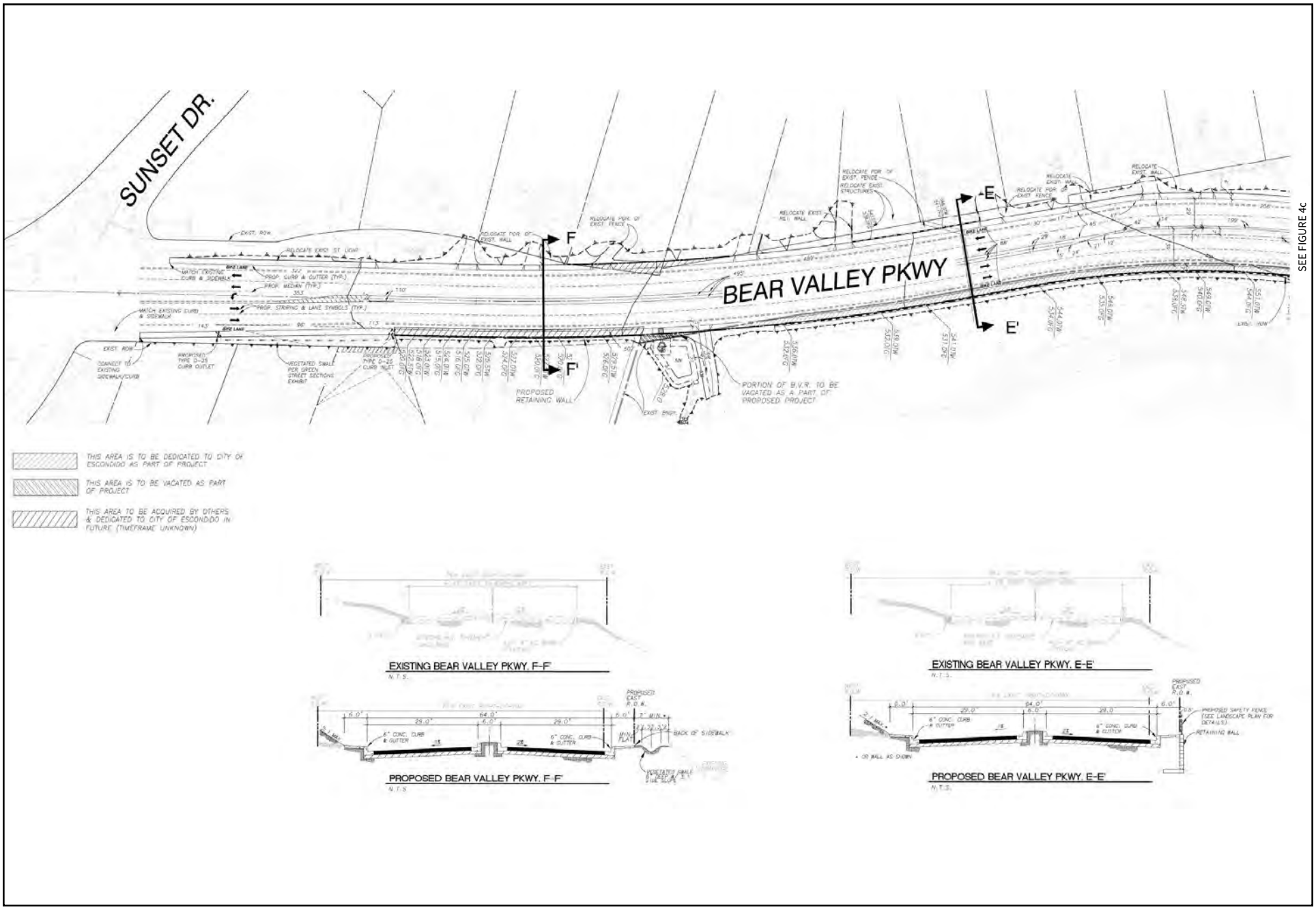


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*Source: City of Escondido 2016*

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**Figure 4d**
Bear Valley Parkway Full-Width SAP Improvements

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**CITY OF ESCONDIDO**
**Planning Division**
**201 North Broadway**
**Escondido, CA 92025-2798**
**(760) 839-4671**
**www.escondido.org**

# Environmental Checklist Form (Initial Study Part II)

1. Project title and case file number: 661 Bear Valley Parkway, City File No. SUB 15-0002
2. Lead agency name and address: City of Escondido, 201 North Broadway Escondido, CA 92025-2798
3. Lead agency contact person name, title, phone number and email: Ann Dolmage, Associate Planner, (760) 839-4548, adolmage@escondido.org
4. Project location: 661 Bear Valley Parkway, Escondido CA
5. Project applicant's name, address, phone number and email: Spieth & Wohlford, P.O. Box 5005 #17, Rancho Santa Fe, CA
6. General Plan designation: Estate II
7. Zoning: RE-20 (proposed PD-R)
8. Description of project: (Describe the whole action involved, including, but not limited to, later phases of the project and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)
   55 single-family units, park, open space, and associated infrastructure. Roadway improvements. (See attachment)
9. Surrounding land uses and setting (briefly describe the project's surroundings):
   Primarily residential and open space (See attachment)
10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement).
    RWQCB, CDFW, and USACE
11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

    All persons listed by the Native American Heritage Commission were contacted on March 24, 2016. As of November 2016, responses from three of the tribal contacts (Pauma Band of Luiseño Indians, the Viejas Band of Kumeyaay Indians, and the Soboba Band of Luiseño Indians) were received. Furthermore, pursuant to AB 52, the Rincon Band of Luiseño Indians, the San Luis Rey Band of Mission Indians, and the Soboba Band of Luiseño Indians were notified regarding the proposed project in August 2015. The Rincon Band of Luiseño Indians and the San Luis Rey Band of Mission Indians both requested formal consultation. The Soboba Band of Luiseño Indians did not have any specific concerns regarding the proposed project and deferred to the Pauma Band of Luiseño Indians and the Rincon Band of Luiseño Indians. Consultation is underway.

    Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below potentially would be affected by this project involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- ☑ Aesthetics
- ☑ Biological Resources
- ☐ Greenhouse Gas Emissions
- ☑ Land Use/Planning
- ☐ Recreation
- ☐ Utilities/Service Systems
- ☑ Agricultural Resources
- ☑ Cultural Resources
- ☑ Hazards & Hazardous Materials
- ☐ Mineral Resources
- ☐ Population/Housing
- ☑ Transportation/Traffic
- ☑ Mandatory Findings of Significance
- ☐ Air Quality
- ☑ Geology and Soils
- ☐ Hydrology/Water Quality
- ☑ Noise
- ☐ Public Services
- ☑ Tribal Cultural Resources

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION shall be prepared.

☐ I find that, although the proposed project might have a significant effect on the environment, there would not be a significant effect in this case because revisions in the project have been made, or agreed to, by the project proponent. A MITIGATED NEGATIVE DECLARATION shall be prepared.

☐ I find that the proposed project might have a significant effect on the environment and/or deficiencies exist relative to the City's General Plan Quality of Life Standards, and the extent of the deficiency exceeds the levels identified in the City's Environmental Quality Regulations pursuant to Zoning Code Article 47, Section 33-924 (b), and an ENVIRONMENTAL IMPACT REPORT shall be required.

☑ I find that the proposed project might have a "potentially significant impact" or "potentially significant unless mitigated impact" on the environment, but at least one effect: a.) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and b.) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT shall be required, but it shall analyze only the effects that remain to be addressed.

☐ I find that, although the proposed project might have a significant effect on the environment, no further documentation is necessary because all potentially significant effects: (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project.

Signature

November 17, 2016

Date

Bill Martin, Director Community Development

Printed Name and Title

EVALUATION OF ENVIRONMENTAL IMPACTS:

1. This section evaluates the potential environmental effects of the proposed project, generally using the environmental checklist from the State CEQA Guidelines as amended and the City of Escondido Environmental Quality Regulations (Zoning Code Article 47). A brief explanation in the Environmental Checklist Supplemental Comments is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. All answers must take into account the whole action involved, including off-site, on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts and mitigation measures. Once the lead agency has determined that a particular physical impact might occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. The definitions of the response column headings include the following:

   A. “Potentially Significant Impact" applies if there is substantial evidence that an effect might be significant. If there are one or more "Potentially Significant Impact" entries once the determination is made, an EIR shall be required.

   B. “Less Than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section 2 below, "Earlier Analyses," may be cross-referenced). Measures incorporated as part of the Project Description that reduce impacts to a “Less than Significant” level shall be considered mitigation.

   C. “Less Than Significant Impact” applies where the project creates no significant impacts, only less than significant impacts.

   D. “No Impact" applies where a project does not create an impact in that category. “No Impact” answers do not require an explanation if they are adequately supported by the information sources cited by the lead agency which show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. Earlier Analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or Negative Declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   A. Earlier Analysis Used. Identify and state where it is available for review.

   B. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of an adequately analyzed earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   C. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

3. Lead agencies are encouraged to incorporate references to information sources for potential impacts into the checklist (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

4. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

5. The explanation of each issue should identify the significance of criteria or threshold, if any, used to evaluate each question, as well as the mitigation measure identified, if any, to reduce the impact to less than significant.

**ISSUES:**

| | | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|---|
| **I.** | **AESTHETICS** Would the project: | | | | |
| | a. Have a substantial adverse effect on a scenic vista? | ☑ | ☐ | ☐ | ☐ |
| | b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | ☑ | ☐ | ☐ | ☐ |
| | c. Substantially degrade the existing visual character or quality of the site and its surroundings? | ☑ | ☐ | ☐ | ☐ |
| | d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | ☑ | ☐ | ☐ | ☐ |
| **II.** | **AGRICULTURAL RESOURCES** In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland.<br>Would the project: | | | | |
| | a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency or (for annexations only) as defined by the adopted policies of the Local Agency Formation Commission, to non-agricultural use? | ☑ | ☐ | ☐ | ☐ |
| | b. Conflict with existing zoning for agricultural use, or a Williamson Act contract? | ☑ | ☐ | ☐ | ☐ |
| | c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? | ☐ | ☐ | ☐ | ☑ |
| | d. Result in the loss of forest land or conversion of forest land to non-forest use? | ☐ | ☐ | ☐ | ☑ |

| | | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|---|
| e. | Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use? | ☑ | ☐ | ☐ | ☐ |
| **III.** | **AIR QUALITY** Where applicable, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project: | | | | |
| a. | Conflict with or obstruct implementation of the applicable air quality plan (or applicable air quality thresholds specified in City of Escondido Zoning Code Article 47)? | ☐ | ☐ | ☑ | ☐ |
| b. | Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | ☐ | ☐ | ☑ | ☐ |
| c. | Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | ☐ | ☐ | ☑ | ☐ |
| d. | Expose sensitive receptors to substantial pollutant concentrations? | ☐ | ☐ | ☑ | ☐ |
| e. | Create objectionable odors affecting a substantial number of people? | ☐ | ☐ | ☑ | ☐ |
| **IV.** | **BIOLOGICAL RESOURCES** Would the project: | | | | |
| a. | Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? | ☑ | ☐ | ☐ | ☐ |
| b. | Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | ☑ | ☐ | ☐ | ☐ |
| c. | Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | ☑ | ☐ | ☐ | ☐ |

| | | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|---|
| d. | Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | ☑ | ☐ | ☐ | ☐ |
| e. | Conflict with any local policies or ordinances protecting biological resources such as a tree preservation policy or ordinance? | ☑ | ☐ | ☐ | ☐ |
| f. | Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? | ☑ | ☐ | ☐ | ☐ |
| **V.** | **CULTURAL RESOURCES** Would the project: | | | | |
| a. | Cause a substantial adverse change in the significance of a historical. resource as defined in Ä15064.5 (or conflict with applicable historic thresholds specified in City of Escondido Zoning Code Article 47)? | ☑ | ☐ | ☐ | ☐ |
| b. | Cause a substantial adverse change in the significance of an archaeological resource pursuant to Ä15064.5? | ☑ | ☐ | ☐ | ☐ |
| c. | Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | ☐ | ☐ | ☑ | ☐ |
| d. | Disturb any human remains, including those interred outside of dedicated cemeteries? | ☑ | ☐ | ☐ | ☐ |
| **VI.** | **GEOLOGY AND SOILS** Would the project: | | | | |
| a. | Expose people or structures to potentially substantial adverse effects, including the risk of loss, injury, or death involving: | ☐ | ☐ | ☑ | ☐ |
| i. | Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | ☐ | ☐ | ☑ | ☐ |
| ii. | Strong seismic ground shaking? | ☐ | ☐ | ☑ | ☐ |
| iii. | Seismic-related ground failure, including liquefaction? | ☐ | ☐ | ☑ | ☐ |
| iv. | Landslides? | ☐ | ☐ | ☑ | ☐ |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| b. Result in substantial soil erosion or the loss of topsoil? | ☐ | ☐ | ☑ | ☐ |
| c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? | ☑ | ☐ | ☐ | ☐ |
| d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? | ☑ | ☐ | ☐ | ☐ |
| e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? | ☐ | ☐ | ☐ | ☑ |
| **VII. GREENHOUSE GAS EMISSIONS** Would the project: | | | | |
| a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (or conflict with applicable greenhouse gas emissions thresholds specified in City of Escondido Zoning Code Article 47)? | ☐ | ☐ | ☑ | ☐ |
| b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses? | ☐ | ☐ | ☑ | ☐ |
| **VIII. HAZARDS AND HAZARDOUS MATERIALS** Would the project: | | | | |
| a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | ☑ | ☐ | ☐ | ☐ |
| b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | ☑ | ☐ | ☐ | ☐ |
| c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | ☐ | ☐ | ☐ | ☑ |
| d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | ☐ | ☐ | ☐ | ☑ |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| e. For a project located within an airport land-use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in safety hazard for people residing or working in the project area? | ☐ | ☐ | ☐ | ☑ |
| f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? | ☐ | ☐ | ☐ | ☑ |
| g. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan? | ☑ | ☐ | ☐ | ☐ |
| h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? | ☑ | ☐ | ☐ | ☐ |
| **IX. HYDROLOGY AND WATER QUALITY** Would the project: | | | | |
| a. Violate any water quality standards or waste discharge requirements? | ☐ | ☐ | ☑ | ☐ |
| b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? | ☐ | ☐ | ☑ | ☐ |
| c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river in a manner which would result in substantial/increased erosion or siltation on- or off-site? | ☐ | ☐ | ☑ | ☐ |
| d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? | ☐ | ☐ | ☑ | ☐ |
| e. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff? | ☐ | ☐ | ☑ | ☐ |
| f. Otherwise substantially degrade water quality? | ☐ | ☐ | ☑ | ☐ |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| g. Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? | ☐ | ☐ | ☐ | ☑ |
| h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows? | ☐ | ☐ | ☐ | ☑ |
| i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? | ☐ | ☐ | ☐ | ☑ |
| j. Inundation by seiche, tsunami, or mudflow? | ☐ | ☐ | ☐ | ☑ |
| **X. LAND USE PLANNING** Would the project: | | | | |
| a. Physically divide an established community? | ☐ | ☐ | ☐ | ☑ |
| b. Conflict with any applicable land-use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | ☑ | ☐ | ☐ | ☐ |
| c. Conflict with any applicable habitat conservation plan or natural community conservation plan? | ☑ | ☐ | ☐ | ☐ |
| **XI. MINERAL RESOURCES.** Would the project: | | | | |
| a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | ☐ | ☐ | ☑ | ☐ |
| b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land-use plan? | ☐ | ☐ | ☑ | ☐ |
| **XII. NOISE** Would the project result in: | | | | |
| a. Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies (or conflict with applicable noise thresholds specified in City of Escondido Zoning Code Article 47)? | ☑ | ☐ | ☐ | ☐ |

| | | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|---|
| b. | Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels? | ☑ | ☐ | ☐ | ☐ |
| c. | A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | ☑ | ☐ | ☐ | ☐ |
| d. | A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | ☑ | ☐ | ☐ | ☐ |
| e. | For a project located within an airport land-use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | ☐ | ☐ | ☐ | ☑ |
| f. | For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | ☐ | ☐ | ☐ | ☑ |
| **XIII.** | **POPULATION AND HOUSING** Would the project: | | | | |
| a. | Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | ☐ | ☐ | ☑ | ☐ |
| b. | Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☑ | ☐ |
| c. | Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☑ | ☐ |

| | | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|---|
| **XIV.** | **PUBLIC SERVICES** Would the project: | | | | |
| | a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services (or conflict with applicable fire and emergency response time thresholds specified in City of Escondido Zoning Code Article 47)? | ☐ | ☐ | ☑ | ☐ |
| | i. Fire protection? | ☐ | ☐ | ☑ | ☐ |
| | ii. Police protection? | ☐ | ☐ | ☑ | ☐ |
| | iii. Schools? | ☐ | ☐ | ☑ | ☐ |
| | iv. Parks? | ☐ | ☐ | ☑ | ☐ |
| | v. Other public facilities? | ☐ | ☐ | ☑ | ☐ |
| **XV.** | **RECREATION** Would the project: | | | | |
| | a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | ☐ | ☐ | ☑ | ☐ |
| | b. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | ☐ | ☐ | ☑ | ☐ |
| **XVI.** | **TRANSPORTATION/TRAFFIC** Would the project: | | | | |
| | a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths and mass transit (or conflict with applicable traffic thresholds specified in City of Escondido Zoning Code Article 47)? | ☑ | ☐ | ☐ | ☐ |
| | b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? | ☑ | ☐ | ☐ | ☐ |
| | c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? | ☐ | ☐ | ☐ | ☑ |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | ☑ | ☐ | ☐ | ☐ |
| e. Result in inadequate emergency access? | ☑ | ☐ | ☐ | ☐ |
| f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? | ☑ | ☐ | ☐ | ☐ |
| **XVII. TRIBAL CULTURAL RESOURCES** Would the project: | | | | |
| a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: | ☑ | ☐ | ☐ | ☐ |
| i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or | ☑ | ☐ | ☐ | ☐ |
| ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. | ☑ | ☐ | ☐ | ☐ |
| **XVIII. UTILITIES AND SERVICE SYSTEMS** Would the project: | | | | |
| a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | ☐ | ☐ | ☑ | ☐ |
| b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | ☐ | ☐ | ☑ | ☐ |
| c. Require, or result in, the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | ☐ | ☐ | ☑ | ☐ |

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? | ☐ | ☐ | ☑ | ☐ |
| e. Result in a determination by the wastewater treatment provider which serves, or may serve, the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | ☐ | ☐ | ☑ | ☐ |
| f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | ☐ | ☐ | ☑ | ☐ |
| g. Comply with federal, state, and local statutes and regulations related to solid waste? | ☐ | ☐ | ☑ | ☐ |

## XIX. MANDATORY FINDINGS OF SIGNIFICANCE

| | | | | |
|---|---|---|---|---|
| a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number, or restrict the range, of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory? | ☑ | ☐ | ☐ | ☐ |
| b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.) | ☑ | ☐ | ☐ | ☐ |
| c. Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly? | ☑ | ☐ | ☐ | ☐ |
| d. Where deficiencies exist relative to the City's General Plan Quality of Life Standards, does the project result in deficiencies that exceed the levels identified in the Environmental Quality Regulations (City of Escondido Zoning Code Article 47 Section 33-924(a))? | ☐ | ☐ | ☑ | ☐ |

# DRAFT INITIAL STUDY

**Tentative Map/Planned Development/Grading Exemption/Rezone**

**661 Bear Valley Parkway Residential Development**

**Full-Width Specific Plan for the Alignment of Bear Valley Parkway**

**(City File No. SUB 15-0002)**

# ENVIRONMENTAL CHECKLIST SUPPLEMENTAL COMMENTS

An Initial Study Environmental Checklist was prepared for this project. The information contained in the Initial Study Checklist and the associated supplemental comments will be used by the City of Escondido (City) to determine the potential impacts associated with the proposed 661 Bear Valley Parkway Residential Development and the proposed Specific Alignment Plan (SAP) for full-width roadway improvements to Bear Valley Parkway adjacent to the residential development for inclusion in the Notice of Preparation (NOP) pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15082. The City anticipates preparation of an Environmental Impact Report (EIR) for this project.

## INTRODUCTION

This Initial Study provides a preliminary assessment of the environmental impacts of the proposed Tentative Subdivision Map; Rezone; Preliminary, Master and Precise Development Plan; Grading Exemption; roadway Design Standard Waivers and half-width Specific Alignment Plan to develop 55 single-family residential lots, seven open space lots, one recreation lot, and two private street lots on a 40.62-acre property near the intersection of Bear Valley Parkway and Encino Drive in the City of Escondido. These improvements are referred to as the residential development component (residential development) of the proposed project. This Initial Study also provides a preliminary assessment of the environmental impacts of the proposed full-width Specific Alignment Plan to widen and improve Bear Valley Parkway adjacent to the proposed residential development between the intersection with Sunset Drive/Ranchito Drive to the south and the City boundary near the intersection with Choya Canyon Road to the north. These improvements are referred to as the full-width Specific Alignment Plan improvements component (SAP improvements) of the proposed project.

This document is being circulated as a part of the NOP to meet the CEQA requirement to provide the "probable environmental impacts of the project". Affected public agencies and interested persons may provide comments on this document in writing during the 30-day public review period, which is between November 28 and December 30, 2016. Written comments shall be submitted by 5:00 P.M. on December 30, 2016 to the following address:

City of Escondido, Planning Division
201 North Broadway
Escondido, CA 92025-2798

Contact: Ann Dolmage, Associate Planner
Email: adolmage@escondido.org
Phone: (760) 839-4548
Fax: (760) 839-4313

All comments received will be considered with the Final EIR in determining whether to approve the project. A printed copy of this document and associated documents are available at the above address during normal City operation hours during the public review period. In addition, the document is available at the City's website at: https://www.escondido.org/planning.aspx

## PROJECT LOCATION AND ENVIRONMENTAL SETTING

The 40.62-acre residential development site is located at 661 Bear Valley Parkway, Escondido, California (Figure 1). The site is located within the incorporated area of the city on the southeast corner of the intersection of Encino Drive and Bear Valley Parkway (Figures 2 and 3). The residential development site is within Assessor's Parcel Numbers (APNs) 237-131-01 and 237-131-02, but a 0.65-acre portion of APN 237-131-01 located to the west of Bear Valley Parkway is not a part of the project. The property of the proposed residential development, which was used for agriculture and mining prospecting in the past, currently includes a 1,120 square foot (sf) single-family residential structure, disturbed vacant land, drainages, and a riparian corridor. The site for the SAP improvements includes approximately 3,560 linear feet of Bear Valley Parkway alignment from the City boundary at the northern end to the intersection with Sunset Drive/Ranchito Drive at the southern end. Most of the surrounding areas to the north, east and west are within unincorporated San Diego County, with a mix of single-family residential development and undeveloped land. There is a single-family residential development to the south of the project site that is within the city.

## PROJECT DESCRIPTION

The primary objective of the proposed residential development is to provide a residential project that preserves the on-site riparian corridor and is consistent with the City's General Plan. As such, the proposed residential development includes 55 single-family residential lots and preserves approximately 50% of the site within seven open space lots. To support these uses, the proposed residential development also includes one recreation lot and two private street lots (Figure 3). The proposed residential development site access driveway would be at the same location as the existing driveway serving the single-family residential structure; which is at the Zlatibor Ranch Road and Bear Valley Parkway intersection. The proposed residential development also includes half-width frontage improvements to Bear Valley Parkway as well as utility improvements on-site and within Bear Valley Parkway in the immediate vicinity. Grading would involve 342,750 cubic yards (cy) of cut and fill balanced on-site, with up to 38 feet of cut and 58 feet of fill in certain areas. City discretionary actions required would include Grading Exemptions, Tentative Map, Preliminary/Master/Precise Development Plan, Rezone, roadway Design Standard Waivers and a Specific Alignment Plan. The proposed residential development would also likely require resource agency permitting involving the U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife. The residential development would be phased depending on market conditions, but construction is anticipated to last 3 years.

A full-width Specific Alignment Plan (SAP) has also been developed as a separate project component. The proposed SAP improvements would address goals in the City's General Plan Mobility Element such as bicycle and pedestrian access, and would add elements to Bear Valley Parkway that would make it compliant with infrastructure requirements for classification as a Major Road, including a median, bike lanes and sidewalks. The proposed SAP improvements would also improve the geometry of the intersection at Bear Valley Parkway and Encino Drive. The City discretionary actions required for the full-width SAP improvements would include a development agreement, a Specific Alignment Plan, and possible rights-of-way acquisition through eminent domain. Construction of the SAP improvements would occur independent of the residential development.

**ISSUES:**

## I. AESTHETICS

*Would the project:*

a. *Have a substantial adverse effect on a scenic vista?*

b. *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?*

c. *Substantially degrade the existing visual character or quality of the site and its surroundings?*

d. *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

**Potentially Significant Impact (To Be Further Analyzed in the EIR).** The site is located in a rural, residential area. It is bordered by residential and vacant land. The site is not located within the viewshed of a State Scenic Highway (Caltrans 2016); however, the City has identified a portion of Bear Valley Parkway adjacent to the project site as a scenic roadway (City 2012b). Scenic vistas in the area include long-distance views of visually distinctive ridgelines and hillsides, as well as a riparian area. Palomar Observatory is located approximately 20 miles northeast of the site and relies on dark nighttime skies to conduct astronomical observations (City 2012b).

The proposed project would convert the site to a residential housing development with a preserved riparian corridor around the southern site perimeter. The SAP improvements would widen Bear Valley Parkway and add new roadway elements. The project would include street and residential lighting. Due to the potential for aesthetic impacts, this issue will be analyzed further in the EIR.

## II. AGRICULTURE AND FORESTRY RESOURCES

*In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:*

a. *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?*

b. *Conflict with existing zoning for agricultural use, or a Williamson Act contract?*

c. *Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?*

d. *Result in the loss of forest land or conversion of forest land to non-forest use?*

e. *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?*

Agricultural Resources

**Potentially Significant Impact (To Be Further Analyzed in the EIR).** The site does not include active agricultural uses and is not covered by a Williamson Act Contract. The site is not located adjacent to any active farmland. However, the site zoning allows for agricultural uses and the California Department of Conservation Farmland Mapping and Monitoring Program has identified most of the residential development site as Farmland of Local Importance (City 2012b). Historically, citrus and avocado groves existed on the project site from 1947 to 1990 (Vinje & Middleton Engineering, Inc. 2013b). In addition, the surrounding zoning allows for agricultural uses, and areas directly north and east of the site are partially mapped as Farmland of Local Importance (City 2012b). The proposed project would convert the site to residential use and widen Bear Valley Parkway. The potential for significant agricultural resource impacts will be further evaluated in the EIR.

Forestry Resources

**No Impact.** According to the Bear Valley Parkway Biological Technical Reports (Dudek 2016a, 2016c), the residential development site contains 3.35 acres of southern coast live oak riparian forest, 0.13 acre of non-native riparian habitat, 0.17 acre of disturbed southern cactus scrub, 36.43 acres of disturbed habitat, and 0.54 acre of developed land, while the SAP improvements site contains 0.19 acre of southern coast live oak riparian forest, 1.02 acres of disturbed habitat, and 1.39 acres of development land. While the site includes southern coast live oak riparian forest, this habitat is not considered or zoned as timberland. The General Plan EIR (City 2012b) does not identify the site or any of the adjacent properties as forestry resources. Thus, the project, including both the residential development and the SAP improvements, would not conflict with zoning for forest land or timberland, or result in the direct or indirect loss of forestry resources. The project would have no impact to forestry resources.

## III. AIR QUALITY

*Where applicable, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:*

a. *Conflict with or obstruct implementation of the applicable air quality plan?*

b. *Violate any air quality standard or contribute substantially to an existing or projected air quality violation?*

c. *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?*

d. *Expose sensitive receptors to substantial pollutant concentrations?*

e. *Create objectionable odors affecting a substantial number of people?*

The following air quality analysis is based on the Air Quality Conformity Assessment completed by Investigative Science and Engineering, Inc. (ISE) on April 27, 2016 and the memorandum addressing Air Quality and Greenhouse Gas Emissions from the SAP completed by Harris & Associates on September 27, 2016. Refer to the report and memorandum for detailed methodology and additional information.

Air Quality Plans

**Less than Significant.** The California Clean Air Act requires areas in nonattainment of state ambient air quality standards for ozone, carbon monoxide (CO), oxides of sulfur ($SO_2$) and oxides of nitrogen ($NO_x$) prepare plans to attain the standards. The San Diego Air Basin (SDAB) is designated nonattainment for ozone. As such, the Regional Air Quality Strategy (RAQS) was developed and most recently revised in 2009 to address ozone and the associated precursors; volatile organic compounds (VOC) and $NO_x$. In addition, the RAQS for the SDAB also address particulate matter less than 10 microns in diameter ($PM_{10}$), and particulate matter less than 2.5 microns

in diameter ($PM_{2.5}$). Main sources of ozone and PM increases include motor vehicle usage, population, and growth. The implementation control programs include stationary sources, transportation, indirect sources, and a vehicle and fuel program.

The California Air Resources Board (CARB) mobile source emission projections and San Diego Association of Governments (SANDAG) growth projections are based on general plans. The residential development would be consistent with the site's General Plan Estate II designation and the SAP improvements would be consistent with goals in the General Plan Mobility Element. Therefore, the project would be consistent with the SANDAG growth projections and, in-turn, the RAQS. Impacts would be less than significant.

Emissions

**Less than Significant.** Based on the 2012 to 2014 data collected at the Escondido air quality monitoring station, the vicinity currently experiences slight air quality exceedances for criteria pollutants $O_3$, $PM_{10}$ and $PM_{2.5}$. Air Quality testing at the site was completed for 12 chemical compounds, and no significant ambient air quality issues were identified.

*Construction*

The worst-case construction emissions of $NO_x$, CO, $SO_x$, $PM_{10}$, and $PM_{2.5}$ for the proposed residential development would occur during project site grading when the use of heavy diesel equipment and ground disturbance is underway. The worst-case construction emissions of VOCs for the residential development would also occur during the grading phase. Note that low VOC paints were assumed to be used for architectural coatings during the construction phase, thereby lowering VOC emissions below the total amount that would be emitted during grading. Thus, the analysis below analyzes $NO_x$, CO, $SO_x$, $PM_{10}$, $PM_{2.5}$ and VOCs during the grading phase of the residential development.

The worst-case construction emissions were calculated by adding the vehicular, surface grading, and hauling emissions for the grading phase. Diesel construction emissions were calculated based on a 180 work day schedule, and were assumed to involve dozers, scrapers, graders, a water truck, and a hydraulic excavator. Surface grading emissions were based on the same 180 work day schedule, and 342,750 cy of cut and fill. Also, it was assumed that the project would include dust control measures in accordance with the San Diego Air Pollution Control District (SDAPCD) rules, including site watering a minimum of three times per day. Overall, the addition of all grading activity emissions would result in emissions less than the significance thresholds (Table 1).

**TABLE 1**
**Residential Development Worst-Case Grading Emissions (Pounds per Day)**

| Pollutant | Vehicular | Surface Grading | Hauling | Total | Significance Thresholds[a] |
|---|---|---|---|---|---|
| *Grading Phase* | | | | | |
| $NO_x$ | 183.6 | - | 0.0 | 183.6 | 250 |
| CO | 71.6 | - | 0.0 | 71.6 | 550 |
| $SO_x$ | 24.1 | - | 0.0 | 24.1 | 250 |
| $PM_{10}$ | 4.1 | 50.9 | 27.5 | 82.5 | 100 |
| $PM_{2.5}$ | 3.8 | 10.6 | 5.8 | 20.2 | 55 |
| VOC | 26.6 | - | 0.0 | 26.6 | 75 |
| *Architectural Coating Phase* | | | | | |
| VOC | - | - | - | 25.6 | 75 |

Notes:
[a] Significance threshold is based on the Escondido Municipal Code Section 33-924(a)(6).
Source: ISE 2016a

Specific construction details are unknown at this time for the SAP improvements. However, the disturbance area of the SAP improvements would be smaller than that of the residential development (i.e., the SAP improvements would involve approximately 3,560 linear feet of Bear Valley Parkway whereas the proposed residential development would be 40.62 acres (1,769,407 square feet)). Furthermore, given the similarities in site location between the residential development and SAP improvements, it is reasonable to assume a similar construction fleet and schedule would be required for each component. As shown in Table 1, worst-case emissions from grading during the proposed residential development would not exceed any significance threshold. Therefore, emissions from construction of the SAP improvements would also be expected to be less than the significance thresholds (Harris & Associates 2016a).

Construction of the SAP would occur independent of the residential component. In summary, worst-case emissions would be less than the thresholds (Escondido Municipal Code Section 33-924(a)(6)) for all criteria pollutants. Thus, construction emission impacts from both components of the proposed project would be less than significant.

*Operation*

Once the proposed 55 single-family residences are operational, the site would generate additional air quality emissions through vehicular traffic, and fixed source emissions. The additional 55 residential units would generate a total of 550 average daily trips, which were assumed to be 20 miles one-way based on the proposed land use type and surrounding area conditions. Fixed source emissions generated by the residences would include emissions from landscaping equipment, natural gas use, and fireplace/wood burning. The operational air pollutants generated from the residential development are shown in Table 2.

**TABLE 2**
**Residential Development Trip-Generation Emissions (Pounds per Day)**

| Pollutant | Vehicle Emissions | Landscaping Equipment | Natural Gas | Fireplace | Total[a] | Significance Thresholds[b] |
|---|---|---|---|---|---|---|
| $NO_x$ | 8.1 | 0.0 | 1.1 | - | 9.3 | 250 |
| CO | 24.1 | 0.3 | 0.5 | - | 24.9 | 550 |
| $SO_x$ | 0.1 | 0.0 | - | - | 0.1 | 250 |
| $PM_{10}$ | 0.1 | 0.0 | 0.0 | 12.9 | 13.0 | 100 |
| $PM_{2.5}$ | 0.1 | - | - | 12.2 | 12.3 | 55 |
| VOC | 0.8 | 0.0 | 0.1 | - | 0.9 | 75 |

Notes:
[a] Numbers may not sum to Emission totals due to rounding.
[b] Significance threshold is based on the Escondido Municipal Code Section 33-924(a)(6).
Source: ISE 2016a

As shown, operational emissions for the residential development are projected to be less than the applicable threshold (Escondido Municipal Code Section 33-924(a)(6)) for all criteria pollutants. Operation of the SAP improvements would not generate new, permanent vehicular trips or other sources of operational emissions. Therefore, operational emissions would be less than significant.

Sensitive Receptors

**Less than Significant.** In the project vicinity, uses that may be sensitive to air quality issues include residences, schools, parks with playgrounds or athletic centers, child care centers, and churches. Considering the proposed residential uses, the residential development would not result in a significant stationary source of pollution or create substantial pollutant concentrations. Mobile emissions generated by the residential development were

calculated based on the additional 550 average daily trips (ADT) generated by the project[1] and the CARB EMFAC 2011 emission factors. Due to the dispersal of emissions and the minimum possible standing receptor distance, emission levels were calculated at 100 feet from the roadway centerlines. Three scenarios were evaluated: the existing plus project conditions, near-term cumulative plus project conditions, and the General Plan buildout plus project conditions. As shown in Tables 3 to 5, the proposed project would result in a minimal change in mobile emissions along roadways under all conditions studied. The change in emissions resulting from the project would be 0.1 pounds per day or less for all emission compounds evaluated. Ultimately, the roadway segments examined were found to comply with the California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS) standards. Thus, project impacts to sensitive receptors would be less then significant.

**TABLE 3**
**Incremental Traffic Segment Pollutant Increases**
**Existing and Existing plus Project Conditions (Pounds per Day)**

| Roadway Segment | ΔCO | | $\Delta NO_x$ | | $\Delta PM_{10}$ | | $\Delta PM_{2.5}$ | |
|---|---|---|---|---|---|---|---|---|
| **Bear Valley Parkway** | **Ex.** | **Ex.+P[a]** | **Ex.** | **Ex.+P[a]** | **Ex.** | **Ex.+P[a]** | **Ex.** | **Ex.+P[a]** |
| El Dorado Dr. to Zlatibor Ranch Rd. | 0.1 | 0.1 | 0.7 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 |
| Zlatibor Ranch Rd. to Encino Dr. | 0.1 | 0.1 | 0.7 | 0.7 | 0.5 | 0.6 *(+0.1)* | 0.5 | 0.6 *(+0.1)* |
| Encino Dr. to Sunset Dr. | 0.1 | 0.1 | 0.7 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 |
| Sunset Dr. to Las Palmas Ave. | 0.1 | 0.1 | 0.8 | 0.8 | 0.7 | 0.8 *(+0.1)* | 0.7 | 0.8 *(+0.1)* |
| Las Palmas Ave. to Mary Ln. | 0.1 | 0.1 | 0.8 | 0.8 | 0.7 | 0.7 | 0.7 | 0.7 |
| Mary Ln. to San Pasqual Rd. | 0.1 | 0.1 | 0.8 | 0.8 | 0.7 | 0.7 | 0.7 | 0.7 |
| **Encino Drive** | | | | | | | | |
| West of Bear Valley Parkway | 0.0 | 0.0 | 0.3 | 0.3 | 0.1 | 0.1 | 0.1 | 0.1 |
| **Sunset Drive** | | | | | | | | |
| West of Bear Valley Parkway | 0.0 | 0.0 | 0.5 | 0.5 | 0.3 | 0.3 | 0.3 | 0.3 |

Notes:
[a] Change between the baseline and baseline plus project conditions indicated in parenthesis where a difference occurs.
Source: ISE 2016a

[1] The SAP improvements are not expected to generate additional daily trips.

**TABLE 4**
**Incremental Traffic Segment Pollutant Increases**
**Near-Term Cumulative Conditions (Pounds per Day)**

| Roadway Segment | ΔCO | | ΔNO$_x$ | | ΔPM$_{10}$ | | ΔPM$_{2.5}$ | |
|---|---|---|---|---|---|---|---|---|
| **Bear Valley Parkway** | **NT** | **NT+P[a]** | **NT** | **NT+P [a]** | **NT** | **NT+P[a]** | **NT** | **NT+P[a]** |
| El Dorado Dr. to Zlatibor Ranch Rd. | 0.1 | 0.1 | 0.8 | 0.8 | 0.7 | 0.7 | 0.7 | 0.7 |
| Zlatibor Ranch Rd. to Encino Dr. | 0.1 | 0.1 | 0.7 | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 |
| Encino Dr. to Sunset Dr. | 0.1 | 0.1 | 0.8 | 0.8 | 0.7 | 0.7 | 0.7 | 0.7 |
| Sunset Dr. to Las Palmas Ave. | 0.1 | 0.1 | 0.8 | 0.9 *(+0.1)* | 0.8 | 0.8 | 0.8 | 0.8 |
| Las Palmas Ave. to Mary Ln. | 0.1 | 0.1 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| Mary Ln. to San Pasqual Rd. | 0.1 | 0.1 | 0.9 | 0.9 | 0.8 | 0.8 | 0.8 | 0.8 |
| **Encino Drive** | | | | | | | | |
| West of Bear Valley Parkway | 0.0 | 0.0 | 0.3 | 0.3 | 0.1 | 0.1 | 0.1 | 0.1 |
| **Sunset Drive** | | | | | | | | |
| West of Bear Valley Parkway | 0.0 | 0.0 | 0.5 | 0.5 | 0.3 | 0.3 | 0.3 | 0.3 |

Notes:
[A] Change between the baseline and baseline plus project conditions indicated in parenthesis where a difference occurs.
Source: ISE 2016a

**TABLE 5**
**Incremental Traffic Segment Pollutant Increases**
**Long-Term Cumulative Conditions (Pounds per Day)**

| Roadway Segment | ΔCO | | ΔNO$_x$ | | ΔPM$_{10}$ | | ΔPM$_{2.5}$ | |
|---|---|---|---|---|---|---|---|---|
| **Bear Valley Parkway** | **LT** | **LT+P[a]** | **LT** | **LT+P[a]** | **LT** | **LT+P[a]** | **LT** | **LT+P[a]** |
| El Dorado Dr. to Zlatibor Ranch Rd. | 0.1 | 0.1 | 0.9 | 0.9 | 0.8 | 0.8 | 0.8 | 0.8 |
| Zlatibor Ranch Rd. to Encino Dr. | 0.1 | 0.1 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| Encino Dr. to Sunset Dr. | 0.1 | 0.1 | 0.9 | 0.9 | 1.0 | 1.0 | 1.0 | 1.0 |
| Sunset Dr. to Las Palmas Ave. | 0.1 | 0.1 | 0.9 | 0.9 | 1.0 | 1.0 | 1.0 | 1.0 |
| Las Palmas Ave. to Mary Ln. | 0.1 | 0.1 | 0.9 | 0.9 | 1.0 | 1.0 | 1.0 | 1.0 |
| Mary Ln. to San Pasqual Rd. | 0.2 | 0.2 | 1.0 | 1.0 | 1.1 | 1.1 | 1.1 | 1.1 |
| **Encino Drive** | | | | | | | | |
| West of Bear Valley Parkway | 0.0 | 0.0 | 0.4 | 0.4 | 0.2 | 0.2 | 0.2 | 0.2 |
| **Sunset Drive** | | | | | | | | |
| West of Bear Valley Parkway | 0.0 | 0.0 | 0.5 | 0.5 | 0.3 | 0.3 | 0.3 | 0.3 |

Notes:
[a] Change between the baseline and baseline plus project conditions indicated in parenthesis where a difference occurs.
Source: ISE 2016a

Odors

**Less than Significant.** The project would generate trace amounts of ammonia, carbon dioxide, hydrogen sulfide, methane, dust, organic dust, and endotoxins (i.e., bacteria are present in the dust) temporarily during construction. VOCs would also be generated by the project during the application of architectural coatings, but are expected to generate minimal odors considering low-VOC paints would be used in accordance with regulations. Construction emissions would be less than significant considering the intermittent and temporary nature of the emissions. Considering the proposed residential use, long-term operational odors would be minimal and also less than significant.

## IV. BIOLOGICAL RESOURCES

*Would the project:*

a. *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

b. *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

c. *Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

d. *Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

e. *Conflict with any local policies or ordinances protecting biological resources such as a tree preservation policy or ordinance?*

f. *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

**Potentially Significant Impact (To Be Further Analyzed in the EIR).** Biological Resources Technical Reports and an Arborist Report were prepared for the project by Dudek in 2016 (Dudek 2016a, 2016b, and 2016c). The following information is provided based on those reports.

The residential development site has 3.35 acres of southern coast live oak riparian forest, 0.13 acre of non-native riparian habitat, 0.17 acre of disturbed southern cactus scrub, 36.43 acres of disturbed habitat, and 0.54 acre of developed land. The SAP improvements site contains 0.19 acre of southern coast live oak riparian forest, 1.02 acres of disturbed habitat, and 1.39 acres of development land. The southern coast live oak riparian forest, non-native riparian habitat and unvegetated stream channels are regulated through Sections 401 and 404 of the Clean Water Act (CWA) and Fish and Game Code 1600-1602, and are considered jurisdictional under the U.S. Army Corps of Engineers (USACOE), Regional Water Quality Control Board (RWQCB), and/or California Department of Fish and Wildlife (CDFW). There is 0.44 acre of wetlands and non-wetland waters under the jurisdiction of USACOE and RWQCB and streambeds on the residential development site, composed of 0.13 acre of wetlands and 0.31 acre of unvegetated waters. CDFW jurisdictional area in the residential development site totals 3.62 acres, including 3.48 acres of riparian area and 0.31 acre of streambed. (Note that the drainages and riparian habitat canopy overlap, so the riparian area and streambed areas are not added.). CDFW jurisdictional area in the SAP improvements site totals 0.19 acre of southern coast live oak riparian forest associated with the stream channel east of Bear Valley Parkway.

No special-status plant or wildlife species were documented on site during biological surveys, however a patch of disturbed cactus scrub on the residential development site could provide potential nesting habitat for coastal cactus wren. There are eight special-status wildlife species that have a moderate or high potential to occur on the site based on habitat types and species' range. In addition, there are two special-status plant species that have a moderate potential to occur. There are no major aquatic resources on site that would be attractive for wildlife use and movement; however mobile species, such as birds, and urban-adapted species that use oak trees and disturbed areas, such as raccoon, striped skunk, and coyote, could use the site for movement on a regional basis.

Raptors as a group are considered special-status, and Section 3503.5 of the California Fish and Game Code specifically prohibits the unauthorized take of raptors and raptor nests. In addition, Migratory Bird Treaty Act (MBTA) protects migratory bird nesting. One raptor (red-shouldered hawk) was seen foraging on the residential development site. Large trees on the property could provide for raptor nesting, and migratory birds could also nest in the large trees or other native habitat areas on site.

The southern coast live oak riparian forest on site is within the City of Escondido's Multiple Habitat Conservation Program (MHCP) Focused Planning Area, within which some lands would be dedicated for open space and habitat conservation. The City identified the vegetation classes on site as agriculture and riparian forest (City 2012a).

Tree protection, removal, and replacement standards are included in the City's General Plan (City 2012b) and in Chapter 33 (Zoning), Article 55 (Grading and Erosion Control) of the City's Municipal Code (Ordinance 2001-21). The General Plan recognizes oak trees and other mature trees as significant aesthetic and ecological resources deserving protection within the boundaries of the city. According to the arborist report (Dudek 2016b), the survey area includes 182 protected trees and 307 mature trees.

Considering the presence of biological resources within and adjacent to the proposed project impact area, the project has potential to result in significant biological resource impacts. The potential for significant impacts to biological resources will be further analyzed in the EIR.

## V. CULTURAL RESOURCES

*Would the project:*

a. *Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5 (or conflict with applicable historic thresholds specified in City of Escondido Zoning Code Article 47)?*

b. *Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*

c. *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

d. *Disturb any human remains, including those interred outside of dedicated cemeteries?*

Historical Resources, Archaeological Resources, and Human Remains

**Potentially Significant Impact (To Be Further Analyzed in the EIR).** A Cultural Resources Survey and Evaluation of Built Environment was completed by ASM Affiliates in April 2016 for the proposed residential development site. This report included records searches, sacred lands searches with local tribes, archaeological survey results, and historian survey results. Based on this information, a historic trash scatter (SDI-12920), two milling sites (SDI-21808 and SDI-5340) and two isolates were located on the project site or in the immediate project vicinity. The site also contains a residence and garage that were built in 1946 and, as such, are over 50 years old. No known human remains are located on the site. As recommended in the April survey report, a Cultural Resources Evaluation of Prehistoric Archaeological Site SDI-21808 was completed by ASM Affiliates in June 2016. In September 2016, an Additional Cultural Resources Survey was prepared by ASM Affiliates for the

SAP improvements. Based on the information in the reports and the proposed ground disturbance areas, there is potential for a significant cultural resource impact to occur as a result of project development. The potential for significant impacts to historical and archaeological resources will be further analyzed in the EIR.

Paleontological Resources

**Less than Significant Impact.** There is a direct relationship between fossils and the geologic formations within which they are enclosed; therefore, with sufficient knowledge of the geology and stratigraphy of a particular area and the paleontological resource potential, it is possible to reasonably predict where fossils might or might not be found.

The project site primarily contains mid-Cretaceous granitic and other intrusive crystalline rocks of all ages. It also contains an area of Holocene and late Pleistocene undifferentiated surficial deposits along the western boundary of the residential development site, adjacent to Bear Valley Parkway (City 2012b, Figure 4.5-2). Below is a description of the mapped geologic formations found at the project site:

- **Granitic and other intrusive crystalline rocks.** These rocks were formed during the mid-Cretaceous period, which is the final period of the Mesozoic era and spanning the time between 145 and 65 million years ago. Crystalline rocks are composed of crystals that either formed directly from molten magma or lava (igneous rocks), or that formed under intense heat and pressure deep below the surface of the earth (metamorphic rocks). This formation is considered to have no paleontological resource potential.
- **Undifferentiated Surficial Deposits (Holocene and Late Pleistocene).** These deposits include colluviums, slope wash, talus deposits and other surface deposits. The surficial deposits are of the Holocene and late Pleistocene epochs. This geologic formation is judged to have a strong, but often unproven, potential for producing unique fossil remains.
- **Artificial Fill.** These deposits are of late Holocene age, and are considered relatively recent deposits. Areas composed of Artificial Fill, such as the footprints of roadways and developed areas, have been identified as having no resource potential (City 2012b).

The proposed residential development would preserve the southwestern area of the project site. Grading into previously undisturbed soils along Bear Valley Parkway in this area would be minimal. Thus, the proposed project would have a less than significant potential to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

## VI. GEOLOGY AND SOILS

*Would the project:*

a. *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:*

   i. *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.*

   ii. *Strong seismic ground shaking?*

   iii. *Seismic-related ground failure, including liquefaction?*

   iv. *Landslides?*

b. *Result in substantial soil erosion or the loss of topsoil?*

c. *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

d. *Be located on expansive soil, as defined in Table 18 1 B of the Uniform Building Code (1994), creating substantial risks to life or property?*

e. *Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?*

Seismic Activity, Liquefaction, and Landslides

**Less than Significant.** A geotechnical investigation (Vinje & Middleton Engineering, Inc. 2013b) and associated update (Vinje & Middleton Engineering, Inc. 2014) was prepared for the proposed residential development to address geology and soils issues. Vinje & Middleton Engineering prepared a geotechnical investigation for the SAP improvements in September 2016 (Vinje & Middleton Engineering, Inc. 2016d). According to these reports, the site is not located along an Alquist-Priolo earthquake fault zone fault or in the immediate vicinity of such a zone, but is located in the seismically-active southern California region. The nearest major faults include Rose Canyon (16.2 miles away), Elsinore-Julian (16.9 miles away), Newport-Inglewood (21.7 miles away), and Coronado Bank (30.8 miles away). The site would have an estimated peak ground acceleration of 0.45g[2]. The geotechnical investigations found no evidence of impending surface ruptures, slope instability, or significant shear zones. The City's General Plan EIR (City 2012a) also indicates that the project site is not in a liquefaction hazard area. A relatively small corner of the site has slopes greater than 25 percent, but the site does not have soils subject to potential landslide. With California Building Code compliance, the project would result in less than significant impacts associated with potential seismic, liquefaction and landslide issues.

Soil Erosion

**Less than Significant.** There is a potential for scouring and erosion in the southeast drainage channel on the residential development site and the soil stability in the lower elevations of the site require adequate storm water control. Shallow topsoil deposits occur along ridgelines and hilltops at the site. As described further under Section IX, Hydrology and Water Quality, the project would include construction and operational Best Management Practices (BMPs) in compliance with applicable regulations that would control runoff and reduce the potential for erosion (Hunsaker & Associates 2016a, 2016b, and 2016c). Thus, project impacts related to soil erosion would be less than significant.

Soil Stability/Expansive Soils

**Potentially Significant Impact (To Be Further Analyzed in the EIR).** The residential development property's ridgeline and hillside terrain is underlain by bedrock suitable for new site fills. Potentially expansive clayey soils occur in minor quantities overall at the site (Vinje & Middleton Engineering, Inc. 2013b and 2014). Existing fills, topsoil, alluvium, upper soft to loose deposits, and upper highly weathered bedrock are not suitable in their present condition to support new structures. In addition, previous mining prospecting activities involved the development of mine shafts and horizontal passages on the property that have resulted in unstable soils. The mining prospecting activities have resulted in various sinkholes on the residential development site. Furthermore, while the geotechnical investigations found that gross geologic instability is not indicated or expected within the SAP improvement site, over-excavation or ground stabilization techniques may be needed to address loose soils at the site (Vinje & Middleton Engineering, Inc. 2016d). Impacts related to soil stability at the proposed residential development site would be potentially significant, and will be further evaluated in the EIR.

[2] Peak ground acceleration is expressed in g, the acceleration of gravity (9.8 m/s$^2$ (meters per second squared)).

Septic Systems

**No Impact.** The site is located in an area serviced by the City's municipal sewer system, and would not require a septic system. Thus, the project would have no impact related to soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

## VII. GREENHOUSE GAS EMISSIONS AND ENERGY

*Would the project:*

a. *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

b. *Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses?*

c. *Result in the use of excessive energy?*

d. *Affect energy supplies that would serve the project, including peak demand?*

GHG Emissions and Plan Consistency

**Less than Significant.** The City of Escondido prepared a Climate Action Plan (E-CAP) in 2013 that demonstrated how the City will reduce greenhouse gas (GHG) emissions pursuant to Assembly Bill 32 (AB 32). The E-CAP includes CEQA Thresholds and Screening Tables to be used for development projects in order to ensure that the specific reduction strategies in the E-CAP are implemented as part of the CEQA process. The E-CAP establishes a threshold level of 2,500 metric tons of carbon dioxide equivalent ($MTCO_2E$) per year for identifying projects that require the use of screening tables or a project-specific technical analysis to quantify and mitigate project emissions. The project-specific analysis may consist of calculating the $MTCO_2E$ for the project or evaluating project features to obtain 100 points minimum per the Screening Tables.

For this project, a GHG Assessment (ISE 2016b) was completed to determine the amount of $MTCO_2E$ generated by the project. A technical memorandum was also prepared for the SAP improvements (Harris & Associates 2016). The following analysis is based on those project-specific reports and the City's E-CAP.[3]

The GHG Assessment calculation for the proposed residential development includes emissions from diesel vehicles and water use during construction, operational vehicle emissions, operational landscaping equipment use, operational natural gas use, operational electricity use, solid waste disposal, and water use/wastewater generation. The construction emissions were amortized over the course of a 20-year period in order to evaluate

[3] The E-CAP addresses the City's GHG emissions pursuant to targets set in AB 32; however, AB 32 only set targets through the year 2020. On September 8, 2016, Senate Bill 32 (SB 32) was signed into law, which extended statewide GHG emission reduction measures beyond 2020. SB 32 mandated a 40 percent reduction in GHG levels below 1990 levels by 2030. Although local guidance on the City's portion of the new statewide emission reductions is not yet available, the E-CAP assumed that beyond 2020, the City's emissions would be offset by the continued implementation of measures in the E-CAP and the extension of statewide measures beyond 2020. GHG emissions from the proposed project are expected to continually decrease over time to comply with measures in the E-CAP and future statewide initiatives. For example, a large share of the future emissions reduction goals in SB 32 are expected to be accomplished by statewide initiatives such as the renewables portfolio standard for utilities; the Pavley vehicle emissions standards; energy efficiency standards for buildings, appliances, and industrial equipment; incentives for electric vehicles; and the low-carbon fuel standard for imported fuel. For this reason, as well as the fact that the estimated project emissions are well below the City's current CEQA screening threshold levels, the proposed project is expected to comply with the new statewide targets beyond 2020.

the average yearly contribution to the cumulative GHG conditions. Refer to the GHG Assessment (ISE 2016b) for additional details regarding methodology and assumptions. As shown in Table 6, the project would generate 1,744.8 $MTCO_2E$ per year, which is below the City's E-CAP screening level of 2,500 $MTCO_2E$ per year. Thus, the project would have a less than significant GHG emission impact and would be consistent with the City's E-CAP.

**TABLE 6**
**Residential Development GHG Emissions ($MTCO_2E$)**

| Source | Annual $MTCO_2E$ | Threshold[b] |
|---|---|---|
| Construction | 74.7[a] | |
| Vehicles | 1,207.8 | |
| Landscaping Equipment | 6.6 | |
| Natural Gas Use | 253.1 | 2,500 |
| Electricity Use | 160.1 | |
| Solid Waste Generation | 18.1 | |
| Water Use/Wastewater Processing | 24.4 | |
| TOTAL | 1,744.8 | |

Notes:
[a] Amortized over 20 years to convert to an annual average over 20 years.
[b] Significance thresholds based on Escondido Municipal Code Section 33-924(G)
Source: ISE 2016b

Specific construction details are unknown at this time for the SAP improvements. However, the construction effort for the SAP improvements would be less than the total construction effort required for the proposed residential development. As such, GHG emissions for the SAP improvements would be less than the estimated emissions for the proposed residential development, shown in Table 6. Proposed construction of the residential development would result in an annual amortized contribution of 74.7 $MTCO_2E$ (Table 6). The SAP improvements would not generate new GHG emissions or another source of operational GHG emissions. Construction of the SAP would occur independent of the residential component. However, even if they occurred simultaneously, an additional contribution of 74.7 $MTCO_2E$ or less to the project's total annual GHG emissions would not cause the project to exceed the 2,500 $MTCO_2E$ screening level.[4] Therefore, the SAP improvements, in combination with the proposed residential development, would have a less than significant GHG emission impact.

Energy Use

**Less than Significant.** In accordance with Section II(F) of Appendix F of the CEQA Guidelines, a project would be considered to have a significant energy conservation impact if it would result in wasteful, inefficient, or unnecessary consumption of energy during construction or operation. CEQA Guidelines Appendix F also guides environmental studies to include an analysis of the energy supplies that would serve the project and the potential effects on capacity and peak demand. The following is based on the estimated energy use during construction and operation of the residential development in the Greenhouse Gas Emissions Assessment (ISE 2016b), as well as the technical memorandum prepared for the SAP improvements (Harris & Associates 2016a).

The construction phase of both the residential development and SAP improvements would use energy related to the use of demolition and grading equipment on-site, employee vehicular travel, transport of construction

[4] In other words, 1,744.8 (total emissions from residential development) + 74.7 (potential emissions from SAP improvements) = 1,819.5, which is less than 2,500.

materials, and application of water for dust control. Typical equipment would be used for grading and construction activities (e.g., dozers, scrapers, graders, excavators), and is not anticipated to result in the use of excessive energy. Due to the site's proximity to existing urban areas, worker and transport trip distances are not anticipated to be unusually long or excessive relative to average trip lengths in the County. Overall, construction-related energy use would not be excessive.

During operation, the residential development would use energy primarily through vehicular travel, home electricity use, and home natural gas use. Solid waste disposal, water consumption, wastewater processing, and maintenance activities (e.g., landscaping) would account for project energy use to a lesser extent. The SAP improvements are not expected to result in a substantial change in operation of Bear Valley Parkway.

The vehicle trips generated by the proposed residential development would be 550 ADT, with average vehicle trip length of 20 miles and median running speed of 45 miles per hour (ISE 2016b). The daily trips generated by the proposed project would be typical for a residential project and would not be excessive. While the amount of emissions per vehicle are out of the control of the applicant, it is noted that the federal Corporate Average Fuel Economy (CAFE) standards are anticipated to reduce energy consumed by vehicles over time.

The GHG Assessment (ISE 2016b) assumed a level of electricity consumption at the proposed project of 10,000 kilowatt hours (kWh) per house per year and a 6,665 cubic feet ($ft^3$) per month natural gas usage rate. This electrical consumption rate is higher than the average California 7,000 kWh residential electrical use rate (U.S. Energy Information Administration 2009) and the 3,981 $ft^3$ per month natural gas use rate (California Gas and Electric Utilities, 2010 and EIA 2016). It is noted that these average consumption rates include all housing types and an average unit size of 1,583 sf. Ultimately, the residential development would comply with existing home energy efficiency standards, including Title 24, Part 6 of the California Code of Regulations. Known as the Building Energy Efficiency Standards, Part 6 of Title 24 establishes energy efficiency standards for residential and non-residential buildings in order to reduce California's energy consumption. The current version became effective July 1, 2014 and requires new construction to reduce energy consumption at a minimum of 25 percent for lighting, heating, cooling, ventilation, and water heating compared to the 2008 Title 24 standards (CEC 2016). In conclusion, the proposed project would not use an unnecessary or wasteful amount of electricity or natural gas.

San Diego Gas and Electric (SDG&E) is responsible for the transmission of energy supplies to the San Diego region. Electricity supplies come from local facilities and the statewide utility grid (SDG&E 2014). Similarly, natural gas comes from a number of major supply basins located across western North America (CPUC 2016). This diverse mix of power insures the local energy transmission system runs smoothly. The proposed project is consistent with the vision for development under the City's General Plan (City 2012b) and is therefore not expected to overburden local energy supplies, including during times of peak demand.

To be conservative, the GHG Assessment assumed that the project would generate the maximum amount of solid waste able to be stored on the proposed project site on a weekly basis. This equated to 6.2 pounds of solid waste per day per house, which is roughly consistent with the statewide average of 4.5 pounds of trash generated per resident per day (CalRecycle 2016a). The proposed project would not generate an excessive level of solid waste.

The proposed project would generate a typical level of water consumption and wastewater processing needs. The development associated with the proposed project would comply with current water conservation laws, including the 2015 Updated Model Water Efficient Landscape Ordinance. The Model Ordinance promotes efficient landscapes in new developments by increasing water efficiency standards for irrigation systems, greywater systems, onsite storm water capture, and by limiting the proportion of landscapes that can be covered in turf. The Model Ordinance requires reporting on local implementation and enforcement (DWR 2016). Furthermore, new development in California is subject to stringent requirements regarding water-efficient household fixtures. For example, as of 2016, new toilets are required to use no more than 1.28 gallons per flush and new bathroom faucets no more than 1.2 gallons per minute (Reuters 2015). Compliance with existing

regulations would prevent the proposed project from consuming a wasteful amount of water or producing an unnecessary amount of wastewater.

## VIII. HAZARDS AND HAZARDOUS MATERIALS

*Would the project:*

a. *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

b. *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

c. *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

d. *Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

e. *For a project located within an airport land-use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in safety hazard for people residing or working in the project area?*

f. *For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?*

g. *Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?*

h. *Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?*

Hazardous Materials

**Potentially Significant Impact (To Be Further Analyzed in the EIR).** A Phase I Environmental Site Assessment (ESA) (2013a), Limited Phase II ESA (2013c), soils remediation report (2015), and several updates (2016a, 2016b, and 2016c) were prepared by Vinje & Middleton Engineering, Inc. These reports found that use of hazardous compounds for mining and separation of precious metals from ore may have been conducted at the site as part of the mining prospecting activities that occurred at the end of the 19$^{th}$ century and early 20$^{th}$ century. In addition, the historical use of the site as a citrus and avocado grove presents the risk of persistent agricultural chemicals. Dark surficial soil stains, most likely the result of overfilling or spilling diesel fuel, are present throughout the former grove area. Two aboveground storage tanks, one for storing diesel and one for storing oil, were constructed on the site in 1958 and removed at an unknown time. The 1,120 sf single-story house and 96 sf detached garage were built in 1946, and may contain asbestos and lead-based paint. These potentially hazardous conditions, as well as any potential for use, transport or disposal of hazardous materials as a result of the project, will be further evaluated in the EIR.

Hazardous Materials Near a School

**No Impact.** The project site is not located within one-quarter mile of an existing or proposed school (City 2012a). Thus, the project would have no impact related to the emission of a hazardous material within one-quarter mile of an existing or proposed school.

Hazardous Site Listing

**No Impact.** According to the City's General Plan EIR (City 2012a), the project site does not contain any Hazardous Waste and Substances sites, Leaking Underground Storage Tank sites, Active Cease and Desist Orders or Cleanup and Abatement Orders sites, solid waste disposal sites, contaminated sites as identified by the County of San Diego, or Resource Conservation and Recovery Act facilities. Further, the site-specific environmental site assessments (Vinje & Middleton Engineering, Inc. 2013a, 2013c, 2016a, 2016b and 2016c) did not identify the project site on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. No impact would occur.

Airport Hazards

**No Impact.** The closest airports to the project site are the Ramona and McClellan-Palomar Airports, both of which are located more than two miles away. The project site is not located within the Airport Influence Area of these airports (San Diego Regional Airport Authority 2011a and 2011b). The northern site perimeter is located approximately two miles from the downtown Palomar Hospital helipad (City 2012a). Due to the distance and relatively low height of the proposed structures, the project would not result in a safety issue related to the downtown Palomar Hospital helipad. Thus, the project would have no impact related to private or public airports.

Adopted Emergency Response Plan or Emergency Evacuation Plan

**Potentially Significant Impact (To Be Further Analyzed in the EIR).** The project site is covered by the Multi-Jurisdictional Hazard Mitigation Plan which was developed by the Unified Disaster Council which is chaired by a member of the San Diego County Board of Supervisors and comprised of representatives from all 18 incorporated cities in San Diego County, including Escondido. The proposed project site also falls within the San Diego County Operational Area Emergency Plan and the City Emergency Response Team program. Bear Valley Parkway, which borders the project site, is identified as an evacuation route (City 2012a). The residential development and SAP improvements would have access from Bear Valley Parkway and include improvements to Bear Valley Parkway, which have the potential to significantly impact an established evacuation route. This issue will be further evaluated in the EIR.

Wildlands

**Potentially Significant Impact (To Be Further Analyzed in the EIR).** The project site is within the "high" fire hazard zone rating area. To address this potential issue, a Fire Protection Plan (Dudek 2015c) was prepared for the project. This report addresses the potential fire risk associated with development of the proposed project. A potentially significant impact may occur. This issue will be further evaluated in the EIR.

## IX. HYDROLOGY AND WATER QUALITY

*Would the project:*

a. *Violate any water quality standards or waste discharge requirements?*

b. *Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted?*

c. *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river in a manner which would result in substantial/increased erosion or siltation on- or off-site?*

*d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*

*e. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?*

*f. Otherwise substantially degrade water quality?*

*g. Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?*

*h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?*

*i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?*

*j. Inundation by seiche, tsunami, or mudflow?*

A Drainage Study and a Priority Development Project Storm Water Quality Management Plan were completed by Hunsaker & Associates for the proposed residential development on April 1, 2016 (Hunsaker & Associates 2016a and 2016b). Hunsaker & Associates prepared a memorandum to address water quality for the proposed SAP improvements on August 29, 2016 (Hunsaker & Associates 2016c). The following analysis is based on those reports.

Water Quality

**Less than Significant Impact.** The project site currently drains to the local storm drain system along Bear Valley Parkway, through a pipe under the North County Fair Mall and discharges to Lake Hodges, the San Dieguito River, the San Dieguito Lagoon, and ultimately to the Pacific Ocean. The Water Quality Control Plan for the San Diego Basin (San Diego Basin Plan; RWQCB 2016) identifies the beneficial uses of these water bodies to include municipal supply, agricultural supply, industrial supply, processing supply, contact and non-contact water recreation, biological preserve, warm water habitat, cold water habitat, wildlife habitat, and rare species habitat. Downstream Clean Water Act (CWA) Section 303(d) listed impaired waterbodies (RWQCB 2012) include Felicita Creek for Aluminum and Total Dissolved Solids (TDS).

Based on the proposed project type (detached residential and roadway widening and improvements), the anticipated potential operational pollutants of the project include sediments, nutrients, heavy metals, organic compounds, trash and debris, oxygen-demanding substances, oil and grease, bacteria and viruses, and pesticides (Hunsaker & Associates 2016b). Based on the downstream 303(d) listed impaired waterbody, pollutants of concern that are also in the receiving water include aluminum and TDS.

To address the potential pollutants of concern, the proposed residential development would implement construction and post-construction Best Management Practices (BMPs) in compliance with the City and Regional Water Quality Control Board regulations. Construction BMPs are anticipated to include measures such as silt fencing, gravel bag barriers, street sweeping, solid waste management, stabilized construction entrance/exits, water conservation practices, and spill prevention and control. Operational BMPs would include source control, site design, and structural BMPs. Source Control BMPs would include (1) Prevention of Illicit Discharges into the MS4, (2) Storm Drain Stenciling or Signage, and (3) Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal. Site design BMPs would include (1) Maintain Natural Drainage Pathways and Hydrologic Features, (2) Conserve Natural Areas, Soils, and Vegetation, (3) Minimize Impervious Area, (4) Minimize Soil Compaction, (5) Impervious Area Dispersion, (6) Runoff Collection, (7) Landscaping with Native or Drought Tolerant Species, and (8) Harvesting and Using Precipitation. Structural BMPs would include two bioretention basins as well as a rain garden, which would both provide biofiltration.

The proposed full-width SAP improvements would implement USEPA Green Streets design elements that would protect water quality. The Green Streets design standards are proposed as part of the full-width SAP improvements so that the project would qualify for an exemption from being defined as a "Priority Development Project" per San Diego Regional Water Quality Control Board Order No. R9-2013-0001, Section E.3.b.(3)(a)(iii), as incorporated into Section 1.4.3 of the City of Escondido BMP Design Manual (Hunsaker & Associates 2016c). Proposed Green Streets design elements for the SAP improvements would include:

1) The pavement would be narrowed from 41' to 32' adjacent to the wetland habitat east of the southern portion of Bear Valley Parkway. The reduction includes narrowing the median from 14' to 6' and narrowing the pavement from 34' to 29'. The easterly curb would be removed and reconstructed to implement pavement narrowing and provide a smooth lane transition for traffic travelling northbound on BVP.
2) A vegetated swale would be added at the southern end of the road where the SAP improvements would create a wider parkway. Elsewhere on Bear Valley Parkway, implementation of vegetated swales would be limited to areas exclusive of abutting sensitive habitat and retaining wall construction.
3) A rain garden would treat a portion of the proposed widening prior to discharge of runoff into the drainage course that contains wetland habitat.
4) Street trees would be planted to promote infiltration as well as improve air quality.

Ultimately, all components of the project would be required to comply with the drainage and water quality regulations in place at the time of construction. These regulations include the State Water Resources Control Board General Construction Permit Water Quality Order 2009-0009-DWQ, the Municipal Permit Order No. R9-2013-0001 (as amended), the Standard Urban Stormwater Mitigation Plan (SUSMP), and the City of Escondido Grading and Erosion Control Ordinance (Article 55 of the Escondido Municipal Code). Compliance with regulations and the inclusion of BMPs would reduce potential water quality impacts to below a level of significance.

Groundwater Recharge

**Less than Significant Impact.** While the proposed project would not directly use groundwater, the project may incrementally reduce groundwater recharge through the proposed increase in impermeable surfaces. The effect of the increase in impermeable surfaces would be partially offset by the proposed irrigated landscaped areas, bioretention basins, and rain garden that would result in increased infiltration in those areas. As the area is serviced by a municipal water system, and not dependent upon groundwater, the proposed project is not anticipated to result in a groundwater impact that would affect permitted, actively used wells. Thus, groundwater recharge impacts would be less than significant.

Drainage

**Less than Significant Impact.** As identified in the San Diego Basin Plan, the project site is located within the San Dieguito Hydrologic Unit, Hodges Hydrologic Area and Del Dios Hydrologic Subarea (HSA; 905.21). The project site includes three on-site drainage areas: the westerly drainage, the central drainage, and the eastern drainage. The western and central drainages currently converge near the southern boundary and flow in a ditch adjacent to Bear Valley Parkway. The drainage that exists to the east of the project site discharges to the Bear Valley Parkway drainage ditch approximately 200 feet south of the site. The drainage ditch flow enters a pipe under the North County Fair Mall and is discharged to Lake Hodges. Lake Hodges discharges to the San Dieguito River, to the San Dieguito lagoon, and ultimately to the Pacific Ocean. The residential development site discharge rate is currently 352.7 cubic feet per second (cfs) under 100-year peak flow conditions.

With the implementation of the proposed residential development, the site would include an additional 19.3 acres of impervious area although the existing drainage pattern of the site would remain largely unchanged. The easterly drainage will be maintained to convey offsite runoff through the southwest portion of the development site and the shallow southern drainage and eroding western drainage will be removed by development. To address the potential increase in runoff from the site due to the increased impervious areas, the project would include two bioretention basins near the westerly boundary. The bioretention areas would temporarily hold water

to control runoff rates. Water from the bioretention areas would be directed to the existing southern discharge location where it would be discharged into the existing 60-inch culvert under Bear Valley Parkway. With the implementation of the proposed project, the discharge rate from the residential development site would be 335.0 cfs under 100-year peak flow conditions. The project, therefore, would reduce the discharge rate from the residential development site by approximately 17.7 cfs compared to existing conditions. As described above, runoff from the SAP would be controlled through vegetated swales, a rain garden, and street trees. Overall drainage patterns at the project site would remain largely unchanged.

In addition, the project would be required to comply with the drainage and water quality regulations in place at the time of construction. These regulations include the State Water Resources Control Board General Construction Permit Water Quality Order 2009-0009-DWQ, the Municipal Permit Order No. R9-2013-0001 (as amended), the SUSMP, and the City of Escondido Grading and Erosion Control Ordinance (Article 55 of the Escondido Municipal Code). These regulations are intended to protect drainage conditions and preclude significant impacts.

Overall, the project would have a less than significant impact related to changes to the drainage pattern of the site, as the reduction in the runoff rate would reduce the potential for erosion, siltation, flooding, and storm drain capacity issues.

Flood Hazard, Seiche, Tsunami, Mudflow

**No Impact.** The site is within Zone X per the Federal Emergency Management Agency (FEMA). Zone X is outside of the 500-year floodplain (FIRM Panel 1081 of 2375; Map Number 06073C1081G). As such, the project would not place any structures or alter areas within a flood hazard. Also, the project would reduce drainage discharge rates and would not exacerbate any downstream flooding issue. Overall, the project would have no impact related to flood zone hazards.

The site is located over four miles from the Dixon Lake Dam, over five miles from Lake Wolhford Dam, and upstream from the Lake Hodges Dam. According to the General Plan (City 2012a) Figure VI-8, the site is outside of the dam failure inundation area for Lake Wolford and Dixon Lake. Thus, no impact related to inundation from a dam failure would occur.

The site is not located near any levee, and is located about 15 miles from the ocean at 525 to 680 feet above mean sea level. The project is located on a hillside, but soils are stable and the risk of mudflow is not significant (Vinje & Middleton Engineering, Inc. 2013b). Thus, the project would have no impacts related to inundation from a levee, seiche, tsunami, or mudflow.

## X. LAND USE PLANNING

*Would the project:*

a. *Physically divide an established community?*

b. *Conflict with any applicable land-use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?*

c. *Conflict with any applicable habitat conservation plan or natural community conservation plan?*

Divide Established Community

**No Impact**. The construction of the proposed residential development and SAP improvements would not physically divide an established community, as access to the surrounding neighborhoods and roadways would be maintained after the implementation of the proposed project. Further, the proposed project is consistent with

the General Plan land use designation for the site and the General Plan Mobility Element. Therefore, no impact would occur.

Conflict with Applicable Plan, Policy or Regulation/Habitat Conservation Plan

**Potentially Significant Impact (To Be Further Analyzed in the EIR).** The proposed residential development has the potential to conflict with existing zoning requiring a zone change and would exceed allowable heights for cut and fill slopes requiring a grading exemption. The proposed full-width SAP improvements, however, would not conflict with applicable plans because the SAP improvements are consistent with the goals of the General Plan Mobility Element. This issue will be addressed further in the EIR.

## XI. MINERAL RESOURCES

*Would the project:*

a. *Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*

b. *Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land-use plan?*

**Less than Significant Impact.** The City's General Plan EIR (City 2012b) does not identify existing and past extraction facilities at the project site. However, the site is located immediately south of a historical gold and silver extraction site. Due to the proximity to the historical mining operation, the site was explored for gold and silver resources in the late 19th and early 20th centuries (Vinje & Middleton Engineering, Inc. 2013a). However, the early mineral explorations were unproductive and the site does not contain known significant mineral resources. The project site is unsuitable for mining due to the adjacent rural residential properties and the Estate II General Plan designation. Thus, implementation of the proposed project would result in a less than significant impact related to the loss of mineral resources.

## XII. NOISE

*Would the project result in:*

a. *Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

b. *Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?*

c. *A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?*

d. *A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?*

e. *For a project located within an airport land-use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

f. *For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?*

Noise and Vibration

**Potentially Significant Impact (To be Further Analyzed in the EIR)**. An Acoustical Site Assessment and a Construction Vibration Assessment were completed by Investigative Science and Engineering, Inc. in April 2016 (ISE, Inc. 2016c and 2016d, respectively). The Acoustical Site Assessment evaluated the existing noise conditions at the project site, noise generated during construction of the residential development, and changes in roadway noise levels resulting from the residential development. In September 2016, a technical memorandum was prepared by Harris & Associates that evaluated the potential for noise and vibration impacts from the SAP improvements (Harris & Associates 2016b). As proposed residences would potentially experience noise levels over the 60 decibel (db) Community Noise Equivalent Level (CNEL) City General Plan residential compatibility threshold, noise will be further analyzed in the EIR. The analysis to be completed in the EIR will also address project consistency with the City of Escondido Municipal Code Chapter 17, Article 12, Noise Abatement and Control (Noise Ordinance). In addition, potential vibration impacts will be addressed. Thus, additional analysis will be completed in the EIR to determine noise and vibration impacts of the project.

Airport Noise

**No Impact.** The closest airports to the project site are the Ramona and McClellan-Palomar Airports, both of which are located more than two miles away. The project site is not located within the Airport Influence Area of these airports (San Diego Regional Airport Authority 2011a and 2011b). The northwestern boundary of the site is located within two miles of the downtown Palomar Hospital heliport, but the heliport is not anticipated to generate significant noise levels at the project site considering the distance from the site and intermittent use of the heliport. Thus, the project would have no impact related to airport noise.

## XIII. POPULATION AND HOUSING

*Would the project:*

a. *Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?*

b. *Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?*

c. *Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?*

**Less than Significant Impact.** The proposed residential development would demolish one single-family home and construct 55 new, single-family homes. Based on an average of 3.12 persons per household in the city in 2010 (City 2016a), the net increase of 54 single-family homes would add approximately 168 people to the city. This growth is consistent with the Estate II General Plan designation in the City's General Plan. The loss of the single house would be more than offset by the proposed 55 homes, and replacement housing would not be necessary. Thus, the project would have a less than significant impact associated with population and housing.

The SAP improvements would make improvements to 3,560 linear feet of Bear Valley Parkway such that the roadway could be classified as a Major Road. Improvements would include bike lanes, sidewalks, and a median, and widening the roadway to two lanes in each direction. These improvements would not be growth-inducing. Rather, the SAP improvements would help the City meet goals in its current General Plan Mobility Element such as Complete Streets and Bicycle and Pedestrian Networks. Thus, the project would have a less than significant impact associated with indirectly inducing population growth.

## XIV. PUBLIC SERVICES

*Would the project:*

a. *Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which*

*could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*

*i. Fire protection?*
*ii. Police protection?*
*iii. Schools?*
*iv. Parks?*
*v. Other public facilities?*

As indicated above, the proposed residential development project would increase the population in the city by approximately 168 people by providing new residential housing. This increase in population would incrementally increase the demand for fire protection, police protection, schools, parks, and other public facilities such as libraries. As described below, the proposed residential development project would not result in a need for physical improvements to existing public service facilities or new public service facilities. Furthermore, the SAP improvements would not require the provision of new or physically altered public services. Impacts related to public services would be less than significant.

Fire Protection

**Less than Significant Impact.** The proposed project site would be serviced though the Escondido Fire District Service Area District 4, with the nearest fire station (Fire Station 4) located approximately 1.25 miles to the south at 3301 Bear Valley Parkway (City 2016b). This location has one paramedic fire engine and one brush engine (City 2016b). Applicable performance objectives for fire protection services are identified in the General Plan (City 2012a) Quality of Life Standard #3, as follows: In urbanized areas of the city, an initial response time of seven and one-half minutes for all structure fire and emergency Advanced Life Support (ALS) calls and a maximum response time of ten minutes for supporting companies shall be maintained. As identified in the Fire Protection Plan (Dudek 2015c), four fire stations in the district would respond to the site within seven minutes and the nearest fire station would respond within 4.2 minutes. The project would generate approximately 16 additional calls per year, which would not result in an increase in fire demand that would require a new or improved fire station facility (Dudek 2015c). However, the General Plan EIR (City 2012b) identifies a need for two additional fire stations under General Plan buildout conditions which would be located at: 1) the North Broadway area and the southeastern portion of the city; and 2) the area along Highway 78, east of Bear Valley Parkway. The project is located near the second proposed fire station location. The net increase in demand for fire protection services from development of the proposed project would be offset through payment of the Escondido Public Facility Development Fee (Article 18B of Chapter 6 of the Escondido Municipal Code) as well as increased funding available to the fire district through property taxes. As noted in the General Plan EIR, the construction of new fire station facilities would be subject to its own CEQA review (City 2012b). Impacts would be less than significant.

Police Protection

**Less than Significant Impact.** Police service would be provided to the proposed project site through the City of Escondido Police Department. According to the General Plan EIR (City 2012b), the existing Escondido Police Headquarters at 1163 North Centre City Parkway is anticipated to provide adequate service for the next 40 years. As the proposed project would be consistent with General Plan anticipated growth, the proposed project demand for police service would be adequately met by the existing facilities. Thus, no new police facility improvements or new police facilities would be required to provide adequate police service. Project impacts to police protection service would be less than significant.

Schools

**Less than Significant Impact.** The proposed project site is located in the Escondido Union Elementary School District (kindergarten to 8th grade) and the Escondido Union High School District (grades 9 to 12). As required by Senate Bill 50 and Article 21 of Chapter 6 of the Escondido Municipal Code, the project would be required to

provide payment of school fees to offset the demand for school capacity generated by the project. Conformance with statutory requirements for the payment of school fees would ensure that project impacts to school facilities remain below a level of significance (Government Code §65995(b)).

Parks

**Less than Significant Impact.** The General Plan Quality of Life Standard #6 states that the City shall provide a minimum of 11.8 acres of active and passive parkland per 1,000 dwelling units. As of 2012, the city had 6,556.3 acres of parkland and open space (City 2012a) and, as of 2015, there were an estimated 48,557 housing units (City 2016a). This is equivalent to 135 acres of parkland per 1,000 units. Thus, the City has an existing surplus of park and open space land.

The net addition of 54 residential units would require the provision of 0.64 acre of additional park and open space land in the city to meet the need of 11.8 acres of parkland per 1,000 dwelling units. However, this would be met by the current parkland surplus. Furthermore, the proposed project includes 20.04 acres of open space, including a 0.24-acre active pocket park that would partially satisfy this additional demand. The net increase in demand for recreational services from development of the proposed project would be offset through payment of the Escondido Public Facility Development Fee. Impacts would be less than significant.

Library

**Less than Significant Impact.** Library service in the city, including the project site, is provided by the Escondido Public Library Department through the Main Library and the Escondido Pioneer Room, as well as the Escondido Technology Center and Literacy Learning Center. The City's General Plan (City 2012a) Quality of Life Standard #7 is to maintain two collection items per capita, three public library staff per 8,000 residents of the City, and 1.6 square feet of library space per dwelling unit.

Given that the city has an estimated population of 147,294 and 48,557 dwelling units (City 2016a), it should have 294,588 collection items, 55 staff, and 77,691 square feet of library space. In its Preliminary Five-Year Capital Improvement Program and Budget for fiscal years 2016/17 – 2020/21, the City identified the following library projects to help meet existing demands and prepare for future growth: the purchase of books and circulating items to comply with the General Plan standards; use of donated funds for library books and other circulated materials; and the use of library technology projects, hardware, software, and equipment (City 2016c). The net increase in demand for library services from development of the proposed project would be offset through payment of the Escondido Public Facility Development Fee that would go towards these CIP library projects. Impacts would be less than significant.

## XV.RECREATION

*Would the project:*

a. *Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*

b. *Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

**Less than Significant Impact.** See Section XV, Public Services, Parks.

## XVI. TRANSPORTATION/TRAFFIC

*Would the project:*

a. *Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit*

*and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths and mass transit (or conflict with applicable traffic thresholds specified in City of Escondido Zoning Code Article 47)?*

b. *Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?*

c. *Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?*

d. *Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*

e. *Result in inadequate emergency access?*

f. *Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?*

Circulation System Operations

**Potentially Significant Impact (To be Further Analyzed in the EIR).** A Traffic Impact Analysis (Linscott Law & Greenspan (LLG) 2016a) was prepared to address the proposed residential development's traffic impacts in accordance with the City of Escondido's published 2014 Traffic Impact Analysis Requirement Guidelines. The proposed 55 residential units would generate 550 daily trips that would be distributed on the roadway network. These additional trips added to the roadway network have the potential to result in traffic impacts to an intersection. A memorandum was prepared to address the proposed SAP improvements' traffic impacts (LLG 2016b). Development of the SAP is not expected to result in traffic impacts. This issue will be addressed further in the EIR.

Air Traffic

**No Impact.** As indicated above, the proposed project is not located within an Airport Influence Area and would not affect air traffic patterns (San Diego Regional Airport Authority 2011a and 2011b). No impact would occur.

Traffic Hazards and Emergency Access

**Potentially Significant Impact (To be Further Analyzed in the EIR).** Access to the proposed project would be from Bear Valley Parkway and from a secondary emergency access roadway. The residential development would include internal circulation improvements and the SAP improvements would include improvements to Bear Valley Parkway. Potential traffic hazards and emergency access issues will be addressed further in the EIR.

Alternative Transportation

**Potentially Significant Impact (To be Further Analyzed in the EIR).** The proposed project would construct 55 residential units along Bear Valley Parkway, as well as improvements to Bear Valley Parkway including sidewalks and a bike lane. A trail would also be included on the proposed project site that would connect the proposed onsite recreational area to the southern area of the site. Additional analysis of the project impacts related to consistency with public transit, bicycle, or pedestrian facilities policies will be addressed in the EIR.

## XVII. TRIBAL CULTURAL RESOURCES

*Would the project:*

a. C*ause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:*

*i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or*

*ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.*

**Potentially Significant Impact (To be Further Analyzed in the EIR).** As described under Section V, Cultural Resources, cultural resources reports (ASM 2016a, 2016b, and 2016c) have been prepared for the proposed residential development and SAP improvements. These reports identified the presence of archaeological resources. In addition, the City has completed tribal consultation requirements pursuant to Assembly Bill 52 and CEQA. Tribal cultural resources will be addressed in the EIR.

## XVIII. UTILITIES AND SERVICE SYSTEMS

*Would the project:*

*a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?*

*b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

*c. Require, or result in, the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

*d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?*

*e. Result in a determination by the wastewater treatment provider which serves, or may serve, the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

*f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?*

*g. Comply with federal, state, and local statutes and regulations related to solid waste?*

Wastewater Facilities and Capacity

**Less than Significant Impact.** The proposed on-site sewer system for the residential development would include sewer lines within the proposed internal roadways. The internal system would connect to a proposed line in Bear Valley Parkway, which would connect to an existing sewer line in Encino Drive. Based on sewer service analysis (Dexter Wilson Engineering, Inc. 2016), the existing system in Encino Drive that conveys wastewater to the treatment facility would have adequate capacity to accommodate the additional wastewater generated by

the project. Further, the wastewater effluent from the residential development project site would be typical of residential developments and would not exceed the wastewater treatment requirements of the San Diego RWQCB. The project is consistent with the General Plan; therefore, no additional wastewater treatment facilities are required. Impacts would be less than significant.

Stormwater Facilities

**Less than Significant Impact.** As described under Section IX, Hydrology and Water Quality, after project development, onsite runoff from the residential development would be directed towards two bioretention areas. Runoff from the SAP improvements would be captured in a vegetated swale, a rain garden, and street trees. With implementation of the proposed residential development and associated features, 100-year peak flow runoff rates would decrease from 353 cfs under the existing conditions to 335 cfs under the proposed project conditions (Hunsaker & Associates 2016a). Drainage patterns would remain generally the same as existing conditions, and proposed runoff would drain to the existing 60-inch culvert under Bear Valley Parkway. Thus, the proposed project would not result in a need for additional stormwater capacity improvements off-site. Impacts related to stormwater would be less than significant.

Water Facilities and Supplies

**Less than Significant Impact.** Water service would be provided to the proposed project by the City of Escondido and the property is within the City's existing water service area. The total average estimated water demand for the residential development is 44,000 gallons per day (gpd), with a maximum daily demand of 79,200 gpd. The SAP improvements are anticipated to have a negligible demand for additional water supplies. The City's existing Clearwell 975 Pressure Zone water system will provide water to the site. The project would include two connections to the water system in order to provide a looped water system through the project (Dexter Wilson Engineering, Inc. 2015). Because the proposed development is consistent with the General Plan, no additional entitlements or resources would be needed to service the project. Thus, the proposed project would have a less than significant impact related to water supply and the construction of new water treatment facilities.

Solid Waste Capacity and Compliance

**Less than Significant Impact.** The proposed project would result in an increased demand for solid waste disposal. The project would generate solid waste during demolition and construction phases, as well as, during operation of the residential development (the SAP improvements are not expected to generate any solid waste). Construction and demolition waste would be disposed of at regional landfills, green waste centers, and recycling centers, as appropriate. Any contaminated soils or other hazardous materials would be disposed of in accordance with regulations. Operational waste would be collected by the Escondido Disposal, Inc. and disposed of at regional landfills. More specifically, the solid waste would be taken to the Escondido Disposal Transfer Station, and then to the Otay Landfill or Sycamore Landfill. The Otay Landfill has a remaining capacity of 25,514,904 cubic yards (cy), and is expected to be operational until 2028 (CalRecycle 2016b). The Sycamore Landfill has a remaining capacity of 71,233,171 cy and an anticipated closure date of 2042 (CalRecycle 2016b). Considering the size of the project and the project consistency with the General Plan, the remaining capacity at these landfills would be sufficient to serve the project and the project would not result in a need for new or expanded landfill facilities. Thus, project impacts related to solid waste would be less than significant.

## XIX. MANDATORY FINDINGS OF SIGNIFICANCE

*Would the project:*

a. *Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number, or restrict the range, of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?*

b. *Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)*

c. *Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?*

d. *Where deficiencies exist relative to the City's General Plan Quality of Life Standards, does the project result in deficiencies that exceed the levels identified in the Environmental Quality Regulations {Zoning Code Section 33-924 (a)}?*

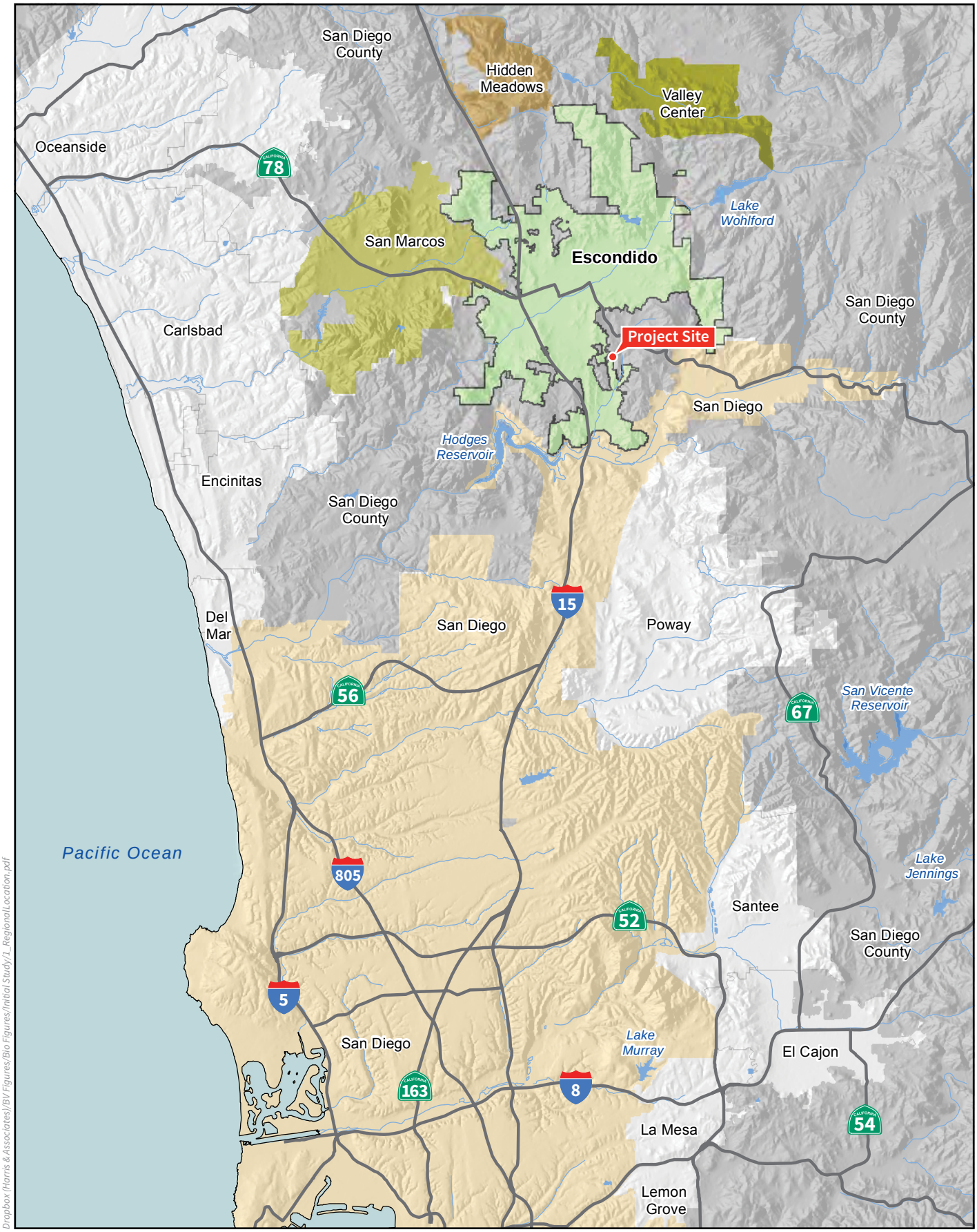
**Potentially Significant (To be Further Analyzed in the EIR).** The proposed project has the potential to result in significant direct and/or cumulative impacts related to:

- Aesthetics
- Agriculture Resources
- Biological Resources
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Land Use and Planning
- Noise
- Transportation and Traffic
- Tribal Cultural Resources

All other project impacts would be less than significant without mitigation.

## MANDATORY FINDINGS OF SIGNIFICANCE

The proposed project has the potential to result in significant impacts related to Aesthetics, Agricultural Resources, Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Land Use and Planning, Noise, Transportation and Traffic, and Tribal Cultural Resource issue areas. Therefore, in the City of Escondido staff's opinion, the proposed project may have a significant individual or cumulative impact to the environment. An Environmental Impact Report shall be prepared to further address the project's potentially significant impacts.




Source: City of Escondido 2012

Harris & Associates

**Figure 1**
Regional Location

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Path: MarCom/_COMMS EXTERNAL/GRAPHICS/ BD Proposals/ Bear Valley EIR Figures/ 1 Initial Study Figures

*Source: Google Earth 2016*

Harris & Associates

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**Figure 2**
Project Vicinity

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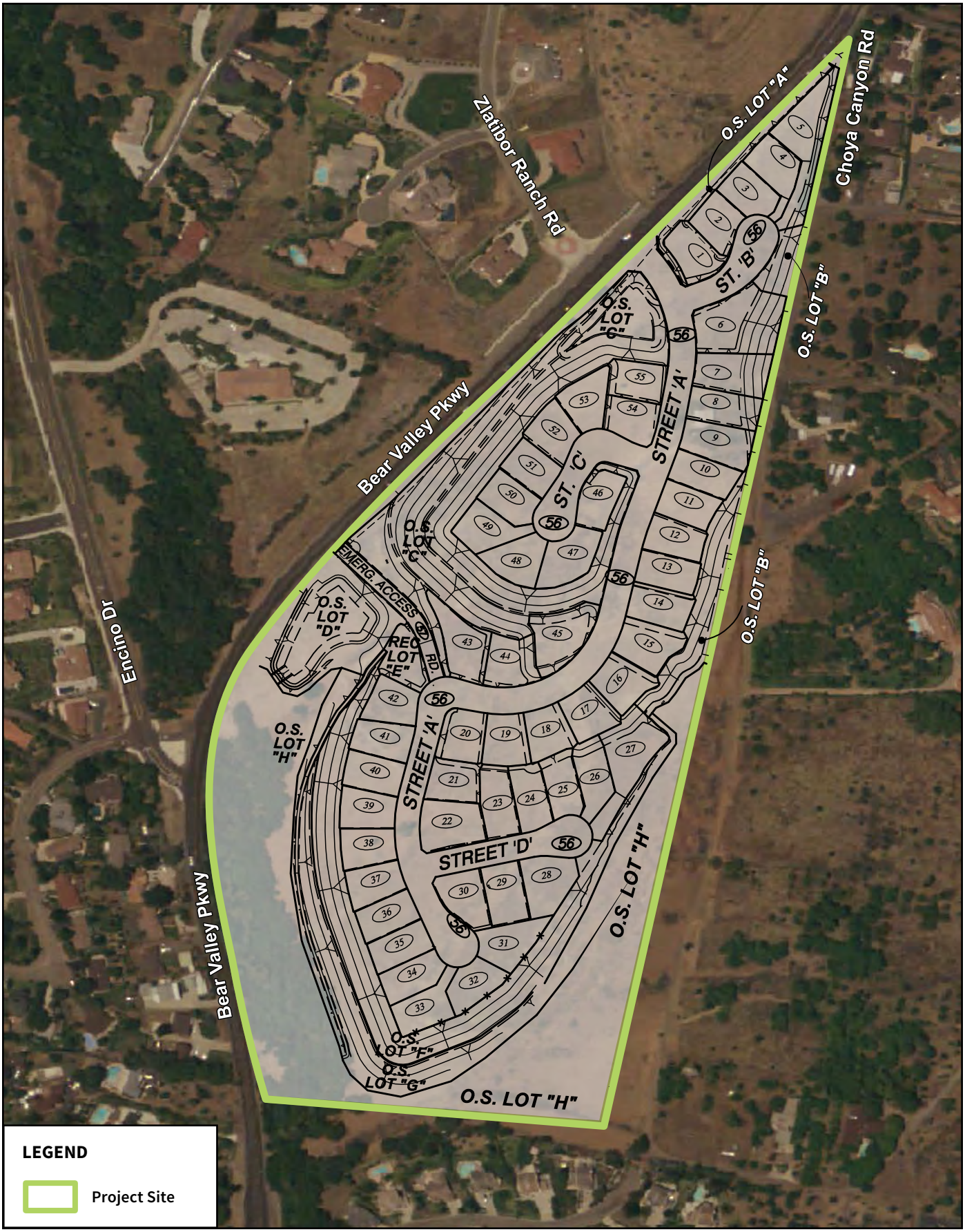


Source: Hunsaker & Associates 2016a

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**Figure 3**
Residential Development Site Plan

*Note: All drawings are approximate.*

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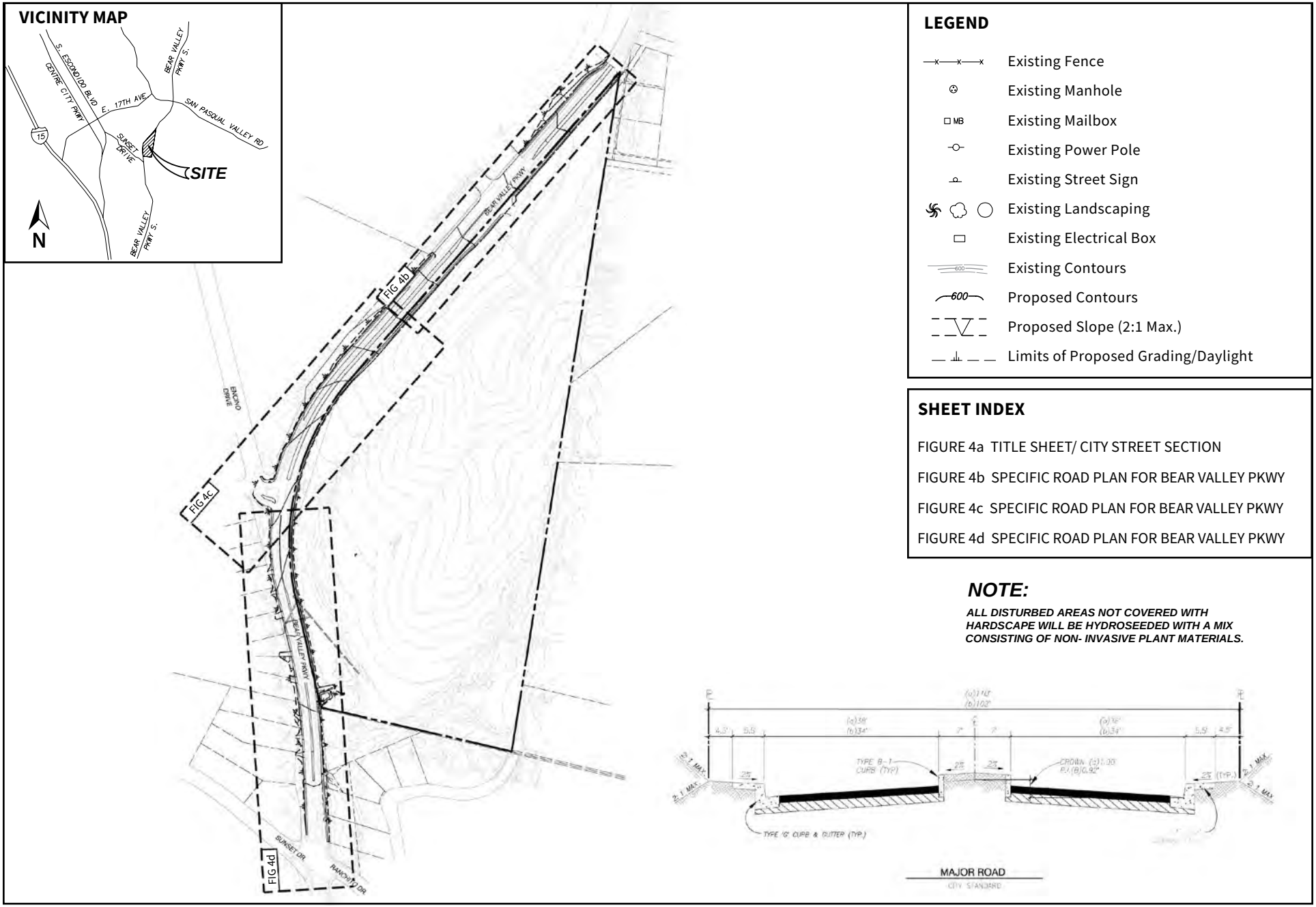


Data/Departments/MarCom/_COMMS EXTERNAL/GRAPHICS/ BD Proposals/Bear Valley EIR Figures

Source: City of Escondido 2016

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**Figure 4a**
Bear Valley Parkway Full-Width SAP Improvements

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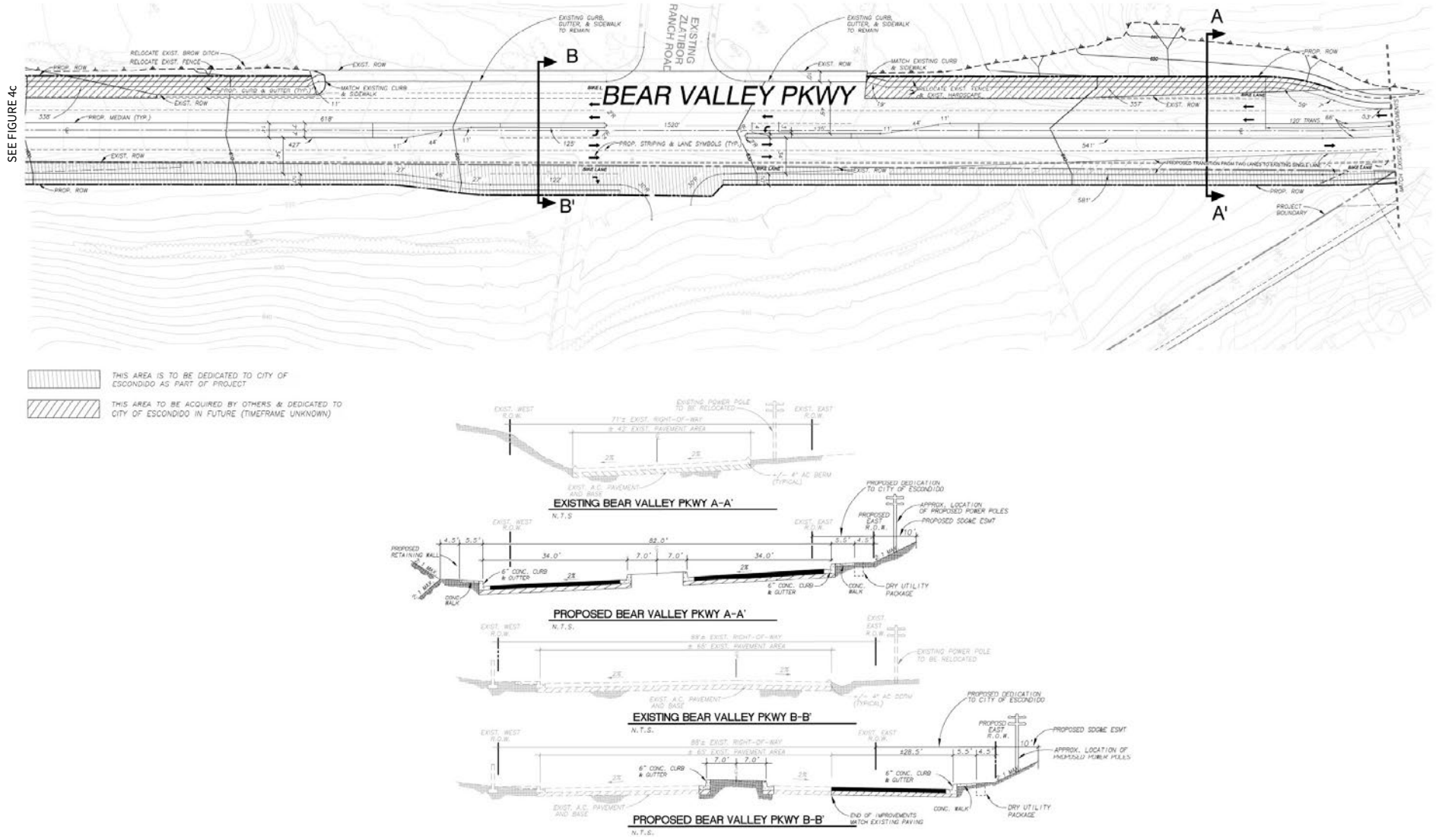


Source: City of Escondido 2016

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**Figure 4b**
Bear Valley Parkway Full-Width SAP Improvements

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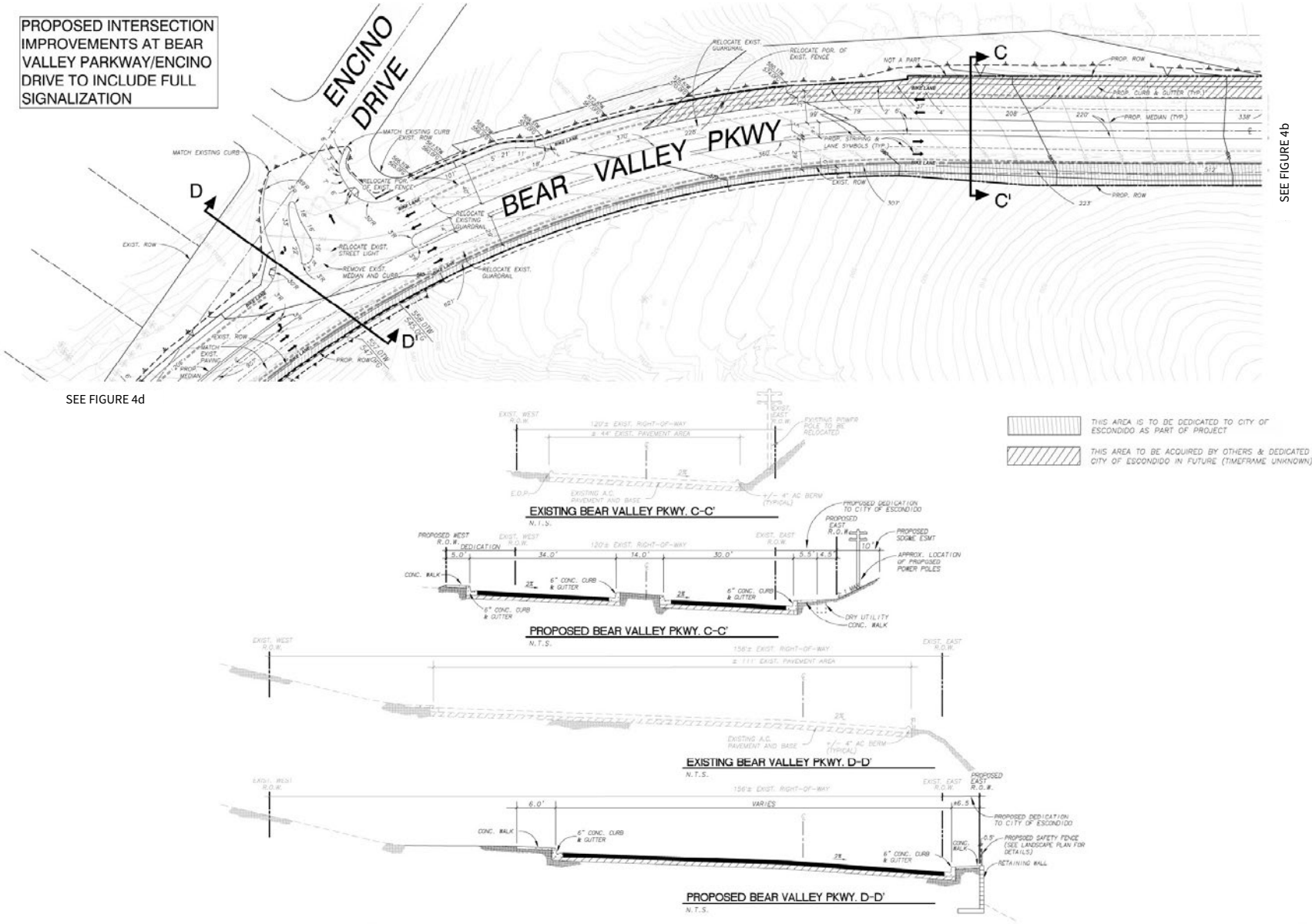


*Data/Departments/MarCom/_COMMS EXTERNAL/GRAPHICS/BD Proposals/Bear Valley EIR Figures*

*Source: City of Escondido 2016*

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**Figure 4c**
Bear Valley Parkway Full-Width SAP Improvements

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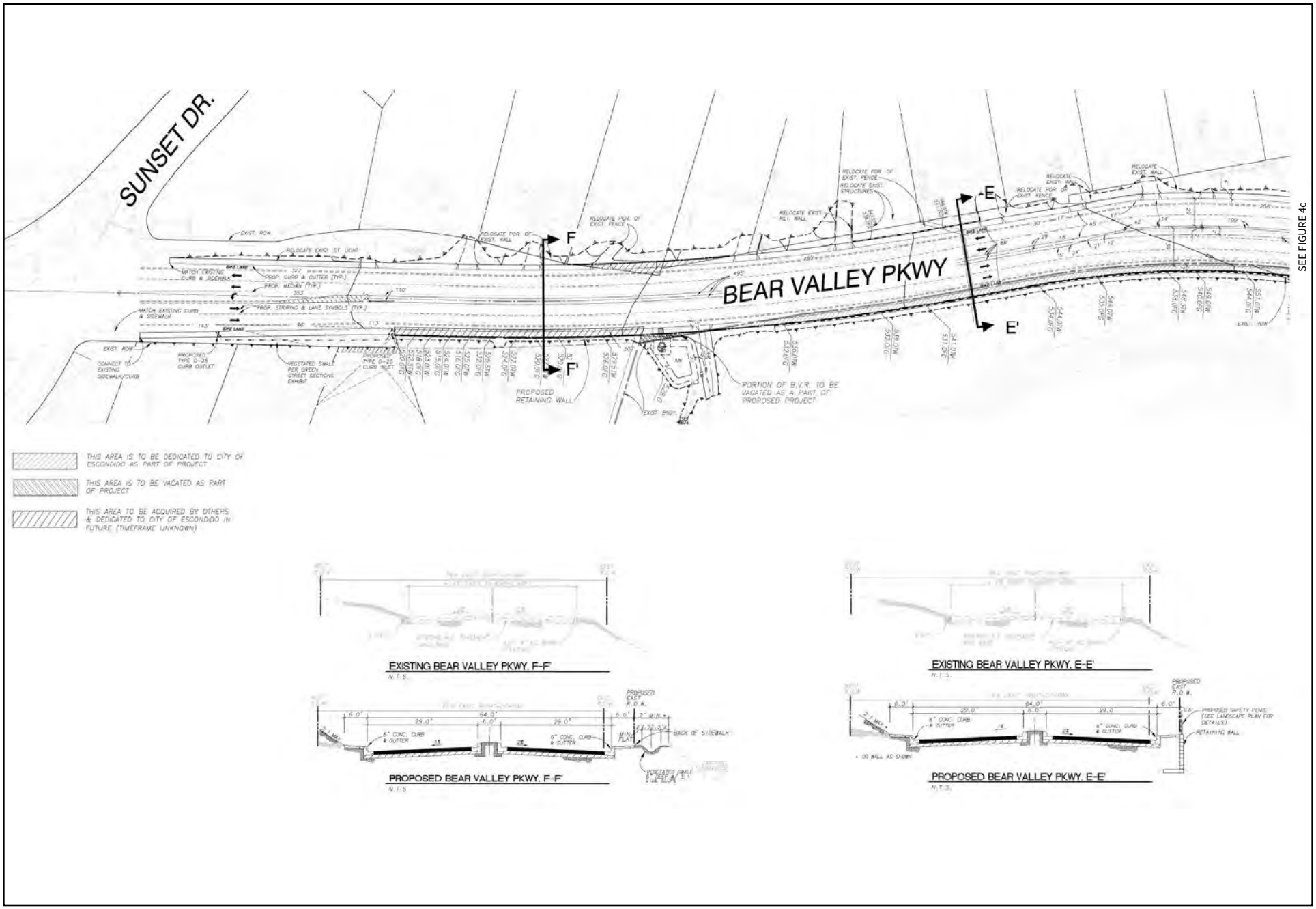


Data/Departments/MarCom/_COMMS EXTERNAL/GRAPHICS/BD Proposals/Bear Valley EIR Figures

*Source: City of Escondido 2016*

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**Figure 4d**
Bear Valley Parkway Full-Width SAP Improvements

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## MATERIAL USED IN PREPARATION OF THIS ANALYSIS

### Figures

Figure 1: Regional Location
Figure 2: Project Vicinity
Figure 3: Residential Development Site Plan
Figure 4a: Bear Valley Parkway Full-Width Improvements, Title Sheet / City Street Section
Figure 4b: Bear Valley Parkway Full-Width Improvements, Specific Road Plan Sheet 4b
Figure 4c: Bear Valley Parkway Full-Width Improvements, Specific Road Plan Sheet 4c
Figure 4d: Bear Valley Parkway Full-Width Improvements, Specific Road Plan Sheet 4d

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November 30, 2016

Ann Dolmage
City of Escondido
201 North Broadway
Escondido, CA 92025

sent via e-mail:
adolmage@escondido.org

RE: SCH# 2016111060; 661 Bear Valley Parkway Residential Development (Project No. SUB 15-0002) Project, Notice of Preparation for Draft Environmental Impact Report, San Diego County, California

Dear Ms. Dolmage:

The Native American Heritage Commission has received the Notice of Preparation (NOP) for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code § 21000 et seq.), specifically Public Resources Code section 21084.1, states that a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, § 15064.5 (b) (CEQA Guidelines Section 15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared. (Pub. Resources Code § 21080 (d); Cal. Code Regs., tit. 14, § 15064 subd.(a)(1) (CEQA Guidelines § 15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources with the area of project effect (APE).

**CEQA was amended significantly in 2014**. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a **separate category of cultural resources**, "tribal cultural resources" (Pub. Resources Code § 21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment (Pub. Resources Code § 21084.2). Please reference California Natural Resources Agency (2016) "Final Text for tribal cultural resources update to Appendix G: Environmental Checklist Form," http://resources.ca.gov/ceqa/docs/ab52/Clean-final-AB-52-App-G-text-Submitted.pdf. Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code § 21084.3 (a)). **AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. § 800 et seq.) may also apply.

The NAHC recommends **lead agencies consult with all California Native American tribes** that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments. **Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws**.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a **lead agency** shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
    a. A brief description of the project.
    b. The lead agency contact information.
    c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code § 21080.3.1 (d)).

d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code § 21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A **lead agency** shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code § 21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or environmental impact report. (Pub. Resources Code § 21080.3.1(b)).
   a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code § 65352.4 (SB 18). (Pub. Resources Code § 21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
   a. Alternatives to the project.
   b. Recommended mitigation measures.
   c. Significant effects. (Pub. Resources Code § 21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
   a. Type of environmental review necessary.
   b. Significance of the tribal cultural resources.
   c. Significance of the project's impacts on tribal cultural resources.
   d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code § 21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 6254 (r) and 6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code § 21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
   a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
   b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code § 21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
   a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
   b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code § 21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code § 21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code section 21084.3 (b). (Pub. Resources Code § 21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:
    i. Planning and construction to avoid the resources and protect the cultural and natural context.
    ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
    i. Protecting the cultural character and integrity of the resource.
    ii. Protecting the traditional use of the resource.
    iii. Protecting the confidentiality of the resource.
c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
d. Protecting the resource. (Pub. Resource Code § 21084.3 (b)).
e. Please note that a federally recognized California Native American tribe or a nonfederally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code § 815.3 (c)).
f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code § 5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An environmental impact report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.3.1 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2.
    b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code § 21082.3 (d)).

    *This process should be documented in the Cultural Resources section of your environmental document.*

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires **local governments** to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code § 65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code § 65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code section 65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code sections 5097.9 and 5097.993 that are within the city's or county's jurisdiction. (Gov. Code § 65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason,

we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have been already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
    a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
    b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
    a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, section 15064.5(f) (CEQA Guidelines section 15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
    b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
    c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code section 7050.5, Public Resources Code section 5097.98, and Cal. Code Regs., tit. 14, section 15064.5, subdivisions (d) and (e) (CEQA Guidelines section 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

Please contact me if you need any additional information at gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst

cc: State Clearinghouse

County of San Diego

MARK WARDLAW
DIRECTOR
PHONE (858) 694-2962
FAX (858) 694-2555

PLANNING & DEVELOPMENT SERVICES
5510 OVERLAND AVENUE, SUITE 310, SAN DIEGO, CA 92123
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December 27, 2016

Ann Dolmage
Associate Planner
Community Development Department
Planning Division
201 North Broadway
City of Escondido, CA 92025

Via email to: adolmage@escondido.org

**Comments on Notice of Preparation for 661 Bear Valley Parkway Residential Project, Case Number SUB 15-0002**

Dear Ms. Dolmage,

The County of San Diego (County) has reviewed the City of Escondido's 661 Bear Valley Parkway Residential project, and appreciates this opportunity to provide input. The County has completed their review and has the following comments regarding the proposed project.

**GENERAL COMMENTS**

1. The City of Escondido should evaluate the potential impacts to surrounding unincorporated area residents that may result from the project. The surrounding development in the County unincorporated area to the east is characterized by semi-rural residential development and undeveloped lands. The environmental document should evaluate compatibility with the surrounding community character, visual impacts, and impacts resulting from increased traffic, noise, and project construction.

2. The County's Land Use and Environment Group has developed Guidelines for Determining Significance that are used to determine the significance of environmental impacts and mitigation options for addressing potentially significant impacts in the unincorporated portions of the County. Project impacts that could have potentially significant adverse effects to the unincorporated County or County facilities should be evaluated using the

County's Guidelines for Determining Significance. These guidelines are available online at: http://www.sandiegocounty.gov/pds/procguid.html.

**LAND & WATER QUALITY**

1. Records for the parcels that fall within the cut slope are incomplete. However, if septic systems are in use, there is the potential for impacts to them and the required reserve septic area from grading to properties adjacent to parcels 237-142-26, 27, 28, 30 and 237-141-01. Cut slopes must maintain a 5:1 (horizontal to vertical) setback to any existing septic systems or reserve areas. In addition, the existing structure to be demolished may also be served by a septic system. If so, the septic system must be properly abandoned prior to grading. There may also be water wells associated with the existing structure to be demolished or other areas impacted by grading activities. All wells must be identified on the parcel map with the designated use. Any wells proposed to be destroyed must be done under permit and inspection by the Department of Environmental Health prior to grading. Please contact Eric Klein, Land Use Supervisor at 858-694-2551 or via email at eric.klein@sdcounty.ca.gov for more information.

**VECTOR CONTROL PROGRAM**

The County of San Diego Vector Control Program (VCP) is responsible for the protection of public health through the surveillance and control of mosquitoes that are vectors for human disease including West Nile virus (WNV). The VCP has completed their review and has the following comments regarding the proposed project.

1. The VCP respectfully requests that the draft Environmental Impact Report address potential impacts from possible mosquito breeding sources created by the project and that the project be designed and constructed in a manner to minimize those impacts. Specifically, ensure construction-related depressions created by grading activities and vehicle tires, tree pits and landscaping do not result in depressions that will hold standing water. In addition, ensure BMPs, storm water drainage systems, and ornamental water features do not create a potential mosquito breeding source. Any area that is capable of accumulating and holding at least ½ inch of water for more than 96 hours can support mosquito breeding and development. Finally, if habitat remediation is required for the project, the design should be consistent with guidelines for preventing mosquito habitat creation.

2. Please note, the VCP has the authority pursuant to state law and County Code to order the abatement of any mosquito breeding that does occur either during construction or after the project is completed that is determined to be a vector breeding public

nuisance. The VCP will exert that authority as necessary to protect public health if the project is not designed and constructed to prevent such breeding.

3. For your information, the County of San Diego Guidelines for Determining Significance for Vectors can be accessed at http://www.sandiegocounty.gov/content/dam/sdc/pds/docs/vector_guidelines.pdf and the California Department of Public Health Best Management Practices for Mosquito Control in California is available at http://www.cdph.ca.gov/HealthInfo/discond/Documents/BMPforMosquitoControl07-12.pdf.

4. The VCP appreciates the opportunity to participate in the environmental review process for this project. If you have any questions regarding these comments, please contact me at 858-688-3722 or by e-mail at Daniel.Valdez@sdcounty.ca.gov.

**PUBLIC WORKS**

1. According to County GIS, an existing drainage system within the County's jurisdiction is located at the intersection of Encino Drive and Rancho Verde Drive. The drainage spans the northwest corner to the southwest corner of the intersection. Based on the Tentative Map, it appears the project proposes a connection between this existing drainage and the proposed open space lot. Any impacts to County infrastructure (i.e., roads, storm-water/drainage systems) must be coordinated with the County.

**TRANSPORTATION/TRAFFIC**

1. The project's Traffic Impact Analysis (TIA) identifies direct and cumulative impacts to Bear Valley Parkway. To mitigate for these direct impacts, the project proposes full half-width improvements to provide an additional (2nd) northbound lane. The Tentative Map (TM) also shows half-width improvements to Bear Valley Parkway. The County had previously commented on the need for payment to the County's TIF program for cumulative impacts to County road facilities. The County has concerns, however, that the ultimate classification improvements of a four-lane road with bike lanes will remain unfinished because of the existing homes on the west side of the road, which are largely within the County, while the remaining west side right-of-way is within the City of Escondido.

2. In lieu of TIF contributions to the County, the City should condition the project to complete the full four lane road with bike lane improvements within the City's jurisdiction as this segment of Bear Valley Parkway/project frontage is bookended by segments of Bear Valley Parkway within the unincorporated County.

3. The City and the project should also demonstrate that there is an existing programmed improvement for the fair-share contribution to the improvement at Bear Valley Parkway and Encino Drive.

The County looks forward to receiving future documents and/or notices related to this project and providing additional assistance at your request. If you have any questions regarding these comments, please contact Danny Serrano, Land Use / Environmental Planner at (858) 694-3680, or via email at daniel.serrano@sdcounty.ca.gov.

Sincerely,

FOR J. FARACE

Joe Farace, Group Program Manager
Advance Planning Division
Planning & Development Services

Email cc:

Keith Corry, Policy Advisor, Board of Supervisors, District 3
Vincent Kattoula, CAO Staff Officer, LUEG
Erin Jensen, Administrative Analyst, DEH
Nick Ortiz, Project Manager, PDS
Jeff Kashak, Planner, DPW

# San Diego County Archaeological Society, Inc.

Environmental Review Committee

28 December 2016

RECEIVED
JAN 03 2017
PLANNING DIVISION

To: Ms. Ann Dolmage, Associate Planner
Planning Division
Community Development Department
City of Escondido
201 North Broadway
Escondido, California 92025

Subject: Notice of Preparation of a Draft Environmental Impact Report
661 Bear Valley Parkway Residential Project
Project Case No. SUB 15-0002

Dear Ms. Dolmage:

Thank you for the Notice of Preparation for the subject project, which was received by this Society last month.

We are pleased that cultural resources have been included in the list of subject areas to be addressed in the DEIR. In order to permit us to review the cultural resources aspects of the project, please include us in the distribution of the DEIR when it becomes available for public review. Also, in order to facilitate our review, we would appreciate being provided with one copy of the cultural resources technical report(s) along with the DEIR.

SDCAS appreciates being included in the environmental review process for this project.

Sincerely,

James W. Royle, Jr., Chairperson
Environmental Review Committee

cc: SDCAS President
File

P.O. Box 81106 San Diego, CA 92138-1106 (858) 538-0935

**From:** Vincent Whipple [mailto:vwhipple@RinconTribe.org]
**Sent:** Friday, December 30, 2016 11:29 AM
**To:** Ann F. Dolmage <adolmage@escondido.org>
**Subject:** Notice of Preparation – Project Case No. SUB 15-0002

RE: Notice of Preparation – Project Case No. SUB 15-0002

Ms. Ann Dolmage:

This message is sent on behalf of the Rincon Band of Luiseno Indians. We have received the notice of November 22, 2016 regarding the above named project. The identified location is within the Aboriginal Territory of the Luiseno people, and it is also within Rincon's historic area of cultural interest. Embedded in the Luiseno Territory are Rincon's history, culture, and identity.

The site location is in our Traditional Use Area, and we believe there is the potential for additional cultural findings, including inadvertent discoveries. The cultural surveys from 2016 named in the Draft Initial Study confirm this position as they identified cultural resources at the project location. We agree with the recommendation for further analysis of impacts to historical and archaeological resources in the EIR.

Due to the culturally sensitive nature of the project area, Rincon recommends a Luiseno Tribal Monitor be present for all ground disturbing activities associated with the project.

We thank you for the opportunity to comment and to protect and preserve our Luiseno cultural heritage.

Vincent Whipple
Cultural Resources Manager
Rincon Band of Luiseno Indians
760-297-2635

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# Appendix B Biological Resources Technical Report for Bear Valley Parkway Project (~~April 2016~~May 2017)

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# Biological Resources Technical Report for
# Bear Valley Parkway Project
# San Diego County, California

*Prepared for:*

**Spieth-Wohlford Inc.**
P.O. Box 5005 No. 17
Rancho Santa Fe, California 92067
*Contact: Mr. Burnet Wohlford*

*Prepared by:*

DUDEK
605 Third Street
Encinitas, California 92024
*Contact: Anita Hayworth*
*760.479.4239*

**MAY 2017**

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# TABLE OF CONTENTS

**Section** **Page No.**

**SUMMARY OF FINDINGS** ..... **V**

**1 INTRODUCTION** ..... **1**
1.1 Proposed Project ..... 1

**2 PROJECT SETTING** ..... **7**
2.1 Environmental Setting ..... 7
2.1.1 Soils ..... 7
2.1.2 Hydrology ..... 7
2.2 Applicable Regulations ..... 8
2.2.1 Federal ..... 8
2.2.2 State ..... 14
2.2.3 Local/City of Escondido ..... 17

**3 METHODS** ..... **21**
3.1 Literature Review ..... 21
3.2 Field Reconnaissance ..... 21
3.2.1 Resource Mapping ..... 21
3.2.2 Flora ..... 22
3.2.3 Fauna ..... 22
3.2.4 Jurisdictional Wetlands Delineation ..... 22

**4 RESULTS OF SURVEY** ..... **29**
4.1 Botany – Plant Communities and Floral Diversity ..... 29
4.1.1 Southern Coast Live Oak Riparian Forest (61310) ..... 29
4.1.2 Non-native Riparian (65000) ..... 30
4.1.3 Disturbed Southern Cactus Scrub ..... 30
4.1.4 Disturbed Habitat (11300) ..... 30
4.1.5 Developed Land (12000) ..... 30
4.1.6 Floral Diversity ..... 31
4.2 Zoology – Wildlife Diversity ..... 31
4.2.1 Birds ..... 31
4.2.2 Reptiles and Amphibians ..... 31
4.2.3 Mammals ..... 31
4.2.4 Invertebrates ..... 32

# TABLE OF CONTENTS (CONTINUED)

**Section** **Page No.**

4.3 Special-Status Biological Resources/Regulated Resources ..... 32
4.3.1 Special-Status Plant Species ..... 33
4.3.2 Special-Status Wildlife Species ..... 33
4.3.3 Wildlife Corridors and Habitat Linkages ..... 34
4.3.4 Jurisdictional Aquatic Resources ..... 35

**5 ANTICIPATED PROJECT IMPACTS ..... 39**
5.1 Direct Impacts ..... 39
5.1.1 Vegetation Communities ..... 39
5.1.2 Special-Status Plants ..... 40
5.1.3 Special-Status Wildlife ..... 40
5.1.4 Habitat Linkages/Wildlife Corridors ..... 43
5.1.5 Jurisdictional Aquatic resources ..... 43
5.2 Indirect Impacts ..... 44
5.2.1 Vegetation Communities and Special-status Plants ..... 44
5.2.2 Special-Status Wildlife ..... 46
5.2.3 Habitat Linkages/Movement Corridors ..... 48
5.2.4 Jurisdictional Aquatic Resources ..... 49

**6 ANALYSIS OF SIGNIFICANCE ..... 51**
6.1 Explanation of Findings of Significance ..... 51
6.2 Vegetation Communities ..... 52
6.3 Special-Status Plants ..... 53
6.4 Special-Status Wildlife ..... 53
6.5 Habitat Linkages/Wildlife Corridors ..... 54
6.6 Jurisdictional Aquatic Resources ..... 54

**7 MITIGATION ..... 57**
7.1 Vegetation Communities ..... 57
7.2 Special-Status Plants ..... 58
7.3 Special-Status Wildlife ..... 58
7.4 Habitat Linkages/Wildlife Corridors ..... 59
7.5 Jurisdictional Aquatic Resources ..... 59

**8 ACKNOWLEDGMENTS ..... 61**

**9 LITERATURE CITED ..... 63**

# TABLE OF CONTENTS (CONTINUED)

**Page No.**

## APPENDICES

A Vascular Plant Species Observed within the Study Area
B Cumulative List of Wildlife Species Observed within the Study Area
C Special-Status Plant Species Potential to Occur
D Special -Status Wildlife Potential to Occur
E Routine Wetland Determination Forms
F Jurisdictional Delineation Report

## FIGURES

1 Regional Map ..... 3
2 Vicinity Map ..... 5
3 Watershed Map ..... 9
4 Subregional Plan Area ..... 19
5 Biological Resources ..... 25
6 Project Impacts ..... 41

## TABLES

1 Vegetation Communities and Land Covers ..... 29
2 Jurisdictional Aquatic Resources ..... 36
3 Direct Impacts to Vegetation Communities ..... 40
4 Impacts to On-site Jurisdictional Aquatic Resources ..... 44
5 Preserved Vegetation Communities and Land Covers ..... 57
6 Jurisdictional Aquatic Resources ..... 59

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## SUMMARY OF FINDINGS

The Bear Valley Parkway Parcel consists of approximately 41 acres of which the Bear Valley Parkway Project (Study Area) consists of 40.62 acres in the City of Escondido, California. A "Not a Part" portion, consisting of 0.65 acre is located west of Bear Valley Parkway, is not included in the project. Biological surveys of the Study Area were conducted by Dudek in 2013 and 2014 and included a reconnaissance-level field survey and a formal jurisdictional delineation.

The purpose of the biological resource technical report is to map and assess the existing vegetation communities and, if necessary, survey for plant and animal species recognized as special-status by local, state, or federal wildlife agencies (U.S. Fish and Wildlife Service [USFWS] and California Department of Fish and Wildlife [CDFW]). Following the surveys, direct and indirect impacts to vegetation communities and special-status species, if present, were evaluated based on the proposed project. This report describes the biological characteristics of the Study Area; provides an analysis of direct and indirect impacts based on the proposed project; analyzes the biological significance of the proposed project under the California Environmental Quality Act (CEQA); and discusses mitigation measures, which will reduce significant impacts to a level below significant.

There are five vegetation communities/land covers mapped on site: southern coast live oak riparian forest, non-native riparian, disturbed southern cactus scrub, disturbed habitat, and developed land. In addition, three unvegetated stream channels are mapped on site. The southern coast live oak riparian forest, non-native riparian areas and unvegetated stream channels are regulated through Sections 401 and 404 of the Clean Water Act (CWA) and Fish and Game Code 1600-1602, and are considered jurisdictional under the U.S. Army Corps of Engineers (ACOE), Regional Water Quality Control Board (RWQCB), and/or CDFW.

No special-status plant species were documented on site. There are two species with moderate potential to occur, San Diego ambrosia (*Ambrosia pumila*) and smooth tarplant (*Centromadia pungens* ssp. *laevis).*

No special-status wildlife species were detected on site during the surveys, however, one coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*; a CDFW SSC[1]) was observed in a palm tree immediately off site and there is a small patch of disturbed cactus scrub on site that may provide potential nesting habitat.

[1] SSC: Species of Special Concern

There are five special-status wildlife species that have a high potential to occur based on habitat types and species' range. While some raptors are not considered special-status and are fairly common in Southern California, raptors, as a group, are considered special-status, and Section 3503.5 of the California Fish and Game Code specifically prohibits the unauthorized take of raptors and raptor nests.

Implementation of the project would result in significant direct impacts to 0.67 acres of southern live oak riparian forest (on- and off-site); 0.03 acres of jurisdictional aquatic resources; and potential impacts associated with direct or indirect impacts to nesting birds protected under the Migratory Bird Treaty Act. The impacts to 0.67 acres of southern live oak riparian forest will be mitigated through at 3:1 ratio and 0.03 acres unvegetated channel will be mitigated at a 1:1 mitigation ratio as directed by Final Multiple Habitat Conservation Plan Volume 1 (SANDAG 2003, Table 4-7) and as anticipated by the wetland regulatory agencies. These impacts will be mitigated through establishment and enhancement of 2.04 acres within the mitigation area on site. Potential impacts to nesting birds will be mitigated through pre-construction nesting bird surveys and setbacks as needed. Impacts to disturbed habitat or developed lands are not considered significant and do not require mitigation.

# 1 INTRODUCTION

The Bear Valley Parkway Parcel consists of approximately 41 acres of which the Bear Valley Parkway Project site (Study Area) consists of 40.62 acres in the City of Escondido, San Diego County, California. The Not A Part portion of the parcel, a total of 0.65 acre, is not included in the proposed project, is not part of the Study Area, and will not be discussed further in this biology report. The project is located in southeast Escondido, approximately 1.5 miles east of Interstate 15 (I-5) and south of State Route 78 (SR-78)/San Pasqual Valley Road (Figure 1). The Study Area is located on the U.S. Geological Survey (USGS) 7.5 minute Escondido quadrangle map in section 26, Township 12S, and Range 2W (Figure 2). A biological reconnaissance survey was conducted by Dudek in May 2013 and a formal jurisdictional delineation was conducted in March 2014.

The purpose of the biological resource technical report is to map and assess the existing vegetation communities and potential for plant and animal species recognized as special-status by local, state, or federal Wildlife Agencies (U.S. Fish and Wildlife Service [USFWS] and California Department of Fish and Wildlife [CDFW]). to occur in the Study Area. Following the reconnaissance survey, direct and indirect impacts to vegetation communities and special-status species were evaluated based on the proposed project. This report describes the biological characteristics of the Study Area; provides an analysis of direct and indirect impacts based on the proposed project; analyzes the biological significance of the proposed project under the CEQA; and discusses mitigation measures, which will reduce significant impacts to a level below significant.

## 1.1 Proposed Project

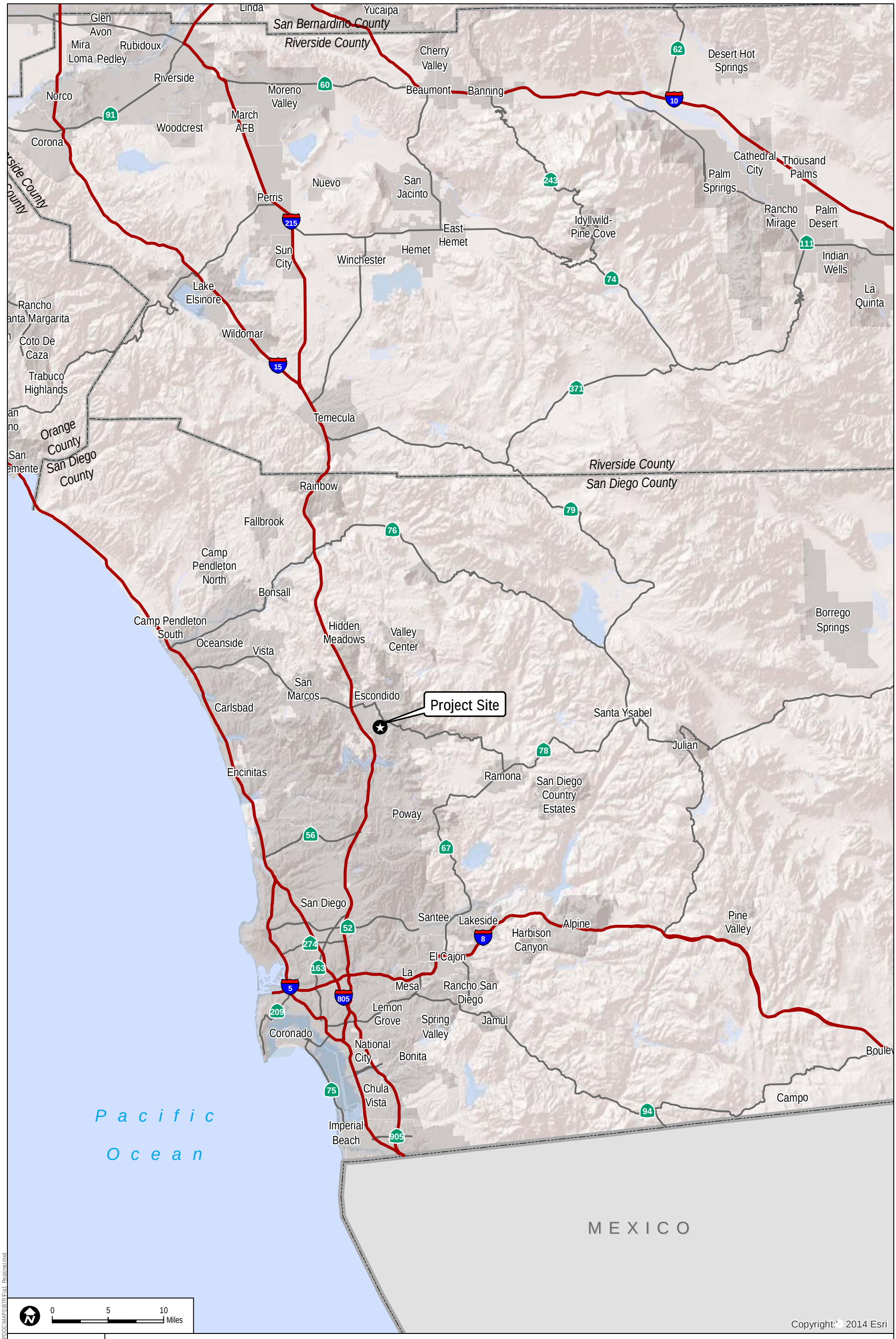
The project consists of a proposed subdivision of 40.62 acres into 55 residential lots, each containing a minimum of 10,000 square feet. In addition to the residential lots, the project proposes two private street lots, seven open space lots and one recreation lot. Private open space will occupy 20.04 acres. The open space lots will include any necessary mitigation areas related to upland or wetland habitat. Two drainage basins are proposed at the entry locations.

A main recreation area will be constructed near the secondary access point. Pedestrian linkages will be via non-curb adjacent private streets where walkways are separated from vehicle traffic by privately maintained parkways. This system will tie into the public Bear Valley Parkway sidewalk system.

The project will take access from Bear Valley Parkway at the intersection of Zlatibor Ranch Road and Bear Valley Parkway. A secondary, gated emergency ingress and egress will be

provided on the east side of Bear Valley Parkway, northerly of the intersection of Bear Valley Parkway and Encino. The project includes frontage right of way dedication to complete a 51-foot wide right-of-way from the center line of existing Bear Valley Parkway right-of-way. In addition, the project will be obligated to construct frontage improvements along Bear Valley Parkway consisting of curb, gutter, side walk, parkway, bike lane and one full travel lane with transitions that will tie into existing improvements. A portion of these frontage improvement are located off site of the subject property. These impacts have been calculated and are displayed in the impact analysis but are not shown in the existing conditions exhibits.

The tentative map design includes balanced grading of the site with no import or export of material. Additionally the project includes a request for a grading exemption due to creation of cut slopes over 20 feet in height and fill slopes exceeding 10 feet in height.




DUDEK

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SEPTEMBER 2015

**FIGURE 1**

**Regional Map**

Bear Valley Parkway Project - Biological Technical Report

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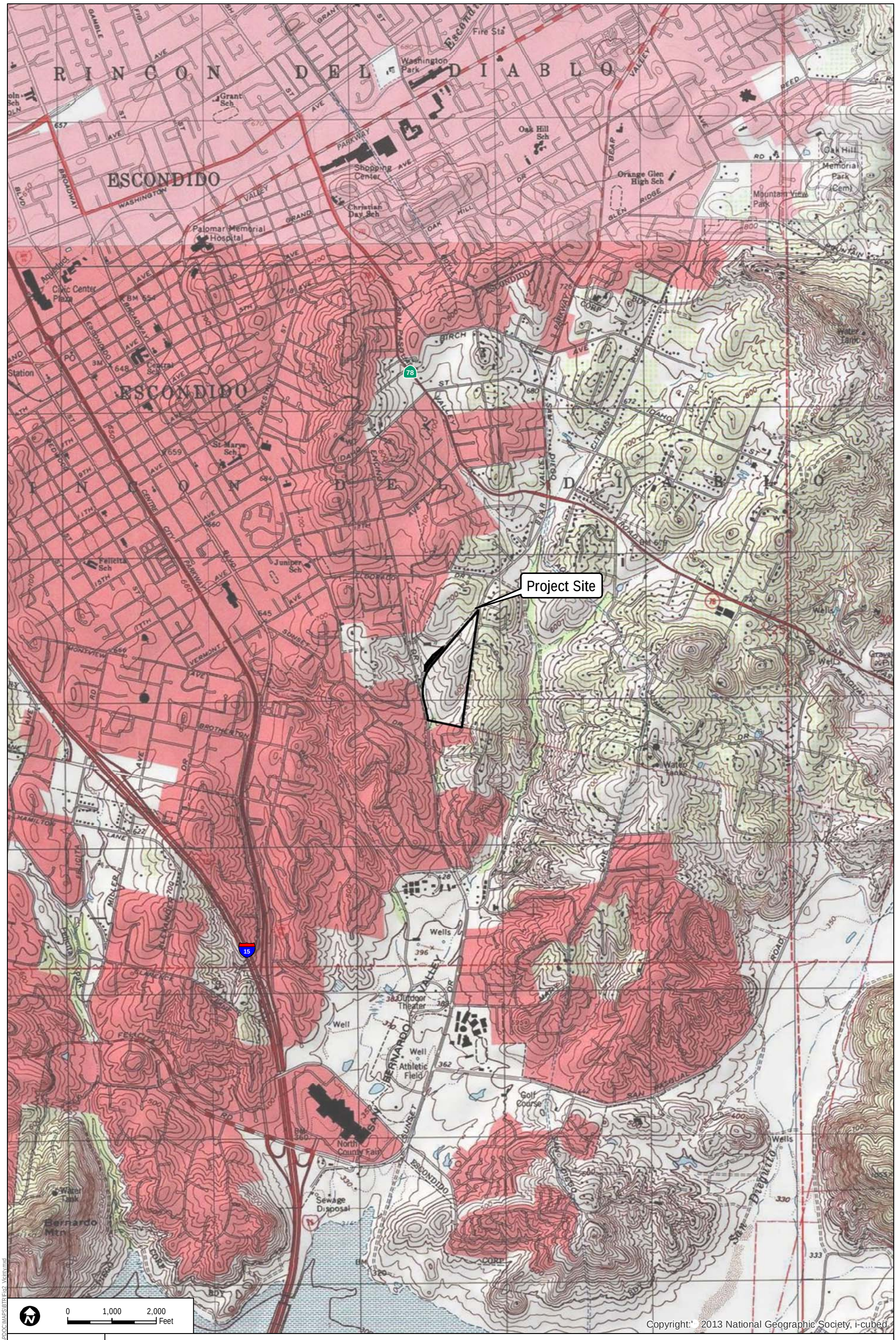


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7833

SEPTEMBER 2015

SOURCE: USGS 7.5-Minute Series Escondido Quadrangle.

**FIGURE 2**

**Vicinity Map**

Bear Valley Parkway Project - Biological Technical Report

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# 2 PROJECT SETTING

## 2.1 Environmental Setting

The majority of the Study Area was once an avocado orchard; however, the orchard was removed and now is considered disturbed habitat. There is one residence on site in the central portion of the property that is currently occupied. The remaining portions of the site are undeveloped. An unnamed intermittent stream channel, within an overstory of oak riparian, traverses the southwestern portion of the Study Area. The Study Area is adjacent to Bear Valley Parkway near Zlatibor Ranch Road. The property is located in a more rural part of Escondido (Figure 2).

The Study Area slopes upward from approximately 590 feet above mean sea level (AMSL) to 680 feet AMSL at the top of the hill. Much of the site is gently sloping or relatively flat.

### 2.1.1 Soils

Soils on the site are mapped as Fallbrook sandy loam, 9% to 15% slopes, eroded; Fallbrook sandy loam, 15% to 30% slopes, eroded; Ramona sandy loam, 2% to 5% slopes; Ramona sandy loam, 9% to 15% slopes, eroded; and steep gullied land (USDA 2013).

According to the Natural Resource Conservation Service (NRCS), the Fallbrook series consists of deep, well-drained soils formed from weathered granitic rock. These soils occur on rolling hills and steeper slopes, and have a mean annual precipitation of approximately 15 inches (USDA 2013).

The Ramona series consists of mixed "fine-loamy" soils (USDA 2013). Ramona soils are found on flat to moderately steep slopes, with an annual precipitation of approximately 20 inches (USDA 2013).

Steep gullied land is described as "strongly sloping to steep areas that are actively eroding into old alluvium or decomposed rock" and supporting sparse vegetation (Bowman 1973).

### 2.1.2 Hydrology

The Study Area lies within the San Dieguito Hydrologic Unit (905.00), a rectangular-shaped area of approximately 350 square miles. This Hydrologic Unit lies between the San Luis Rey and Carlsbad Hydrologic Units to the north and San Diego River and Penasquitos Hydrologic Units to the south. The Study Area lies within the Hodges Hydrologic Area (905.20) within the Del Dios (905.21) and Bear Hydrologic Subareas (905.24). The Study Area is located on border of the two Subareas (Figure 3).

The San Dieguito Hydrologic Unit includes the San Dieguito River and its tributaries, including Santa Ysabel and Santa Maria creeks. The San Dieguito Hydrologic Unit contains two major reservoirs, Lake Hodges and Sutherland Reservoir. The San Dieguito Lagoon is located at the mouth of the San Dieguito River and forms the northerly boundary of the City of Del Mar. The lagoon is typically closed off from the ocean by a sandbar.

The National Hydrography Dataset identifies one tributary within the Study Area running from north to south through the western portion of the Study Area (USGS 2014). The USGS 7.5-minute quadrangle identifies this feature as a blue-line stream that is tributary to the Lake Hodges-San Dieguito River, which eventually flows into the Pacific Ocean. The tributary travels south through the Study Area, joins with a second stream approximately 0.60 miles south of the Study Area and with the San Dieguito River approximately 2.70 miles south of the Study Area. The San Dieguito River then flows west into Lake Hodges and continues to the Pacific Ocean.

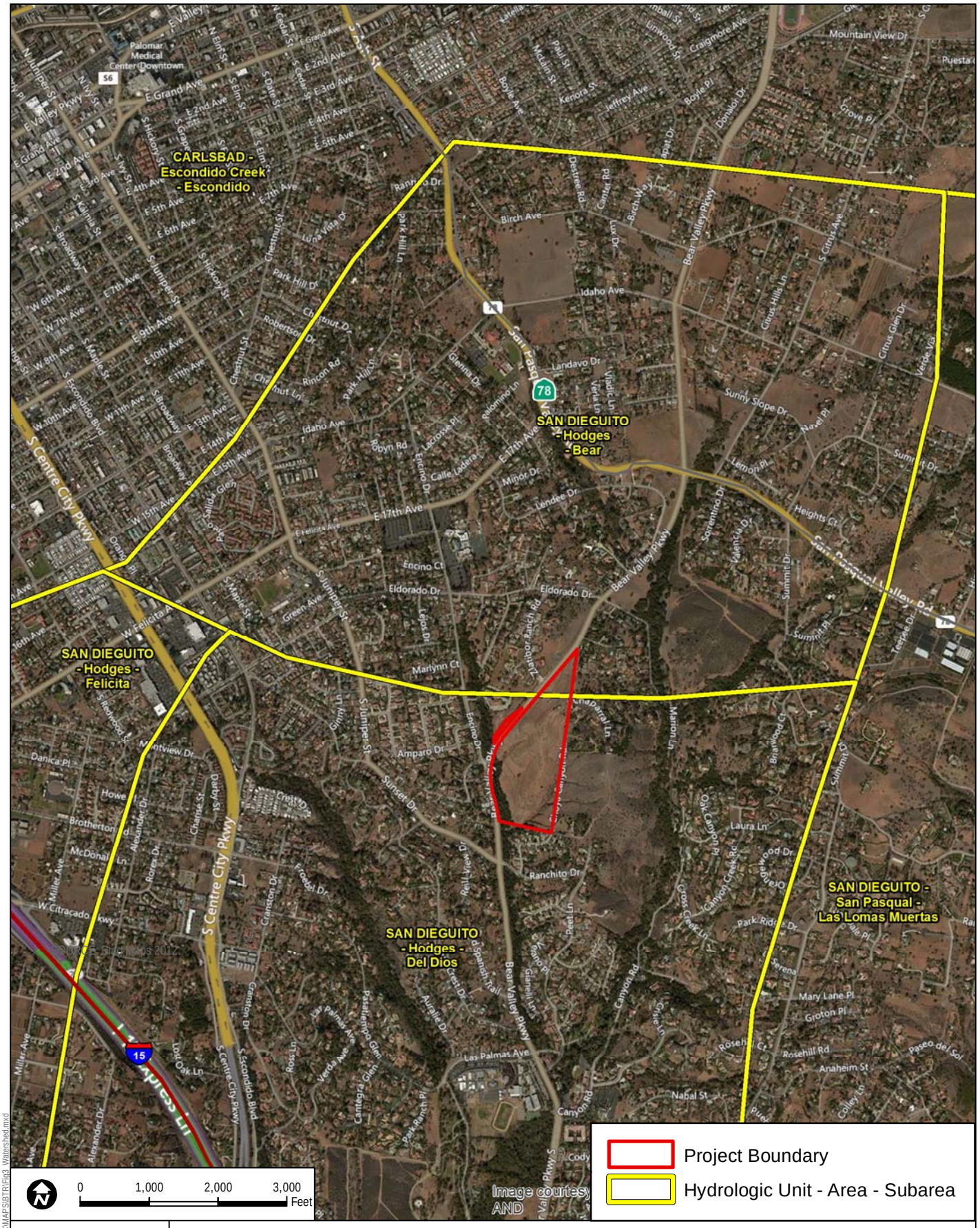
No other stream courses or water features were identified in the literature review. Section 3.2.4 describes the methods used to delineate jurisdictional aquatic resources on site, and Section 4.3.4 provides the results of these studies.

## 2.2 Applicable Regulations

### 2.2.1 Federal

**Clean Water Act**

The Clean Water Act (CWA) is intended to restore and maintain the quality and biological integrity of the nation's waters. Section 402 of the CWA prohibits the discharge of pollutants into waters of the United States from any point source, unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) Permit. The CWA, Section 402, requires an NPDES Permit for the discharge of stormwater from municipal separate storm sewer systems (MS4), serving urban areas with a population greater than 100,000, construction sites that disturb 1 acre or more, and industrial facilities. The RWQCB administers these permits with oversight provided by the SWRCB and U.S. Environmental Protection Agency (EPA) Region IX.




SOURCE: National Hydrography Dataset

**FIGURE 3**

**Watershed Map**

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SEPTEMBER 2015

Bear Valley Parkway Project - Biological Technical Report

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Section 404 of the CWA authorizes the Secretary of the Army, acting through the ACOE, to issue permits regulating the discharge of dredged or fill materials into the "navigable waters at specified disposal sites." CWA Section 502 further defines "navigable waters" as "waters of the United States, including territorial seas." "Waters of the United States" are broadly defined in the Code of Federal Regulations (CFR), Title 33, Section 328.3, Subdivision (a)[2] to include navigable waters; perennial and intermittent streams, lakes, rivers, and ponds; and wetlands, marshes, and wet meadows. Specifically, Section 328.3(a) defines waters of the United States as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters, including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters:
    i. Which are or could be used by interstate or foreign travelers for recreational or other purposes;
    ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    iii. Which are or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under the definition;
5. Tributaries of waters identified in paragraphs (a)(1) through (4) of this section;
6. The territorial seas; and
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1) through (6) of this section.

[2] This regulation, 33 CFR Section 328.3, and the definitions contained therein, have been the subject of recent litigation. In addition, the U.S. Supreme Court has recently addressed the scope and extent of the ACOE's jurisdiction over navigable waters and waters of the United States under the CWA. See *Solid Waste Agency of Northern Cook Cty.* v. *U.S. Army Corps of Engineers*, 531 U.S. 159 (2001) ("SWANCC") and *Rapanos* v. *United States*, 126 S. Ct. 2208 (ACOE and EPA 2008). Despite the impact of these recent decisions, the definitions continue to provide guidance to the extent that they establish an outer limit for the extent of the ACOE's jurisdiction over waters of the United States, and therefore, are referenced here for that purpose.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition) are not waters of the United States.

8. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of CWA, the final authority regarding CWA jurisdiction remains with the EPA.

The lateral limits of the ACOE's CWA Section 404 jurisdiction in non-tidal waters are defined by the "ordinary high water mark" (OHWM), unless adjacent wetlands are present. The OHWM is a line on the shore or edge of a channel established by the fluctuations of water and indicated by physical characteristics, such as a clear, natural line impressed upon the bank, shelving, changes in the character of soil, destruction of vegetation, or presence of debris (33 CFR Section 328.3I). As such, waters are recognized in the field by the presence of a defined watercourse with appropriate physical and topographic features. If wetlands occur within, or adjacent to, waters of the United States, the lateral limits of the ACOE's jurisdiction will extend beyond the OHWM to the outer edge of the wetlands. The upstream limit of jurisdiction in the absence of adjacent wetlands is the point beyond which the OHWM is no longer perceptible (33 CFR Section 328.4).

Section 401 of the CWA requires that an applicant for a federal license or permit to discharge into navigable waters must provide the federal agency with a water quality certification, declaring that the discharge will comply with water quality standard requirements of the CWA. The ACOE is prohibited from issuing a CWA permit until the applicant receives a CWA Section 401 water quality certification or waiver from the RWQCB.

**Federal Endangered Species Act**

The federal Endangered Species Act (FESA) designates threatened and endangered animals and plants and provides measures for their protection and recovery. Under FESA, "take" of listed animal and plant species in areas under federal jurisdiction is prohibited without obtaining a federal permit. FESA defines "take" as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct" (16 U.S.C. 1531). Harm includes any act that actually kills or injures fish or wildlife, including significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife. Activities that damage (i.e., harm) the habitat of listed wildlife species require approval from USFWS for terrestrial species. If critical habitat has been designated under FESA for listed species, impacts to areas that contain the primary

constituent elements identified for the species, whether or not it is currently present, is also prohibited without obtaining a federal permit. FESA Sections 7 and 10 provide two pathways for obtaining permission to take listed species.

Under Section 7 of FESA, a federal agency that authorizes, funds, or carries out a project that "may affect" a listed species or its critical habitat must consult with USFWS. For example, the ACOE must issue a permit for projects impacting waters or wetlands under ACOE jurisdiction. In a Section 7 consultation, the lead agency (e.g., ACOE) prepares a Biological Assessment that analyzes whether the project is likely to adversely affect listed wildlife or plant species or their critical habitat, and it proposes suitable avoidance, minimization, or compensatory mitigation measures. If the action would adversely affect the species, USFWS has up to 135 days to complete the consultation process and develop a Biological Opinion determining whether the project is likely to jeopardize the continued existing species or result in adverse modification of critical habitat. If a "no jeopardy" opinion is provided, "the action agency may proceed with the action as proposed, provided no incidental take is anticipated. If incidental take is anticipated, the agency or the applicant must comply with the reasonable and prudent measures and implementing terms and conditions in the Service's incidental take statement to avoid potential liability for any incidental take" (USFWS 1998). If a jeopardy or adverse modification opinion is provided, USFWS may suggest "reasonable and prudent alternatives for eliminating the jeopardy or adverse modification of critical habitat in the opinion" or "choose to take other action if it believes, after a review of the biological opinion and the best available scientific information, such action satisfies section 7(a)(2)" (USFWS 1998).

Under Section 10 of FESA, private parties with no federal nexus may obtain an incidental take permit to harm listed wildlife species incidental to the lawful operation of a project. To obtain an incidental take permit, the applicant must develop a habitat conservation plan (HCP) that specifies impacts to listed species, provides minimization and mitigation measures and funding, and discusses alternatives considered and the reasons why such alternatives are not being used.

If USFWS finds the HCP will not appreciably reduce the likelihood of the survival and recovery of the species, it will issue an incidental take permit. Issuance of incidental take permits requires USFWS to conduct an internal Section 7 consultation, thus triggering coverage of any listed plant species or critical habitat present on site (thus listed plants on private property are protected under FESA if a listed animal is present). Unlike a Section 7 consultation, USFWS is not constrained by a time limit to issue an incidental take permit.

**Migratory Bird Treaty Act**

The Migratory Bird Treaty Act implements international treaties between the United States and other nations that protect migratory birds (including their eggs and nests) from killing, hunting, pursuing, capturing, selling, and shipping, unless expressly authorized or permitted. The list of migratory birds is extensive, including American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), and northern mockingbird (*Mimus polyglottos*) (16 U.S.C. 703–712).

### 2.2.2 State

**California Endangered Species Act**

The CDFW administers the California Endangered Species Act (CESA) (California Fish and Game Code, Section 2050 et seq.), which prohibits the take of plant and animal species designated by the Fish and Game Commission as endangered or threatened in the State of California. Under CESA, Section 86, take is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA Section 2053 stipulates that state agencies may not approve projects that will "jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat which would prevent jeopardy".

CESA Sections 2080 through 2085 address the taking of threatened, endangered, or candidate species by stating, "No person shall import into this state, export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the Commission determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided in this chapter, the Native Plant Protection Act (California Fish and Game Code, Sections 1900–1913), or the California Desert Native Plants Act (Food and Agricultural Code, Section 80001)".

**California Environmental Quality Act**

The CEQA was enacted in 1970 to provide for full disclosure of environmental impacts to the public before issuance of a permit by state and local public agencies. Qualifying projects include zoning ordinances, issuance of conditional use permits, variances, and the approval of tentative subdivision maps. If a project is regulated under CEQA, the developer completes necessary studies and designs for the project and identifies the state lead agency for the project. The lead agency conducts an Initial Study that identifies the environmental impacts of the project and determines whether these impacts are significant. In some cases, the lead agency may skip the preparation of the Initial Study and proceed directly to the preparation

of an Environmental Impact Report (EIR). The lead agency may prepare a Negative Declaration if it finds no significant impacts, a Mitigated Negative Declaration if it revises the project to avoid or mitigate significant impacts, or an EIR if it finds significant, unmitigated impacts. The EIR is subject to more extensive public comment and provides information on the potentially significant impacts, lists ways to minimize these impacts, and discusses alternatives to the project. CEQA only provides a public review process, and projects with significant impacts may be approved if the lead agency makes a finding of overriding considerations.

In addition to state-listed or federally listed species, special-status plants and animals receive consideration under CEQA. Special-status species are discussed further in Section 4.3.

**California Fish and Game Code**

***Birds and Mammals***

According to Sections 3511 and 4700 of the California Fish and Game Code, which regulate birds and mammals, respectively, a "fully protected" species may not be taken or possessed, and "incidental takes" of these species are not authorized. However, the CDFW may authorize the taking of those species for necessary scientific research, including efforts to recover fully protected, threatened, or endangered species, and may authorize the live capture and relocation of those species pursuant to a permit for the protection of livestock. Examples of fully protected species include the white-tailed kite (*Elanus leucurus*) and ringtail (*Bassariscus astutus*).

***Resident and Migratory Birds***

The California Fish and Game Code provides protection for wildlife species. It states that no mammal, bird, reptile, amphibian, or fish species listed as fully protected can be "taken or possessed at any time." In addition, CDFW affords protection over the destruction of nests and eggs of native bird species (Section 3503), and it states that no birds in the orders of *Falconiformes* or *Strigiformes* (birds of prey) can be taken, possessed, or destroyed (Section 3503.5). CDFW cannot issue permits or licenses that authorize the take of any fully protected species, except under certain circumstances, such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock (Section 3511). Separate from federal and state designations of species, CDFW designates certain vertebrate species as Species of Special Concern based on declining population levels, limited ranges, and/or continuing threats that have made them vulnerable to extinction.

### *California Native Plant Protection Act*

The Native Plant Protection Act of 1977 (California Fish and Game Code, Sections 1900–1913) directed the CDFW to carry out the legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The Native Plant Protection Act gave the California Fish and Game Commission the power to designate native plants as endangered or rare and protect these plants from take. When the California Endangered Species Act was passed in 1984, it expanded on the original Native Plant Protection Act, enhanced legal protection for plants, and created the categories of threatened and endangered species to parallel FESA. The California Endangered Species Act converted all rare animals into the act as threatened species but did not do so for rare plants, which resulted in three listing categories for plants in California: rare, threatened, and endangered. The Native Plant Protection Act remains part of the California Fish and Game Code, and mitigation measures for impacts to rare plants are specified in a formal agreement between CDFW and the project proponent.

### *California Natural Community Conservation Planning Act*

The California Natural Community Conservation Planning (NCCP) Act provides for regional planning to conserve listed and candidate species, their habitats, and natural communities through habitat-based conservation measures while allowing economic growth and development (California Fish and Game Code, Section 2800–2835). The initial application of the NCCP Act was in coastal sage scrub habitat in Southern California, home to the California gnatcatcher; it has subsequently been applied to the CALFED Bay–Delta Program and others in Northern California.

The Southern California coastal sage scrub NCCP region consists of 11 subregions, which may be further divided into subareas corresponding to the boundaries of participating jurisdictions or landowners. In each subregion and subarea, landowners, environmental organizations, and local agencies participate in collaborative planning to develop a conservation plan acceptable to USFWS and CDFW. The NCCP conservation requires threat impacts be mitigated to a level that contributes to the recovery of listed species, rather than just avoiding jeopardy.

### *Porter-Cologne Water Quality Control Act (Water Code, Section 13000 et seq.)*

The intent of the Porter-Cologne Water Quality Control Act is to protect water quality and the beneficial uses of water, and it applies to both surface water and groundwater. Under this law, the State Water Resource Control Board develops statewide water quality plans, and the RWQCB develops basin plans that identify beneficial uses, water quality

objectives, and implementation plans. The RWQCBs have the primary responsibility to implement the provisions of both statewide and basin plans. Waters regulated under the Porter-Cologne Water Quality Control Act include isolated waters that are no longer regulated by the ACOE. Developments with impacts to jurisdictional waters must demonstrate compliance with the goals of the act by developing Stormwater Pollution Prevention Plans, Standard Urban Storm Water Mitigation Plans, and other measures in order to obtain a CWA Section 401 certification.

***Streambed Alteration Agreement***

CDFW must be notified prior to beginning any activity that would obstruct or divert the natural flow of, use material from, or deposit or dispose of material into a river, stream, or lake, whether permanent, intermittent, or ephemeral waterbodies under Section 1602 of the California Fish and Game Code. CDFW has 30 days to review the proposed actions and propose measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by CDFW and the applicant is the Streambed Alteration Agreement. The conditions of a Streambed Alteration Agreement and a CWA Section 404 permit often overlap.

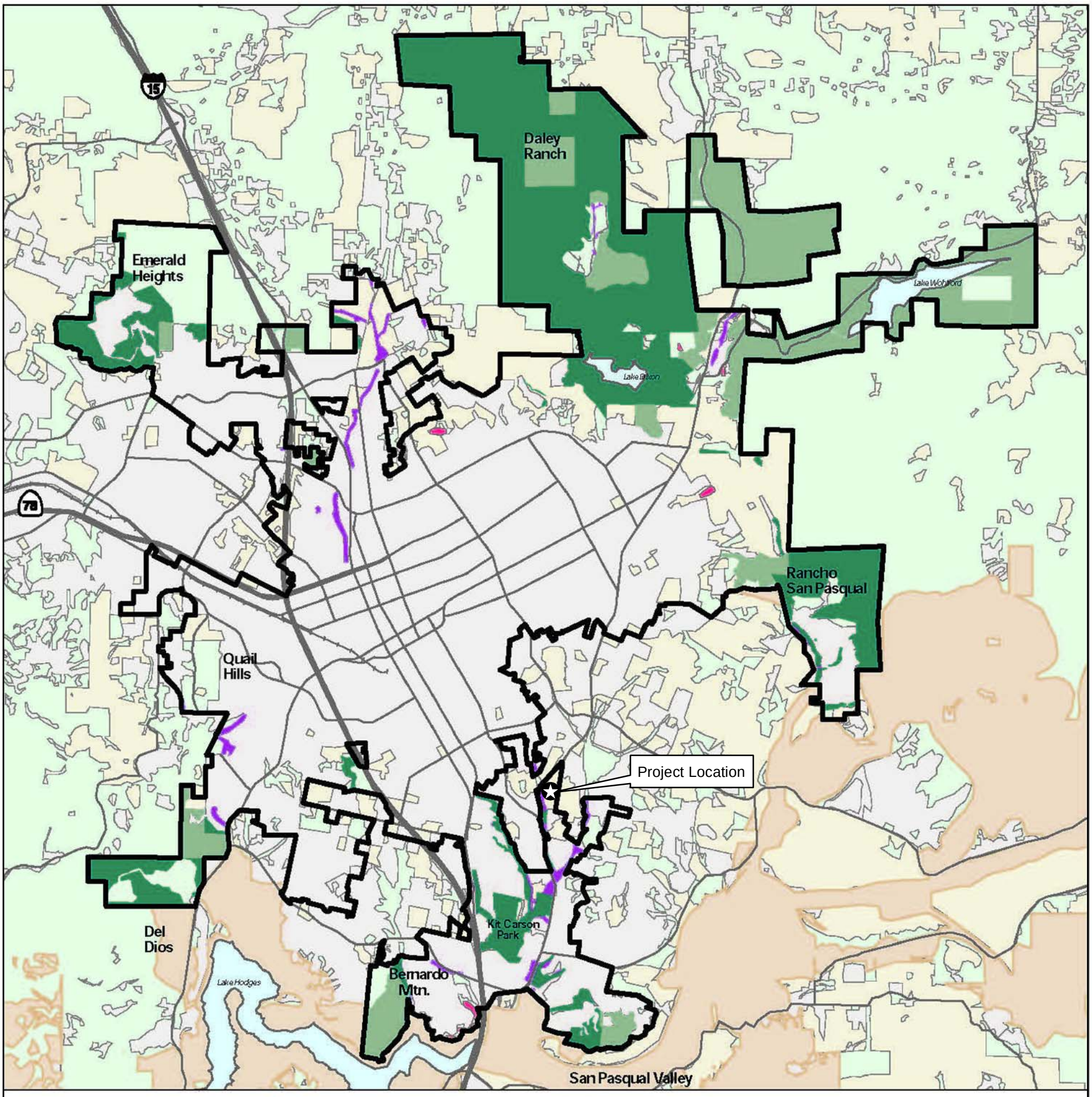
### 2.2.3 Local/City of Escondido

The Public Review Draft Escondido Subarea Habitat (Subarea Plan) (Ogden and CBI 2001) is intended to be consistent with the Multiple Habitat Conservation Program (MHCP) and with the plans prepared by the entities participating in the MHCP.

The MHCP is a comprehensive conservation planning process that addresses the needs of multiple plant and animal species in North Western San Diego County. The MHCP encompasses the cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista. Its goal is to conserve approximately 19,000 acres of habitat, of which roughly 8,800 acres (46%) are already in public ownership and contribute toward the habitat preserve system for the protection of more than 80 rare, threatened, or endangered species. The MHCP Subregional Plan and Final Environmental Impact Statement / Environmental Impact Report (EIS/EIR) were adopted and certified by the SANDAG Board of Directors on March 28, 2003.

The Subarea Plan comprehensively addresses how the City will conserve natural vegetation communities and special-status plant and wildlife species pursuant to the California NCCP. The Subarea Plan qualifies as a stand-alone document to implement the MHCP and forms the basis for an Implementing Agreement, which will be the legally binding agreement between the City of Escondido and the Wildlife Agencies.

The Study Area is located within the southeast portion of the Subarea Plan. It is not located within the Biological Core and Linkage Area (BCLA) (see Figure 3-2 of the Subarea Plan). The Study Area is located outside of any Focused Planning Areas (FPAs); however, the stream channel that runs through the southwestern portion of the Study Area is designated as a Constrained Lands (Wetlands) Outside the FPA (see Figure 4-1 of the Subarea Plan and Figure 4). The Constrained Lands designation includes lands with steep slopes and wetlands regulated by ACOE federal wetland permitting requirements and the MHCP "no net loss of wetlands" policy (Ogden and CBI 2001). The remaining portion of the property is designated as agriculture although it has been fallow for over 20 years and does not currently support agricultural crops or production. At this time the City of Escondido is not moving forward with the Subarea Plan thus there is no take coverage afforded under the Subarea Plan or the MHCP.




# Figure 4-1
# City of Escondido Subarea Plan
# Focused Planning Area (FPA) and Constrained Lands Outside the FPA

- Natural Habitats
- Agricultural Land
- Developed and Disturbed Land
- Hardline Focused Planning Area (90% and greater Conservation)
- Softline Focused Planning Area (Less than 90% Conservation)
- Constrained Lands (Wetlands) Outside the FPA
- Constrained Land (Slopes > 35%) Outside the FPA
- MSCP Habitat Preserve Planning Area

San Diego ASSOCIATION OF GOVERNMENTS
May 29, 2001

Feet 0 4,000 8,000
Meters 960 1,920

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SOURCE: City of Escondido, 1999

**FIGURE 4**
**Subregional Plan Area**

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# 3 METHODS

Data regarding biological resources present within the Study Area were obtained through a review of pertinent literature and through field reconnaissance; both are described in detail below.

## 3.1 Literature Review

Prior to the field investigations conducted by Dudek, a review of the existing biological resources within the vicinity of the Study Area was conducted using the California Natural Diversity Data Base (CNDDB) (CDFW 2014a-c), USFWS occurrence data (USFWS 2014), and California Native Plant Society (CNPS 2013). Species included in the Public Review Draft Escondido Subarea Habitat (Subarea Plan) (Ogden and CBI 2001) Table 3-2 MHCP Species Occurring or Potentially Occurring in Escondido were also incorporated within the special-status species tables. The purpose of this review was to determine if special-status plant and wildlife species were known to occur on site or in the nearby vicinity[3] of the Study Area and what constraints these occurrences might have on the property.

Baseline hydrology information was obtained from the USGS 7.5-minute quadrangles, National Hydrography Dataset (USGS 2014), and California Regional Water Quality Control Board – San Diego Region (RWQCB) Water Quality Control Plan for the San Diego Region (RWQCB 2007).

## 3.2 Field Reconnaissance

A reconnaissance-level field survey of the Study Area and a formal jurisdictional delineation were conducted on May 23, 2013 and March 21, 2014, respectively, by Dudek biologists Callie Ford and Patricia Schuyler. The surveys included mapping the vegetation communities, determining potential for special-status plant species occurrences on site, and a jurisdictional delineation of aquatic resources. The project includes off-site impacts along Bear Valley Road evaluated on December 16, 2014 by Callie Ford. The purpose of the most recent survey was to confirm site conditions along the road as they related to the impact provided by the project civil engineer. These off site impacts are quantified and addressed as impact, shown in Section 5, but have not been included in the existing conditions Section 4.

### 3.2.1 Resource Mapping

Vegetation communities were mapped in the field directly onto a 200-scale (1 inch = 200 feet) false-color digital orthographic map of the property (Bing 2013). These boundaries and

[3] A search of the USGS 7.5-minute Escondido quadrangle and surrounding 8 quadrangles (San Marcos, Valley Center, Rodriguez Mtn, Rancho Santa Fe, San Pasqual, Del Mar, Poway and San Vicente Reservoir) was conducted for the CNDDB and CNPS searches; and a 3-mile radius search was conducted for the USFWS occurrence data.

locations were digitized by Dudek geographic information system (GIS) technician Randy Deodat using ArcGIS software.

Vegetation community classifications used in this report follow Holland (1986) and Oberbauer et al. (2008), with modifications to accommodate the lack of conformity of the observed communities to those of Holland.

### 3.2.2 Flora

No focused rare plant surveys were conducted in the Study Area. However, all plant species encountered during the field surveys were identified and recorded. Latin and common names for plant species with a California Rare Plant Rank (CRPR) (formerly CNPS List) follow the CNPS On-Line Inventory of Rare, Threatened, and Endangered Plants of California (CNPS 2015). For plant species without a CRPR, Latin names follow the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2015) and common names follow the United States Department of Agriculture (USDA) Natural Resources Conservation Service Plants Database (USDA 2015). A list of plant species observed on the property is presented in Appendix A.

### 3.2.3 Fauna

Wildlife species detected during the reconnaissance survey were recorded. Binoculars (10×42 power) were used to aid in the identification of observed wildlife, and any special-status species observed or detected were mapped. In addition to species actually detected, expected wildlife use of the site was determined by known habitat preferences of local species and knowledge of their relative distributions in the area. Latin and common names of animals follow Crother (2014) for reptiles and amphibians, American Ornithologists' Union (AOU) (2015) for birds, Wilson and Reeder (2005) for mammals, North American Butterfly Association (NABA) (2012) or San Diego Natural History Museum (SDNHM 2002) for butterflies, and Moyle (2002) for fish. A list of wildlife species observed on the property is presented in Appendix B.

### 3.2.4 Jurisdictional Wetlands Delineation

An assessment of jurisdictional aquatic resources was completed by Dudek biologist Callie Ford on May 23, 2013. A formal jurisdictional delineation was conducted by Dudek biologists Callie Ford and Patricia Schuyler on March 21, 2014 with an update on December 16, 2014. Ms. Ford and Ms. Schuyler delineated the extent of jurisdictional aquatic resources in the Study Area. Jurisdictional boundaries were mapped in the field directly onto a 200-foot-scale (1 inch = 200 feet) aerial photograph (Bing 2013) or using a Trimble GeoXT GPS with submeter accuracy. The delineation defined areas under the jurisdiction of the CDFW pursuant to Sections 1600–

1603 of the California Fish and Game Code, under the jurisdiction of the ACOE pursuant to Section 404 of the federal CWA, and under jurisdiction of RWQCB pursuant to CWA Section 401 and the Porter-Cologne Act. The ACOE wetland delineation was performed in accordance with ACOE methodology (ACOE 1987, 2008; ACOE and EPA 2008).

Specifically, the methodology used for each jurisdiction or regulating agency, including the ACOE, CDFW, and RWQCB, is described as follows.

The ACOE wetlands delineation was performed in accordance with the 1987 *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Technical Report Y-87-1; Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (ACOE 2008), and guidance provided by the ACOE and EPA on the geographic extent of jurisdiction based on the U.S. Supreme Court's interpretation of the CWA (ACOE and EPA 2008). The ACOE and RWQCB, pursuant to the federal CWA, include all areas supporting all three wetlands criteria described in the ACOE manual: hydric soils, hydrology, and hydrophytic vegetation. The RWQCB may also take jurisdiction over surface waters lacking ACOE regulation pursuant to the state Porter-Cologne Act. These areas generally include areas with at least one of the three wetlands indicators but that are isolated from a tributary of navigable water through lack of evidence of surface water hydrology. Jurisdiction of the RWQCB is coincident with the ACOE in accordance with the federal CWA, except in cases where a resource is determined to be isolated from navigable waters of the United States and where the RWQCB may take jurisdiction under the state Porter-Cologne Act. A predominance of hydrophytic vegetation, where associated with a stream channel, was used to determine CDFW-regulated riparian areas. Streambeds under the jurisdiction of CDFW were delineated using the Cowardin method of waters classification, which defines waters boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology).

Collectively, areas under the jurisdiction of the ACOE, RWQCB, and CDFW are termed jurisdictional aquatic resources. A more detailed description of the methods is described below.

Jurisdictional determinations were made at seven sampling points (Figure 5) to determine which areas are under the jurisdiction of the regulatory agencies mentioned above. The extent of jurisdictional aquatic resources was determined by mapping the areas with similar vegetation and topography to sampled locations. See Appendix F, the Jurisdictional Delineation Report, for more details regarding jurisdictional aquatic resources.

#### 3.2.4.1 Hydrophytic Vegetation

Seasonal changes in species composition, human land-use practices, wildfires, and other natural disturbances can adversely affect the hydrophytic vegetation determination. During the delineation, a sampling point was considered positive for hydrophytic vegetation if it passed the basic dominance test (Indicator 1), meaning that more than 50% of the dominant species sampled were characterized as either obligate, facultative wetland, and/or facultative per the *Arid West 2014 Regional Wetland Plant List* (Lichvar et al 2014). In those cases where the dominance test failed, the vegetation parameter was re-evaluated using the prevalence index (Indicator 2), which takes into account all plant species in the community, not just dominants. All plant species observed during the surveys were identified and recorded. Where plant identification could not be made in the field, a sample was taken and later identified in the laboratory.

#### 3.2.4.2 Hydric Soils

According to the National Technical Committee for Hydric Soils, hydric soils are "soils that are formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (U.S. Department of Agriculture (USDA) 1994). Soil pits were prepared using a "sharp shooter" shovel to determine if hydric soils were present. The presence of hydric soils was determined through consultations with the 1987 ACOE manual, *Field Indicators of Hydric Soils in the United States v. 5.01* (USDA 2003), ACOE's *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (*Version 2.0*) (ACOE 2008), and Munsell Soil Color Charts. Where feasible, soil pits were prepared to depths ranging from 10 to 16 inches, and dry soils were moistened to obtain the most accurate color. Excavated soils were examined for evidence of hydric conditions, including low chroma values and mottling, vertical streaking, sulfidic odor, and high organic matter content in the upper horizon. Evidence of previous ponding or flooding was assessed along with the slope, slope shape, existing landform characteristics, soil material/composition, and hydrophytic vegetation to determine if hydric soils were present.

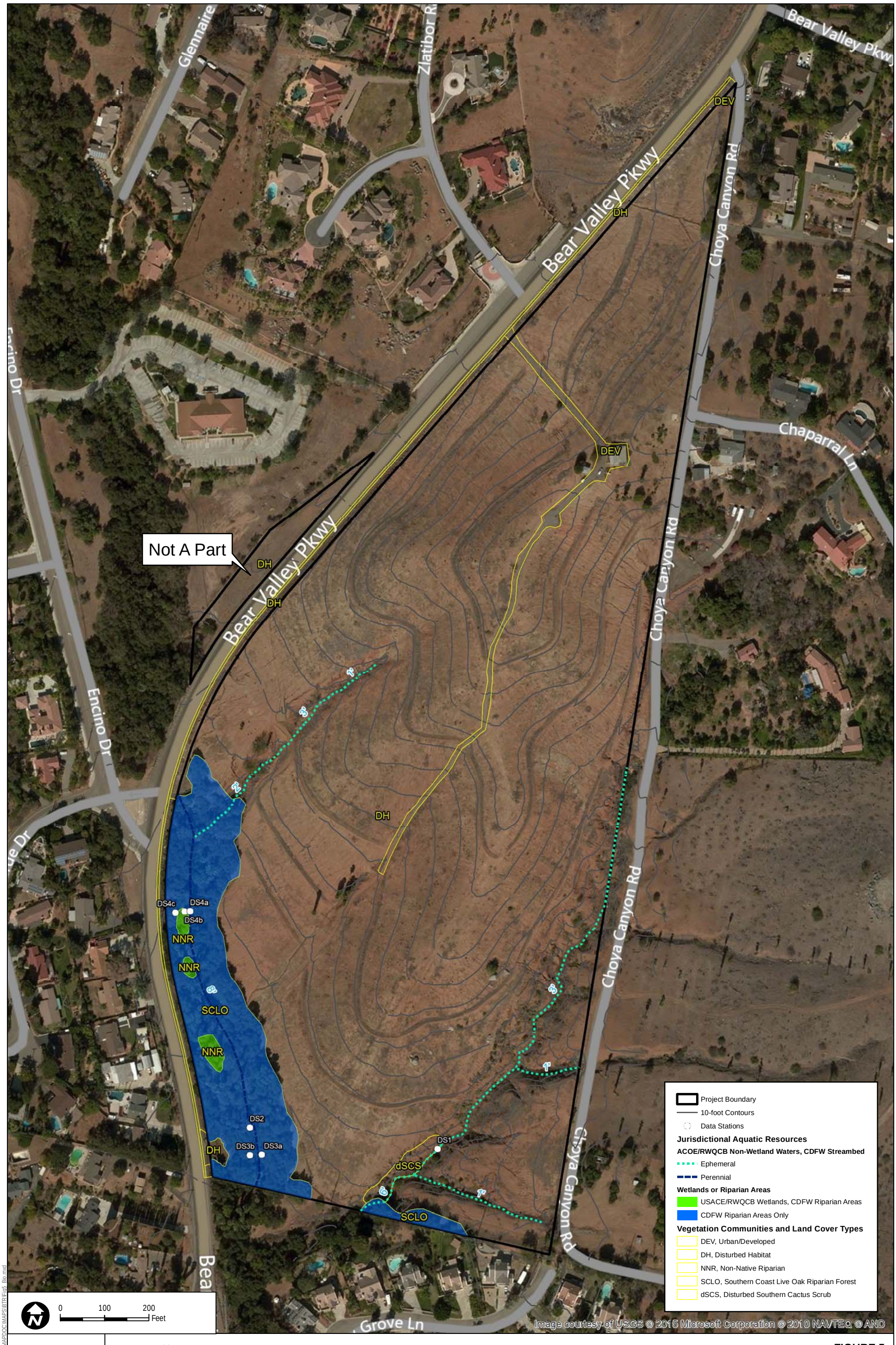


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**FIGURE 5**

**Biological Resources**

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#### *3.2.4.3 Hydrology*

Per the guidelines prescribed in the Arid West supplement (ACOE 2008), wetland hydrology indicators are separated into four major groups: groups A, B, C, and D. Group A indicators are based on direct observations of surface flow, ponding, and soil saturation/groundwater. Group B indicators consist of evidence that the Study Area has been or is currently subjected to ponding, including, but not limited to, water marks, drift deposits, and sediment deposits. Group C indicators include signs of previous and/or current saturation, including oxidized rhizospheres surrounding living roots and the presence of reduced iron or sulfur, both of which are indicative of extended periods of soil saturation. Group D indicators consist of "vegetation and soil features that are indicative of current rather than historic wet conditions and include a shallow aquitard and results of the Facultative (FAC)-Neutral test" (ACOE 2008). Each group is subdivided into primary and secondary categories based on their frequency and reliability to occur in the Arid West region. Signs of hydrology were investigated on the Study Area.

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# 4 RESULTS OF SURVEY

## 4.1 Botany – Plant Communities and Floral Diversity

The Study Area is substantially disturbed as a result of the previous land uses as an orchard and a rural residence. Southern coast live oak riparian forest and southern cactus scrub in the southern portion of the Study Area are the only areas that support native vegetation.

Within the Study Area, there are five vegetation communities/land covers: southern coast live oak riparian forest, non-native riparian, disturbed southern cactus scrub, disturbed habitat, and developed land (Table 1; Figure 5). Off-site impacts are presented and discussed in Section 5.

**Table 1**
**Vegetation Communities and Land Covers**

| Habitat Type | Existing Acres |
|---|---|
| *Wetlands/Riparian Areas* | |
| Southern Coast Live Oak Riparian Forest (SCLO) | 3.35 |
| Non-native Riparian (NNR) | 0.13 |
| *Upland* | |
| Disturbed Southern Cactus Scrub (dSCS) | 0.17 |
| *Other Land Covers* | |
| Disturbed Habitat (DH) | 36.43 |
| Developed Land (DEV) | 0.54 |
| **Total** | **40.62** |

### 4.1.1 Southern Coast Live Oak Riparian Forest (61310)

Southern coast live oak riparian forest is an open to locally dense evergreen riparian woodland dominated by coast live oak (*Quercus agrifolia*). Compared to other riparian communities, southern coast live oak riparian forest is generally richer in herbs and poorer in understory shrubs. Characteristic species of this vegetation community include coast live oak, mugwort (*Artemisia douglasiana*), California blackberry (*Rubus ursinus*), California laurel (*Umbellularia californica*), and hoary nettle (*Urtica dioica* ssp. *holosericea*). This community occurs on fine-grained, rich alluvium on bottomlands and outer floodplains along larger streams.

Southern coast live oak riparian forest occurs along the perennial stream channel in the southern portion of the Study Area. On site, southern coast live oak riparian forest is dominated by coast live oak, scattered palm trees (*Washingtonia robusta* and *Phoenix dactylifera*), poison oak (*Toxicodendron diversilobum*) and edible fig (*Ficus carica*). Because it is associated with the

stream channel, all southern coast live oak riparian forest within the Study Area is considered under the jurisdiction of CDFW.

### 4.1.2 Non-native Riparian (65000)

Non-native riparian areas are densely vegetated riparian thickets dominated by non-native, invasive species. According to Oberbauer et al. 2008, this designation should only be used where non-native, invasive species account for greater than 50% of the total vegetative cover within a mapping unit.

In the Study Area, non-native riparian areas are dominated by Washington fan palms interspersed with edible fig. Non-native riparian areas occur in three locations along the western boundary of the project site and adjacent to a perennial stream. The non-native riparian areas on site constitutes wetlands under the jurisdiction of ACOE, and RWQCB and is also considered a CDFW associated riparian area.

### 4.1.3 Disturbed Southern Cactus Scrub

Southern cactus scrub is not described in Holland (1986) or Oberbauer et al. (2008) but is similar to the cactus dominated habitat described in Sawyer et al (2009). It is a rare form of coastal sage scrub, occurring in relatively isolated areas throughout San Diego County (e.g., Chula Vista, San Pasqual).

In the Study Area, this community consists of 35% cover of prickly-pear cactus (*Opuntia littoralis*) and 65% cover of barbary fig (*Opuntia ficus-indica*) with ruderal species such as castor bean (*Ricinus communis*). Total vegetative cover is approximately 20%. Disturbed southern cactus scrub is mapped in portions of the southeastern Study Area.

### 4.1.4 Disturbed Habitat (11300)

Disturbed habitat typically occurs in areas where soils have been recently or repeatedly disturbed by grading or compaction resulting in the growth of very few native perennials. The disturbed habitat is a combination of the old orchard, graded lots, and cleared areas. Vegetation on the disturbed habitat areas is typically sparse, and nearly entirely dominated by non-native annual weedy species.

### 4.1.5 Developed Land (12000)

Developed land refers to areas supporting manmade structures, including homes, yards, roadways, and other highly modified lands supporting structures associated with dwellings or other permanent structures. Within the Study Area, developed land refers to existing roads and the residence.

### 4.1.6 Floral Diversity

A total of 32 species of vascular plants, 13 native (41%) and 19 non-native (59%), were recorded from the site. The complete list of plant species identified on site is provided as Appendix A.

## 4.2 Zoology – Wildlife Diversity

The Study Area supports habitat for a limited number of common upland and riparian species. A small patch of disturbed cactus scrub on site may provide potential nesting habitat, especially for coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*). The southern coast live oak riparian forest provides habitat for common riparian woodland species, such as birds, nesting raptors, and small mammals. Ruderal plant species in the ephemeral unvegetated stream channel may provide some foraging and/or nesting habitat for small birds, such as house finch (*Carpodacus mexicanus*) and bushtit (*Pheucticus melanocephalus*). Twelve species of wildlife were observed during the surveys (Appendix B).

### 4.2.1 Birds

Nine species of birds were observed during the survey. Typical species observed on site include American crow (*Corvus brachyrhynchos*), California towhee (*Pipilo crissalis*), Anna's hummingbird (*Calypte anna*), and northern mockingbird (*Mimus polyglottos*). A red-shouldered hawk (*Buteo lineatus*) was observed, and other raptors may use the site. Raptors could potentially nest in the oak woodland. Coastal cactus wren may use the small patch of disturbed cactus scrub on site.

### 4.2.2 Reptiles and Amphibians

No reptile or amphibian species were recorded during surveys; however, common reptiles that likely occur on site include western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*), and gopher snake (*Pituophis melanoleucus*). Treefrogs (*Pseudacris regilla, P. cadaverina*) may use the stream channels found within the Study Area.

### 4.2.3 Mammals

Two common species of mammals were recorded on site: California ground squirrel (*Spermophilus beecheyi*), and brush rabbit (*Sylvilagus bachmanii*). Other mammals adapted to living in areas near human disturbance, such as striped skunk (*Mephitis mephitis*), Virginia opossum (*Didelphis virginica*), Botta's pocket gopher (*Thomomys bottae*), raccoon (*Procyon lotor*), mule deer (*Odocoileus hemionus*), and coyote (*Canis latrans*) may also occur on the site.

### 4.2.4 Invertebrates

No butterflies were recorded on site; however, common butterflies that could occur on site include swallowtail (*Papilio* spp.), cabbage butterfly (*Pieris rapae*), common white (*Pontia protodice*), west coast lady (*Vanessa annabella*), painted lady (*Vanessa cardui*), and buckeye (*Junonia coenia*).

## 4.3 Special-Status Biological Resources/Regulated Resources

Endangered, rare, or threatened plant species, as defined in CEQA Guidelines Section 15380(b) (14 CCR 15000 et seq.), are referred to as "special-status plant species" in this report and include (1) endangered or threatened plant species recognized in the context of the California Endangered Species Act (CESA) and the federal Endangered Species Act (ESA); and (2) plant species with a CRPR 1 or 2 designation (CDFW 2014b-c; CNPS 2013).

Appendix C lists the special-status plant species reported in the USGS 7.5-minute Escondido quadrangle and the surrounding eight topographic quadrangles (CNPS and CNDDB occurrences). Species included in the Public Review Draft Escondido Subarea Habitat (Subarea Plan) (Ogden and CBI 2001) Table 3-2 MHCP Species Occurring or Potentially Occurring in Escondido were also incorporated within the special-status species tables. This appendix also includes an analysis of each of these special-status species' occurrence or potential to occur based on known range, habitat associations, preferred soil substrate, life form, elevation, and blooming period.

Endangered, rare, or threatened wildlife species, as defined in CEQA Guidelines, Section 15380(b) (14 CCR 15000 et seq.), are referred to as "special-status wildlife species" and, as used in this report, include (1) endangered or threatened wildlife species recognized in the context of the CESA and ESA; (2) California Species of Special Concern (SSC) species, as designated by the CDFW (2014d); and (3) mammals and birds that are fully protected (FP) species, as described in Fish and Game Code, Sections 4700 and 3511.

Appendix D lists occurrences of special-status wildlife species reported in the USGS 7.5-minute Escondido quadrangle and the surrounding eight topographic quadrangles resulting from a CNDDB search (CDFW 2014b) and from Table 3-2 of the Subarea Plan (Ogden and CBI 2001). Appendix D describes these species' potential to occur in the Study Area based on the range, presence of suitable habitat, and life history of the species.

### 4.3.1 Special-Status Plant Species

No special-status plant species were detected during the May 23, 2013 reconnaissance survey or the March 21, 2014 jurisdictional delineation. A rare plant survey was not conducted, because the site supports limited suitable habitat and due to the low diversity of plant species within the Study Area, There are two special-status plant species with moderate potential to occur within the Study Area; San Diego ambrosia (*Ambrosia pumila*) and smooth tarplant (*Centromadia pungens* ssp. *laevis).* These species are typically found within riparian habitats or disturbed areas with sandy soils which the Study Area supports. The potential for the other special-status plants is low or not expected due to the high level of disturbance that exists on site (see Appendix C).

### 4.3.2 Special-Status Wildlife Species

Although no special-status wildlife species were observed on site during the reconnaissance survey or jurisdictional delineation, there are several that have a moderate to high potential to occur.

The areas with intact native habitat, such as southern cactus scrub and southern coast live oak riparian forest would be expected to receive general use by wildlife. The perennial stream found along the western boundary of the Study Area could provide a water source and associated habitat for a number of special-status wildlife species that could then also use the Study Area for foraging or nesting requirements or dispersal purposes.

There are five special-status species with USFWS critical habitat within a 3-mile buffer of the Study Area; arroyo toad (*Anaxyrus californicus)*, southwestern willow flycatcher (*Empidonax traillii extimus),* Quino checkerspot butterfly (*Euphydryas editha quino)* and coastal California gnatcatcher (*Polioptila californica californica)* and least Bell's vireo (*Vireo bellii pusillus*). These species all have low potential to occur on site.

**Special-Status Mammals**

Two species have moderate potential to use the Study Area, western red bat (*Lasiurus blossevillii*) and San Diego blacktailed jackrabbit (*Lepus californicus bennettii*) The western red bat has potential to forage in habitat edges along riparian areas and therefore has potential to roost in trees occurring on site. The San Diego black-tailed jackrabbit prefers open and disturbed areas which the site contains.

Southern mule deer (*Odocoileus hemionus fuliginata*) is a MCHP Escondido Subarea Plan covered species with high potential to occur on site. No other special-status mammals have high potential to occur in the Study Area.

**Special-Status Birds**

No special-status bird species were observed on site, however, one coastal cactus wren (CDFW SSC) was observed in a palm tree immediately off site and there is a small patch of disturbed cactus scrub on site that may provide potential nesting habitat. Additional special-status bird species that have a high potential to occur include: Cooper's hawk (*Accipiter cooperii*), California horned lark (*Eremophila alpestris actia*), and western bluebird (*Sialia Mexicana*).

A number of special-status bird species have moderate or low potential to use the Study Area due to its size, connectivity to other undeveloped areas, and potential perching, roosting, and nesting locations within the coast live oak trees: these are described in Appendix D.

The major nesting opportunities for raptors are along the southwestern border of the Study Area where the riparian habitat is located; however, no special-status raptors were observed during any of the surveys.

**Special-Status Amphibians and Reptiles**

There is only one area on site that provides a regular water source, the perennial stream along southwestern portion of the site. It has low potential to support special-status amphibians due to the level of disturbance surrounding the Study Area and its small size.

No special-status reptile species have high potential to occur. There are several with moderate potential, including San Diego ringneck snake (*Diadophis punctatus similis*), two-striped garter snake (*Thamnophis hammondii*; SSC species), orange-throated whiptail (*Aspidoscelis hyperythra;* SSC species), and coastal whiptail (*Aspidoscelis tigris stejnegeri*).

### 4.3.3 Wildlife Corridors and Habitat Linkages

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the migration of animals. Wildlife corridors contribute to population viability by assuring continual exchange of genes between populations, providing access to adjacent habitat areas for foraging and mating, and providing routes for recolonization of habitat after local extirpation or ecological catastrophes (e.g., fires). Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation. Habitat linkages provide a potential route for gene flow and long-term dispersal of plants and animals and may serve as primary habitat for smaller animals, such as reptiles and amphibians. Habitat linkages may be continuous habitat or discrete habitat islands that function as stepping stones for dispersal.

While the Study Area may provide for localized wildlife movement along the stream channel, most of the Study Area is composed of disturbed habitat. Although there is a perennial stream on site, there are no major aquatic resources on site that would be attractive for wildlife use and movement.

Analysis of wildlife movement on a regional basis is based on Figure 4-1 from the Escondido Subarea Plan. The perennial stream on site is considered a Constrained Wetlands Outside the FPA and flows south to Kit Carson Park which is a Hardline Focused Planning Area. Wildlife movement is assumed to use the areas east of the Study Area designated as Natural Lands and MSCP Habitat Preserve (Figure 4-1 Subarea Plan). Other wildlife movement could occur to the south around the Lake Hodges MSCP Habitat Preserve. The wildlife movement is somewhat fragmented but mobile species, such as birds would be able to traverse the off-site rural residential properties, connect to the drainage that flows south, and thence, connect to the regional corridor composed of Kit Carson Park and the Lake Hodges and San Dieguito River to the south and east.

### 4.3.4 Jurisdictional Aquatic Resources

In general, there are three types of potential jurisdictional aquatic resources that were evaluated during the delineation. The first type includes natural canyon drainages in the southeast, northwest, and western boarder of the Study Area containing both ephemeral and perennial channels. Each of these areas exhibit characteristics of ACOE/RWQCB waters and CDFW streambeds (i.e., defined bed and bank). The channels continue to flow from the project site through off-site drainage courses or storm drains into San Dieguito River and are, therefore, hydrologically connected to navigable waters of the U.S. and jurisdictional under ACOE, RWQCB, and CDFW regulations.

The second type of potential jurisdictional aquatic resource studied as part of the survey includes southern coast live oak riparian forest occurring along the perennial stream channel in the southwestern portion of the Study Area. The southern coast live oak riparian forest did not show signs of wetland hydrology, hydric soils, or hydrophytic vegetation (see sampling point 3a). However, since this vegetation community is associated with the stream channel, it is considered under the jurisdiction of CDFW.

The third type of jurisdictional aquatic resource on site is wetlands/associated riparian areas located within the southern coast live riparian forest. These areas are mapped as non-native riparian due to the presence of non-native vegetation, including Washington fan palm and edible fig. The wetlands/associated riparian areas are located immediately adjacent to the perennial stream channel, and are surrounded by oak woodlands. All three indicators were present within

the representative sampling point associated with these areas. Therefore, these patches of non-native riparian are under the jurisdiction of ACOE, RWQCB, and CDFW.

Wetlands and non-wetland waters under the jurisdiction of ACOE/ RWQCB and streambeds and associated riparian areas under CDFW jurisdiction in the Study Area total 3.62 acres, composed of 3.48 acre of wetlands/associated riparian areas. Jurisdictional vegetation communities on site include southern coast live oak riparian forest and non-native riparian habitat. The jurisdictional areas are shown in Table 2 and Figure 5. The off-site impact areas to jurisdictional resources are shown in Section 5.

**Table 2**
**Jurisdictional Aquatic Resources**

| Jurisdictional Aquatic Resource | CDFW Riparian Area (Acres) | ACOE/RWQCB Wetland (Acres) |
|---|---|---|
| Southern Coast Live Oak Riparian Forest | 3.35 | – |
| Non-Native Riparian | 0.13 | 0.13 |
| *Total Riparian/Wetlands* | *3.48* | *0.13* |
| **Jurisdictional Aquatic Resource** | **CDFW Streambed (Acres)** | **ACOE/RWQCB Non-wetland Waters (Acres)** |
| Ephemeral Stream Channel | 0.14 | 0.14 |
| Perennial Stream Channel | 0.17 | 0.17 |
| *Total Streambed/ Non-wetland Waters* | *0.31* | *0.31* |
| **Total Jurisdictional Area*** | **3.62**** | **0.44** |

* Ephemeral stream channels are an overlay within the disturbed habitat and southern coast live oak vegetation communities. The perennial stream channel on site is within the understory of the oak canopy and therefore, to avoid double counting of resources, this channel, and the portion of the ephemeral channel within the oak canopy, are not counted toward the total jurisdictional area.

** Acreage may not total due to rounding.

ACOE- and RWQCB-jurisdictional areas on site total 0.44 acre, including 0.13 acre of jurisdictional wetlands composed of non-native riparian areas. The remaining 0.31 acre under ACOE/RWQCB jurisdiction consists of ephemeral and perennial stream channels.

CDFW jurisdiction extends over all areas under ACOE and RWQCB jurisdiction discussed above and includes areas that meet ACOE wetland (i.e., hydrophytic) vegetation criteria but lack wetlands hydrology and/or hydric soils indicators. CDFW-jurisdictional areas on site total 3.48 acres of associated riparian habitat including 3.35 acres of southern coast live oak riparian forests and 0.13 acre of non-native riparian areas. In addition, there are also 0.31 acre of stream channels under the jurisdiction of CDFW, of which 0.17 acre is already included within the southern coast live oak riparian forest. In total, there are 3.62 acre of CDFW jurisdictional resources on-site.

Jurisdictional waters/streambeds on site include perennial and ephemeral drainages flowing generally from north to south off site and downstream into San Dieguito River. San Dieguito River flows into Lake Hodges Reservoir and continues to the Pacific Ocean, a navigable water of the U.S. Jurisdictional waters/streambeds exhibit wetlands hydrology and/or hydric soils and signs of a bed and bank and they are therefore considered non-wetland waters under the jurisdiction of ACOE /RWQCB, and CDFW jurisdictional streambeds. The unvegetated perennial stream channel under ACOE/RWQCB/CDFW jurisdiction occurs within oak woodlands which are CDFW-jurisdictional riparian areas.

The wetlands determination forms used to develop these determinations are provided in Appendix E and more details regarding jurisdictional aquatic resources can be found in the Jurisdictional Delineation Report attached to this report (Appendix F).

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# 5 ANTICIPATED PROJECT IMPACTS

This section addresses direct and indirect impacts to biological resources that would result from implementation of the proposed project.

**Direct Impacts** refer to 100% permanent loss of a biological resource. For purposes of this report, it refers to the area where the limits of grading are proposed. Direct impacts were quantified by overlaying the limits of grading on geographic information system (GIS)-located biological resources (Figure 6). Direct impacts include on-site impacts as well as off-site impacts associated with road improvements.

**Indirect impacts** are reasonably foreseeable effects caused by project implementation on remaining or adjacent biological resources outside the direct limits of grading. Indirect impacts may affect areas within the defined Study Area but outside the limits of grading, including non-impacted areas and areas outside the Study Area, such as downstream effects. Indirect impacts include short-term effects immediately related to construction activities and long-term or chronic effects related to long-term use of the housing development. In most cases, indirect effects are not quantified, but in some cases, quantification might be included, such as using a noise contour to quantify indirect impacts to nesting birds.

## 5.1 Direct Impacts

### 5.1.1 Vegetation Communities

Short-term, construction-related, or temporary direct impacts to vegetation communities would primarily result from construction activities. Clearing, trampling, or grading of vegetation outside designated construction zones could occur in the absence of avoidance and mitigation measures. These potential effects could damage vegetation communities and alter their ecosystem, creating gaps in vegetation that allow exotic, non-native plant species to become established, thus increasing soil compaction and leading to soil erosion.

Long-term or permanent direct impacts to vegetation communities were quantified by comparing the impact footprint with the boundaries of the vegetation communities mapped in the Study Area. Direct impacts to vegetation communities on site would occur as a result of grading activities. Off-site impacts are would occur as a result of the work along Bear Valley Road. Table 3 shows the acreage of direct impacts to on site and off site vegetation communities within the Study Area as a result of the limits of grading (Figure 6). In total, there are on-site impacts to 32.61 acres of vegetation communities and land covers and 0.89 acres of off-site impacts (Table 3).

**Table 3**
**Direct Impacts to Vegetation Communities**

| Habitat Type | Existing On-site (Acres) | Direct On Site Impacts (Acres) | Direct Off Site Impacts (Acres) | Proposed Open Space (Lot H) |
|---|---|---|---|---|
| *Upland* | | | | |
| Disturbed Southern Cactus Scrub (dSCS) | 0.17 | — | — | 0.17 |
| *Subtotal* | *0.17* | — | — | *0.17* |
| *Jurisdictional Aquatic Resources* | | | | |
| Southern Coastal Live Oak Riparian Forest (SCLO) | 3.35 | 0.40 | 0.27 | 2.95 |
| Non-native Riparian (NNR) | 0.13 | — | — | 0.13 |
| *Subtotal* | *3.48* | *0.40* | *0.27* | *3.08* |
| *Other Land Covers* | | | | |
| Disturbed Habitat (DH) | 36.43 | 31.67 | 0.59 | 4.76 |
| Developed Land (DEV) | 0.54 | 0.54 | 0.03 | 0.00 |
| *Subtotal* | *36.97* | *32.21* | *0.62* | *4.76* |
| **Total**** | **40.62** | **32.61** | **0.89** | **8.01** |

** Totals may not sum due to rounding.

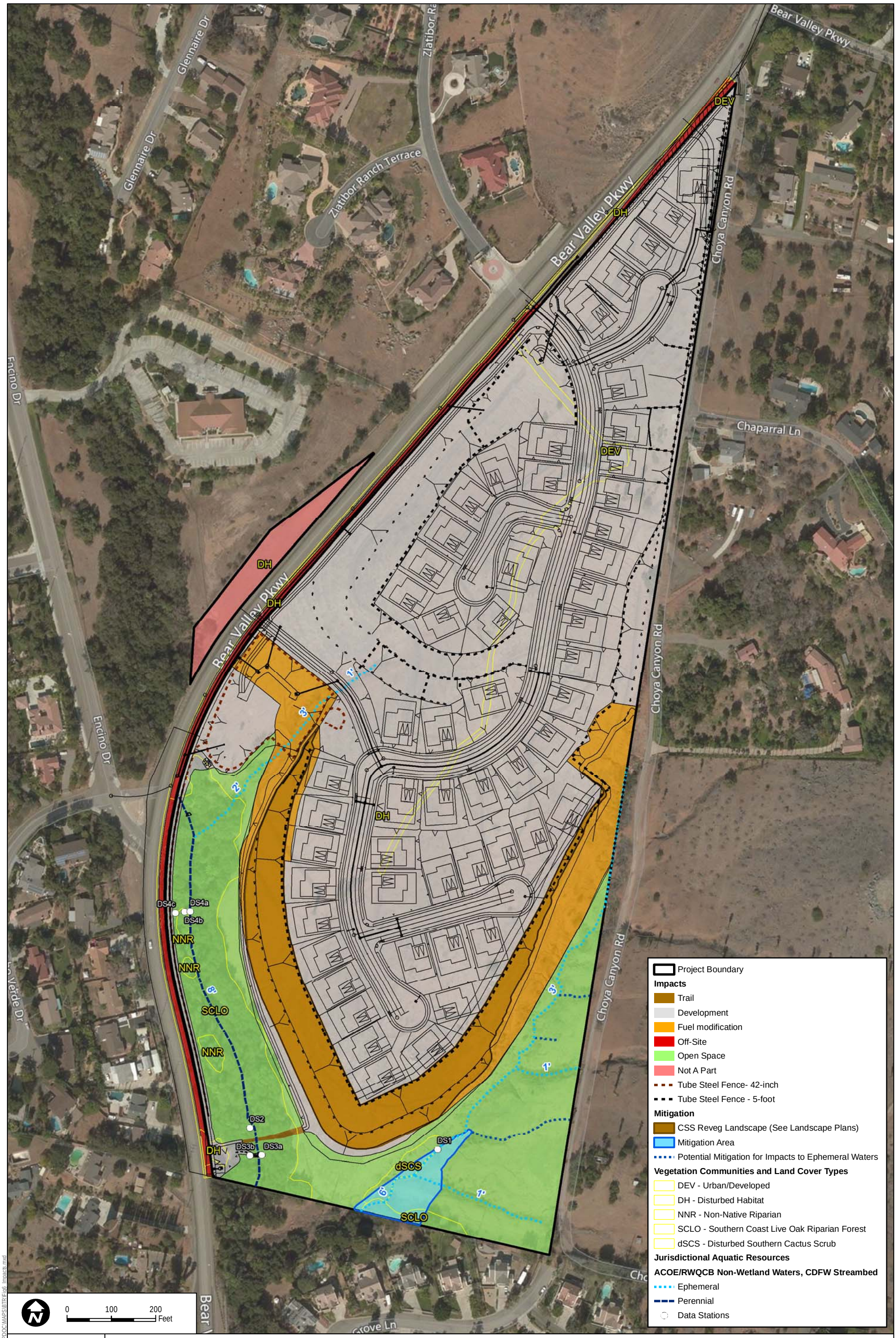
Impacts are primarily to disturbed habitat from the grading of the site for the residential lots. There are minor impacts to the southern live oak riparian forest from the construction of frontage improvements along Bear Valley Parkway consisting of curb, gutter, sidewalk, parkway, bike lane and one full travel lane with transitions that will tie into existing improvements.

### 5.1.2 Special-Status Plants

No special-status plants were observed within the Study Area. Due to the high level of disturbance within the Study Area and because the two species with moderate potential to occur, San Diego ambrosia and smooth tarplant, would likely occur outside the impact area, it is not expected that implementation of the proposed project would result in impacts to special-status plant species.

### 5.1.3 Special-Status Wildlife

No special-status wildlife species were detected on site or are expected in the off-site areas. One coastal cactus wren was observed off site and there is potential for this individual to use the cactus scrub on site, however this habitat community is not being impacted. One raptor, red-shouldered hawk, was detected foraging on site. While this species is not considered special-status and are fairly common in Southern California, raptors as a group are considered special-status, and Section 3503.5 of the California Fish and Game Code specifically prohibits the unauthorized take of raptors and raptor nests.

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SOURCE: World Imagery, SANGIS

**FIGURE 6**

## Project Impacts

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Implementation of the proposed project would not result in potential direct impacts to the special-status wildlife species that have moderate to high potential to occur because these species occur within the native habitats found on site such as southern coast live oak riparian forest and southern cactus scrub and the vast majority of impacts are within disturbed areas. These native habitats provide foraging and nesting habitat for birds and habitat for one mammal species, however, no impacts would occur to southern cactus scrub and only a small proportion of the southern live oak riparian forest along Bear Valley Road would be impacted.

### 5.1.4 Habitat Linkages/Wildlife Corridors

As described in Section 4.3.3, the Study Area does not function as a major habitat linkage or wildlife corridor, but likely serves as a local wildlife corridor for common terrestrial and avian species. The proposed project would directly impact movement for urban-adapted species that use the oak trees and disturbed areas (e.g., raccoon, striped skunk, and coyote); however, these species can continue to use the areas outside of the proposed project for movement between habitat types. Wildlife species also tend to utilize drainages for movement; the drainages on site vegetated with riparian habitat will largely be avoided. The patch of southern coast live oak riparian forest within the southwestern corner of the Study Area may support wildlife movement into the Kit Carson Park and further to Lake Hodges; however minimal impacts are occurring to this area.

### 5.1.5 Jurisdictional Aquatic resources

Short-term, construction-related, or temporary direct impacts to jurisdictional aquatic resources would primarily result from construction activities. Clearing, trampling, or grading of vegetation outside designated construction zones could occur in the absence of avoidance and mitigation measures. These potential effects could damage individual plants and alter their ecosystem, creating gaps in vegetation that allow exotic, non-native plant species to become established, thus increasing soil compaction and leading to soil erosion.

Long-term or permanent direct impacts to jurisdictional aquatic resources were quantified by comparing the impact footprint with the boundaries of the jurisdictional aquatic resources mapped in the Study Area.

As a result of the proposed project there are no direct impacts to non-native riparian areas under the jurisdiction of ACOE, RWQCB, and CDFW. There are direct impacts to 0.03 acres of impacts to unvegetated stream channels (including ephemeral channel), under the jurisdiction of ACOE, RWQCB, and CDFW and 0.40 acres of impacts to southern coast live oak riparian forest, CDFW jurisdiction only (Table 4). Off-site impacts include 0.27 acres of impacts to

southern coast live oak riparian forest, CDFW jurisdiction only. There are no off-site impact to ephemeral and perennial channels or areas under the jurisdiction of ACOE and RWQCB.

**Table 4**
**Impacts to On-site Jurisdictional Aquatic Resources**

| Jurisdictional Aquatic Resource | CDFW Riparian Area (Acres) | | | ACOE/RWQCB Wetland (Acres) | | |
|---|---|---|---|---|---|---|
| | *Existing* | *Impacts* | *Remaining* | *Existing* | *Impacts* | *Remaining* |
| Southern Coast Live Oak Riparian Forest | 3.35 | 0.40 | 2.95 | -- | -- | -- |
| Non-Native Riparian | 0.13 | -- | 0.13 | 0.13 | -- | 0.13 |
| *Total Riparian/Wetlands* | *3.48* | *0.40* | *3.08* | *0.13* | -- | *0.13* |
| **Jurisdictional Aquatic Resource** | **CDFW Streambed(Acres)** | | | **ACOE/RWQCB Non-wetland Waters (Acres)** | | |
| | *Existing* | *Impacts* | *Remaining* | *Existing* | *Impacts* | *Remaining* |
| Ephemeral Stream Channel | 0.14 | 0.03 | 0.11 | 0.14 | 0.03 | 0.11 |
| Perennial Stream Channel | 0.17 | 0.002 | 0.17 | 0.17 | 0.002 | 0.17 |
| *Total Streambed/ Non-wetland Waters* | *0.31* | *0.03* | *0.29* | *0.31* | *0.03* | *0.29* |
| **Total Jurisdictional Area*** | **3.62**** | **0.43** | **3.36** | **0.44** | **0.03** | **0.41** |

* Ephemeral stream channels are an overlay within the disturbed habitat and southern coast live oak vegetation communities. The perennial stream channel on site is within the understory of the oak canopy and is therefore, to avoid double counting of resources, this channel, and the portion of the ephemeral channel within the oak canopy, are not counted toward the total jurisdictional area.

** Acreage may not total due to rounding.

## 5.2 Indirect Impacts

### 5.2.1 Vegetation Communities and Special-status Plants

**Short-Term Indirect Impacts**

Potential short-term or temporary indirect impacts to special-status vegetation communities and special-status plants in the Study Area would primarily result from construction activities and include impacts related to or resulting from the generation of fugitive dust; changes in hydrology resulting from construction, including sedimentation and erosion; and the introduction of chemical pollutants (including herbicides). Potential short-term indirect impacts could affect special-status vegetation communities within the Study Area, and special-status plants that have a moderate to high potential to occur in the Study Area. These impacts are described in detail as follows.

***Generation of Fugitive Dust.*** Excessive dust can decrease the vigor and productivity of vegetation through effects on light, penetration, photosynthesis, respiration, transpiration, increased penetration of phytotoxic gaseous pollutants, and increased incidence of pests and diseases.

***Changes in Hydrology.*** Construction could result in hydrologic and water-quality-related impacts adjacent to and downstream of the limits of grading. Hydrologic alterations include

changes in flow rates and patterns in drainages and dewatering, which may affect adjacent and downstream (including off-site) aquatic, wetland, and riparian vegetation communities. Water-quality impacts include chemical-compound pollution (fuel, oil, lubricants, paints, release agents, and other construction materials), erosion, and excessive sedimentation. Direct impacts, as described previously, can also remove native vegetation and increase runoff from roads and other paved surfaces, resulting in increased erosion and transport of surface matter into vegetation communities. Altered erosion, increased surface flows, and underground seepage can allow for the establishment of non-native plants. Changed hydrologic conditions can also alter seed bank characteristics and modify habitat for ground-dwelling fauna that may disperse seed.

***Chemical Pollutants.*** Erosion and chemical pollution (releases of fuel, oil, lubricants, paints, release agents, and other construction materials) may affect special-status vegetation communities. The use of chemical pollutants can decrease the number of plant pollinators, increase the existence of non-native plants, and cause damage to and destruction of native plants.

**Long-Term Indirect Impacts**

Long-term (operation-related) or permanent indirect impacts could result from the proximity of the proposed project to special-status vegetation communities after construction. The proposed project includes a revegetation area adjacent to the wetlands that will provide native landscaping to avoid indirect impacts. The area is shown on Figure 6 and discussed in detail on the landscape plans. Permanent indirect impacts that could affect special-status vegetation communities include chemical pollutants, altered hydrology, non-native invasive species, and increased human activity. Each of these potential indirect impacts is discussed as follows.

***Chemical Pollutants.*** The effects of chemical pollutants on vegetation communities and special-status plant species are described above. During landscaping activities, herbicides may be used to prevent vegetation from reoccurring around structures. However, weed control treatments shall include only legally permitted chemical, manual, and mechanical methods. Additionally, the herbicides used during landscaping activities will be contained within the Project impact footprint.

***Altered Hydrology.*** Water would be used for landscaping purposes that may alter the on-site hydrologic regime. These hydrologic alterations may affect special-status vegetation communities and special-status plant communities. Altered hydrology can allow for the establishment of non-native plants and invasion by Argentine ants (*Linepithema humile*), which can compete with native ant species that could be seed dispersers or plant pollinators. However, the water, and associated runoff, used during landscaping activities will be contained within the Project impact footprint, and long-term indirect impacts associated with altered hydrology are not expected.

***Non-Native, Invasive Plant and Animal Species.*** Invasive plant species that thrive in edge habitats are a well-documented problem in Southern California and throughout the United States. Development could also fragment native plant populations, which may increase the likelihood of invasion by exotic plants due to the increased interface between natural habitats and developed areas. Bossard et al. (2000) list several adverse effects of non-native species in natural open areas, including, but not limited to, exotic plant competition for light, water, and nutrients and the formation of thatches that block sunlight from reaching smaller native plants. Exotic plant species may alter habitats and displace native species over time, leading to extirpation of native plant species and unique vegetation communities. The introduction of non-native, invasive animal species could negatively affect native species that may be pollinators of or seed dispersal agents for plants within vegetation communities and special-status plant populations.

***Increased Human Activity.*** The proposed development will contain 55 residential units. Increased human activity could result in the potential for trampling of vegetation outside of the impacts footprint, as well as soil compaction, and could affect the viability of plant communities. Trampling can alter the ecosystem, creating gaps in vegetation and allow exotic, non-native plant species to become established, leading to soil erosion. Trampling may also affect the rate of rainfall interception and evapotranspiration, soil moisture, water penetration pathways, surface flows, and erosion. An increased human population increases the risk for damage to vegetation communities and special-status plants. The riparian habitat within the Study Area will be fenced in order to deter human activity. Further information regarding fencing is included in the landscape plan (GMP, Landscape Concept Plan 661 Bear Valley, December 2014).

### 5.2.2 Special-Status Wildlife

**Short-Term Indirect Impacts**

Short-term, construction-related, or temporary indirect impacts to special-status wildlife species that have moderate or high potential to occur (see Appendix D) would primarily result from construction activities. Potential temporary indirect impacts could occur as a result of generation of fugitive dust, noise, chemical pollutants, increased human activity, and non-native animal species.

***Generation of Fugitive Dust.*** Dust and applications for fugitive dust control can impact vegetation surrounding the limits of grading, resulting in changes in the community structure and function. These changes could result in impacts to suitable habitat for special-status wildlife species.

**Noise.** Construction-related noise could occur from equipment used during vegetation clearing and construction of the residences and associated infrastructure. Noise impacts can have a variety of indirect impacts on wildlife species, including increased stress, weakened immune systems, altered foraging behavior, displacement due to startle, degraded communication with conspecifics (e.g., masking), damaged hearing from extremely loud noises, and increased vulnerability to predators (Lovich and Ennen 2011; Brattstrom and Bondello 1983, cited in Lovich and Ennen 2011).

***Chemical Pollutants.*** Accidental spills of hazardous chemicals could contaminate nearby surface waters and groundwater and indirectly impact wildlife species through poisoning or altering suitable habitat.

***Increased Human Activity.*** Construction activities can deter wildlife from using habitat areas near the proposed project footprint and increase the potential for vehicle collisions.

***Non-Native Animal Species.*** Trash from construction-related activities could attract invasive predators, such as ravens and coyotes that could impact the wildlife species in the Study Area.

**Long-Term Indirect Impacts**

Potential long-term or permanent indirect impacts to special-status wildlife species that have moderate or high potential to occur (see Appendix D) include non-native, invasive plant and animal species; increased human activity; and altered hydrology.

***Non-Native, Invasive Plant and Animal Species.*** Invasive plant species that thrive in edge habitats are a well-documented problem in Southern California and throughout the United States. Development could also fragment native plant populations, which may increase the likelihood of invasion by exotic plants due to the increased interface between natural habitats and developed areas. Bossard et al. (2000) list several adverse effects of non-native species in natural open areas, including, but not limited to, the fact that exotic plants compete for light, water, and nutrients and can create a thatch that blocks sunlight from reaching smaller native plants. Exotic plant species may alter habitats and displace native species over time, leading to extirpation of native plant species and subsequently suitable habitat for special-status wildlife species. In addition, trash can attract invasive predators, such as ravens and coyotes, that could impact the wildlife species in the Study Area.

***Increased Human Activity.*** The proposed residential development will contain 55 units. Increased human activity could result in the potential for trampling of vegetation outside of the impacts footprint, and soil compaction and could affect the viability and function of suitable habitat for wildlife species. An increased human population increases the risk for

damage to suitable habitat for wildlife species. In addition, increased human activity can deter wildlife from using habitat areas near the proposed project footprint, and increased human activity and vehicle trips could result in vehicle collisions with wildlife species. The riparian habitat within the Study Area will be fenced in order to deter human activity. Further information regarding fencing is included in the landscape plan (GMP, Landscape Concept Plan 661 Bear Valley, December 2014).

***Altered Hydrology.*** Water would be used for landscaping purposes that may alter the on-site hydrologic regime. These hydrologic alterations may affect special-status wildlife species. Altered hydrology can allow for the establishment of non-native plants and invasion by Argentine ants, which can compete with native ant species that could be seed dispersers or plant pollinators. Changes in plant composition could affect the native vegetation communities and wildlife habitat. However, the water, and associated runoff, used during landscaping activities will be contained within the Project impact footprint, and long-term indirect impacts associated with altered hydrology are not expected.

### 5.2.3 Habitat Linkages/Movement Corridors

**Short-Term Indirect Impacts**

Short-term indirect impacts to habitat connectivity and wildlife corridors could result from lighting and increased human activity.

***Increased Human Activity.*** Project construction would likely take place during the daytime and would not affect wildlife species such as mammals that are most active in evenings and nighttime. Wildlife species such as birds, rabbits, and lizards are active in the daytime, but use a variety of habitats and could continue using other areas within and adjacent to the Study Area for wildlife movement.

***Lighting.*** During construction of the proposed project, nighttime lighting may be required, which would create new sources of light in the area. These impacts would be short-term, and since the Study Area is not considered a core wildlife corridor, the proposed project is not expected to result in significant impacts to wildlife movement.

**Long-Term Indirect Impacts**

Long-term indirect impacts include fencing of the Study Area and lighting.

***Fencing.*** Fencing will be provided to protect the sensitive habitat from indirect impacts. Fencing will consist of tubular steel fencing at variable heights and will be placed along the areas indicated per the landscape plan ((GMP, Landscape Concept Plan 661 Bear Valley, December 2014).

***Lighting.*** Lighting should be directed downward, and limit the type and spacing of lighting to maintain reasonable levels that do not contribute to light pollution. The buildings and parking areas would include lighting designed to minimize light pollution and preserve dark skies, while enhancing safety, security, and functionality.

### 5.2.4 Jurisdictional Aquatic Resources

**Short-Term Indirect Impacts**

Potential short-term or temporary indirect impacts to jurisdictional aquatic resources in the Study Area would primarily result from construction activities and include impacts related to or resulting from the generation of fugitive dust; changes in hydrology resulting from construction, including sedimentation and erosion; and the introduction of chemical pollutants (including herbicides). Potential short-term indirect impacts that could affect all the jurisdictional aquatic resources that occur on the Study Area are described in detail as follows.

***Generation of Fugitive Dust.*** As stated above, excessive dust can decrease the vigor and productivity of vegetation through effects on light, penetration, photosynthesis, respiration, and transpiration, as well as increased penetration of phytotoxic gaseous pollutants and increased incidence of pests and diseases.

***Changes in Hydrology.*** Construction could result in hydrologic and water-quality-related impacts adjacent to and downstream of the construction area. The effects of changes in hydrology would be similar to those described in Section 5.2.1.

***Chemical Pollutants.*** Erosion and chemical pollution (releases of fuel, oil, lubricants, paints, release agents, and other construction materials) may affect jurisdictional aquatic resources. The use of chemical pollutants can decrease the number of plant pollinators, increase the existence of non-native plants, and cause damage to and destruction of native plants.

**Long-Term Indirect Impacts**

Long-term (operation-related) or permanent indirect impacts could result from the proximity of the proposed project to jurisdictional aquatic resources after construction, including impacts related to operation and maintenance. The proposed project includes a revegetation area adjacent to the wetlands that will provide native landscaping to avoid indirect impacts. The revegetation

landscaping is not required as mitigation since impacts to uplands are not proposed however the revegetation area will be composed of native plant species to provide a buffer of the proposed development to the wetland area. The area is shown on Figure 6 and discussed in detail on the landscape plans. Operation and maintenance activities will occur within the impact footprint. Permanent indirect impacts that could affect jurisdictional aquatic resources include generation of fugitive dust, habitat fragmentation, chemical pollutants, altered hydrology, non-native invasive species, increased human activity, and alteration of the natural fire regime. Each of these potential indirect impacts is discussed as follows.

***Chemical Pollutants.*** The effects of chemical pollutants on jurisdictional aquatic resources are described above.

***Altered Hydrology.*** Water used for landscaping purposes may alter the on-site hydrologic regime. These hydrologic alterations may affect jurisdictional aquatic resources. However, the water, and associated runoff, used during landscaping activities will be contained within the Project impact footprint, and long-term indirect impacts associated with altered hydrology are not expected.

***Non-Native, Invasive Plant and Animal Species.*** The effects of chemical pollutants would be similar to those described in Section 5.2.1. The introduction of non-native, invasive animal species could negatively affect native species that may be pollinators of or seed dispersal agents for plants within jurisdictional aquatic resources.

***Increased Human Activity.*** The effects of increased human activity would be similar to those described in Section 5.2.1. An increased human population increases the risk for damage to jurisdictional aquatic resources. However, these resources will be fenced in order to deter human activity. Further information regarding fencing is included in the landscape plan (GMP, Landscape Concept Plan 661 Bear Valley, December 2014).

# 6 ANALYSIS OF SIGNIFICANCE

## 6.1 Explanation of Findings of Significance

Impacts to vegetation communities, special-status plants, special-status wildlife, and wildlife movement species must be quantified and analyzed to determine whether such impacts are significant under the CEQA. CEQA Guidelines Section 15064(b) states that an ironclad definition of "significant" effect is not possible, because the significance of an activity may vary with the setting. Appendix G of the Guidelines, however, does provide "examples of consequences which may be deemed to be a significant effect on the environment" (CEQA Guidelines Section 15064[e]). These effects include substantial effects on rare or endangered species of animal or plant or the habitat of the species. CEQA Guidelines Section 15065(a) is also helpful in defining whether a project may have "a significant effect on the environment." Under that section, a proposed project may have a significant effect on the environment if the project has the potential to: (1) substantially degrade the quality of the environment; (2) substantially reduce the habitat of a fish or wildlife species; (3) cause a fish or wildlife population to drop below self-sustaining levels; (4) threaten to eliminate a plant or animal community; or (5) reduce the number or restrict the range of a rare or endangered plant or animal.

The following are the significance thresholds for biological resources provided in the CEQA Guidelines Appendix G environmental checklist, which states that a project could potentially have a significant effect if it:

- Has a substantial adverse effect, either directly or through habitat modifications, on any species identified as being a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFG[4] or USFWS
- Has a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFG or USFWS
- Has a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means
- Interferes substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impedes the use of native wildlife nursery sites

[4] Although CDFG changed their name to CDFW in January 2013, we have retained language from the CEQA Guidelines Appendix G here, which refers to the agency as CDFG. The two are synonymous.

- Conflicts with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflicts with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan

The evaluation of whether or not an impact to a particular biological resource is significant must consider both the resource itself and the role of that resource in a regional context. Substantial impacts are those that contribute to, or result in, permanent loss of an important resource, such as a population of a rare plant or animal. Impacts may be important locally, because they result in an adverse alteration of existing site conditions, but considered not significant, because they do not contribute substantially to the permanent loss of that resource regionally. The severity of an impact is the primary determinant of whether or not that impact can be mitigated to a level below significant.

## 6.2 Vegetation Communities

**Direct Impacts.** There are on-site direct impacts to 32.61 acres and off-site direct impact to 0.89 acres of vegetation communities and land covers, including southern live oak riparian forest, disturbed habitat, and developed land as a result of the proposed project. The majority of the impacts are to disturbed habitat and developed land, with minimal impacts to native vegetation communities. Impacts to 0.40 acres of on-site and 0.27 acre of off-site southern live oak riparian forest are considered significant (**Impact BIO-1**). However, this area is under CDFW jurisdiction and will therefore be mitigated through jurisdictional resources discussed (e.g., unvegetated channel and southern live oak riparian forest) in Section 6.6.

**Indirect Impacts.** Potential short-term or temporary indirect impacts to special-status vegetation communities and special-status plants in the Study Area would primarily result from construction activities and include impacts related to or resulting from the generation of fugitive dust; changes in hydrology resulting from construction, including sedimentation and erosion; and the introduction of chemical pollutants (including herbicides). It is assumed, however, that standard construction Best Management Practices (BMPs) and construction-related minimization measures to control dust, erosion, and runoff will be implemented and will ameliorate these effects. Therefore, a significant impact would be avoided through these measures.

Long-term (operation-related) or permanent indirect impacts could result from the proximity of the proposed project to special-status vegetation communities after construction. Permanent indirect impacts that could affect special-status vegetation communities include chemical pollutants, altered hydrology, non-native invasive species, and increased human activity. A significant impact for these potential impacts will be avoided through the following project design features: (1) fencing

will be included per the landscape plans to preclude humans from traveling into the areas to be preserved; (2) landscaping adjacent to preserved land will not include species listed as high or moderate on the California Invasive Plant Council (Cal-IPC 2013); (3) proper selection, design, placement, and utilization of BMPs including source control (i.e., signage, and trash enclosures), treatment control (i.e., constructed wetlands, filter inserts, and catch basins), and site design (i.e., landscaping) BMPs; and (4) attenuation of flows from increase run-off from site development through energy dissipation (e.g., detention basins, rip-rap, etc.).

## 6.3 Special-Status Plants

**Direct Impacts.** In determining significance, the significance threshold applied to plants is whether the project would have a substantial adverse effect on the special-status species. While no special-status plant species were detected on site during surveys, there is moderate potential for two species to occur (see Appendix C). Potential impacts to individual species are not considered significant because much of the impacted habitat is already disturbed and low quality with minimal impacts to the outer edge of the riparian area on site. The two species with moderate potential to occur, San Diego ambrosia (*Ambrosia pumila*) and smooth tarplant (*Centromadia pungens* ssp. *laevis)*, are typically found within riparian areas. The proposed project will impact the outer edge of the riparian habitat on site, therefore direct impacts to these species are not expected.

**Indirect Impacts**. Potential long-term or permanent indirect impacts to special-status plant species include non-native, invasive plant and animal species; increased human activity; and altered hydrology. A significant impact for these impacts will be avoided through the following project design features: (1) fencing will be included preclude humans from traveling into the areas to be preserved; (2) landscaping adjacent to preserved land will not include species listed as high or moderate on the California Invasive Plant Council (Cal-IPC 2013); (3) proper selection, design, placement and utilization of BMPs including source control, treatment control, and site design (i.e., landscaping) BMPs; and (4) attenuation of flows from increase run-off from site development through energy dissipation (e.g., detention basins, rip-rap).

## 6.4 Special-Status Wildlife

**Direct Impacts.** In determining significance, the significance threshold applied to wildlife is whether the project would have a substantial adverse effect on the special-status species. While no special-status wildlife species were detected on site during surveys, there is potential for some species to occur (see Appendix D). It is unlikely that direct impacts would occur to these special-status species since the only two native habitats on site will have none to minimal impacts resulting from the proposed project. If construction activities occur during the bird-

breeding season (typically February 1 through September 15), impacts to migratory birds or destruction of active migratory bird nests and/or eggs would be considered a significant impact because they are protected under the Migratory Bird Treaty Act (**Impact BIO-2**).

**Indirect Impacts.** Short-term, construction-related indirect impacts to special-status wildlife species that have moderate to high potential to occur (see Appendix D) that would primarily result from construction activities, including fugitive dust, chemical pollutants, increased human activity, and non-native animal species would be avoided through the project design features listed in Sections 6.2 and 6.3. Potential indirect impacts from construction-related noise to nesting special-status birds or raptors would be considered a significant impact (**Impact BIO-3**).

Potential long-term or permanent indirect impacts to special-status wildlife species that have moderate or high potential to occur (see Appendix D) associated with non-native, invasive plant and animal species; increased human activity; and altered hydrology would be avoided through the project design features listed in Sections 6.2 and 6.3. Based on the minimal use of the impacted areas for wildlife movement through the site, habitat fragmentation would not be considered a significant impact.

## 6.5 Habitat Linkages/Wildlife Corridors

**Direct Impacts.** As mentioned, the site does not serve as a major wildlife corridor or habitat linkage and there are minimal impacts to the southern live oak riparian forest on the western side of the Study Area, which connects to undeveloped land off site. Additionally, there are no impacts to the main perennial channel along the western boundary and no impacts to the ephemeral channel that runs along the eastern portion of the project boundary. Both channels run in a north-south direction. Therefore, there would not be direct significant impacts to this minor local habitat linkage/wildlife corridor.

**Indirect Impacts.** Significant short-term indirect impacts to the minor local habitat linkage/wildlife corridor would be avoided through standard construction BMPs and construction-related minimization measures as discussed above. Potential long-term indirect impacts to will be avoided through the project design features as mentioned above in Section5.2.

## 6.6 Jurisdictional Aquatic Resources

**Direct Impacts.** Jurisdictional aquatic resources, as described in Sections 3.2.4 and 4.3.4, are considered special-status and regulated by state and federal agencies. The direct impacts to these jurisdictional areas are considered significant. Implementation of the proposed project would result in direct impacts to 0.40 acre on site and 0.27 acre off site of southern coast live oak riparian forest under CDFW jurisdiction and impacts to 0.03 acres of ephemeral stream channel,

which are under the jurisdiction of the ACOE, RWQCB, and CDFW. These impacts are considered significant (**Impact BIO-4**).

**Indirect Impacts.** Potential short-term indirect impacts to jurisdictional aquatic resources in the Study Area that would primarily result from construction activities, including fugitive dust; changes in hydrology resulting from construction, including sedimentation and erosion; and the introduction of chemical pollutants (including herbicides) would be avoided through the project design features listed in Sections 6.2 and 6.3.

Long-term indirect impacts to jurisdictional aquatic resources, including chemical pollutants, altered hydrology, non-native invasive species, increased human activity, and alteration of the natural fire regime would be avoided through the project design features listed in Sections 6.2 and 6.3. Because the jurisdictional resources on site include low-quality unvegetated ephemeral stream channels and only the edges of southern coast live oak riparian forest, potential indirect impacts associated with fragmentation from other jurisdictional resources are not considered a significant impact.

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# 7 MITIGATION

## 7.1 Vegetation Communities

Impacts BIO-1 Direct impacts to southern coast live oak riparian forest will be mitigated through habitat enhancement and establishment as described in MM-1.

**MM-1** The project applicant shall establish or enhance at least 2.01 acres of southern live oak riparian forest with establishment of 0.67 acre within the on-site mitigation area and enhancement of 1.34 acre within the open space area in general including enhancing the 0.13 acre of non-native riparian and enhancing the balance within the area mapped as southern coast live oak riparian forest which contains non-native and invasive species (Table 5). The mitigation will occur within the open space lot (Lot H) totaling 8.0 acres (Table 3). The mitigation area occurs along the ephemeral drainage that runs along the southeastern boundary as shown on Figure 6. A Conceptual Mitigation Plan shall be prepared as part of the permit application process by persons with expertise in southern California ecosystems and native plant revegetation techniques. The Conceptual Mitigation Plan shall include, at a minimum (a) the location of the mitigation site; (b) the plant species to be used, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.

**Table 5**
**Preserved Vegetation Communities and Land Covers**

| Habitat Type | Direct On-Site Impacts (Acres) | Direct Off-Site Impacts (Acres) | Mitigation Ratio | Mitigation Acreage | Required On-Site Mitigation |
|---|---|---|---|---|---|
| Southern Coast Live Oak Riparian Forest (CDFW-jurisdictional) | 0.40 | 0.27 | 3:1 | 2.01 | Establishment at 1:1 through revegetation within the mitigation area; Enhancement at 2:1 in the open space area. |
| Non-native Riparian | — | — | 1:1 | — | None |
| Disturbed Southern Cactus Scrub | — | — | 1:1 | — | None |

**Table 5**
**Preserved Vegetation Communities and Land Covers**

| Habitat Type | Direct On-Site Impacts (Acres) | Direct Off-Site Impacts (Acres) | Mitigation Ratio | Mitigation Acreage | Required On-Site Mitigation |
|---|---|---|---|---|---|
| Unvegetated Stream Channels* (ACOE/RWQCB/CDFW) | 0.03 | | 1:1[1] | 0.03* | Establishment/Enhancement within the mitigation area as noted Figure 6 and discussed below in Section 7.5 |
| Disturbed Habitat | 31.67 | 0.59 | None | — | None |
| Developed Land | 0.54 | 0.03 | None | — | None |
| **Total**** | **32.61** | **0.89** | **-** | **2.04** | |

* Ephemeral stream channels are an overlay within the disturbed habitat and southern coast live oak vegetation communities. The perennial stream channel on site is within the understory of the oak canopy and is therefore, to avoid double counting of resources, this channel, and the portion of the ephemeral channel within the oak canopy, are not counted toward the total jurisdictional area.

** Acreage may not total due to rounding..

[1] Mitigation ratios for this habitat type are 1:1 to 2:1 according to the Table 4-7 in the MHCP. The Study Area lies outside Focused Planning Area, the on-site in-kind mitigation will enhance therefore impacts to unvegetated channels will be mitigated at 1:1.

## 7.2 Special-Status Plants

No mitigation is proposed for impacts to special-status plants because direct impacts to special-status plants are not expected to occur.

## 7.3 Special-Status Wildlife

Potential impacts BIO-2 (direct impacts to nesting birds) and BIO-3 (indirect impacts to nesting birds) will be mitigated through pre-construction nesting bird surveys and appropriate buffers around active nests regulated by the Migratory Bird Treaty Act (MM-2, below).

**MM-2** If construction activity occurs during the breeding season for raptors and other birds (typically January 1 through September 15), a one-time biological survey for nesting bird species must be conducted within the proposed impact area and a 300-foot buffer within 72 hours prior to construction. This survey is necessary to assure avoidance of impacts to nesting raptors (e.g., Cooper's hawk and red-tailed hawk) and/or birds protected by the federal Migratory Bird Treaty Act. If any active nests are detected, the area will be flagged and mapped on the construction plans along with a minimum of a 300-foot buffer and up to a maximum of 500 feet for raptors, as determined by the project biologist, and will be avoided until the nesting cycle is complete. The project biologist may reduce the avoidance buffer if a reduced buffer maintains protection of the nesting cycle of the avian species.

## 7.4 Habitat Linkages/Wildlife Corridors

No mitigation is proposed for impacts to habitat linkages/wildlife corridors because the proposed impacts are not considered significant.

## 7.5 Jurisdictional Aquatic Resources

Impact BIO-4 (impacts to jurisdictional aquatic resources) will be mitigated through on-site enhancement and establishment of southern live oak riparian forest and unvegetated stream channel (see MM-1, above and MM-3, below), and compliance with federal and state regulatory agencies (MM-4, below), thus resulting in no net loss of acreage, function, and value of these resources.

**MM-3** The project applicant shall establish/enhance approximately 0.03 (1:1 mitigation ratio) acre of unvegetated stream channel (Table 6). The mitigation area occurs along the ephemeral drainage that runs along the southeastern boundary as shown on Figure 6. The 0.03 acre plus the 2.01 acre from MM-1 will result in the establishment of 2.04 acre within the mitigation area. Details will be provided in a Conceptual Mitigation Plan which will be prepared as part of the permit application process.

**Table 6**
**Jurisdictional Aquatic Resources**

| Habitat Type | Direct On-Site Impacts (Acres) | Direct Off-Site Impacts (Acres) | Mitigation Ratio | Mitigation Acreage | Required On-Site Mitigation |
|---|---|---|---|---|---|
| Southern Coast Live Oak Riparian Forest (CDFW-jurisdictional) | 0.40 | 0.27 | 3:1 | 2.01 | Establishment at 1:1 through revegetation within the mitigation area; Enhancement at 2:1 in the open space area. |
| Non-native Riparian | — | — | 1:1 | — | None |
| Unvegetated Stream Channels* (ACOE/RWQCB/CDFW) | 0.03 | — | 1:1 | 0.03 | Establishment/Enhancement within the mitigation area as noted Figure 6 |
| **Total** | **0.43** | **0.27** | **—** | **2.04** | |

**MM-4** To comply with the state and federal regulations for impacts to jurisdictional aquatic resources, the following agency permits are required, or verification that they are not required shall be obtained:

- A CWA, Section 401/404 permit issued by the California RWQCB and the ACOE for all project-related disturbances of non-wetland waters of the United States and/or associated wetlands.

- A Section 1602 Streambed Alteration Agreement issued by the CDFW for all project-related disturbances of any streambed and associated riparian habitat.

Permits are required to be obtained by the applicant prior to the impact to the resources. As noted above in MM-1 and MM-3, a Conceptual Mitigation Plan is required to provide compensatory mitigation for the impacts. The on-site wetland preservation area and the proposed wetland mitigation area (Open Space; Lot H) will be protected under a covenant of easement or conservation easement. A long-term management plan for the area shall be prepared and will include maintenance of the wetland functions and values of the existing and restored habitat in perpetuity by the Home Owners Association, underlying land owner, or an approved land manager.

The land manager shall be an entity approved by CDFW and USFWS according to a long-term management plan approved by these agencies. The responsible party shall deter access to the Open Space through the use of signage and/or barriers which will also be placed along the proposed trail within the Open Space. The tasks in the long-term management plan shall provide for the long-term monitoring, documentation of site conditions, as well as task such as removal of trash, repair of any vandalism, and control of invasive species. The long-term management plan shall also provide BMPs that help reduce the spread of Polyphagous and Kuroshio shot hole borers (SHBs). BMPs may include on-site worker education, reporting of infestations, equipment disinfection, pruning infected limbs, avoidance of transport of infected host tree materials, chipping potential infected material to less than 1 inch in size and solarizing prior to removal or composting, solarizing or burning of cut material and is potentially infected.

The condition of the Open Space shall be documented annually by the preparation of an annual report submitted to the City and resource agencies. The responsible party shall also be responsible for the implementation of any remedial measures (e.g., planting of native wetland plants) to repair damage or loss due to any of the above mentioned factors. The long-term management plan shall be funded by a non-wasting endowment for which the amount can be determined via the preparation of a Property Analysis Record or similar method.

# 8 ACKNOWLEDGMENTS

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# APPENDIX A

***Vascular Plant Species***
***Observed within the Study Area***

# APPENDIX A
# Plant Compendium

## VASCULAR SPECIES

### DICOTS

***ANACARDIACEAE—SUMAC OR CASHEW FAMILY***

* *Schinus molle*—Peruvian peppertree
*Toxicodendron diversilobum*—Pacific poison oak

***APIACEAE—CARROT FAMILY***

* *Foeniculum vulgare*—sweet fennel

***ASTERACEAE—SUNFLOWER FAMILY***

* *Cynara cardunculus*—cardoon
* *Erigeron bonariensis*—asthmaweed
* *Glebionis coronaria*—crowndaisy
*Isocoma menziesii*—Menzies' goldenbush
*Baccharis salicifolia* ssp. *salicifolia*—mulefat
* *Carduus pycnocephalus*—Italian plumeless thistle

***BORAGINACEAE—BORAGE FAMILY***

*Phacelia adenophora*—glandular yellow phacelia

***BRASSICACEAE—MUSTARD FAMILY***

* *Brassica nigra*—black mustard
* *Hirschfeldia incana*—shortpod mustard
* *Raphanus sativus*—cultivated radish

***CACTACEAE—CACTUS FAMILY***

* *Opuntia ficus-indica*—Barbary fig
*Opuntia littoralis*—coastal pricklypear

***CHENOPODIACEAE—GOOSEFOOT FAMILY***

*Atriplex canescens*—fourwing saltbush

***EUPHORBIACEAE—SPURGE FAMILY***

* *Ricinus communis*—castorbean

***FAGACEAE—OAK FAMILY***

*Quercus agrifolia*—California live oak

***LAMIACEAE—MINT FAMILY***

* *Marrubium vulgare*—horehound

***MORACEAE—MULBERRY FAMILY***

* *Ficus carica*—edible fig

***PHRYMACEAE—LOPSEED FAMILY***

*Mimulus aurantiacus*—orange bush monkeyflower

***PLATANACEAE—PLANE TREE, SYCAMORE FAMILY***

*Platanus racemosa*—California sycamore

***SALICACEAE—WILLOW FAMILY***

*Salix exigua*—narrowleaf willow
*Salix gooddingii*—Goodding's willow
*Salix lasiolepis*—arroyo willow

***SOLANACEAE—NIGHTSHADE FAMILY***

* *Nicotiana glauca*—tree tobacco
*Datura wrightii*—sacred thorn-apple

***TAMARICACEAE—TAMARISK FAMILY***

* *Tamarix aphylla*—Athel tamarisk

**MONOCOTS**

***ARECACEAE—PALM FAMILY***

* *Washingtonia robusta*—Washington fan palm
* *Phoenix dactylifera*—date palm

***POACEAE—GRASS FAMILY***

* *Arundo donax*—giant reed
* *Bromus diandrus*—ripgut brome
* *Digitaria sanguinalis*—hairy crabgrass

* signifies introduced (non-native) species

# APPENDIX B

*Cumulative List of Wildlife Species Observed within the Study Area*

# APPENDIX B
# Wildlife Compendium

## BIRD

### EMBERIZINES

***EMBERIZIDAE—EMBERIZIDS***

*Melospiza melodia*—Song sparrow

*Melozone crissalis*—California towhee

### FINCHES

***FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES***

*Spinus tristis*—American goldfinch

### HAWKS

***ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES***

*Buteo lineatus*—Red-shouldered hawk

### HUMMINGBIRDS

***TROCHILIDAE—HUMMINGBIRDS***

*Calypte anna*—Anna's hummingbird

### JAYS, MAGPIES AND CROWS

***CORVIDAE—CROWS AND JAYS***

*Corvus brachyrhynchos*—American crow

### MOCKINGBIRDS AND THRASHERS

***MIMIDAE—MOCKINGBIRDS AND THRASHERS***

*Mimus polyglottos*—Northern mockingbird

### WOOD WARBLERS AND ALLIES

***PARULIDAE—WOOD-WARBLERS***

*Setophaga coronata*—Yellow-rumped warbler

### WRENS

***TROGLODYTIDAE—WRENS***

*Campylorhynchus* —Cactus wren

## INVERTEBRATE

### CRAYFISH

***CAMBARIDAE—FRESHWATER CRAYFISH***

*Procambarus* sp.—Crayfish

## MAMMAL

### HARES AND RABBITS

***LEPORIDAE—HARES AND RABBITS***

*Sylvilagus bachmani*—Brush rabbit

### SQUIRRELS

***SCIURIDAE—SQUIRRELS***

*Spermophilus (Otospermophilus) beecheyi*—California ground squirrel

* signifies introduced (non-native) species

# APPENDIX C

*Special-Status Plants Potential to Occur Table*

# APPENDIX C
# Special-Status Plants with Potential to Occur

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Abronia maritima* | red sand-verbena | None/ None/ 4.2/ None | Coastal dunes/ perennial herb/ Feb-Nov/ 0-328 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Acanthomintha ilicifolia* | San Diego thorn-mint | FT/ SE/ 1B.1/ Covered | Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools/Clay, openings/ annual herb/ Apr-Jun/ 33-3150 | Not expected to occur. No coastal scrub or chaparral on site and suitable clay soils are absent. Species known to occur on Las Posas, Olivenhain, Redding, Huerhuero, Altamont, Ciendeba, and Linne soils (75 FR 50454 50496). Species known to occur within the vicinity[2]. |
| *Acmispon prostratus* | Nuttall's acmispon | None/ None/ 1B.1/ None | Coastal dunes, Coastal scrub(sandy)/ annual herb/ Mar-Jun(Jul)/ 0-33 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Adolphia californica* | California adolphia | None/ None/ 2B.1/ None | Chaparral, Coastal scrub, Valley and foothill grassland/clay/ perennial deciduous shrub/ Dec-May/ 148-2428 | Not expected to occur. The site is located within the species' known elevation range; however, coastal scrub is limited in extent on site and is disturbed. Shrub would have been observed during surveys if present. Species is known to occur within the vicinity[2]. |
| *Agave shawii* var. *shawii* | Shaw's agave | None/ None/ 2B.1/ None | Coastal bluff scrub, Coastal scrub/ perennial leaf succulent/ Sep-May/ 33-394 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Ambrosia pumila* | San Diego ambrosia | FE/ None/ 1B.1/ Covered | Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools/sandy loam or clay, often in disturbed areas, sometimes alkaline/ perennial rhizomatous herb/ Apr-Oct/ 66-1362 | Moderate potential to occur. Suitable sandy loam soils on site and the species is known to occur along drainages and river channels in western San Diego County (75 FR 74546 74604). Species is known to occur within the vicinity[2]. |
| *Aphanisma blitoides* | aphanisma | None/ None/ 1B.2/ None | Coastal bluff scrub, Coastal dunes, Coastal scrub/sandy/ annual herb/ Mar-Jun/ 3-1001 | Low potential to occur. The site is located within the species' known elevation range; however, due to the disturbed nature and limited extent of coastal scrub present, species has a low potential to occur. |

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Arctostaphylos glandulosa* ssp. *crassifolia* | Del Mar manzanita | FE/ None/ 1B.1/ Covered | Chaparral(maritime, sandy)/ perennial evergreen shrub/ Dec-Jun/ 0-1198 | Not expected to occur. No suitable vegetation present and evergreen shrub would have been observed during surveys if present. |
| *Arctostaphylos rainbowensis* | Rainbow manzanita | None/ None/ 1B.1/ None | Chaparral/ perennial evergreen shrub/ Dec-Mar/ 673-2198 | Not expected to occur. No suitable vegetation present and evergreen shrub would have been observed during surveys if present. |
| *Artemisia palmeri* | San Diego sagewort | None/ None/ 4.2/ None | Chaparral, Coastal scrub, Riparian forest, Riparian scrub, Riparian woodland/sandy, mesic/ perennial deciduous shrub/ (Feb),May-Sep/ 49-3002 | Low potential to occur. Suitable riparian vegetation and sandy soils are found on site, however perennial shrub would have been observed during surveys. Species is known to occur within the vicinity[2]. |
| *Asplenium vespertinum* | western spleenwort | None/ None/ 4.2/ None | Chaparral, Cismontane woodland, Coastal scrub/rocky/ perennial rhizomatous herb/ Feb-Jun/ 591-3281 | Low potential to occur. The site is located within the species' known elevation range and suitable vegetation is present; however, site lacks rocky habitat. |
| *Astragalus oocarpus* | San Diego milk-vetch | None/ None/ 1B.2/ None | Chaparral(openings), Cismontane woodland/ perennial herb/ May-Aug/ 1001-5000 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Astragalus tener* var. *titi* | coastal dunes milk-vetch | FE/ SE/ 1B.1/ None | Coastal bluff scrub(sandy), Coastal dunes, Coastal prairie(mesic)/often vernally mesic areas/ annual herb/ Mar-May/ 3-164 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable coastal vegetation present. |
| *Atriplex coulteri* | Coulter's saltbush | None/ None/ 1B.2/ None | Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley and foothill grassland/alkaline or clay/ perennial herb/ Mar-Oct/ 10-1509 | Not expected to occur. The site is located within the species' known elevation range; however, there are no suitable soils found on site. |
| *Atriplex pacifica* | South Coast saltscale | None/ None/ 1B.2/ None | Coastal bluff scrub, Coastal dunes, Coastal scrub, Playas/ annual herb/ Mar-Oct/ 0-459 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Atriplex parishii* | Parish's brittlescale | None/ None/ 1B.1/ None | Chenopod scrub, Playas, Vernal pools/alkaline/ annual herb/ Jun-Oct/ 82-6234 | Not expected to occur. No suitable vegetation present. |
| *Baccharis vanessae* | Encinitas baccharis | FT/ SE/ 1B.1/ Covered | Chaparral(maritime), Cismontane woodland/sandstone/ perennial deciduous shrub/ Aug-Nov/ 197-2362 | Not expected to occur. Suitable vegetation is present; however, site lacks suitable soils and shrub would have been observed during surveys if present. Species is known to occur within the vicinity[2]. |

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Berberis nevinii* | Nevin's barberry | FE/ SE/ 1B.1/ None | Chaparral, Cismontane woodland, Coastal scrub, Riparian scrub/sandy or gravelly/ perennial evergreen shrub/ Mar-Jun/ 899-2707 | Not expected to occur. Suitable vegetation is present; however, the site is outside of the species' known elevation range and evergreen shrub would have been observed during surveys if present. |
| *Bergerocactus emoryi* | golden-spined cereus | None/ None/ 2B.2/ None | Closed-cone coniferous forest, Chaparral, Coastal scrub/sandy/ perennial stem succulent/ May-Jun/ 10-1296 | Not expected to occur. The site is located within the species' known elevation range and there is one small patch of disturbed cactus scrub; however, conspicuous stem succulent would have been observed during surveys if present. |
| *Bloomeria clevelandii* | San Diego goldenstar | None/ None/ 1B.1/ Covered | Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools/clay/ perennial bulbiferous herb/ Apr-May/ 164-1526 | Not expected to occur. No suitable habitat or clay soils found on site. Species is known to occur within the vicinity[2]. |
| *Brodiaea filifolia* | thread-leaved brodiaea | FT/ SE/ 1B.1/ Covered | Chaparral(openings), Cismontane woodland, Coastal scrub, Playas, Valley and foothill grassland, Vernal pools/often clay/ perennial bulbiferous herb/ Mar-Jun/ 82-3675 | Low potential to occur. The site is located within the species' known elevation range and species is known to occur on Fallbrook soils; however, there is very limited suitable habitat found on site. Species is known to occur within the vicinity[2]. |
| *Brodiaea orcuttii* | Orcutt's brodiaea | None/ None/ 1B.1/ Covered | Closed-cone coniferous forest, Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland, Vernal pools/mesic, clay, sometimes serpentinite/ perennial bulbiferous herb/ May-Jul/ 98-5551 | Low potential to occur. The site is located within the species' known elevation range however, suitable vernal pools are absent. |
| *Calandrinia breweri* | Brewer's calandrinia | None/ None/ 4.2/ None | Chaparral, Coastal scrub/sandy or loamy, disturbed sites and burns/ annual herb/ Mar-Jun/ 33-4003 | Low potential to occur. The site is located within the species' known elevation range, suitable soils are present and species is found within disturbed sites. |
| *California macrophylla* | round-leaved filaree | None/ None/ 1B.1/ None | Cismontane woodland, Valley and foothill grassland/clay/ annual herb/ Mar-May/ 49-3937 | Low potential to occur. The site is located within the species' known elevation range and suitable woodland is present; however, site lacks suitable soils. |

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Calochortus dunnii* | Dunn's mariposa lily | None/ SR/ 1B.2/ None | Closed-cone coniferous forest, Chaparral, Valley and foothill grassland/gabbroic or metavolcanic, rocky/ perennial bulbiferous herb/ (Feb),Apr-Jun/ 607-6004 | Not expected to occur. No suitable vegetation present. |
| *Camissoniopsis lewisii* | Lewis' evening-primrose | None/ None/ 3/ None | Coastal bluff scrub, Cismontane woodland, Coastal dunes, Coastal scrub, Valley and foothill grassland/sandy or clay/ annual herb/ Mar-May(Jun)/ 0-984 | Low potential to occur. The site is located within the species' known elevation range and suitable vegetation is present; however, suitable soils are absent. |
| *Ceanothus cyaneus* | Lakeside ceanothus | None/ None/ 1B.2/ None | Closed-cone coniferous forest, Chaparral/ perennial evergreen shrub/ Apr-Jun/ 771-2477 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. Evergreen shrub would have been observed during surveys if present |
| *Ceanothus verrucosus* | wart-stemmed ceanothus | None/ None/ 2B.2/ Covered | Chaparral/ perennial evergreen shrub/ Dec-May/ 3-1247 | Not expected to occur. No suitable vegetation present and evergreen shrub would have been observed during surveys if present. Species is known to occur within the vicinity[2]. |
| *Centromadia parryi ssp. australis* | southern tarplant | None/ None/ 1B.1/ None | Marshes and swamps(margins), Valley and foothill grassland(vernally mesic), Vernal pools/ annual herb/ May-Nov/ 0-1575 | Low potential to occur. Site is located within the species' known elevation range; however, suitable vegetation is absent. Species is known to occur within the vicinity[2]. |
| *Centromadia pungens* ssp. *laevis* | smooth tarplant | None/ None/ 1B.1/ None | Chenopod scrub, Meadows and seeps, Playas, Riparian woodland, Valley and foothill grassland/alkaline/ annual herb/ Apr-Sep/ 0-2100 | Moderate potential to occur. Suitable riparian habitat found on site and the site is located within the species' known elevation range. Species is known to occur within the vicinity[2]. |
| *Chaenactis glabriuscula* var. *orcuttiana* | Orcutt's pincushion | None/ None/ 1B.1/ None | Coastal bluff scrub(sandy), Coastal dunes/ annual herb/ Jan-Aug/ 0-328 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Chamaebatia australis* | southern mountain misery | None/ None/ 4.2/ None | Chaparral(gabbroic or metavolcanic)/ perennial evergreen shrub/ Nov-May/ 984-3346 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. Evergreen shrub would have been observed during surveys if present |

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Chloropyron maritimum* ssp. *maritimum* | salt marsh bird's-beak | FE/ SE/ 1B.2/ None | Coastal dunes, Marshes and swamps(coastal salt)/ annual herb (hemiparasitic)/ May-Oct/ 0-98 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Chorizanthe leptotheca* | Peninsular spineflower | None/ None/ 4.2/ None | Chaparral, Coastal scrub, Lower montane coniferous forest/alluvial fan, granitic/ annual herb/ May-Aug/ 984-6234 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Chorizanthe orcuttiana* | Orcutt's spineflower | FE/ SE/ 1B.1/ None | Closed-cone coniferous forest, Chaparral(maritime), Coastal scrub/sandy openings/ annual herb/ Mar-May/ 10-410 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Chorizanthe polygonoides* var. *longispina* | long-spined spineflower | None/ None/ 1B.2/ None | Chaparral, Coastal scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools/often clay/ annual herb/ Apr-Jul/ 98-5020 | Not expected to occur. No suitable vegetation or soils found on site. |
| *Cistanthe maritima* | seaside cistanthe | None/ None/ 4.2/ None | Coastal bluff scrub, Coastal scrub, Valley and foothill grassland/sandy/ annual herb/ (Feb),Mar-Jun(Aug)/ 16-984 | Not expected to occur. No suitable habitat found on site. |
| *Clarkia delicata* | delicate clarkia | None/ None/ 1B.2/ None | Chaparral, Cismontane woodland/often gabbroic/ annual herb/ Apr-Jun/ 771-3281 | Low potential to occur. There is suitable woodland present; however, the site is slightly outside of the species' known elevation range. Species is known to occur within the vicinity[2]. |
| *Clinopodium chandleri* | San Miguel savory | None/ None/ 1B.2/ None | Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley and foothill grassland/Rocky, gabbroic or metavolcanic/ perennial shrub/ Mar-Jul/ 394-3527 | Not expected to occur. The site is located within the species' known elevation range and suitable woodland is present; however, there are no suitable soils found on site. Shrub would have been observed during surveys if present |
| *Comarostaphylis diversifolia* ssp. *diversifolia* | summer holly | None/ None/ 1B.2/ Covered | Chaparral, Cismontane woodland/ perennial evergreen shrub/ Apr-Jun/ 98-2592 | Not expected to occur. Suitable woodland is present and species is known to occur within the vicinity[2]; however, evergreen shrub would have been observed during surveys if present |
| *Convolvulus simulans* | small-flowered morning-glory | None/ None/ 4.2/ None | Chaparral(openings), Coastal scrub, Valley and foothill grassland/clay, serpentinite seeps/ annual herb/ Mar-Jul/ 98-2297 | Low potential to occur. The site is located within the species' known elevation range; however, there is a limited amount of disturbed coastal scrub present. |

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Corethrogyne filaginifolia* var. *incana* | San Diego sand aster | None/ None/ 1B.1/ None | Coastal bluff scrub, Chaparral, Coastal scrub/ perennial herb/ Jun-Sep/ 10-377 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Corethrogyne filaginifolia* var. *linifolia* | Del Mar Mesa sand aster | None/ None/ 1B.1/ None | Coastal bluff scrub, Chaparral(maritime, openings), Coastal scrub/sandy/ perennial herb/ May-Sep/ 49-492 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Cylindropuntia californica* var. *californica* | snake cholla | None/ None/ 1B.1/ None | Chaparral, Coastal scrub/ perennial stem succulent/ Apr-May/ 98-492 | Not expected to occur. The site is outside of the species' known elevation range and conspicuous stem succulent would have been observed during surveys if present. |
| *Deinandra paniculata* | paniculate tarplant | None/ None/ 4.2/ None | Coastal scrub, Valley and foothill grassland, Vernal pools/usually vernally mesic, sometimes sandy/ annual herb/ Apr-Nov/ 82-3084 | Low potential to occur. The site is located within the species' known elevation range; however, there is a limited amount of disturbed coastal scrub present. |
| *Dichondra occidentalis* | western dichondra | None/ None/ 4.2/ None | Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/ perennial rhizomatous herb/ (Jan),Mar-Jul/ 164-1640 | Low potential to occur. The site is located within the species' known elevation range and suitable vegetation is present. |
| *Dudleya brevifolia* | short-leaved dudleya | None/ SE/ 1B.1/ None | Chaparral(maritime, openings), Coastal scrub/Torrey sandstone/ perennial herb/ Apr-May/ 98-820 | Low potential to occur. The site is located within the species' known elevation range and there is a limited amount of vegetation present; however, site lacks suitable soils. |
| *Dudleya variegata* | variegated dudleya | None/ None/ 1B.2/ Covered | Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland, Vernal pools/clay/ perennial herb/ Apr-Jun/ 10-1903 | Low potential to occur. The site is located within the species' known elevation range and suitable vegetation is present; however, no suitable soils found on site. Species is known to occur within the vicinity[2]. |
| *Dudleya viscida* | sticky dudleya | None/ None/ 1B.2/ Covered | Coastal bluff scrub, Chaparral, Cismontane woodland, Coastal scrub/rocky/ perennial herb/ May-Jun/ 33-1804 | Not expected to occur. No suitable soils found on site. Species is not known to occur within the vicinity[2]. |
| *Ericameria palmeri* var. *palmeri* | Palmer's goldenbush | None/ None/ 1B.1/ None | Chaparral, Coastal scrub/mesic/ perennial evergreen shrub/ (Jul),Sep-Nov/ 98-1969 | Not expected to occur. Limited suitable vegetation found on site and conspicuous evergreen shrub would have been detected during surveys. Species is known to occur within the vicinity[2]. |

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Eryngium aristulatum* var. *parishii* | San Diego button-celery | FE/ SE/ 1B.1/ None | Coastal scrub, Valley and foothill grassland, Vernal pools/mesic/ annual / perennial herb/ Apr-Jun/ 66-2034 | Not expected to occur. No suitable vernal pools found on site. Species is known to occur within the vicinity[2]. |
| *Euphorbia misera* | cliff spurge | None/ None/ 2B.2/ None | Coastal bluff scrub, Coastal scrub, Mojavean desert scrub/rocky/ perennial shrub/ Dec-Aug(Oct)/ 33-1640 | Not expected to occur. Limited suitable vegetation and no suitable soils found on site. |
| *Ferocactus viridescens* | San Diego barrel cactus | None/ None/ 2B.1/ Covered | Chaparral, Coastal scrub, Valley and foothill grassland, Vernal pools/ perennial stem succulent/ May-Jun/ 10-1476 | Not expected to occur. Limited cactus scrub found on site and conspicuous stem succulent would have been observed during surveys. Species is known to occur within the vicinity[2]. |
| *Frankenia palmeri* | Palmer's frankenia | None/ None/ 2B.1/ None | Coastal dunes, Marshes and swamps(coastal salt), Playas/ perennial herb/ May-Jul/ 0-33 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Geothallus tuberosus* | Campbell's liverwort | None/ None/ 1B.1/ None | Coastal scrub(mesic), Vernal pools/mesic soil/ ephemeral liverwort/ N.A./ 33-1969 | Not expected to occur. No suitable vernal pools found on site. |
| *Githopsis diffusa* ssp. *filicaulis* | Mission Canyon bluecup | None/ None/ 3.1/ None | Chaparral(mesic, disturbed areas)/ annual herb/ Apr-Jun/ 1476-2297 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Grindelia hallii* | San Diego gumplant | None/ None/ 1B.2/ None | Chaparral, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland/ perennial herb/ May-Oct/ 607-5725 | Not expected to occur. No suitable vegetation present. |
| *Harpagonella palmeri* | Palmer's grapplinghook | None/ None/ 4.2/ None | Chaparral, Coastal scrub, Valley and foothill grassland/clay/ annual herb/ Mar-May/ 66-3133 | Not expected to occur. Limited suitable vegetation and no suitable soils found on site. |
| *Hazardia orcuttii* | Orcutt's hazardia | FC/ CT/ 1B.1/ None | Chaparral(maritime), Coastal scrub/often clay/ perennial evergreen shrub/ Aug-Oct/ 262-279 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Heterotheca sessiliflora* ssp. *sessiliflora* | beach goldenaster | None/ None/ 1B.1/ None | Chaparral(coastal), Coastal dunes, Coastal scrub/ perennial herb/ Mar-Dec/ 0-4019 | Not expected to occur. No suitable coastal dune habitat found on site. Limited coastal scrub found on site; species not known to occur in the vicinity[2]. |
| *Holocarpha virgata* ssp. *elongata* | graceful tarplant | None/ None/ 4.2/ None | Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland/ annual herb/ May-Nov/ 197-3609 | Low potential to occur. The site is located within the species' known elevation range and suitable vegetation is present. |

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Hordeum intercedens* | vernal barley | None/ None/ 3.2/ None | Coastal dunes, Coastal scrub, Valley and foothill grassland(saline flats and depressions), Vernal pools/ annual herb/ Mar-Jun/ 16-3281 | Not expected to occur. No suitable coastal dune habitat or vernal pools found on site. |
| *Horkelia truncata* | Ramona horkelia | None/ None/ 1B.3/ None | Chaparral, Cismontane woodland/clay, gabbroic/ perennial herb/ May-Jun/ 1312-4265 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Isocoma menziesii* var. *decumbens* | decumbent goldenbush | None/ None/ 1B.2/ None | Chaparral, Coastal scrub(sandy, often in disturbed areas)/ perennial shrub/ Apr-Nov/ 33-443 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Iva hayesiana* | San Diego marsh-elder | None/ None/ 2B.2/ Covered | Marshes and swamps, Playas/ perennial herb/ Apr-Oct/ 33-1640 | Not expected to occur. Suitable vegetation found on site and species is known to occur within the vicinity[2], but this perennial herb is conspicuous and would have been detected during surveys conducted, if present. |
| *Juncus acutus* ssp. *leopoldii* | southwestern spiny rush | None/ None/ 4.2/ None | Coastal dunes(mesic), Meadows and seeps(alkaline seeps), Marshes and swamps(coastal salt)/ perennial rhizomatous herb/ (Mar),May-Jun/ 10-2953 | Not expected to occur. No suitable vegetation found on site. |
| *Lasthenia glabrata* ssp. *coulteri* | Coulter's goldfields | None/ None/ 1B.1/ None | Marshes and swamps(coastal salt), Playas, Vernal pools/ annual herb/ Feb-Jun/ 3-4003 | Not expected to occur. No suitable vegetation found on site. |
| *Lepechinia cardiophylla* | heart-leaved pitcher sage | None/ None/ 1B.2/ None | Closed-cone coniferous forest, Chaparral, Cismontane woodland/ perennial shrub/ Apr-Jul/ 1706-4495 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Lepidium virginicum* var. *robinsonii* | Robinson's pepper-grass | None/ None/ 4.3/ None | Chaparral, Coastal scrub/ annual herb/ Jan-Jul/ 3-2904 | Low potential to occur. Limited suitable vegetation found on site is in a disturbed state. Species is known to occur within the vicinity[2]. |
| *Leptosiphon grandiflorus* | large-flowered leptosiphon | None/ None/ 4.2/ None | Coastal bluff scrub, Closed-cone coniferous forest, Cismontane woodland, Coastal dunes, Coastal prairie, Coastal scrub, Valley and foothill grassland/usually sandy/ annual herb/ Apr-Aug/ 16-4003 | Low potential to occur. Suitable vegetation and soils found on site, but species is not known to occur within the vicinity[2]. |
| *Leptosyne maritima* | sea dahlia | None/ None/ 2B.2/ None | Coastal bluff scrub, Coastal scrub/ perennial herb/ Mar-May/ 16-492 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Lycium californicum* | California box-thorn | None/ None/ 4.2/ None | Coastal bluff scrub, Coastal scrub/ perennial shrub/ (Dec),Mar-Aug/ 16-492 | Not expected to occur. The site is outside of the species' known elevation range. |

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Microseris douglasii* ssp. *platycarpha* | small-flowered microseris | None/ None/ 4.2/ None | Cismontane woodland, Coastal scrub, Valley and foothill grassland, Vernal pools/clay/ annual herb/ Mar-May/ 49-3510 | Low potential to occur. Limited suitable vegetation and no suitable soils found on site. |
| *Mimulus diffusus* | Palomar monkeyflower | None/ None/ 4.3/ None | Chaparral, Lower montane coniferous forest/sandy or gravelly/ annual herb/ Apr-Jun/ 4003-6004 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Monardella hypoleuca* ssp. *lanata* | felt-leaved monardella | None/ None/ 1B.2/ None | Chaparral, Cismontane woodland/ perennial rhizomatous herb/ Jun-Aug/ 984-5167 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Monardella viminea* | willowy monardella | FE/ SE/ 1B.1/ None | Chaparral, Coastal scrub, Riparian forest, Riparian scrub, Riparian woodland/alluvial ephemeral washes/ perennial herb/ Jun-Aug/ 164-738 | Low potential to occur. The site is located within the species' known elevation range and suitable vegetation and ephemeral washes found on site. |
| *Myosurus minimus* ssp. *apus* | little mousetail | None/ None/ 3.1/ None | Valley and foothill grassland, Vernal pools(alkaline)/ annual herb/ Mar-Jun/ 66-2100 | Not expected to occur. No suitable vegetation present. |
| *Navarretia fossalis* | spreading navarretia | FT/ None/ 1B.1/ None | Chenopod scrub, Marshes and swamps(assorted shallow freshwater), Playas, Vernal pools/ annual herb/ Apr-Jun/ 98-2149 | Not expected to occur. No suitable marshes or swamps found on site. |
| *Nemacaulis denudata* var. *denudata* | coast woolly-heads | None/ None/ 1B.2/ None | Coastal dunes/ annual herb/ Apr-Sep/ 0-328 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Nolina cismontana* | chaparral nolina | None/ None/ 1B.2/ None | Chaparral, Coastal scrub/sandstone or gabbro/ perennial evergreen shrub/ (Mar),May-Jul/ 459-4183 | Not expected to occur. No suitable vegetation or soils found on site and perennial shrub would have been observed during surveys. |
| *Ophioglossum californicum* | California adder's-tongue | None/ None/ 4.2/ None | Chaparral, Valley and foothill grassland, Vernal pools(margins)/mesic/ perennial rhizomatous herb/ (Dec),Jan-Jun/ 197-1722 | Not expected to occur. No suitable vegetation present. |
| *Orcuttia californica* | California Orcutt grass | FE/ SE/ 1B.1/ None | Vernal pools/ annual herb/ Apr-Aug/ 49-2165 | Not expected to occur. No suitable vegetation present. |
| *Orobanche parishii* ssp. *brachyloba* | short-lobed broomrape | None/ None/ 4.2/ None | Coastal bluff scrub, Coastal dunes, Coastal scrub/sandy/ perennial herb (parasitic)/ Apr-Oct/ 10-1001 | Low potential to occur. No suitable coastal bluff or dune habitat found on site. Coastal scrub on site is limited to a small disturbed stand. |

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Packera ganderi* | Gander's ragwort | None/ CR/ 1B.2/ None | Chaparral(burns, gabbroic outcrops)/ perennial herb/ Apr-Jun/ 1312-3937 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Pentachaeta aurea* ssp. *aurea* | golden-rayed pentachaeta | None/ None/ 4.2/ None | Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Riparian woodland, Valley and foothill grassland/ annual herb/ Mar-Jul/ 262-6070 | Low potential to occur. The site is located within the species' known elevation range and suitable vegetation is present. |
| *Phacelia ramosissima* var. *austrolitoralis* | south coast branching phacelia | None/ None/ 3.2/ None | Chaparral, Coastal dunes, Coastal scrub, Marshes and swamps(coastal salt)/sandy, sometimes rocky/ perennial herb/ Mar-Aug/ 16-984 | Low potential to occur. Limited suitable coastal scrub habitat and no dune habitat found on site. |
| *Phacelia stellaris* | Brand's star phacelia | None/ None/ 1B.1/ None | Coastal dunes, Coastal scrub/ annual herb/ Mar-Jun/ 3-1312 | Low potential to occur. Limited suitable coastal scrub habitat and no dune habitat found on site. |
| *Pinus torreyana* ssp. *torreyana* | Torrey pine | None/ None/ 1B.2/ None | Closed-cone coniferous forest, Chaparral/Sandstone/ perennial evergreen tree/ N.A./ 246-525 | Not expected to occur. No suitable vegetation present or soils present. Evergreen tree would have been observed during surveys if present. |
| *Piperia cooperi* | chaparral rein orchid | None/ None/ 4.2/ None | Chaparral, Cismontane woodland, Valley and foothill grassland/ perennial herb/ Mar-Jun/ 49-5200 | Low potential to occur. Suitable vegetation present; however, species is not known to occur within the vicinity[2]. |
| *Pogogyne abramsii* | San Diego mesa mint | FE/ SE/ 1B.1/ None | Vernal pools/ annual herb/ Mar-Jul/ 295-656 | Not expected to occur. No suitable vegetation present. |
| *Pogogyne nudiuscula* | Otay Mesa mint | FE/ SE/ 1B.1/ None | Vernal pools/ annual herb/ May-Jul/ 295-820 | Not expected to occur. No suitable vegetation present. |
| *Polygala cornuta* var. *fishiae* | Fish's milkwort | None/ None/ 4.3/ None | Chaparral, Cismontane woodland, Riparian woodland/ perennial deciduous shrub/ May-Aug/ 328-3281 | Low potential to occur. The site is located within the species' known elevation range and suitable vegetation is found on site. However, perennial shrub would have been observed during surveys. |
| *Psilocarphus brevissimus* var. *multiflorus* | Delta woolly-marbles | None/ None/ 4.2/ None | Vernal pools/ annual herb/ May-Jun/ 33-1640 | Not expected to occur. No suitable vegetation present. |

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Quercus cedrosensis* | Cedros Island oak | None/ None/ 2B.2/ None | Closed-cone coniferous forest, Chaparral, Coastal scrub/ perennial evergreen tree/ Apr-May/ 837-3150 | Not expected to occur. The site is outside of the species' known elevation range. Evergreen tree would have been observed during surveys if present. |
| *Quercus dumosa* | Nuttall's scrub oak | None/ None/ 1B.1/ None | Closed-cone coniferous forest, Chaparral, Coastal scrub/sandy, clay loam/ perennial evergreen shrub/ Feb-Apr(Aug)/ 49-1312 | Not expected to occur. No suitable vegetation present. Evergreen shrub would have been observed during surveys. |
| *Quercus engelmannii* | Engelmann oak | None/ None/ 4.2/ Covered | Chaparral, Cismontane woodland, Riparian woodland, Valley and foothill grassland/ perennial deciduous tree/ Mar-Jun/ 164-4265 | Not expected to occur. Suitable vegetation is present and site is located within species' known elevation range; however, deciduous tree would have been observed during surveys. |
| *Selaginella cinerascens* | ashy spike-moss | None/ None/ 4.1/ None | Chaparral, Coastal scrub/ perennial rhizomatous herb/ N.A./ 66-2100 | Not expected to occur. Limited suitable vegetation found on site and not known from within the vicinity[2]. |
| *Senecio aphanactis* | chaparral ragwort | None/ None/ 2B.2/ None | Chaparral, Cismontane woodland, Coastal scrub/sometimes alkaline/ annual herb/ Jan-Apr/ 49-2625 | Not expected to occur. Suitable vegetation present; however, no suitable soils found on site. Species not known from within the vicinity[2]. |
| *Sphaerocarpos drewei* | bottle liverwort | None/ None/ 1B.1/ None | Chaparral, Coastal scrub/openings, soil/ ephemeral liverwort/ N.A./ 295-1969 | Not expected to occur. Limited suitable vegetation found on site and not known from within the vicinity[2]. |
| *Stemodia durantifolia* | purple stemodia | None/ None/ 2B.1/ None | Sonoran desert scrub(often mesic, sandy)/ perennial herb/ Jan-Dec/ 591-984 | Not expected to occur. No suitable vegetation present. |
| *Stipa diegoensis* | San Diego County needle grass | None/ None/ 4.2/ None | Chaparral, Coastal scrub/rocky, often mesic/ perennial herb/ Feb-Jun/ 33-2625 | Not expected to occur. Limited suitable vegetation and no suitable soils found on site. |
| *Suaeda esteroa* | estuary seablite | None/ None/ 1B.2/ None | Marshes and swamps(coastal salt)/ perennial herb/ May-Oct(Jan)/ 0-16 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Suaeda taxifolia* | woolly seablite | None/ None/ 4.2/ None | Coastal bluff scrub, Coastal dunes, Marshes and swamps(margins of coastal salt)/ perennial evergreen shrub/ Jan-Dec/ 0-164 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Tetracoccus dioicus* | Parry's tetracoccus | None/ None/ 1B.2/ Covered | Chaparral, Coastal scrub/ perennial deciduous shrub/ Apr-May/ 541-3281 | Not expected to occur. No suitable vegetation is present. Shrub would have been observed during surveys if present. |
| *Texosporium sancti-jacobi* | woven-spored lichen | None/ None/ 3/ None | Chaparral(openings)/On soil, small mammal pellets, dead twigs, and on *Selaginella* spp/ *crustose lichen* (*terricolous*)/ N.A./ 951-2165 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Triquetrella californica* | coastal triquetrella | None/ None/ 1B.2/ None | Coastal bluff scrub, Coastal scrub/soil/ moss/ N.A./ 33-328 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Viguiera laciniata* | San Diego County viguiera | None/ None/ 4.2/ None | Chaparral, Coastal scrub/ perennial shrub/ Feb-Jun(Aug)/ 197-2461 | Not expected to occur. Limited suitable vegetation found on site and conspicuous shrub would have been detected. |
| *Xanthisma junceum* | rush-like bristleweed | None/ None/ 4.3/ None | Chaparral, Coastal scrub/ perennial herb/ Jun-Jan/ 787-3281 | Not expected to occur. The site is outside of the species' known elevation range. |

[1] **Status Legend:**

**Federal**

FE: Federally listed as endangered
FT: Federally listed as threatened
FC: Federal Candidate for listing

**State**

SE: State listed as endangered
ST: State listed as threatened
SR: State Rare

**CRPR**

CRPR 1A: Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere
CRPR 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
CRPR 2A: Plants Presumed Extirpated in California, But More Common Elsewhere
CRPR 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
CRPR 3: Plants About Which More Information is Needed - A Review List
CRPR 4: Plants of Limited Distribution - A Watch List
.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)
**Multiple Habitat Conservation Program (MHCP) Escondido Subarea Plan**
Covered: MHCP species occurring or potentially occurring in Escondido
2 **Potential to Occur Designations:**
Found within the vicinity: Escondido quadrangle
Found within the region: CNDDB 9-quad search

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# APPENDIX D

*Special-Status Wildlife Potential to Occur Table*

# APPENDIX D
# Special-Status Wildlife Species Potential To Occur

| Scientific Name | Common Name | Status[1] Federal/State/ MCHP Subarea Plan/ Other | Primary Habitat Associations | Status on Site or Potential to Occur[2] |
|---|---|---|---|---|
| | | *Amphibians* | | |
| *Anaxyrus californicus* | Arroyo toad | FE/SSC/None/ None | Stream channels for breeding(typically 3rd order); adjacent stream terraces and uplands for foraging and wintering | Low potential to occur. Although the site contains a perennial stream it lacks the stream terraces to be considered suitable habitat. There is a USFWS occurrence of this species within 3 miles of the project site. |
| *Rana draytonii* | California red-legged frog | FT/ SSC/ Covered/None | Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. | Low potential to occur. Although the site contains a perennial stream it lacks the depth and emergent vegetation to be considered suitable habitat. |
| *Scaphiopus (= Spea ) hammondi* | Western spadefoot toad | None/ SSC/ Covered/None | Most common in grasslands, coastal sage scrub near rain pools or vernal pools; riparian habitats | Low potential to occur. No suitable grasslands coastal sage scrub or vernal pools occur on site. Found within the vicinity. |
| | | *Reptiles* | | |
| *Aspidoscelis hyperythra* | Orange-throated whiptail | None/SSC/ Covered/None | Chaparral Cismontane woodland, coastal scrub | Moderate potential to occur in dSCS and SCLOW. Found within the vicinity. |
| *Aspidoscelis tigris stejnegeri* | Coastal whiptail | None/None/ None/None | Coastal sage scrub, chaparral, grassland, juniper and oak woodland | Moderate potential to occur in dSCS and SCLOW Found within the vicinity. |
| *Charina trivirgata* | Rosy boa | None/None/ None/None | Chaparral, Mojavean desert scrub, Sonoran desert scrub | Not expected to occur on site due to very limited scrub habitat present and highly disturbed character of site. Found within the vicinity. |
| *Crotalus ruber* | Red-diamond rattlesnake | None/SSC/ None/None | Variety of shrub habitats where there is heavy brush, large rocks, or boulders | Low potential to occur. The site is generally lacking in boulders and shrubs and is highly disturbed from past agricultural activity. Found within the vicinity. |

| Scientific Name | Common Name | Status[1] Federal/State/ MCHP Subarea Plan/ Other | Primary Habitat Associations | Status on Site or Potential to Occur[2] |
|---|---|---|---|---|
| *Diadophis punctatus similis* | San Diego ringneck snake | None/None/ None/None | Open, rocky areas in moist habitats near intermittent streams: marsh, riparian woodland, sage scrub | Moderate potential to occur. Suitable riparian habitat occurs on site. |
| *Emys marmorata* | Western pond turtle | None/SSC/ Covered/None | Slow-moving permanent or intermittent streams, ponds, small lakes, reservoirs with emergent basking sites; adjacent uplands used during winter. Found in coast ranges, central valley, below 1,800 meters. | Low potential to occur on site. Limited suitable habitat present, the perennial stream contains very little water (3 inches). Found within the vicinity. |
| *Phrynosoma coronatum (blainvillei population)* | Coast horned lizard | None/SSC/ Covered/None | Coastal sage scrub, annual grassland, chaparral, oak and riparian woodland, coniferous forest | Low potential to occur. Limited suitable habitat occurs on site. Found within the vicinity. |
| *Plestiodon skiltonianus interparietalis* | Coronado Island skink | None/SSC/ None/None | Grassland, riparian and oak woodland; found in litter, rotting logs, under flat stones | Low potential to occur onsite. Limited suitable habitat present. Site dominated by disturbed habitat. Found within the vicinity. |
| *Salvadora hexalepis virgultea* | Coast patch-nosed snake | None/SSC/ None/None | Chaparral, washes, sandy flats, rocky areas | Low potential to occur. No chaparral or sandy washes occur on site. |
| *Thamnophis hammondii* | Two-striped garter snake | None/SSC/ None/None | Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools | Moderate potential to occur. Suitable habitat on site. |
| | | | *Birds* | |
| *Accipiter cooperii* | Cooper's hawk | None/WL/ Covered/None | Cismontane woodland, riparian forest, riparian woodland, upper montane coniferous forest | High potential to occur. Suitable coast live oak woodland is found on site. |
| *Agelaius tricolor* (nesting colony) | Tricolored blackbird | None/SSC/ Covered/None | Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony. | Low potential to occur. No open water found on site. |
| *Aimophila ruficeps canescens* | Southern California rufous-crowned sparrow | None/WL/ Covered/None | Chaparral, coastal scrub | Low potential to occur. No chaparral or coastal sage scrub found on site. Found within the vicinity. |

| Scientific Name | Common Name | Status[1] Federal/State/ MCHP Subarea Plan/ Other | Primary Habitat Associations | Status on Site or Potential to Occur[2] |
|---|---|---|---|---|
| *Ammodramus savannarum* | Grasshopper sparrow | None/SSC/ Covered/None | Valley and foothill grassland | Low potential to occur. No grassland found on site. |
| *Aquila chrysaetos* (nesting and wintering) | Golden eagle | None/FP, WL/ Covered/None | Open country, especially hilly and mountainous regions; grassland, coastal sage scrub, chaparral, oak savannas, open coniferous forest | Moderate potential to forage, low potential to nest on site. The site is open with oak woodland but due to the limited space and surrounding residential development unlikely to support nesting habitat. Species typically requires inaccessible nesting sites that are more isolated from development than the site can provide. |
| *Artemisiospiza belli belli* | Bell's sage sparrow | None/WL/ Covered/None | Chaparral, coastal scrub | Low potential to occur. No chaparral or coastal sage scrub found on site. Found within the vicinity. |
| *Athene cunicularia* (burrow sites) | Burrowing owl | None/SSC/ Covered/None | Grassland, lowland scrub, agriculture, coastal dunes and other artificial open areas | Moderate potential to occur on site. Site contains open areas, however, no suitable burrows were observed during surveys. Found within the vicinity. |
| *Buteo swainsoni* (nesting) | Swainson's hawk | None/ST/None /None | Nests in open woodland and savanna, riparian and in isolated large trees; forages in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture | Moderate potential to forage; low potential to nest. Typically prefer isolated large trees for nesting, which are not characteristic of the site. Suitable foraging habitat occurs on site, however very limited in size. Found within the vicinity. |
| *Campylorhynchus brunneicapillus sandiegensis* | Coastal cactus wren | None/SSC/ Covered/None | Southern cactus scrub, maritime succulent scrub, cactus thickets in coastal sage scrub. In arid parts of westward-draining slopes of Southern California. | High potential to occur. Observed in a palm tree immediately off site and could use cactus scrub areas on site for nesting. Found within the vicinity. |
| *Charadrius alexandrinus nivosus* (nesting) | Western snowy plover (coastal population) | FT/SSC/ None/None | Nests primarily on coastal beaches, in flat open areas, with sandy or saline substrates; less commonly in salt pans, dredged spoil disposal sites, dry salt ponds and levees | Not expected to occur. No suitable coastal beaches, site is 14 miles inland. |

| Scientific Name | Common Name | Status[1] Federal/State/ MCHP Subarea Plan/ Other | Primary Habitat Associations | Status on Site or Potential to Occur[2] |
|---|---|---|---|---|
| *Circus cyaneus* (nesting) | Northern harrier | None/ST/ Covered/None | Coastal salt and fresh-water marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas. | Moderate potential to forage, low potential to nest on site. The site is open with oak woodland but due to the limited space unlikely to support nesting habitat. |
| *Elanus leucurus* (nesting) | White-tailed kite | None/FP/ None/None | Open grasslands, savanna-like habitats, agriculture, wetlands, oak woodlands, riparian | Moderate potential to occur. Suitable oak woodland and riparian habitat occur on site. |
| *Empidonax traillii extimus* | Southwestern willow flycatcher | FE/SE/ Covered/None | Riparian woodlands along streams and rivers with mature, dense stands of willows or alders; may nest in thickets dominated by tamarisk | Low potential to occur in SCLOW along drainage. No willow thickets found on site. Found within the vicinity. There is a USFWS occurrence of this species within 3 miles of the project site. |
| *Eremophila alpestris actia* | California horned lark | None/WL/ None/None | Nests and forages in grasslands disturbed lands, agriculture, and beaches; nests in alpine fell fields of the high Sierra | High potential to occur. Suitable disturbed, agricultural habitat occurs on site. |
| *Icteria virens (*nesting) | Yellow-breasted chat | None/SSC/ Covered/None | Dense, relatively wide riparian woodlands and thickets of willows, vine tangles and dense brush. | Low potential to occur. No willow thickets found on site. Found within the vicinity. |
| *Laterallus jamaicensis coturniculus* | California black rail | None/ST, FP/ None/None | Saline, brackish, and fresh emergent wetlands mostly in central coastal California | Not expected to occur. No suitable habitat on site. |
| *Numenius americanus* (nesting) | Long-billed curlew | None/WL/ Covered/None | Habitats on gravelly soils and gently rolling terrain are favored over others. Breeds in upland shortgrass prairies and wet meadows | Low potential to occur. No shortgrass prairies or wet meadows found on site. |
| *Pandion halieatus* (nesting) | Osprey | None/ WL/ Covered/None | Ocean shore, bays, fresh-water lakes, and larger streams. | Low potential to occur on site. No suitable nesting or open water foraging habitat occurs on site. |
| *Passerculus sandwichensis beldingi* | Belding's savannah sparrow | None/SE/ None/None | Scattered southern coastal salt marsh wetlands in southwestern California | Not expected to occur. No suitable habitat on site. |
| *Plegadis chihi* | White-faced ibis | None/WL/ Covered/None | Marsh and swamp, wetlands | Low potential to occur on site. No suitable marsh and swamp habitat present on site. Found within the vicinity. |

| Scientific Name | Common Name | Status[1] Federal/State/ MCHP Subarea Plan/ Other | Primary Habitat Associations | Status on Site or Potential to Occur[2] |
|---|---|---|---|---|
| *Polioptila californica californica* | Coastal California gnatcatcher | FT/SSC/ Covered/None | Coastal sage scrub, coastal sage scrub-chaparral mix, coastal sage scrub-grassland ecotone, riparian in late summer | Low potential to occur on site; not expected to nest on site. No suitable coastal sage scrub habitat occurs on site. Limited amount of dSCS on site (less than 1/5 of an acre; however the site is dominated by highly disturbed land from past agricultural activities. Found within the vicinity. There is a USFWS occurrence of this species within 3 miles of the project site. |
| *Rallus obsoletus levipes* | Ridgeway's Rail (formerly Light-footed clapper rail) | FE/SE, FP/ None/None | Coastal saline emergent wetlands along southern California from Santa Barbara Co. to San Diego Co. | Not expected to occur. No suitable habitat on site. |
| *Sialia mexicana* | Western bluebird | None/None/ Covered/None | Oak savannah, parks and agricultural lands where trees and open areas are present. | High potential to occur. Suitable habitat occurs on site. |
| *Sternula antillarum browni* (nesting colony) | California least tern | FE/SE, FP/ None/None | Breeding colonies located in marine and estuarine shores and in abandoned salt ponds and estuarine shores. Feeds in nearby waters. | Not expected to occur. No suitable habitat on site. |
| *Vireo bellii pusillus* | Least Bell's vireo | FE/SE/ Covered/None | Nests in southern willow scrub with dense cover within 1-2 meters of the ground; habitat includes willows, cottonwoods, baccharis, wild blackberry or mesquite on desert areas | Low potential to occur on site. Riparian area on site does not contain willows. Found within the vicinity. There is a USFWS occurrence of this species within 3 miles of the project site. |
| | | *Mammals* | | |
| *Antrozous pallidus* | Pallid bat | None/SSC/ None/ WBWG: H | Grasslands, shrublands, woodlands, forests; most common in open dry habitats with rocky outcrops for roosting. Found throughout low elevations of California, except for high Sierra Nevada and northwestern corner of the state south to Mendocino Co. | Not expected to roost on site due to lack of rocky outcrops. Moderate potential to forage on site. Found within the vicinity. |
| *Chaetodipus californicus femoralis* | Dulzura pocket mouse | None/SSC/ None/None | Coastal sage scrub, chaparral, riparian-scrub ecotone; more mesic areas | Low potential to occur. Limited suitable habitat found on site; site highly disturbed from past agricultural operations. Found within the vicinity. |

| Scientific Name | Common Name | Status[1] Federal/State/ MCHP Subarea Plan/ Other | Primary Habitat Associations | Status on Site or Potential to Occur[2] |
|---|---|---|---|---|
| *Chaetodipus fallax fallax* | Northwestern San Diego pocket mouse | None/SSC/ Covered/None | Coastal sage scrub, grassland, sage scrub-grassland ecotones, sparse chaparral; rocky substrates, loams and sandy loams | Low potential to occur on site. No coastal sage scrub habitat occurs on site. Site is highly disturbed from past agricultural operations. |
| *Choeronycteris mexicana* | Mexican long-tongued bat | None/SSC/ None/ WBWG: H | Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon-juniper woodland. Roosts in caves, mines, and buildings. Summer resident in San Diego Co. In southwestern US, typically observed in oak-conifer woodlands and semi desert grasslands. | Not expected to roost on site due to lack of suitable roosting habitat. Low potential to forage on site because species is rare in western San Diego County. |
| *Corynorthinus townsendii* | Townsend's big-eared bat | None/ CT, SSC/ Covered/ WBWG: H | Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, also man-made structures and tunnels. | Low potential to roost and forage on site. Found within the vicinity. |
| *Dipodomys stephensi* | Stephens' kangaroo rat | FE/ST/ Covered/None | Coastal scrub, valley and foothill grassland | No potential to occur. No grassland available on site. Nearest populations are in Fallbrook and on Camp Pendleton, which are separated from the Project site by highly unsuitable land uses (intensive agriculture and urban development) and unsuitable vegetation (chaparral and dense coastal scrub). |
| *Euderma maculatum* | Spotted bat | None/SSC/ None/ WBWG: H | Arid deserts, grasslands and mixed conifer forests at elevations from below sea level to 10,000 feet. Roosts sites are cracks, crevices and caves, usually high in fractured rock cliffs. | No potential to roost on site due to lack of suitable roosting habitat. Low potential to forage on site. |
| *Eumops perotis californicus* | Western mastiff bat | None/SSC/ Covered/ WBWG: H | Primarily a cliff-dwelling species. Roosts under exfoliating rock slabs, or in small colonies in cracks and small holes in boulders and buildings. | Not expected to roost on site due to lack of suitable roosting habitat. Moderate potential to forage on site. Found within the vicinity. |

| Scientific Name | Common Name | Status[1] Federal/State/ MCHP Subarea Plan/ Other | Primary Habitat Associations | Status on Site or Potential to Occur[2] |
|---|---|---|---|---|
| *Odocoileus hemionus fuliginata* | Southern mule deer | None/None/ Covered/None | Conifer forests, oak woodlands, open scrub, chaparral, riparian areas and along the margins of meadows and grasslands. | High potential to occur. Suitable oak woodland occurs on site and the species is known to readily move through rural residential neighborhoods on the edge of urban cities within the county. |
| *Lasiurus blossevillii* | Western red bat | None/SSC/ None/ WBWG: H | Roosts in forests and woodlands and feeds over grasslands, shrublands, open woodlands and forests, and croplands. Roosts sites are often in edge habitats adjacent to streams, fields or urban areas. | Moderate potential to roost and forage on site. Suitable woodlands adjacent to stream occur on site. |
| *Lasiurus cinereus* | Hoary bat | None/None/ None/ WBWG: M | Broadleaved upland forest. Cismontane woodland. Lower montane coniferous forest. North coast coniferous forest. | No potential to roost due to lack of suitable roosting habitat. Moderate potential to forage on site due to presence of water. Found within the vicinity. |
| *Lasionycteris noctivagans* | Silver-haired bat | None/None/ None/WBWG: M | Old growth forest, maternity roosts in trees (primarily woodpecker hollows), large diameter snags 50 ft above ground; hibernates in hollow trees, under sloughing bark, in rock crevices, and occasionally in buildings, mines and caves; forages in or near coniferous or mixed deciduous forest, often following stream or river drainages | Not expected to roost on site due to lack of suitable roosting habitat. Low potential to forage on site due to lack of suitable foraging habitat. |
| *Lasiurus xanthinus* | Western yellow bat | None/SSC/ None/ WBWG: H | Valley foothill riparian, desert riparian, desert wash, and palm oasis habitats below 2,000 feet. Display a particular association with palms and desert riparian oases. Prefer tree-roosting under palm leaves, but also have been documented using cottonwood. | Not expected to roost on site due to lack of suitable roosting habitat. Low potential to forage on site. Species very uncommon in western San Diego County. |
| *Lepus californicus bennettii* | San Diego black-tailed jackrabbit | None/SSC/ Covered/None | Arid habitats with open ground; grasslands, coastal sage scrub, agriculture, disturbed areas, rangelands | Moderate potential to occur. Site contains open areas but lacks grassland or coastal sage scrub habitat. Found within the vicinity. |

| Scientific Name | Common Name | Status[1] Federal/State/ MCHP Subarea Plan/ Other | Primary Habitat Associations | Status on Site or Potential to Occur[2] |
|---|---|---|---|---|
| *Myotis ciliolabrum* | Western small-footed myotis | None/None/ None/WBWG: M | Caves, old mines, abandoned buildings | Not expected to roost on site due to lack of suitable roosting habitat. Moderate potential to forage on site due to presence of water. |
| *Myotis evotis* | Long-eared myotis | None/None/ None/ WBWG: M | Roosts in buildings, crevices, under bark, and snags. Caves used as night roosts. Feeds along habitat edges, in open habitats, and over water. Occurs primarily along entire coast and in Sierra Nevada, Cascades, Great Basin, and 0-2700 m | Not expected to roost on site due to lack of suitable roosting habitat. Moderate potential to forage on site due to presence of water. |
| *Myotis yumanensis* | Yuma myotis | None/None/ None/ WBWG: LM | Lower montane coniferous forest. Riparian forest. Riparian woodland. Upper montane coniferous forest. | Low potential to roost on site due to presence of riparian woodland. Moderate potential to forage on site due to presence of water. |
| *Neotoma lepida intermedia* | San Diego desert woodrat | None/SSC/ None/None | Coastal sage scrub, chaparral, pinyon-juniper woodland with rock outcrops, cactus thickets, dense undergrowth | Low potential to occur due to very limited and disturbed suitable habitat on site. Found within the vicinity. |
| *Nyctinomops femorosaccus* | Pocketed free-tailed bat | None/SSC/ None/ WBWG: M | Rocky desert areas with high cliffs or rock outcrops; pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, palm oasis | Not expected to roost on site due to lack of suitable roosting habitat. Low potential to forage on site; more common in desert areas.. Found within the vicinity. |
| *Nyctinomops macrotis* | Big free-tailed bat | None/SSC/ None/ WBWG: MH | Rugged, rocky canyons in arid landscapes. Primarily roosts in crevices in rocks in cliffs, but also documented using buildings, caves and tree cavities. | Not expected to roost on site due to lack of suitable roosting habitat. Moderate potential to forage on site due to presence of water. Found in vicinity. |
| *Puma concolor* | Mountain lion | None/None/ Covered/None | Live in dense bottomland vegetation, also found in adjacent, rocky uplands. | Low potential to occur. Limited suitable habitat found on site and site is surrounded by rural residential development. |
| *Perognathus longimembris pacificus* | Pacific pocket mouse | FE/SSC/ None/None | Coastal dunes, river alluvium, coastal sage scrub with firm sandy soils; along immediate coast in San Diego, Orange, and Los Angeles Cos. | No potential to occur. Site is well east and south of current known range for this species, including Camp Pendleton and Dana Point in Orange County. |

| Scientific Name | Common Name | Status[1] Federal/State/ MCHP Subarea Plan/ Other | Primary Habitat Associations | Status on Site or Potential to Occur[2] |
|---|---|---|---|---|
| *Taxidea taxus* | American badger | None/SSC/ None/None | Dry, open treeless areas, grasslands, coastal sage scrub, especially with friable soils throughout California | Low potential to occur. Limited suitable habitat occurs on site. Found within the vicinity. |
| | | | *Mollusks* | |
| *Tryonia imitator* | Mimic tryonia (=California brackishwater snail) | None/None/ None/None | Aquatic, estuaries, lagoons, marshes and swamps, and wetland areas. Salt and brackish marshes. | Not expected to occur. No estuaries, lagoons or brackish waters on site. |
| | | | *Fish* | |
| *Gilia orcuttii* | Arroyo chub | None/SSC/ None/ AFS: VU | Aquatic. South coast flowing waters | Not expected to occur. Limited suitable habitat on site and species is not known to occur in Escondido. Species is native to the streams and rivers of the Los Angeles plain in southern California. |
| | | | *Invertebrates* | |
| *Branchinecta sandiegonensis* | San Diego fairy shrimp | FE/None/ None/None | Small, shallow vernal pools, occasionally ditches and road ruts | Not expected to occur. No vernal pools on site. |
| *Cicindela hirticollis gravida* | Sandy beach tiger beetle | None/None/ None/None | Clean, dry, light-colored sand in upper zone of the beach dunes, close to non-brackish water along coastal California | Not expected to occur. No suitable beach dune habitat on site. |
| *Cincindela senilis frosti* | Senile tiger beetle | None/None/ None/None | Coastal salt marshes; fresh/brackish lagoons, open patches of Salicornia, dried salt pans, muddy alkali area. Records in Riverside, San Diego, Los Angeles, Ventura Counties | Not expected to occur. No suitable salt marsh habitat on site. |
| *Coelus globosus* | Globose dune beetle | None/None/ None/None | Fore dunes, sand hummocks, back dunes along immediate coast. Larvae, adults spend time under vegetation or debris from Santa Cruz south to Ventura Cos. Possibly extirpated in San Diego and other coastal counties | Not expected to occur. No suitable beach dune habitat on site. |
| *Danaus plexippus* (overwintering) | Monarch butterfly | None/None/ None/None | Overwinters in eucalyptus groves from San Francisco south to northern Baja California | Low potential to occur. No potential to roost due to lack of eucalyptus tree groves on site. Site not near any known roosting locations. |

| Scientific Name | Common Name | Status[1] Federal/State/ MCHP Subarea Plan/ Other | Primary Habitat Associations | Status on Site or Potential to Occur[2] |
|---|---|---|---|---|
| *Euphyes vestris harbisoni* | Harbison's dun skipper | None/None/ Covered/None | Riparian oak woodland in a matrix of chamise chaparral or southern mixed chaparral. Larval host plant, *Carex spissa*. | Low potential to occur. Suitable habitat exists on site but host plant not observed during surveys. |
| *Lycaena hermes* | Hermes copper | None/None/ Covered/None | Found in southern mixed chaparral and coastal sage scrub at western edge of Laguna Mountains. Host plant is *Rhamnus crocea*.and nectar source *Eriogonum fasciculatum* | Low potential to occur. No suitable habitat found on site and no host plant or nectar plant observed during surveys. |
| *Euphydryas editha quino* | Quino checkerspot | FE/None/ Covered/None | Sunny openings within chaparral and coastal sage shrublands in parts of Riverside and San Diego counties. Need high densities of food plants *Plantago erecta, P. insularis, Orthocarpus purpurescens* | Low potential to occur. Site is located outside of the USFWS-identified survey area; and no host plants observed during surveys. There is a USFWS occurrence of this species within 3 miles of the project site. |
| *Melitta californica* | California mellitid bee | None/None/ None/ None | Found in deserts of SE California, SW Arizona and Baja California (collected from desert apricot). Also collected at Torrey Pines, on sea dahlia. | Not expected to occur. No suitable habitat is present on site. |
| *Streptocephalus woottoni* | Riverside fairy shrimp | FE/None/ None/None | Deep, long-lived vernal pools, vernal pool-like seasonal ponds, stock ponds; warm water pools that have low to moderate dissolved solids; in patches of grassland or agriculture interspersed in coastal sage scrub vegetation in Southern California. | Not expected to occur. No vernal pools on site. |

The federal and state status of species is based on the Special Animals List (September 2014), California Department of Fish and Wildlife.

[1] **Status Designations**

**Federal:**

| | |
|---|---|
| FC | Candidate for federal listing as threatened or endangered |
| (FD) | Federally-delisted; monitored for five years |
| FE | Federally-listed Endangered |
| FPT | Federally-proposed threatened |

**State:**

| | |
|---|---|
| SSC | California Species of Special Concern |
| CT | California Candidate Threatened |
| FP | California Department of Fish and Game Fully Protected Species |
| WL | California Department of Fish and Game Watch List Species |

| | | |
|---|---|---|
| | SE | State-listed as Endangered |
| | ST | State-listed as Threatened |
| | (SD) | State-delisted |

**Multiple Habitat Conservation Program (MHCP) Draft Escondido Subarea Plan:**

| | | |
|---|---|---|
| | Covered | MHCP species occurring or potentially occurring in Escondido (Table 3-2) |

**Other:**

| | | |
|---|---|---|
| **WBWG** | **Western Bat Working Group** | |
| | L: | Species is stable globally but there may be localized conservation concerns. |
| | M: | Species warrants closer evaluation, research, and conservation actions |
| | H: | Species are imperiled or are at high risk of imperilment |
| **AFS** | **American Fisheries Society** | |
| | EN: | Endangered |
| | TH: | Threatened |
| | VU: | Vulnerable |

[2] **Potential to Occur Designations:**

Found within the vicinity: Escondido quadrangle
Found within the region: CNDDB 9-quad search

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# APPENDIX E

*Routine Wetland Determination Data Forms*

# WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Bear Valley Parkway | City/County: Escondido, San Diego | Sampling Date: 5/23/2013

Applicant/Owner: Spieth-Wohlford, Inc./Burnet Wohlford | State: CA | Sampling Point: 1

Investigator(s): Callie Ford | Section, Township, Range: Section 26, T12S, R2W

Landform (hillslope, terrace, etc.): Channel | Local relief (concave, convex, none): None | Slope (%): 0

Subregion (LRR): C - Mediterranean California | Lat: 33.0955 | Long: 117.0573 | Datum:

Soil Map Unit Name: Ramona sandy loam, 9 to 15 percent slopes, eroded | NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ( ) | No (●) | |
| Hydric Soil Present? | Yes ( ) | No (●) | **Is the Sampled Area within a Wetland?** Yes ( ) No (●) |
| Wetland Hydrology Present? | Yes (●) | No ( ) | |

Remarks: Data station taken in low flow channel of a primarily unvegetated stream channel.

## VEGETATION

| Tree Stratum (Use scientific names.) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| Total Cover: | % | | |
| **Sapling/Shrub Stratum** | | | |
| 1. *Ricinus communis* | 20 | Yes | FACU |
| 2. *Mimulus aurantiacus* | 10 | No | Not Listed |
| 3. *Nicotiana glauca* | 5 | No | FAC |
| 4. *Opuntia littoralis* | 5 | No | Not Listed |
| 5. *Opuntia ficus indica* | 5 | No | Not Listed |
| Total Cover: | 45 % | | |
| **Herb Stratum** | | | |
| 1. *Hirschfeldia incana* | 15 | Yes | Not Listed |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| Total Cover: | 15 % | | |
| **Woody Vine Stratum** | | | |
| 1. | | | |
| 2. | | | |
| Total Cover: | % | | |

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | 0 |
| FACW species | | x 2 = | 0 |
| FAC species | 5 | x 3 = | 15 |
| FACU species | 20 | x 4 = | 80 |
| UPL species | 35 | x 5 = | 175 |
| Column Totals: | 60 (A) | | 270 (B) |

Prevalence Index = B/A = 4.50

**Hydrophytic Vegetation Indicators:**

- [●] Dominance Test is >50%
- [●] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

**Hydrophytic Vegetation Present?** Yes ( ) No (●)

Remarks: Vegetation present is sparse and consist of non-native species.

## SOIL

Sampling Point: 1

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture[3] | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-4 | 7.5 YR 3/4 | 100 | | | | | Loamy sand | |
| 4-20 | 7.5 YR 3/3 | 100 | | | | | sand | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils:[4]**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**

Type:

Depth (inches):

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

**Wetland Hydrology Present?** Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Data station located within an ephemeral stream channel that has been created by erosive soil conditions.

# WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Bear Valley Parkway | City/County: Escondido, San Diego | Sampling Date: 5/23/2013

Applicant/Owner: Spieth-Wohlford, Inc./Burnet Wohlford | State: CA | Sampling Point: 2

Investigator(s): Callie Ford | Section, Township, Range: Section 26, T12S, R2W

Landform (hillslope, terrace, etc.): Channel | Local relief (concave, convex, none): None | Slope (%): 0

Subregion (LRR): C - Mediterranean California | Lat: 33.0956 | Long: 117.0587 | Datum:

Soil Map Unit Name: Steep gullied land | NWI classification: Stream/river

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ( ) | No (●) | |
| Hydric Soil Present? | Yes (●) | No ( ) | **Is the Sampled Area within a Wetland?** Yes ( ) No (●) |
| Wetland Hydrology Present? | Yes (●) | No ( ) | |

Remarks: Data station taken in a perennial channel located within an oak woodland understory.

## VEGETATION

| Tree Stratum (Use scientific names.) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| Total Cover: | % | | |
| **Sapling/Shrub Stratum** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| Total Cover: | % | | |
| **Herb Stratum** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| Total Cover: | % | | |
| **Woody Vine Stratum** | | | |
| 1. | | | |
| 2. | | | |
| Total Cover: | % | | |

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | 0 |
| FACW species | | x 2 = | 0 |
| FAC species | | x 3 = | 0 |
| FACU species | | x 4 = | 0 |
| UPL species | | x 5 = | 0 |
| Column Totals: | (A) | | 0 (B) |

Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

- [ ] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

**Hydrophytic Vegetation Present?** Yes ( ) No (●)

Remarks: Data station is located within a perennial creek. There is no vegetation within the creek. The creek is located under a canopy of coast live oaks (Quercus agrifolia) with some palm trees (Washingtonia robusta)

## SOIL

Sampling Point: 2

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture[3] | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-20 | 7.5 YR 4/4 | 100 | | | | | sand | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils:[4]**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☒ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**

Type:

Depth (inches):

**Hydric Soil Present?** Yes ◉ No ○

Remarks: Since the data station is located within a perennial creek, hydric soils are assumed present despite the lack of indicators.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ◉ | No ○ | Depth (inches): | 3" |
| Water Table Present? | Yes ◉ | No ○ | Depth (inches): | 0" |
| Saturation Present? (includes capillary fringe) | Yes ○ | No ◉ | Depth (inches): | |

**Wetland Hydrology Present?** Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Data station is located within a perennial stream channel which is listed in the National Hydrography Dataset as a Stream/ river.

# WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Bear Valley Parkway | City/County: Escondido, San Diego | Sampling Date: 3/21/14

Applicant/Owner: Spieth-Wohlford, Inc./Burnet Wohlford | State: CA | Sampling Point: 3a

Investigator(s): Callie Ford and Patricia Schuyler | Section, Township, Range: Section 26, T12S, R2W

Landform (hillslope, terrace, etc.): Bank | Local relief (concave, convex, none): None | Slope (%): 0

Subregion (LRR): C - Mediterranean California | Lat: | Long: | Datum:

Soil Map Unit Name: Steep gullied land | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ( ) | No (●) | |
| Hydric Soil Present? | Yes ( ) | No (●) | **Is the Sampled Area within a Wetland?** Yes ( ) No (●) |
| Wetland Hydrology Present? | Yes ( ) | No (●) | |

Remarks: Data station taken on bank above channel in oak woodland.

## VEGETATION

| Tree Stratum (Use scientific names.) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Quercus agrifolia* | 60 | Yes | Not Listed |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| Total Cover: | 60 % | | |
| **Sapling/Shrub Stratum** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| Total Cover: | % | | |
| **Herb Stratum** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| Total Cover: | % | | |
| **Woody Vine Stratum** | | | |
| 1. *Toxicodendron diversilobum* | 10 | Yes | FACU |
| 2. | | | |
| Total Cover: | 10 % | | |

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust 100%

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | 0 |
| FACW species | | x 2 = | 0 |
| FAC species | | x 3 = | 0 |
| FACU species | 10 | x 4 = | 40 |
| UPL species | 60 | x 5 = | 300 |
| Column Totals: | 70 (A) | | 340 (B) |

Prevalence Index = B/A = 4.86

**Hydrophytic Vegetation Indicators:**

- (●) Dominance Test is >50%
- (●) Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

**Hydrophytic Vegetation Present?** Yes ( ) No (●)

Remarks: Data station is located on the bank above the perennial creek. Vegetation is dominated by oaks with leaf litter covering the ground.

## SOIL

Sampling Point: 3a

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture[3] | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-16 | 10YR 3/3 | 100 | | | | | silty loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils:[4]**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**

Type:

Depth (inches):

**Hydric Soil Present?** Yes ○ No ◉

Remarks: No indicators of hydric soils with the data station.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

**Wetland Hydrology Present?** Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No signs of hydrology associated with the data station.

# WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Bear Valley Parkway | City/County: Escondido, San Diego | Sampling Date: 3/21/14

Applicant/Owner: Spieth-Wohlford, Inc./Burnet Wohlford | State: CA | Sampling Point: 3b

Investigator(s): Callie Ford and Patricia Schuyler | Section, Township, Range: Section 26, T12S, R2W

Landform (hillslope, terrace, etc.): Channel | Local relief (concave, convex, none): None | Slope (%): 0

Subregion (LRR): C - Mediterranean California | Lat: | Long: | Datum:

Soil Map Unit Name: Steep gullied land | NWI classification: Stream/river

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ( ) | No (●) | |
| Hydric Soil Present? | Yes (●) | No ( ) | **Is the Sampled Area within a Wetland?** Yes ( ) No (●) |
| Wetland Hydrology Present? | Yes (●) | No ( ) | |

Remarks: Data station taken in channel within oak woodland canopy.

## VEGETATION

| Tree Stratum (Use scientific names.) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Phoenix dactylifera* | 5 | Yes | Not Listed |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| Total Cover: | 5 % | | |
| **Sapling/Shrub Stratum** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| Total Cover: | % | | |
| **Herb Stratum** | | | |
| 1. | | | Not Listed |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| Total Cover: | % | | |
| **Woody Vine Stratum** | | | |
| 1. | | | |
| 2. | | | |
| Total Cover: | % | | |

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | 0 |
| FACW species | | x 2 = | 0 |
| FAC species | | x 3 = | 0 |
| FACU species | | x 4 = | 0 |
| UPL species | 5 | x 5 = | 25 |
| Column Totals: | 5 (A) | | 25 (B) |

Prevalence Index = B/A = 5.00

**Hydrophytic Vegetation Indicators:**

- (●) Dominance Test is >50%
- (●) Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

**Hydrophytic Vegetation Present?** Yes ( ) No (●)

Remarks: Data station is located within a perennial creek . Only vegetation within this portion of the channel is a large date palm (Phoenix dactylifera).

## SOIL

Sampling Point: 3b

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture[3] | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-18 | 7.5 YR 3/3 | 20 | | | | | sand | |
| 0-18 | 7.5 YR 4/4 | 40 | | | | | sand | |
| 0-18 | 7.5 YR 5/6 | 40 | | | | | sand | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils:[4]**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☒ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**

Type:

Depth (inches):

**Hydric Soil Present?** Yes ◉ No ○

Remarks: Since the data station is located within a perennial creek, hydric soils are assumed present despite the lack of indicators.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ◉ | No ○ | Depth (inches): | 3" |
| Water Table Present? | Yes ◉ | No ○ | Depth (inches): | 0" |
| Saturation Present? (includes capillary fringe) | Yes ○ | No ◉ | Depth (inches): | 0" |

**Wetland Hydrology Present?** Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Data station within perennial creek with approximately 3 inches of running water.

# WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Bear Valley Parkway City/County: Escondido, San Diego Sampling Date: 3/21/14

Applicant/Owner: Spieth-Wohlford, Inc./Burnet Wohlford State: CA Sampling Point: 4a

Investigator(s): Callie Ford and Patricia Schuyler Section, Township, Range: Section 26, T12S, R2W

Landform (hillslope, terrace, etc.): Channel Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: Long: Datum:

Soil Map Unit Name: Ramona sandy loam, 2% to 5% slopes NWI classification: Stream/River

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ○ | No ◉ | |
| Hydric Soil Present? | Yes ◉ | No ○ | **Is the Sampled Area within a Wetland?** Yes ○ No ◉ |
| Wetland Hydrology Present? | Yes ◉ | No ○ | |

Remarks: Data station taken in a 6-foot wide channel within oak woodland canopy.

## VEGETATION

| Tree Stratum (Use scientific names.) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| Total Cover: | % | | |
| **Sapling/Shrub Stratum** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| Total Cover: | % | | |
| **Herb Stratum** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| Total Cover: | % | | |
| **Woody Vine Stratum** | | | |
| 1. | | | |
| 2. | | | |
| Total Cover: | % | | |

% Bare Ground in Herb Stratum % % Cover of Biotic Crust %

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | 0 |
| FACW species | | x 2 = | 0 |
| FAC species | | x 3 = | 0 |
| FACU species | | x 4 = | 0 |
| UPL species | | x 5 = | 0 |
| Column Totals: | (A) | | 0 (B) |

Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

**Hydrophytic Vegetation Present?** Yes ○ No ◉

Remarks: Data station is located within a perennial creek. There is no vegetation within the creek. The creek is located under a canopy of coast live oaks (Quercus agrifolia).

## SOIL

Sampling Point: 4a

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture[3] | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-18 | 7.5 YR 3/3 | 20 | | | | | sand | |
| 0-18 | 7.5 YR 4/4 | 40 | | | | | sand | |
| 0-18 | 7.5 YR 5/6 | 40 | | | | | sand | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils:[4]**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**

Type:

Depth (inches):

**Hydric Soil Present?** Yes ◉ No ○

Remarks: Since the data station is located within a perennial creek, hydric soils are assumed present despite the lack of indicators.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ◉ | No ○ | Depth (inches): | 3" |
| Water Table Present? | Yes ◉ | No ○ | Depth (inches): | 0" |
| Saturation Present? (includes capillary fringe) | Yes ◉ | No ○ | Depth (inches): | 0" |

**Wetland Hydrology Present?** Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Data station within perennial creek.

# WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Bear Valley Parkway | City/County: Escondido, San Diego | Sampling Date: 3/21/14

Applicant/Owner: Spieth-Wohlford, Inc./Burnet Wohlford | State: CA | Sampling Point: 4b

Investigator(s): Callie Ford and Patricia Schuyler | Section, Township, Range: Section 26, T12S, R2W

Landform (hillslope, terrace, etc.): none | Local relief (concave, convex, none): None | Slope (%): 0

Subregion (LRR): C - Mediterranean California | Lat: | Long: | Datum:

Soil Map Unit Name: Ramona sandy loam, 2% to 5% slopes | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes (●) | No ( ) | |
| Hydric Soil Present? | Yes (●) | No ( ) | **Is the Sampled Area within a Wetland?** Yes (●) No ( ) |
| Wetland Hydrology Present? | Yes (●) | No ( ) | |

Remarks: Data station taken adjacent to the 6-foot wide channel within a stand of palm trees. Area is mapped as non-native riparian.

## VEGETATION

| Tree Stratum (Use scientific names.) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Washingtonia robusta* | 80 | Yes | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| Total Cover: | 80 % | | |
| **Sapling/Shrub Stratum** | | | |
| 1. *Ficus carica* | 2 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| Total Cover: | 2 % | | |
| **Herb Stratum** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| Total Cover: | % | | |
| **Woody Vine Stratum** | | | |
| 1. | | | |
| 2. | | | |
| Total Cover: | % | | |

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 % (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | 0 |
| FACW species | 80 | x 2 = | 160 |
| FAC species | | x 3 = | 0 |
| FACU species | 2 | x 4 = | 8 |
| UPL species | | x 5 = | 0 |
| Column Totals: | 82 (A) | | 168 (B) |

Prevalence Index = B/A = 2.05

**Hydrophytic Vegetation Indicators:**

- [ ] Dominance Test is >50%
- [x] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

**Hydrophytic Vegetation Present?** Yes (●) No ( )

Remarks: Data station is located immediately adjacent to the perennial creek in an area dominated palm trees.

## SOIL

Sampling Point: 4b

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture[3] | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-18 | 7.5 YR 3/3 | 20 | | | | | sand | |
| 0-18 | 7.5 YR 4/4 | 40 | | | | | sand | |
| 0-18 | 7.5 YR 5/6 | 40 | | | | | sand | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils:[4]**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☒ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**

Type:

Depth (inches):

**Hydric Soil Present?** Yes ◉ No ○

Remarks: Despite the lack of indicators, hydric soils are assumed present due to the presence of water within the soil pit.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☒ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ○ | No ◉ | Depth (inches): |
| Water Table Present? | Yes ◉ | No ○ | Depth (inches): 10" |
| Saturation Present? (includes capillary fringe) | Yes ◉ | No ○ | Depth (inches): 3" |

**Wetland Hydrology Present?** Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Water present within soil pit.

# WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Bear Valley Parkway | City/County: Escondido, San Diego | Sampling Date: 3/21/14

Applicant/Owner: Spieth-Wohlford, Inc./Burnet Wohlford | State: CA | Sampling Point: 4c

Investigator(s): Callie Ford and Patricia Schuyler | Section, Township, Range: Section 26, T12S, R2W

Landform (hillslope, terrace, etc.): Slight terrace | Local relief (concave, convex, none): None | Slope (%): 0

Subregion (LRR): C - Mediterranean California | Lat: | Long: | Datum:

Soil Map Unit Name: Ramona sandy loam, 2% to 5% slopes | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (•) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (•) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ( ) | No (•) | |
| Hydric Soil Present? | Yes ( ) | No (•) | **Is the Sampled Area within a Wetland?** Yes ( ) No (•) |
| Wetland Hydrology Present? | Yes ( ) | No (•) | |

Remarks: Data station taken on a slight terrace above DS 4b in an area that visually appears drier than the sample plot for DS 4b.

## VEGETATION

| Tree Stratum (Use scientific names.) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Quercus agrifolia* | 20 | Yes | Not Listed |
| 2. *Washingtonia robusta* | 10 | Yes | FACW |
| 3. | | | |
| 4. | | | |
| Total Cover: | 30 % | | |
| **Sapling/Shrub Stratum** | | | |
| 1. *Ficus carica* | 10 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| Total Cover: | 10 % | | |
| **Herb Stratum** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| Total Cover: | % | | |
| **Woody Vine Stratum** | | | |
| 1. *Toxicodendron diversilobum* | 5 | Yes | FACU |
| 2. | | | |
| Total Cover: | 5 % | | |

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0 % (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | 0 |
| FACW species | 10 | x 2 = | 20 |
| FAC species | | x 3 = | 0 |
| FACU species | 15 | x 4 = | 60 |
| UPL species | 20 | x 5 = | 100 |
| Column Totals: | 45 (A) | | 180 (B) |

Prevalence Index = B/A = 4.00

**Hydrophytic Vegetation Indicators:**

- [ ] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

**Hydrophytic Vegetation Present?** Yes ( ) No (•)

Remarks: Data station is located outside of the perennial creek and non-native riparian.

## SOIL

Sampling Point: 4c

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture[3] | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-16 | 7.5 YR 3/4 | 100 | | | | | sand | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils:[4]**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**

Type: roots

Depth (inches): 16

**Hydric Soil Present?** Yes ○ No ◉

Remarks: No indicators of hydric soils with the data station.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

**Wetland Hydrology Present?** Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No signs of hydrology associated with the data station.

# APPENDIX F

*Jurisdictional Delineation Report*

DUDEK

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May 26, 2017 7833

Mr. Burnet Wohlford
Speith-Wohlford Inc.
P.O. Box 5005 #17
Rancho Santa Fe, California 92067

***Subject:*** ***Jurisdictional Delineation Report for the Bear Valley Parkway Project, San Diego County, California***

Dear Mr. Burnet:

This report documents the results of a jurisdictional delineation for the proposed Bear Valley Parkway project (Study Area). The Study Area contains a total of 40.65 acres and is located in the City of Escondido, San Diego County, California. More specifically, the proposed project is located in southeast Escondido, approximately 1.5 miles east of Interstate 15 (I-5) and south of State Route 78 (SR-78)/San Pasqual Valley Road (Figure 1). The project site is located on the U.S. Geological Survey (USGS) 7.5 minute Escondido quadrangle map in section 26, Township 12 South, and Range 2 West (Figure 2).

This jurisdictional delineation report includes a description of jurisdictional delineation methods, the results of the jurisdictional delineation, an analysis of potential project impacts to jurisdictional resources, recommendations regarding avoidance or minimization of project impacts, and determinations regarding regulatory requirements to permit unavoidable impacts to jurisdictional resources.

## METHODS

### Literature Review

Baseline hydrology information was obtained from the USGS 7.5-minute quadrangles, National Hydrography Dataset (USGS 2014), and California Regional Water Quality Control Board – San Diego Region (RWQCB) Water Quality Control Plan for the San Diego Region (RWQCB 2007).

### Jurisdictional Delineation

An assessment of jurisdictional resources was completed by Dudek biologist Callie Ford on May 23, 2013. A formal jurisdictional delineation was conducted by Dudek biologists Callie Ford and Patricia Schuyler on March 21, 2014 with an update on December 16, 2014. Ms. Ford and Ms. Schuyler delineated the extent of jurisdictional aquatic features in the Study Area. The

delineation defined areas under the jurisdiction of the California Department of Fish and Wildlife (CDFW) pursuant to Sections 1600–1603 of the California Fish and Game Code, under the jurisdiction of the U.S. Army Corps of Engineers (ACOE) pursuant to Section 404 of the federal Clean Water Act (CWA), and under jurisdiction of RWQCB pursuant to CWA Section 401 and the Porter-Cologne Act. The ACOE wetland delineation was performed in accordance with ACOE methodology (ACOE 1987, 2008; ACOE and EPA 2007).

Specifically, the methodology used for each jurisdiction or regulating agency, including the ACOE, CDFW, and RWQCB, is described as follows.

The ACOE wetlands delineation was performed in accordance with the 1987 *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Technical Report Y-87-1; Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (ACOE 2008), and guidance provided by the ACOE and EPA on the geographic extent of jurisdiction based on the U.S. Supreme Court's interpretation of the CWA (ACOE and EPA 2008). The ACOE and RWQCB, pursuant to the federal CWA, include all areas supporting all three wetlands criteria described in the ACOE manual: hydric soils, hydrology, and hydrophytic vegetation. The RWQCB may also take jurisdiction over surface waters lacking ACOE regulation pursuant to the state Porter-Cologne Act. These areas generally include areas with at least one of the three wetlands indicators but that are isolated from a tributary of navigable water through lack of evidence of surface water hydrology. Jurisdiction of the RWQCB is coincident with the ACOE in accordance with the federal CWA, except in cases where a resource is determined to be isolated from navigable waters of the United States and where the RWQCB may take jurisdiction under the state Porter-Cologne Act. A predominance of hydrophytic vegetation, where associated with a stream channel, was used to determine CDFW-regulated riparian areas. Streambeds under the jurisdiction of CDFW were delineated using the Cowardin method of waters classification, which defines waters boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology).

Collectively, areas under the jurisdiction of the ACOE, RWQCB, and CDFW are termed jurisdictional aquatic resources. A more detailed description of the methods is described below.

Wetland determinations were made at seven sampling points (see Appendix A for data station forms) to determine which areas are under the jurisdiction of the regulatory agencies mentioned above. The extent of wetland areas was determined by mapping the areas with similar vegetation and topography to sampled locations.

## Hydrophytic Vegetation

Seasonal changes in species composition, human land-use practices, wildfires, and other natural disturbances can adversely affect the hydrophytic vegetation determination. During the delineation, a data station point was considered positive for hydrophytic vegetation if it passed the basic dominance test (Indicator 1), meaning that more than 50% of the dominant species sampled were characterized as either obligate, facultative wetland, and/or facultative per the *Arid West 2014 Regional Wetland Plant List* (Lichvar et al 2014). In those cases where the dominance test failed, the vegetation parameter was re-evaluated using the prevalence index (Indicator 2), which takes into account all plant species in the community, not just dominants. All plant species observed during the surveys were identified and recorded. Where plant identification could not be made in the field, a sample was taken and later identified in the laboratory.

## Hydric Soils

According to the National Technical Committee for Hydric Soils, hydric soils are "soils that are formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (U.S. Department of Agriculture (USDA) 1994). Soil pits were prepared using a "sharp shooter" shovel to determine if hydric soils were present. The presence of hydric soils was determined through consultations with the 1987 ACOE manual, *Field Indicators of Hydric Soils in the United States v. 5.01* (USDA 2003), ACOE's *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (*Version 2.0*) (ACOE 2008), and Munsell Soil Color Charts. Where feasible, soil pits were prepared to depths ranging from 10 to 16 inches, and dry soils were moistened to obtain the most accurate color. Excavated soils were examined for evidence of hydric conditions, including low chroma values and mottling, vertical streaking, sulfidic odor, and high organic matter content in the upper horizon. Evidence of previous ponding or flooding was assessed along with the slope, slope shape, existing landform characteristics, soil material/composition, and hydrophytic vegetation to determine if hydric soils were present.

## Hydrology

Per the guidelines prescribed in the Arid West supplement (ACOE 2008), wetland hydrology indicators are separated into four major groups: groups A, B, C, and D. Group A indicators are based on direct observations of surface flow, ponding, and soil saturation/groundwater. Group B indicators consist of evidence that the Study Area has been or is currently subjected to ponding, including, but not limited to, water marks, drift deposits, and sediment deposits. Group C indicators include signs of previous and/or current saturation, including oxidized rhizospheres

surrounding living roots and the presence of reduced iron or sulfur, both of which are indicative of extended periods of soil saturation. Group D indicators consist of "vegetation and soil features that are indicative of current rather than historic wet conditions and include a shallow aquitard and results of the Facultative (FAC)-Neutral test" (ACOE 2008). Each group is subdivided into primary and secondary categories based on their frequency and reliability to occur in the Arid West region. Signs of hydrology were investigated on the Study Area.

### Biological Resource Mapping

Vegetation communities and jurisdictional aquatic resources were mapped in the field directly onto a 200-scale (1 inch = 200 feet) aerial photograph (Bing 2013) or using a Trimble GeoXT GPS with submeter accuracy. These boundaries and locations were digitized by Dudek geographic information system (GIS) technician Randy Deodat using ArcGIS software.

Vegetation community classifications used in this report follow Holland (1986) and Oberbauer et al. (2008), with modifications to accommodate the lack of conformity of the observed communities to those of Holland. Ms. Ford and Ms. Schuyler also recorded all identifiable plant species in the Study Area. Latin and common names for plant species with a California Rare Plant Rank (CRPR) (formerly CNPS List) follow the CNPS On-Line Inventory of Rare, Threatened, and Endangered Plants of California (CNPS 2015). For plant species without a CRPR, Latin names follow the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2015) and common names follow the United States Department of Agriculture (USDA) Natural Resources Conservation Service Plants Database (USDA 2015). Appendix C contains a complete list of plant species observed during surveys of the site.

### Survey Limitations

The survey was conducted during the early spring, thereby limiting detection of some annual plant species. However, based on characteristics observed at each of the investigation locations, this limitation is not expected to have affected the jurisdictional determination.

## PHYSICAL CHARACTERISTICS

### Site Description

The Bear Valley Parkway project is located in southeast Escondido, approximately 1.5 miles east of Interstate 15 (I-5) and south of State Route 78 (SR-78)/San Pasqual Valley Road

(Figure 1). The Study Area is located on the U.S. Geological Survey (USGS) 7.5 minute Escondido quadrangle map in section 26, Township 12S, and Range 2W (Figure 2).

The majority of the Study Area was once an avocado orchard; however, the orchard was removed and now is considered disturbed habitat. There is one residence on site in the central portion of the property that is currently occupied. The remaining portions of the site are undeveloped. An unnamed stream channel, within an understory of oak woodland, traverses the southwestern portion of the Study Area. The Study Area is adjacent to Bear Valley Parkway near Zlatibor Ranch Road. The property is located in a more rural part of Escondido.

The Study Area slopes upward from approximately 590 feet above mean sea level (AMSL) to 680 feet AMSL at the top of the hill. Much of the site is gently sloping or relatively flat.

## Soils

Soils on the site are mapped as Fallbrook sandy loam, 9% to 15% slopes, eroded; Fallbrook sandy loam, 15% to 30% slopes, eroded; Ramona sandy loam, 2% to 5% slopes; Ramona sandy loam, 9% to 15% slopes, eroded; and steep gullied land (USDA 2013).

According to the Natural Resource Conservation Service (NRCS), the Fallbrook series consists of deep, well-drained soils formed from weathered granitic rock. These soils occur on rolling hills and steeper slopes, and have a mean annual precipitation of approximately 15 inches (USDA 2013).

The Ramona series consists of mixed "fine-loamy" soils (USDA 2013). Ramona soils are found on flat to moderately steep slopes, with an annual precipitation of approximately 20 inches (USDA 2013).

Steep gullied land is described as "strongly sloping to steep areas that are actively eroding into old alluvium or decomposed rock" and supporting sparse vegetation (Bowman 1973).

## Hydrology

The Study Area lies within the San Dieguito Hydrologic Unit (905.00), a rectangular-shaped area of approximately 350 square miles (Figure 3). This Hydrologic Unit lies between the San Luis Rey and Carlsbad Hydrologic Units to the north and San Diego River and Peñasquitos Hydrologic Units to the south. The Study Area lies within the Hodges Hydrologic Area (905.20) within the Del Dios (905.21) and Bear Hydrologic Subareas (905.24). The Study Area is located on border of the two Subareas (Figure 3).

The San Dieguito Hydrologic Unit includes the San Dieguito River and its tributaries, including Santa Ysabel and Santa Maria creeks. The San Dieguito Hydrologic Unit contains two major reservoirs, Lake Hodges and Sutherland Reservoir. The San Dieguito Lagoon is located at the mouth of the San Dieguito River and forms the northerly boundary of the City of Del Mar. The lagoon is typically closed off from the ocean by a sandbar.

The National Hydrography Dataset identifies one tributary within the project site running from north to south through the western portion of the Study Area (USGS 2014). The USGS 7.5-minute quadrangle identifies this feature as a blue-line stream that is tributary to the Lake Hodges-San Dieguito River, which eventually flows into the Pacific Ocean. The tributary travels south through the Study Area, joins with a second stream approximately 0.60 miles south of the Study Area and with the San Dieguito River approximately 2.70 miles south of the Study Area. The San Dieguito River then flows west into Lake Hodges and continues to the Pacific Ocean.

No other stream courses or water features were identified in the literature review.

## RESULTS OF SURVEY

### Vegetation Communities/Jurisdictional Aquatic Resources

### Evaluation Area

In general, there are three types of potential jurisdictional aquatic resources that were evaluated during the delineation. The first type includes natural canyon drainages in the east, west, and north-central portions of the Study Area containing both ephemeral and perennial channels. Each of these areas exhibit characteristics of ACOE/RWQCB waters and CDFW streambeds (i.e. defined bed and bank). The channels continue to flow from the project site through off-site drainage courses or storm drains into San Dieguito River and are, therefore, hydrologically connected to navigable waters of the U.S. and jurisdictional under ACOE, RWQCB, and CDFW regulations.

The second type of potential jurisdictional aquatic resource studied as part of the survey includes southern coast live oak riparian forest occurring along the perennial stream channel in the southern portion of the Study Area. The southern coast live oak riparian forest did not show signs of wetland hydrology, hydric soils, or hydrophytic vegetation (see data station 3a). However, since this vegetation community is associated with the stream channel, it is considered under the jurisdiction of CDFW.

The third type of jurisdictional aquatic resource onsite is wetlands/associated riparian areas located within the southern coast live riparian forest. These areas are mapped as non-native

riparian due to the presence of non-native vegetation, including Washington fan palm and edible fig. The wetlands/associated riparian areas are located immediately adjacent to the perennial stream channel, and are surrounded by oak woodlands. All three indicators were present within the representative data station associated with these areas. Therefore these patches of non-native riparian are under the jurisdiction of ACOE, RWQCB, and CDFW.

Wetlands and non-wetland waters under the jurisdiction of ACOE/ RWQCB and streambeds and associated riparian areas under CDFW jurisdiction in the Study Area total 3.48 acre of wetlands/associated riparian areas and 0.31 acre of unvegetated waters/streambed. Jurisdictional vegetation communities on site include southern coast live oak riparian forest and non-native riparian habitat. Table 2 lists the jurisdictional aquatic resources and acreages in the Study Area and Figure 4 shows the location of those resources.

**Table 2**
**Jurisdictional Aquatic Resources**

| Jurisdictional Aquatic Resource | CDFW Riparian Area (Acres) | ACOE/RWQCB Wetland (Acres) |
|---|---|---|
| Southern Coast Live Oak Riparian Forest | 3.35 | -- |
| Non-Native Riparian | 0.13 | 0.13 |
| *Total Riparian/Wetlands* | *3.48* | *0.13* |
| **Jurisdictional Aquatic Resource** | **CDFW Streambed (Acres)** | **ACOE/RWQCB Non-wetland Waters (Acres)** |
| Ephemeral Stream Channel | 0.14 | 0.14 |
| Perennial Stream Channel | 0.17 | 0.17 |
| *Total Streambed/ Non-wetland Waters* | *0.31* | *0.31* |
| **Total Jurisdictional Area*** | **3.62**** | **0.44** |

* Ephemeral stream channels are an overlay within the disturbed habitat and southern coast live oak vegetation communities. The perennial stream channel on site is within the understory of the oak canopy and therefore, to avoid double counting of resources, this channel, and the portion of the ephemeral channel within the oak canopy, are not counted toward the total jurisdictional area.

** Acreage may not total due to rounding.

ACOE- and RWQCB-jurisdictional areas on site total 0.44 acre, including 0.13 acre of jurisdictional wetlands composed of non-native riparian areas. The remaining 0.31 acre under ACOE/RWQCB jurisdiction consists of ephemeral and perennial stream channels.

CDFW jurisdiction extends over all areas under ACOE and RWQCB jurisdiction discussed above and includes areas that meet ACOE wetland (i.e., hydrophytic) vegetation criteria but lack wetlands hydrology and/or hydric soils indicators. CDFW-jurisdictional areas on site total 3.48 acres of associated riparian habitat including 3.35 acres of southern coast live oak riparian forests and 0.13 acre of non-native riparian areas. In addition, there are also 0.31 acre of stream channels

under the jurisdiction of CDFW, of which 0.17 acre is already included within the southern coast live oak riparian forest. In total, there are 3.62 acre of CDFW jurisdictional resources on site.

Jurisdictional waters/streambeds on site include perennial and ephemeral drainages flowing generally from north to south and northeast to southwest off site and downstream into San Dieguito River. San Dieguito River flows into Lake Hodges Reservoir and continues to the Pacific Ocean, a navigable water of the U.S. Jurisdictional waters/streambeds exhibit wetlands hydrology and/or hydric soils and signs of a bed and bank and they are therefore considered non-wetland waters under the jurisdiction of ACOE /RWQCB, and CDFW jurisdictional streambeds. The unvegetated perennial stream channel under ACOE/RWQCB/CDFW jurisdiction occurs within oak woodlands which are CDFW-jurisdictional riparian areas.

## Data Stations

Vegetation, hydrology, and soils were examined at seven wetland sampling points (data stations) within the Study Area (Figure 4) to determine the extent of jurisdictional aquatic resources. Table 1 lists the results of these data stations in terms of the three criteria that determine jurisdiction: vegetation, hydrology, and soils.

**Table 1**
**Jurisdictional Data Station Results**

| Data Station | Wetland vegetation | Wetland Soils | Hydrology | Feature Type | Jurisdictional Determination |
|---|---|---|---|---|---|
| DS 1 | Absent | Absent | Present | Unvegetated ephemeral stream | ACOE/RWQCB non-wetland waters<br>CDFW streambed |
| DS 2 | Absent | Present | Present | Unvegetated perennial stream | ACOE/RWQCB non-wetland waters<br>CDFW streambed |
| DS 3a | Absent | Absent | Absent | Upland | Non-jurisdictional |
| DS 3b | Absent | Present | Present | Unvegetated perennial stream | ACOE/RWQCB non-wetland waters<br>CDFW streambed |
| DS 4a | Absent | Present | Present | Unvegetated perennial stream | ACOE/RWQCB non-wetland waters<br>CDFW streambed |
| DS 4b | Present | Present | Present | Non-native riparian | ACOE/RWQCB wetland waters<br>CDFW riparian area |
| DS 4c | Absent | Absent | Absent | Upland | Non-jurisdictional |

### Southern Coast Live Oak Riparian Forest

Southern coast live oak riparian forest is an open to locally dense evergreen riparian woodland dominated by coast live oak (*Quercus agrifolia*). Compared to other riparian communities, southern coast live oak riparian forest is generally richer in herbs and poorer in understory shrubs. Characteristic species of this vegetation community include coast live oak, mugwort (*Artemisia douglasiana*), California blackberry (*Rubus ursinus*), California laurel (*Umbellularia californica*), and hoary nettle (*Urtica dioica* ssp. *holosericea*). This community occurs on fine-grained, rich alluvium on bottomlands and outer floodplains along larger streams.

Southern coast live oak riparian forest occurs along the perennial stream channel in the southern portion of the Study Area. Onsite, southern coast live oak riparian forest is dominated by coast live oak, scattered palm trees (*Washintonia robusta* and *Phoenix dactylifera*), poison oak (*Toxicodendron diversilobum*) and edible fig (*Ficus carica*). Because it is associated with the stream channel, all southern coast live oak riparian forest within the Study Area is considered under the jurisdiction of CDFW.

### Non-native Riparian

Non-native riparian areas are densely vegetated riparian thickets dominated by non-native, invasive species. According to Oberbauer et al. 2008, this designation should only be used where non-native, invasive species account for greater than 50% of the total vegetative cover within a mapping unit.

In the Study Area, non-native riparian areas are dominated by Washington fan palms interspersed with edible fig. Non-native riparian areas occur in three locations along the western boundary of the project site and adjacent to a perennial stream. The non-native riparian areas on site constitute wetlands under the jurisdiction of ACOE, and RWQCB and is also considered a CDFW associated riparian area.

### Unvegetated Stream Channel

Unvegetated stream channel refers to stream channels that are barren or sparsely vegetated and are not wetlands. The lack of vegetation is generally due to the scouring effects of seasonal flooding or lack of flow to support a predominance of hydrophytic vegetation. All areas mapped as stream channel have natural bottoms and are mapped as an overlay to the vegetation communities. These are considered non-wetland waters under the jurisdiction of the ACOE, and RWQCB and CDFW streambed.

## APPLICABLE REGULATIONS AND PERMIT REQUIREMENTS

### Local/City of Escondido

The Public Review Draft Escondido Subarea Habitat (Subarea Plan) (Ogden and CBI 2001) is intended to be consistent with the Multiple Habitat Conservation Plan (MHCP) and with the plans prepared by the entities participating in the MHCP. The Subarea Plan comprehensively addresses how the City will conserve natural vegetation communities and special-status plant and wildlife species pursuant to the California NCCP. The Subarea Plan qualifies as a stand-alone document to implement the MHCP and forms the basis for an Implementing Agreement, which will be the legally binding agreement between the City of Escondido and the Wildlife Agencies.

The Study Area is located within the southeast portion of the Subarea Plan. It is not located within the Biological Core and Linkage Area (BCLA) (see Figure 3-2 of the Subarea Plan). The Study Area is located outside of any Focused Planning Areas (FPAs); however, the stream channel that runs through the southwestern portion of the Study Area is designated as a Constrained Lands (Wetlands) Outside the FPA (see Figure 4-1 of the Subarea Plan). The Constrained Lands designation includes lands with steep slopes and wetlands regulated by ACOE federal wetland permitting requirements and the MHCP "no net loss of wetlands" policy (Ogden and CBI 2001). However, at this time the City of Escondido is not moving forward with the Subarea Plan.

### State and Federal

The following is a summary of permit requirements relative to the jurisdictional waters/wetlands identified on site.

### ACOE

ACOE has two permit programs to allow for development of residential uses that would result in fill of jurisdictional waters pursuant to Section 404 of the CWA: Nationwide Permit (NWP) 29 – Residential Development and an Individual Permit. A review of environmental impacts associated with authorizations under NWP 29 has been completed in accordance with the National Environmental Policy Act, and a determination has been made that, based on criteria included in NWP 29, impacts resulting from authorization of its use across the nation will not result in more than minimal adverse effect on aquatic resources. The criteria that allow for this determination include stipulations that impacts must be less than 0.5 acre and no more than 300 linear feet. The 300-linear-foot threshold may be waived by the district engineer for impacts to ephemeral or

intermittent stream channels based on a determination that the adverse affect on the aquatic environment will be minimal.

## RWQCB

According to the federal CWA, ACOE may not authorize the fill of jurisdictional waters without certification that the authorized activity will not substantially impact water quality. This provision is known as a Section 401 Water Quality Certification. Within California, the 401 Water Quality Certification is issued by RWQCB where the activity is located. The Study Area lies within the San Diego Region (Region 9) of the State Water Resources Control Board (SWRCB).

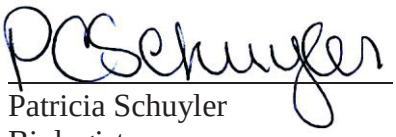
RWQCB usually accepts the ACOE jurisdictional determination and will process a 401 certification for the areas considered for authorization of impacts by ACOE following a review of short- and long-term water quality control measures and overall project avoidance, minimization, and mitigation of jurisdictional impacts. In general, water quality control measures are reviewed with greater scrutiny but still based on the applicable local and state discharge requirements. RWQCB has, in select cases, taken jurisdiction over lands not included within the ACOE jurisdiction, generally consisting of additional CDFW-jurisdictional wetlands, and in the case of vernal pools, isolated wetlands. SWRCB is considering adopting a statewide wetlands definition that, as currently contemplated, would include CDFW-jurisdictional riparian areas. RWQCB will not be able to issue the 401 Water Quality Certification until a valid California Environmental Quality Act (CEQA) document covering the project has been certified/adopted by the lead agency.

## CDFW

In accordance with the Section 1600 of the California Fish and Game Code, a Streambed Alteration Agreement is required for fill and/or vegetation removal within CDFW-jurisdictional riparian areas and streambeds. CDFW will not issue a Streambed Alteration Agreement until a valid CEQA document is certified/adopted.

Should you have any questions regarding this report or require additional information, please do not hesitate to contact me at 760.479.4264 or pschuyler@dudek.com.

Sincerely,



Patricia Schuyler
Biologist

*Att: Figures 1–4*
*Appendix A: Wetland Determination Data Forms*
*Appendix B: Significant Nexus Analysis Forms*
*Appendix C: Vascular Plant Species Observed in the Study Area*

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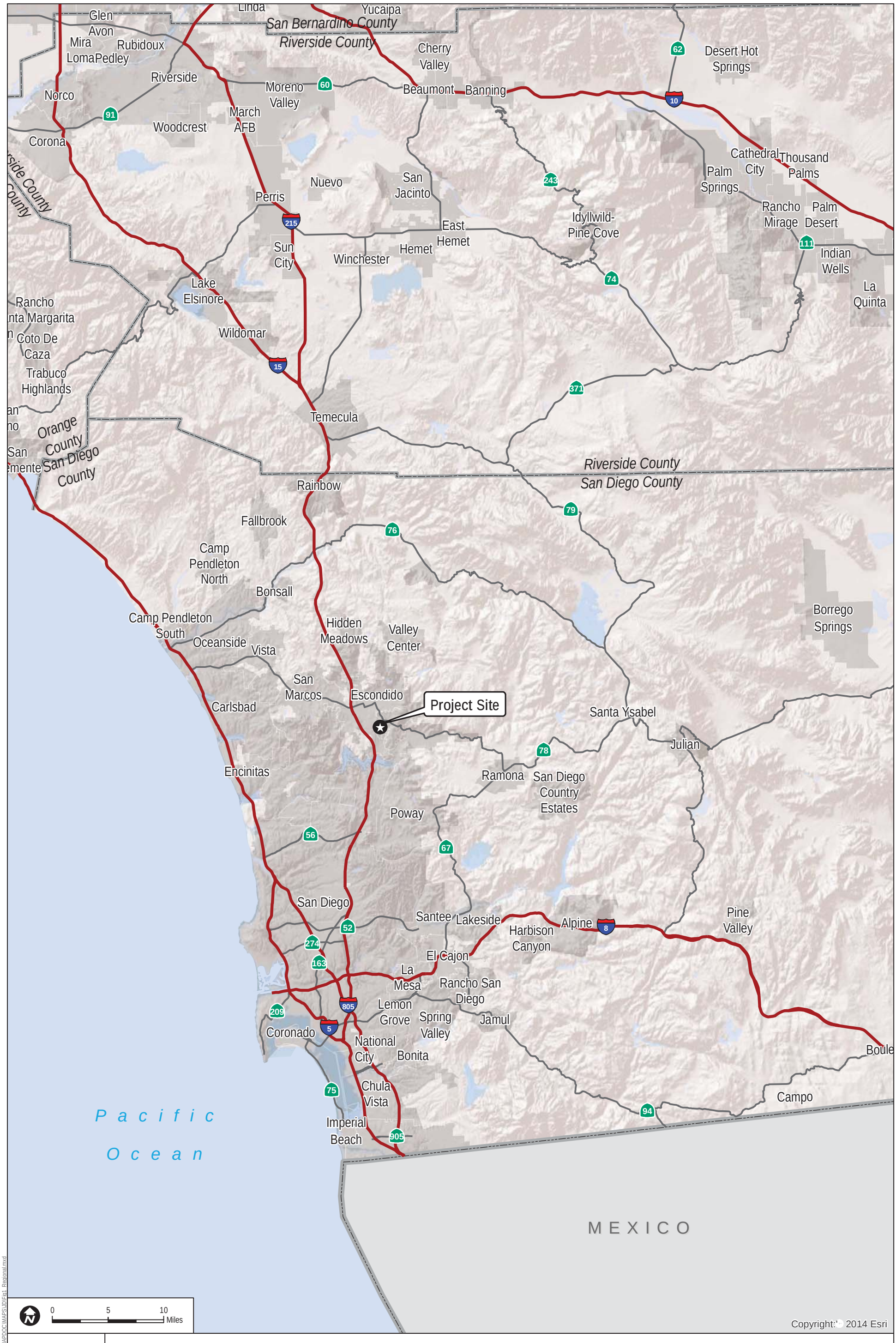



DUDEK

7833

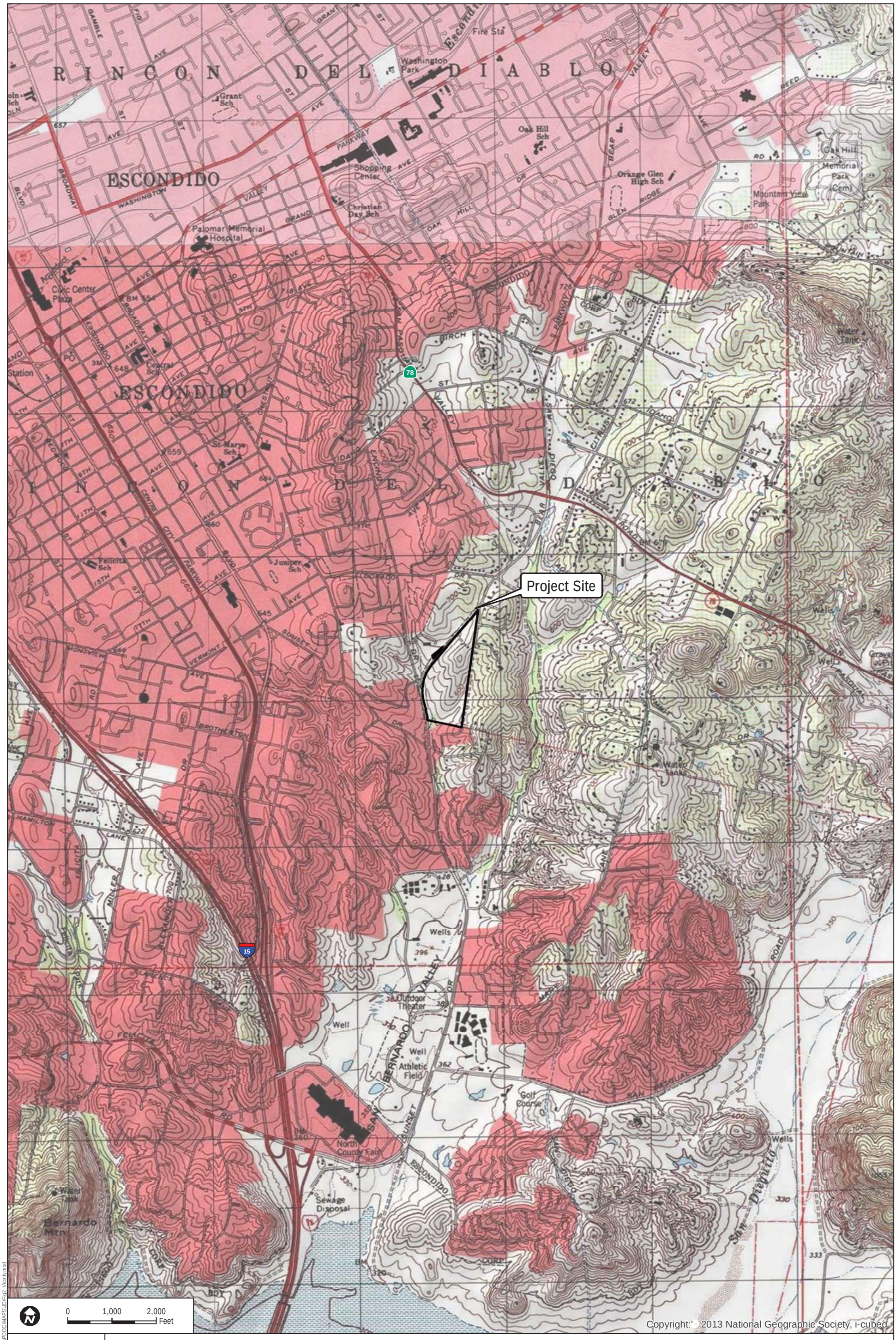
DECEMBER 2014

**FIGURE 1**

**Regional Map**

Bear Valley Parkway Project

Path: Z:\Projects\7833\01\MAPDOC\MAPS\DEIR\01 Regional.mxd




SOURCE: USGS 7.5-Minute Series Escondido Quadrangle.

**FIGURE 2**

## Vicinity Map

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Bear Valley Parkway Project

Path: Z:\Projects\7833\01\MAPDOC\MAPS\DEIR2_Vicinity.mxd

SOURCE: National Hydrography Dataset

**FIGURE 3**

## Watershed Map

Bear Valley Parkway Project

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Z:\Projects\7833011\MAPDOC\MAPS\JDF\fig3_Watershed.mxd

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7833

DECEMBER 2013

SOURCE: World Imagery, SANGIS

**FIGURE 4**

## Biological Resources

Bear Valley Parkway Project

Path: Z:\Projects\7833\11MAPDOC\MAPS\VDP\Fig4_JD.mxd

# APPENDIX A

*Wetland Determination Data Forms*

# WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Bear Valley Parkway | City/County: Escondido, San Diego | Sampling Date: 5/23/2013

Applicant/Owner: Spieth-Wohlford, Inc./Burnet Wohlford | State: CA | Sampling Point: 1

Investigator(s): Callie Ford | Section, Township, Range: Section 26, T12S, R2W

Landform (hillslope, terrace, etc.): Channel | Local relief (concave, convex, none): None | Slope (%): 0

Subregion (LRR): C - Mediterranean California | Lat: 33.0955 | Long: 117.0573 | Datum:

Soil Map Unit Name: Ramona sandy loam, 9 to 15 percent slopes, eroded | NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ( ) | No (●) | |
| Hydric Soil Present? | Yes ( ) | No (●) | **Is the Sampled Area within a Wetland?** Yes ( ) No (●) |
| Wetland Hydrology Present? | Yes (●) | No ( ) | |

Remarks: Data station taken in low flow channel of a primarily unvegetated stream channel.

## VEGETATION

| Tree Stratum (Use scientific names.) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *n/a* | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| Total Cover: | % | | |
| **Sapling/Shrub Stratum** | | | |
| 1. *Ricinus communis* | 20 | Yes | FACU |
| 2. *Mimulus aurantiacus* | 10 | No | Not Listed |
| 3. *Nicotiana glauca* | 5 | No | FAC |
| 4. *Opuntia littoralis* | 5 | No | Not Listed |
| 5. *Opuntia ficus indica* | 5 | No | Not Listed |
| Total Cover: | 45 % | | |
| **Herb Stratum** | | | |
| 1. *Hirschfeldia incana* | 15 | Yes | Not Listed |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| Total Cover: | 15 % | | |
| **Woody Vine Stratum** | | | |
| 1. *n/a* | | | |
| 2. | | | |
| Total Cover: | % | | |

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | 0 |
| FACW species | | x 2 = | 0 |
| FAC species | 5 | x 3 = | 15 |
| FACU species | 20 | x 4 = | 80 |
| UPL species | 35 | x 5 = | 175 |
| Column Totals: | 60 (A) | | 270 (B) |

Prevalence Index = B/A = 4.50

**Hydrophytic Vegetation Indicators:**

- [ ] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

**Hydrophytic Vegetation Present?** Yes ( ) No (●)

Remarks: Vegetation present is sparse and consist of non-native species.

## SOIL

Sampling Point: 1

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture[3] | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-4 | 7.5 YR 3/4 | 100 | | | | | Loamy sand | |
| 4-20 | 7.5 YR 3/3 | 100 | | | | | sand | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils:[4]**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**

Type:

Depth (inches):

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

**Wetland Hydrology Present?** Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Data station located within an ephemeral stream channel that has been created by erosive soil conditions.

# WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Bear Valley Parkway | City/County: Escondido, San Diego | Sampling Date: 5/23/2013

Applicant/Owner: Spieth-Wohlford, Inc./Burnet Wohlford | State: CA | Sampling Point: 2

Investigator(s): Callie Ford | Section, Township, Range: Section 26, T12S, R2W

Landform (hillslope, terrace, etc.): Channel | Local relief (concave, convex, none): None | Slope (%): 0

Subregion (LRR): C - Mediterranean California | Lat: 33.0956 | Long: 117.0587 | Datum:

Soil Map Unit Name: Steep gullied land | NWI classification: Stream/river

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (•) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (•) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ( ) | No (•) | |
| Hydric Soil Present? | Yes (•) | No ( ) | **Is the Sampled Area within a Wetland?** Yes ( ) No (•) |
| Wetland Hydrology Present? | Yes (•) | No ( ) | |

Remarks: Data station taken in a perennial channel located within an oak woodland understory.

## VEGETATION

| Tree Stratum (Use scientific names.) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| Total Cover: | % | | |
| **Sapling/Shrub Stratum** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| Total Cover: | % | | |
| **Herb Stratum** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| Total Cover: | % | | |
| **Woody Vine Stratum** | | | |
| 1. | | | |
| 2. | | | |
| Total Cover: | % | | |

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | 0 |
| FACW species | | x 2 = | 0 |
| FAC species | | x 3 = | 0 |
| FACU species | | x 4 = | 0 |
| UPL species | | x 5 = | 0 |
| Column Totals: | (A) | | 0 (B) |

Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

- [ ] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

**Hydrophytic Vegetation Present?** Yes ( ) No (•)

Remarks: Data station is located within a perennial creek. There is no vegetation within the creek. The creek is located under a canopy of coast live oaks (Quercus agrifolia) with some palm trees (Washingtonia robusta)

## SOIL

Sampling Point: 2

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture[3] | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-20 | 7.5 YR 4/4 | 100 | | | | | sand | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils:[4]**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☒ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**

Type:

Depth (inches):

**Hydric Soil Present?** Yes ◉ No ○

Remarks: Since the data station is located within a perennial creek, hydric soils are assumed present despite the lack of indicators.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ◉ No ○ Depth (inches): 3"

Water Table Present? Yes ◉ No ○ Depth (inches): 0"

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

**Wetland Hydrology Present?** Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Data station is located within a perennial stream channel which is listed in the National Hydrography Dataset as a Stream/ river.

# WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Bear Valley Parkway | City/County: Escondido, San Diego | Sampling Date: 3/21/14

Applicant/Owner: Spieth-Wohlford, Inc./Burnet Wohlford | State: CA | Sampling Point: 3a

Investigator(s): Callie Ford and Patricia Schuyler | Section, Township, Range: Section 26, T12S, R2W

Landform (hillslope, terrace, etc.): Bank | Local relief (concave, convex, none): None | Slope (%): 0

Subregion (LRR): C - Mediterranean California | Lat: | Long: | Datum:

Soil Map Unit Name: Steep gullied land | NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ( ) | No (●) | |
| Hydric Soil Present? | Yes ( ) | No (●) | **Is the Sampled Area within a Wetland?** Yes ( ) No (●) |
| Wetland Hydrology Present? | Yes ( ) | No (●) | |

Remarks: Data station taken on bank above channel in oak woodland.

## VEGETATION

| Tree Stratum (Use scientific names.) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Quercus agrifolia* | 60 | Yes | Not Listed |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| Total Cover: | 60 % | | |
| **Sapling/Shrub Stratum** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| Total Cover: | % | | |
| **Herb Stratum** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| Total Cover: | % | | |
| **Woody Vine Stratum** | | | |
| 1. *Toxicodendron diversilobum* | 10 | Yes | FACU |
| 2. | | | |
| Total Cover: | 10 % | | |

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust 100%

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | 0 |
| FACW species | | x 2 = | 0 |
| FAC species | | x 3 = | 0 |
| FACU species | 10 | x 4 = | 40 |
| UPL species | 60 | x 5 = | 300 |
| Column Totals: | 70 (A) | | 340 (B) |

Prevalence Index = B/A = 4.86

**Hydrophytic Vegetation Indicators:**

- (●) Dominance Test is >50%
- (●) Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

**Hydrophytic Vegetation Present?** Yes ( ) No (●)

Remarks: Data station is located on the bank above the perennial creek. Vegetation is dominated by oaks with leaf litter covering the ground.

## SOIL

Sampling Point: 3a

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture[3] | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-16 | 10YR 3/3 | 100 | | | | | silty loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils:[4]**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**

Type:

Depth (inches):

**Hydric Soil Present?** Yes ○ No ◉

Remarks: No indicators of hydric soils with the data station.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

**Wetland Hydrology Present?** Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No signs of hydrology associated with the data station.

# WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Bear Valley Parkway | City/County: Escondido, San Diego | Sampling Date: 3/21/14

Applicant/Owner: Spieth-Wohlford, Inc./Burnet Wohlford | State: CA | Sampling Point: 3b

Investigator(s): Callie Ford and Patricia Schuyler | Section, Township, Range: Section 26, T12S, R2W

Landform (hillslope, terrace, etc.): Channel | Local relief (concave, convex, none): None | Slope (%): 0

Subregion (LRR): C - Mediterranean California | Lat: | Long: | Datum:

Soil Map Unit Name: Steep gullied land | NWI classification: Stream/river

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ( ) | No (●) | |
| Hydric Soil Present? | Yes (●) | No ( ) | **Is the Sampled Area within a Wetland?** Yes ( ) No (●) |
| Wetland Hydrology Present? | Yes (●) | No ( ) | |

Remarks: Data station taken in channel within oak woodland canopy.

## VEGETATION

| Tree Stratum (Use scientific names.) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Phoenix dactylifera* | 5 | Yes | Not Listed |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| Total Cover: | 5 % | | |
| **Sapling/Shrub Stratum** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| Total Cover: | % | | |
| **Herb Stratum** | | | |
| 1. | | | Not Listed |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| Total Cover: | % | | |
| **Woody Vine Stratum** | | | |
| 1. | | | |
| 2. | | | |
| Total Cover: | % | | |

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | 0 |
| FACW species | | x 2 = | 0 |
| FAC species | | x 3 = | 0 |
| FACU species | | x 4 = | 0 |
| UPL species | 5 | x 5 = | 25 |
| Column Totals: | 5 (A) | | 25 (B) |

Prevalence Index = B/A = 5.00

**Hydrophytic Vegetation Indicators:**

- (●) Dominance Test is >50%
- (●) Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

**Hydrophytic Vegetation Present?** Yes ( ) No (●)

Remarks: Data station is located within a perennial creek . Only vegetation within this portion of the channel is a large date palm (Phoenix dactylifera).

## SOIL

Sampling Point: 3b

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture[3] | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-18 | 7.5 YR 3/3 | 20 | | | | | sand | |
| 0-18 | 7.5 YR 4/4 | 40 | | | | | sand | |
| 0-18 | 7.5 YR 5/6 | 40 | | | | | sand | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils:[4]**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☒ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**

Type:

Depth (inches):

**Hydric Soil Present?** Yes ◉ No ○

Remarks: Since the data station is located within a perennial creek, hydric soils are assumed present despite the lack of indicators.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ◉ | No ○ | Depth (inches): | 3" |
| Water Table Present? | Yes ◉ | No ○ | Depth (inches): | 0" |
| Saturation Present? (includes capillary fringe) | Yes ○ | No ◉ | Depth (inches): | 0" |

**Wetland Hydrology Present?** Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Data station within perennial creek with approximately 3 inches of running water.

# WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Bear Valley Parkway City/County: Escondido, San Diego Sampling Date: 3/21/14

Applicant/Owner: Spieth-Wohlford, Inc./Burnet Wohlford State: CA Sampling Point: 4a

Investigator(s): Callie Ford and Patricia Schuyler Section, Township, Range: Section 26, T12S, R2W

Landform (hillslope, terrace, etc.): Channel Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: Long: Datum:

Soil Map Unit Name: Ramona sandy loam, 2% to 5% slopes NWI classification: Stream/River

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ○ | No ◉ | |
| Hydric Soil Present? | Yes ◉ | No ○ | **Is the Sampled Area within a Wetland?** Yes ○ No ◉ |
| Wetland Hydrology Present? | Yes ◉ | No ○ | |

Remarks: Data station taken in a 6-foot wide channel within oak woodland canopy.

## VEGETATION

| Tree Stratum (Use scientific names.) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| Total Cover: | % | | |
| **Sapling/Shrub Stratum** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| Total Cover: | % | | |
| **Herb Stratum** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| Total Cover: | % | | |
| **Woody Vine Stratum** | | | |
| 1. | | | |
| 2. | | | |
| Total Cover: | % | | |

% Bare Ground in Herb Stratum % % Cover of Biotic Crust %

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | 0 |
| FACW species | | x 2 = | 0 |
| FAC species | | x 3 = | 0 |
| FACU species | | x 4 = | 0 |
| UPL species | | x 5 = | 0 |
| Column Totals: | (A) | | 0 (B) |

Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

**Hydrophytic Vegetation Present?** Yes ○ No ◉

Remarks: Data station is located within a perennial creek. There is no vegetation within the creek. The creek is located under a canopy of coast live oaks (Quercus agrifolia).

## SOIL

Sampling Point: 4a

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture[3] | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-18 | 7.5 YR 3/3 | 20 | | | | | sand | |
| 0-18 | 7.5 YR 4/4 | 40 | | | | | sand | |
| 0-18 | 7.5 YR 5/6 | 40 | | | | | sand | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils:[4]**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**

Type:

Depth (inches):

**Hydric Soil Present?** Yes ◉ No ○

Remarks: Since the data station is located within a perennial creek, hydric soils are assumed present despite the lack of indicators.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ◉ | No ○ | Depth (inches): | 3" |
| Water Table Present? | Yes ◉ | No ○ | Depth (inches): | 0" |
| Saturation Present? (includes capillary fringe) | Yes ◉ | No ○ | Depth (inches): | 0" |

**Wetland Hydrology Present?** Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Data station within perennial creek.

# WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Bear Valley Parkway | City/County: Escondido, San Diego | Sampling Date: 3/21/14

Applicant/Owner: Spieth-Wohlford, Inc./Burnet Wohlford | State: CA | Sampling Point: 4b

Investigator(s): Callie Ford and Patricia Schuyler | Section, Township, Range: Section 26, T12S, R2W

Landform (hillslope, terrace, etc.): none | Local relief (concave, convex, none): None | Slope (%): 0

Subregion (LRR): C - Mediterranean California | Lat: | Long: | Datum:

Soil Map Unit Name: Ramona sandy loam, 2% to 5% slopes | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes (●) | No ( ) | |
| Hydric Soil Present? | Yes (●) | No ( ) | **Is the Sampled Area within a Wetland?** Yes (●) No ( ) |
| Wetland Hydrology Present? | Yes (●) | No ( ) | |

Remarks: Data station taken adjacent to the 6-foot wide channel within a stand of palm trees. Area is mapped as non-native riparian.

## VEGETATION

| Tree Stratum (Use scientific names.) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Washingtonia robusta* | 80 | Yes | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| Total Cover: | 80 % | | |
| **Sapling/Shrub Stratum** | | | |
| 1. *Ficus carica* | 2 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| Total Cover: | 2 % | | |
| **Herb Stratum** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| Total Cover: | % | | |
| **Woody Vine Stratum** | | | |
| 1. | | | |
| 2. | | | |
| Total Cover: | % | | |

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 % (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | 0 |
| FACW species | 80 | x 2 = | 160 |
| FAC species | | x 3 = | 0 |
| FACU species | 2 | x 4 = | 8 |
| UPL species | | x 5 = | 0 |
| Column Totals: | 82 (A) | | 168 (B) |

Prevalence Index = B/A = 2.05

**Hydrophytic Vegetation Indicators:**

- [ ] Dominance Test is >50%
- [x] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

**Hydrophytic Vegetation Present?** Yes (●) No ( )

Remarks: Data station is located immediately adjacent to the perennial creek in an area dominated palm trees.

## SOIL

Sampling Point: 4b

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture[3] | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-18 | 7.5 YR 3/3 | 20 | | | | | sand | |
| 0-18 | 7.5 YR 4/4 | 40 | | | | | sand | |
| 0-18 | 7.5 YR 5/6 | 40 | | | | | sand | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils:[4]**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☒ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**

Type:

Depth (inches):

**Hydric Soil Present?** Yes ◉ No ○

Remarks: Despite the lack of indicators, hydric soils are assumed present due to the presence of water within the soil pit.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☒ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ○ | No ◉ | Depth (inches): |
| Water Table Present? | Yes ◉ | No ○ | Depth (inches): 10" |
| Saturation Present? (includes capillary fringe) | Yes ◉ | No ○ | Depth (inches): 3" |

**Wetland Hydrology Present?** Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Water present within soil pit.

## WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Bear Valley Parkway | City/County: Escondido, San Diego | Sampling Date: 3/21/14

Applicant/Owner: Spieth-Wohlford, Inc./Burnet Wohlford | State: CA | Sampling Point: 4c

Investigator(s): Callie Ford and Patricia Schuyler | Section, Township, Range: Section 26, T12S, R2W

Landform (hillslope, terrace, etc.): Slight terrace | Local relief (concave, convex, none): None | Slope (%): 0

Subregion (LRR): C - Mediterranean California | Lat: | Long: | Datum:

Soil Map Unit Name: Ramona sandy loam, 2% to 5% slopes | NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ( ) | No (●) | |
| Hydric Soil Present? | Yes ( ) | No (●) | **Is the Sampled Area within a Wetland?** Yes ( ) No (●) |
| Wetland Hydrology Present? | Yes ( ) | No (●) | |

Remarks: Data station taken on a slight terrace above DS 4b in an area that visually appears drier than the sample plot for DS 4b.

### VEGETATION

| Tree Stratum (Use scientific names.) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Quercus agrifolia* | 20 | Yes | Not Listed |
| 2. *Washingtonia robusta* | 10 | Yes | FACW |
| 3. | | | |
| 4. | | | |
| Total Cover: | 30 % | | |
| **Sapling/Shrub Stratum** | | | |
| 1. *Ficus carica* | 10 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| Total Cover: | 10 % | | |
| **Herb Stratum** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| Total Cover: | % | | |
| **Woody Vine Stratum** | | | |
| 1. *Toxicodendron diversilobum* | 5 | Yes | FACU |
| 2. | | | |
| Total Cover: | 5 % | | |

% Bare Ground in Herb Stratum % | % Cover of Biotic Crust %

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0 % (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | 0 |
| FACW species | 10 | x 2 = | 20 |
| FAC species | | x 3 = | 0 |
| FACU species | 15 | x 4 = | 60 |
| UPL species | 20 | x 5 = | 100 |
| Column Totals: | 45 (A) | | 180 (B) |

Prevalence Index = B/A = 4.00

**Hydrophytic Vegetation Indicators:**

- [ ] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

**Hydrophytic Vegetation Present?** Yes ( ) No (●)

Remarks: Data station is located outside of the perennial creek and non-native riparian.

## SOIL

Sampling Point: 4c

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture[3] | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-16 | 7.5 YR 3/4 | 100 | | | | | sand | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils:[4]**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**

Type: roots

Depth (inches): 16

**Hydric Soil Present?** Yes ○ No ◉

Remarks: No indicators of hydric soils with the data station.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

**Wetland Hydrology Present?** Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No signs of hydrology associated with the data station.

# APPENDIX B

*Significant Nexus Analysis Forms*
*(TO BE PROVIDED DURING PERMITTING)*

# APPENDIX C

*Vascular Plant Species Observed in the Study Area*

# APPENDIX C
# Vascular Plant Species Observed in the Study Area

## VASCULAR SPECIES

### DICOTS

***ANACARDIACEAE—SUMAC OR CASHEW FAMILY***

* *Schinus molle*—Peruvian peppertree
*Toxicodendron diversilobum*—Pacific poison oak

***APIACEAE—CARROT FAMILY***

* *Foeniculum vulgare*—sweet fennel

***ASTERACEAE—SUNFLOWER FAMILY***

* *Cynara cardunculus*—cardoon
* *Erigeron bonariensis*—asthmaweed
* *Glebionis coronaria*—crowndaisy
*Isocoma menziesii*—Menzies' goldenbush
*Baccharis salicifolia* ssp. *salicifolia*—mulefat
* *Carduus pycnocephalus*—Italian plumeless thistle

***BORAGINACEAE—BORAGE FAMILY***

*Phacelia adenophora*—glandular yellow phacelia

***BRASSICACEAE—MUSTARD FAMILY***

* *Brassica nigra*—black mustard
* *Hirschfeldia incana*—shortpod mustard
* *Raphanus sativus*—cultivated radish

***CACTACEAE—CACTUS FAMILY***

* *Opuntia ficus-indica*—Barbary fig
*Opuntia littoralis*—coastal pricklypear

***CHENOPODIACEAE—GOOSEFOOT FAMILY***

*Atriplex canescens*—fourwing saltbush

***EUPHORBIACEAE—SPURGE FAMILY***

* *Ricinus communis*—castorbean

***FAGACEAE—OAK FAMILY***

*Quercus agrifolia*—California live oak

***LAMIACEAE—MINT FAMILY***

* *Marrubium vulgare*—horehound

***MORACEAE—MULBERRY FAMILY***

* *Ficus carica*—edible fig

***PHRYMACEAE—LOPSEED FAMILY***

*Mimulus aurantiacus*—orange bush monkeyflower

***PLATANACEAE—PLANE TREE, SYCAMORE FAMILY***

*Platanus racemosa*—California sycamore

***SALICACEAE—WILLOW FAMILY***

*Salix exigua*—narrowleaf willow

*Salix gooddingii*—Goodding's willow

*Salix lasiolepis*—arroyo willow

***SOLANACEAE—NIGHTSHADE FAMILY***

* *Nicotiana glauca*—tree tobacco

*Datura wrightii*—sacred thorn-apple

***TAMARICACEAE—TAMARISK FAMILY***

* *Tamarix aphylla*—Athel tamarisk

**MONOCOTS**

***ARECACEAE—PALM FAMILY***

* *Washingtonia robusta*—Washington fan palm

* *Phoenix dactylifera*—date palm

***POACEAE—GRASS FAMILY***

* *Arundo donax*—giant reed

* *Bromus diandrus*—ripgut brome

* *Digitaria sanguinalis*—hairy crabgrass

* signifies introduced (non-native) species

# Appendix C Bear Valley Parkway Specific Alignment Plan Biological Resources Technical Report (October 2016)

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# Bear Valley Parkway Specific Alignment Plan
# Biological Technical Report
# San Diego County, California

*Prepared for:*

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**OCTOBER 2016**

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# TABLE OF CONTENTS

**Section** **Page No.**

**ACRONYMS AND ABBREVIATIONS** ..... **V**

**SUMMARY OF FINDINGS** ..... **VII**

**1 INTRODUCTION** ..... **1**

**2 PROJECT SETTING** ..... **7**

2.1 Environmental Setting ..... 7

2.1.1 Soils ..... 7

2.1.2 Hydrology ..... 7

2.2 Applicable Regulations ..... 8

2.2.1 Federal ..... 8

2.2.2 State ..... 14

2.2.3 Local/City of Escondido ..... 17

**3 METHODS** ..... **21**

3.1 Literature Review ..... 21

3.2 Field Reconnaissance ..... 21

3.2.1 Resource Mapping ..... 21

3.2.2 Flora ..... 22

3.2.3 Fauna ..... 22

3.2.4 Jurisdictional Wetlands Delineation ..... 22

**4 RESULTS OF SURVEY** ..... **27**

4.1 Botany – Plant Communities and Floral Diversity ..... 27

4.1.1 Southern Coast Live Oak Riparian Forest (61310) ..... 27

4.1.2 Disturbed Habitat (11300) ..... 27

4.1.3 Developed Land (12000) ..... 28

4.1.4 Floral Diversity ..... 28

4.2 Zoology – Wildlife Diversity ..... 28

4.2.1 Birds ..... 28

4.2.2 Reptiles and Amphibians ..... 29

4.2.3 Mammals ..... 29

4.2.4 Invertebrates ..... 29

4.3 Special-Status Biological Resources/Regulated Resources ..... 29

4.3.1 Special-Status Plant Species ..... 30

4.3.2 Special-Status Wildlife Species ..... 30

# TABLE OF CONTENTS (CONTINUED)

**Section** **Page No.**

4.3.3 Wildlife Corridors and Habitat Linkages ..... 31
4.3.4 Jurisdictional Aquatic Resources ..... 32

**5 ANTICIPATED PROJECT IMPACTS ..... 33**
5.1 Direct Impacts ..... 33
5.1.1 Vegetation Communities ..... 33
5.1.2 Special-Status Plants ..... 33
5.1.3 Special-Status Wildlife ..... 34
5.1.4 Habitat Linkages/Wildlife Corridors ..... 34
5.1.5 Jurisdictional Aquatic resources ..... 34
5.2 Indirect Impacts ..... 35
5.2.1 Vegetation Communities and Special-Status Plants ..... 35
5.2.2 Special-Status Wildlife ..... 36
5.2.3 Habitat Linkages/Movement Corridors ..... 38
5.2.4 Jurisdictional Aquatic Resources ..... 39

**6 ANALYSIS OF SIGNIFICANCE ..... 41**
6.1 Explanation of Findings of Significance ..... 41
6.2 Vegetation Communities ..... 42
6.3 Special-Status Plants ..... 43
6.4 Special-Status Wildlife ..... 43
6.5 Habitat Linkages/Wildlife Corridors ..... 44
6.6 Jurisdictional Aquatic Resources ..... 44

**7 MITIGATION ..... 47**
7.1 Vegetation Communities ..... 47
7.2 Special-Status Plants ..... 47
7.3 Special-Status Wildlife ..... 47
7.4 Habitat Linkages/Wildlife Corridors ..... 48
7.5 Jurisdictional Aquatic Resources ..... 48

**8 ACKNOWLEDGMENTS ..... 49**

**9 LITERATURE CITED ..... 51**

# TABLE OF CONTENTS (CONTINUED)

**Page No.**

## APPENDICES

A Vascular Plant Species Observed within the Project Boundary
B Cumulative List of Wildlife Species Observed within the Project Boundary
C Special-Status Plant Species Potential to Occur
D Special-Status Wildlife Potential to Occur
E Routine Wetland Determination Data Forms

## FIGURES

1 Regional Map ..... 3
2 Vicinity Map ..... 5
3 Hydrologic Setting ..... 9
4 Subarea Plan ..... 19
5 Biological Resources ..... 25

## TABLES

1 Impacts to Vegetation Communities and Land Covers ..... 27
2 Jurisdictional Aquatic Resources ..... 32

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# ACRONYMS AND ABBREVIATIONS

| Acronyms/Abbreviations | Definition |
|---|---|
| ACOE | U.S. Army Corps of Engineers |
| BCLA | Biological Core and Linkage Area |
| BMP | best management practice |
| CCR | California Code of Regulations |
| CDFW | California Department of Fish and Wildlife |
| CEQA | California Environmental Quality Act |
| CESA | California Endangered Species Act |
| CFR | Code of Federal Regulations |
| CNDDB | California Natural Diversity Database |
| CNPS | California Native Plant Society |
| CRPR | California Rare Plant Rank |
| CWA | Clean Water Act |
| EIR | environmental impact report |
| EIS | Environmental Impact Statement |
| EPA | U.S. Environmental Protection Agency |
| FESA | Federal Endangered Species Act |
| FPA | Focused Planning Area |
| GIS | geographic information system |
| HCP | habitat conservation plan |
| I-5 | Interstate 5 |
| MHCP | Multiple Habitat Conservation Program |
| MM | mitigation measure |
| NCCP | Natural Community Conservation Planning |
| RWQCB | Regional Water Quality Control Board |
| Subarea Plan | Public Review Draft Escondido Subarea Plan |
| U.S.C. | United States Code |
| USDA | U.S. Department of Agriculture |
| USFWS | U.S. Fish and Wildlife Service |
| USGS | U.S. Geological Survey |

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## SUMMARY OF FINDINGS

The Bear Valley Parkway Specific Alignment Plan has an approximately 2.60-acre project boundary in the City of Escondido, California. Biological surveys of the project boundary conducted by Dudek in 2016 included a reconnaissance-level field survey and a formal jurisdictional delineation.

The purpose of this biological resource technical report is to map and assess the existing vegetation communities and, if necessary, survey for plant and animal species recognized as special-status by local, state, or federal wildlife agencies (i.e., the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW)). Following the surveys, direct and indirect impacts to vegetation communities and special-status species that could occur as a result of the proposed project were evaluated. This report describes the biological characteristics of the project boundary; provides an analysis of direct and indirect impacts based on the proposed project; analyzes the biological significance of the proposed project under the California Environmental Quality Act (CEQA); and discusses mitigation measures, which will reduce significant impacts to a level below significant.

There are three vegetation communities/land covers mapped on site: southern coast live oak riparian forest, disturbed habitat, and developed land. The southern coast live oak riparian forest is associated with an unvegetated stream channel and therefore regulated through the California Fish and Game Code, Section 1600–1602, and is considered jurisdictional by the CDFW.

No special-status plant species were documented on site. There is one species with moderate potential to occur: San Diego ambrosia (*Ambrosia pumila*).

No special-status wildlife species were detected on site during the surveys. There are eight special-status wildlife species that have a moderate or high potential to occur based on habitat types and species' range. While some raptors are not considered special status and are fairly common in Southern California, raptors, as a group, are considered special status, and Section 3503.5 of the California Fish and Game Code specifically prohibits the unauthorized take of raptors and raptor nests.

Implementation of the proposed project would result in direct impacts to 2.60 acres of vegetation communities and land cover, including significant direct impacts to 0.19 acre of southern live oak riparian forest, and potential impacts associated with direct or indirect impacts to nesting birds protected under the Migratory Bird Treaty Act. The impacts to 0.19 acre of southern live oak riparian forest will be mitigated through at 1:1 to 3:1 mitigation ratio as directed by *Final Multiple Habitat Conservation Program* (SANDAG 2003, Volume 1,

Table 4-7) and as anticipated by the CDFW. These impacts will be mitigated through establishment and enhancement of habitat within an approved mitigation area or through a mitigation bank. Potential impacts to nesting birds will be mitigated through pre-construction nesting bird surveys and setbacks. Impacts to disturbed habitat or developed lands are not considered significant and do not require mitigation.

# 1 INTRODUCTION

The Bear Valley Parkway Specific Alignment Plan has an approximately 2.60-acre project boundary in the City of Escondido, San Diego County, California. The project is located in southeast Escondido, approximately 1.5 miles east of Interstate 15 (I-5) and south of State Route 78/San Pasqual Valley Road (Figure 1). The project boundary is located on the U.S. Geological Survey (USGS) 7.5-minute Escondido quadrangle map in Section 26, Township 12S, and Range 2W (Figure 2). Dudek conducted a biological reconnaissance survey in June 2016 and a formal jurisdictional delineation in July 2016.

The purpose of this biological resource technical report is to map and assess the existing vegetation communities and describe the potential for plant and animal species recognized as special status by local, state, or federal wildlife agencies (i.e., U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW)) to occur in the project boundary. Following the reconnaissance survey, direct and indirect impacts to vegetation communities and special-status species that would occur as a result of the proposed project were evaluated. This report describes the biological characteristics of the project boundary; provides an analysis of direct and indirect impacts based on the proposed project; analyzes the biological significance of the proposed project under the California Environmental Quality Act (CEQA); and discusses mitigation measures, which will reduce significant impacts to a level below significant.

**Proposed Project**

The Specific Alignment Plan addresses the ultimate roadway network improvements along Bear Valley Parkway from the City of Escondido's northern boundary (just south of Choya Canyon Road) to the intersection of Bear Valley Parkway/Sunset Drive/Ranchito Drive. The Specific Alignment Plan includes the following future improvements not already evaluated in the 661 Bear Valley Parkway project biological technical report:

- Widen and improve Bear Valley Parkway to four lanes from the northern City boundary to the existing four-lane segment just north of the Bear Valley Parkway/Sunset Drive/Ranchito Drive signalized intersection.
- Signalize and realign the Bear Valley Parkway/Encino Drive unsignalized intersection.

In addition, a 5-foot concrete sidewalk will be installed, and a portion of the eastern side will include a vegetated swale per the U.S. Environmental Protection Agency (EPA) Green Streets guidance (EPA 2008) and installation of a safety fence.

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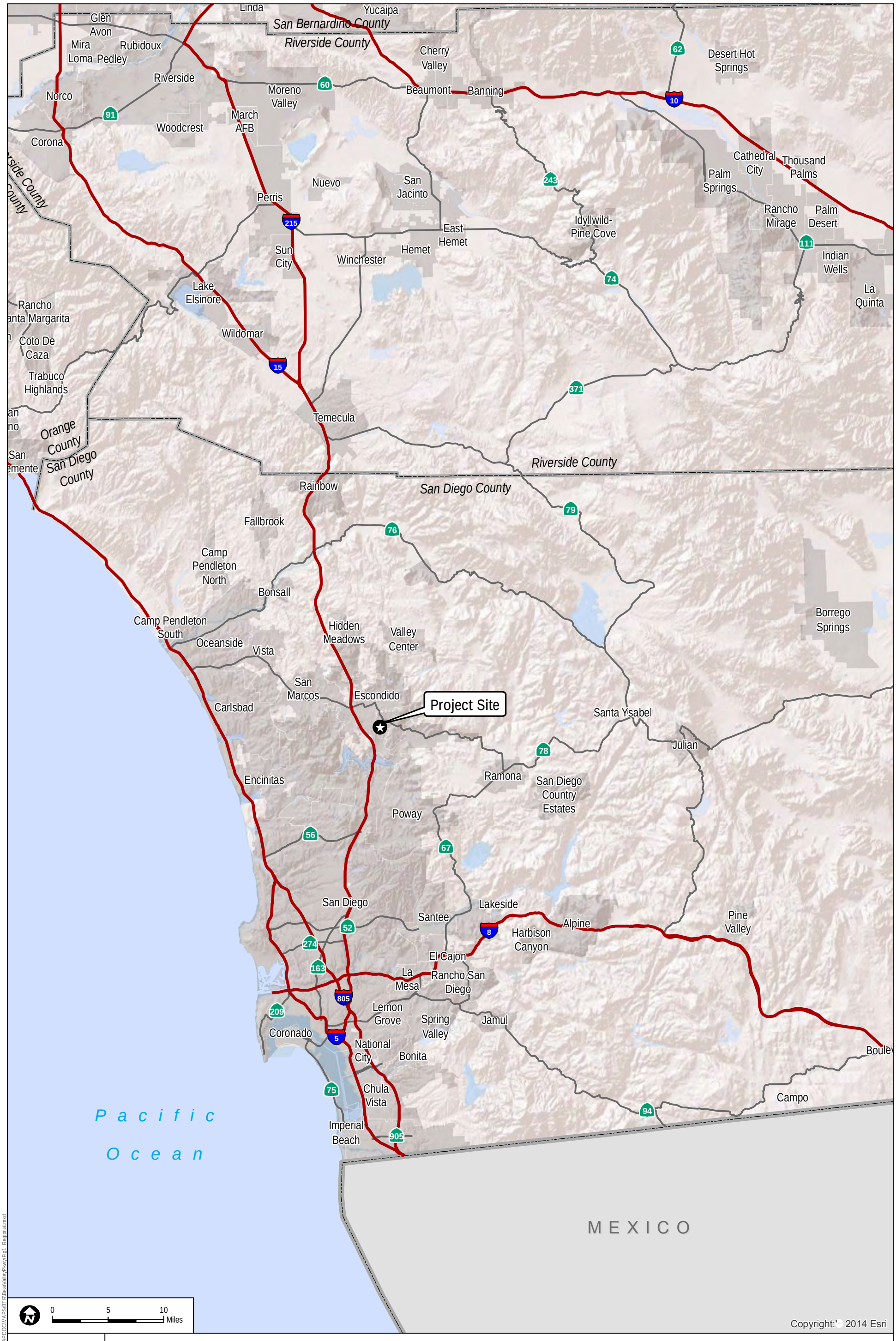


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**FIGURE 1**

**Regional Map**

Bear Valley Parkway Specific Alignment Plan Biological Technical Report

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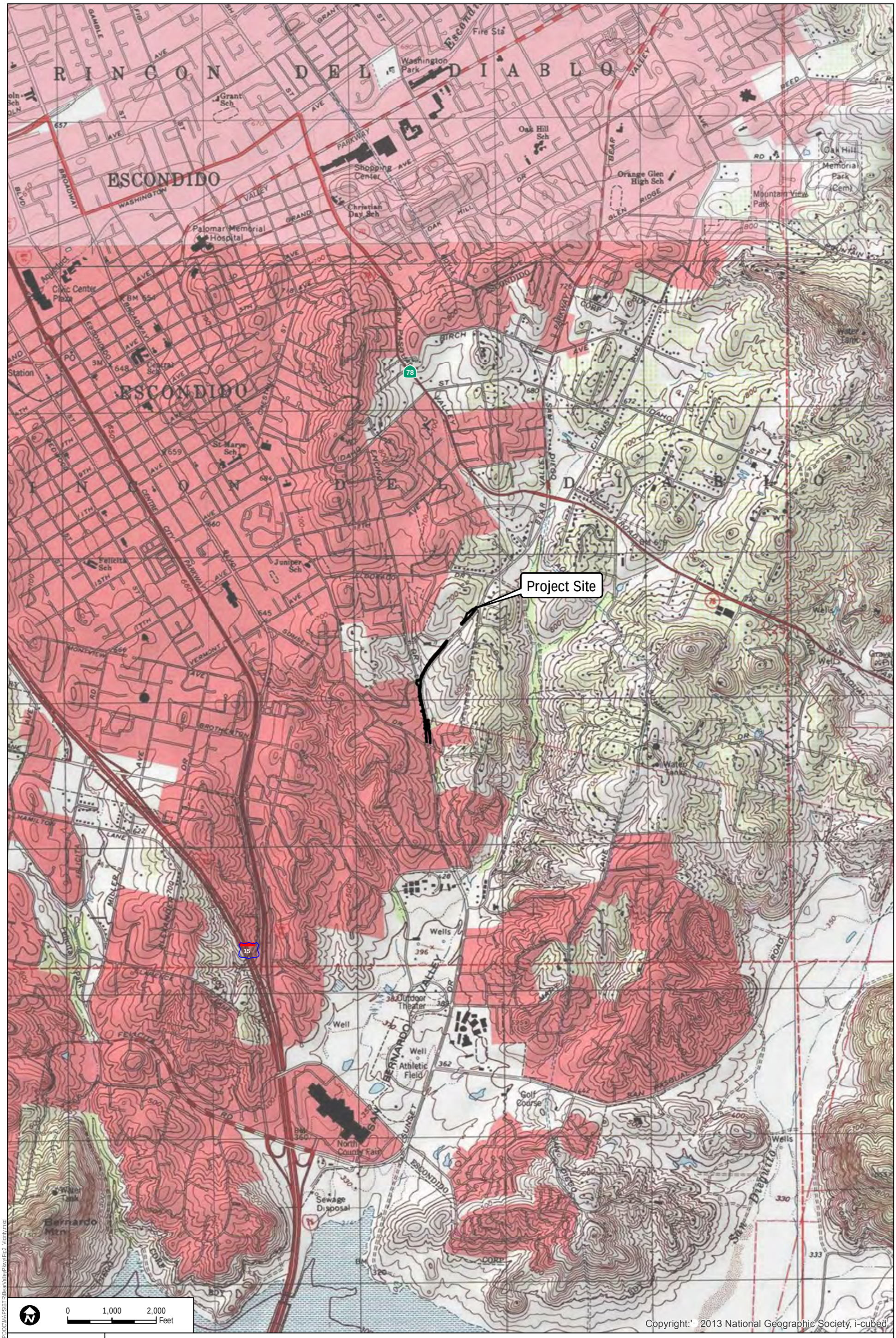


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SOURCE: USGS 7.5-Minute Series Escondido Quadrangle.

**FIGURE 2**

**Vicinity Map**

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Bear Valley Parkway Specific Alignment Plan Biological Technical Report

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# 2 PROJECT SETTING

## 2.1 Environmental Setting

The project boundary consists of Bear Valley Parkway and the alignment improvements immediately adjacent to it. The project boundary is located between Eldorado Road and Sunset Drive/Ranchito Drive. The property is located in a more rural part of Escondido (Figure 2).

The project boundary ranges from approximately 510 feet above mean sea level in the southern portion to 670 feet above mean sea level in the norther portion.

### 2.1.1 Soils

Soils on the site are mapped as Fallbrook sandy loam, 9% to 15% slopes, eroded; Ramona sandy loam, 5% to 9% slopes; Ramona sandy loam, 9% to 15% slopes, eroded; and steep gullied land (USDA 2016).

According to the Natural Resource Conservation Service, the Fallbrook series consists of deep, well-drained soils formed from weathered granitic rock. These soils occur on rolling hills and steeper slopes, and have a mean annual precipitation of approximately 15 inches (USDA 2016).

The Ramona series consists of mixed "fine-loamy" soils (USDA 2016). Ramona soils are found on flat to moderately steep slopes, with an annual precipitation of approximately 20 inches (USDA 2016).

Steep gullied land is described as "strongly sloping to steep areas that are actively eroding into old alluvium or decomposed rock" and supporting sparse vegetation (Bowman 1973).

### 2.1.2 Hydrology

The project boundary lies within the San Dieguito Hydrologic Unit (905.00), a rectangular-shaped area of approximately 350 square miles. This hydrologic unit lies between the San Luis Rey and Carlsbad Hydrologic Units to the north and San Diego River and Penasquitos Hydrologic Units to the south. The project boundary lies within the Hodges Hydrologic Area (905.20) within the Del Dios (905.21) and Bear Hydrologic Subareas (905.24). The project boundary is located on the border of the two subareas (Figure 3).

The San Dieguito Hydrologic Unit includes the San Dieguito River and its tributaries, including Santa Ysabel and Santa Maria Creeks. The San Dieguito Hydrologic Unit contains two major reservoirs, Lake Hodges and Sutherland Reservoir. The San Dieguito Lagoon is located at the

mouth of the San Dieguito River and forms the northerly boundary of the City of Del Mar. The lagoon is typically closed off from the ocean by a sandbar.

The National Hydrography Dataset identifies one tributary adjacent to the project boundary running from north to southeast of Bear Valley Parkway (USGS 2016). The USGS 7.5-minute quadrangle identifies this feature as a blue-line stream that is tributary to the Lake Hodges-San Dieguito River, which eventually flows into the Pacific Ocean. The tributary travels through a small portion of the project boundary, joins with a second stream approximately 0.6 mile south of the project boundary in and with the San Dieguito River approximately 2.7 miles south of the project boundary (Figure 3). The San Dieguito River then flows west into Lake Hodges and continues to the Pacific Ocean.

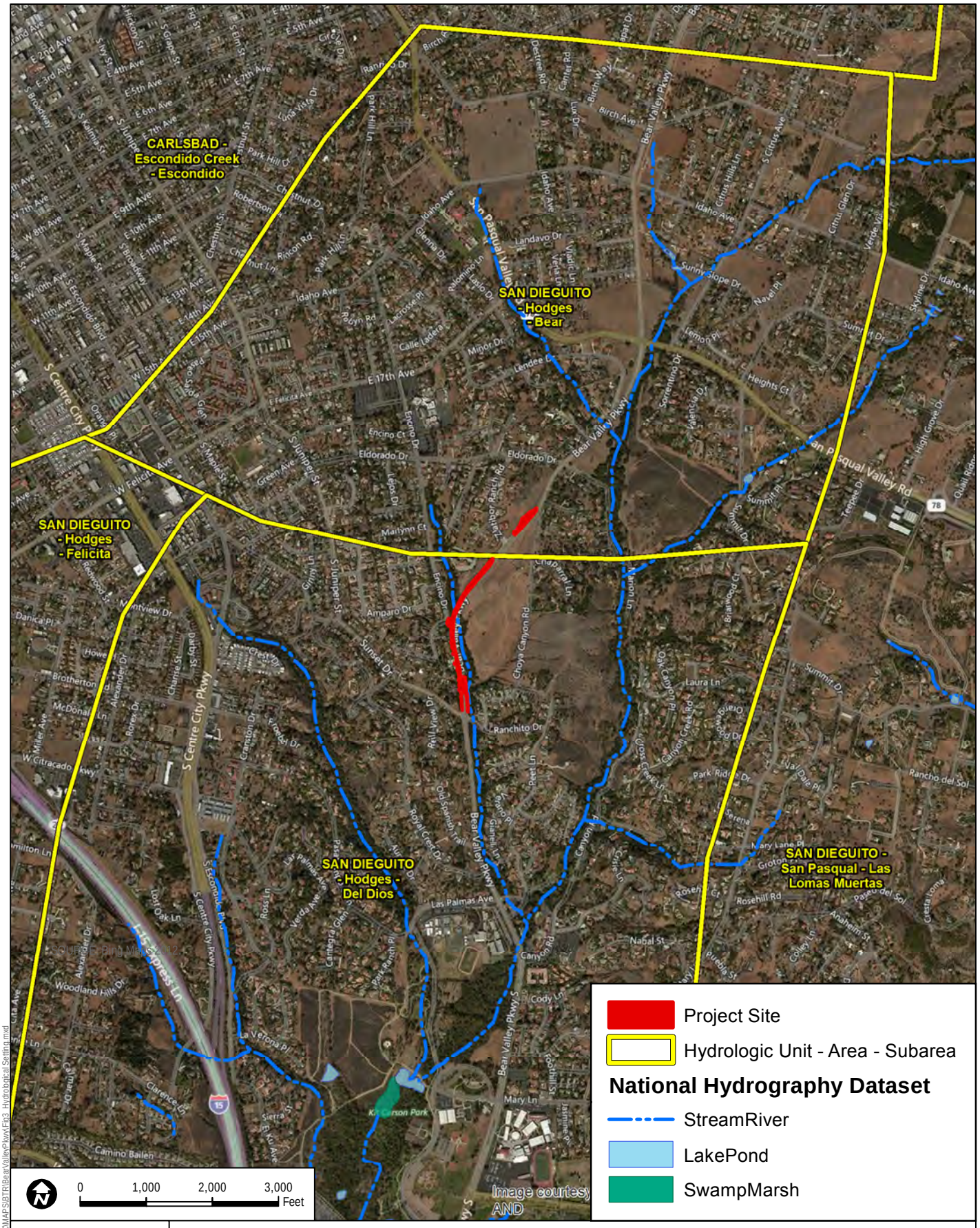
No other stream courses or water features were identified in the literature review. Section 3.2.4 describes the methods used to delineate jurisdictional aquatic resources on site, and Section 4.3.4 provides the results of these studies.

## 2.2 Applicable Regulations

### 2.2.1 Federal

**Clean Water Act**

The Clean Water Act (CWA) is intended to restore and maintain the quality and biological integrity of the nation's waters. Section 402 of the CWA prohibits the discharge of pollutants into waters of the United States from any point source, unless the discharge is in compliance with a National Pollutant Discharge Elimination System Permit. The CWA, Section 402, requires a National Pollutant Discharge Elimination System Permit for the discharge of stormwater from municipal separate storm sewer systems serving urban areas with a population greater than 100,000, construction sites that disturb 1 acre or more, and industrial facilities. The Regional Water Quality Control Board (RWQCB) administers these permits with oversight provided by the State Water Resources Control Board and EPA Region IX.




SOURCE: National Hydrography Dataset

**FIGURE 3**

## Hydrologic Setting

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Bear Valley Parkway Specific Alignment Plan Biological Technical Report

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Section 404 of the CWA authorizes the Secretary of the Army, acting through the U.S. Army Corps of Engineers (ACOE), to issue permits regulating the discharge of dredged or fill materials into the "navigable waters at specified disposal sites." CWA Section 502 further defines "navigable waters" as "waters of the United States, including territorial seas." "Waters of the United States" are broadly defined in the Code of Federal Regulations (CFR), Title 33, Section 328.3, Subdivision (a)[1] to include navigable waters; perennial and intermittent streams, lakes, rivers, and ponds; and wetlands, marshes, and wet meadows. Specifically, Section 328.3(a) defines waters of the United States as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters, including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters:
    i. Which are or could be used by interstate or foreign travelers for recreational or other purposes;
    ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    iii. Which are or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under the definition;
5. Tributaries of waters identified in paragraphs (a)(1) through (4) of this section;
6. The territorial seas; and
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1) through (6) of this section.

[1] This regulation, 33 CFR 328.3, and the definitions contained therein, have been the subject of recent litigation. In addition, the U.S. Supreme Court has recently addressed the scope and extent of the ACOE's jurisdiction over navigable waters and waters of the United States under the CWA. See *Solid Waste Agency of Northern Cook Cty.* v. *U.S. Army Corps of Engineers*, 531 U.S. 159 (2001) ("SWANCC") and *Rapanos* v. *United States*, 126 S. Ct. 2208 (ACOE and EPA 2008). Despite the impact of these recent decisions, the definitions continue to provide guidance to the extent that they establish an outer limit for the extent of the ACOE's jurisdiction over waters of the United States, and they are referenced here for that purpose.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition) are not waters of the United States.

8. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of CWA, the final authority regarding CWA jurisdiction remains with the EPA.

The lateral limits of the ACOE's CWA Section 404 jurisdiction in non-tidal waters are defined by the "ordinary high water mark," unless adjacent wetlands are present. The ordinary high water mark is a line on the shore or edge of a channel established by the fluctuations of water and indicated by physical characteristics, such as a clear, natural line impressed upon the bank, shelving, changes in the character of soil, destruction of vegetation, or presence of debris (33 CFR 328.3I). As such, waters are recognized in the field by the presence of a defined watercourse with appropriate physical and topographic features. If wetlands occur within, or adjacent to, waters of the United States, the lateral limits of the ACOE's jurisdiction will extend beyond the ordinary high water mark to the outer edge of the wetlands. The upstream limit of jurisdiction in the absence of adjacent wetlands is the point beyond which the ordinary high water mark is no longer perceptible (33 CFR 328.4).

Section 401 of the CWA requires that an applicant for a federal license or permit to discharge into navigable waters must provide the federal agency with a water quality certification, declaring that the discharge will comply with water quality standard requirements of the CWA. The ACOE is prohibited from issuing a CWA permit until the applicant receives a CWA Section 401 water quality certification or waiver from the RWQCB.

**Federal Endangered Species Act**

The federal Endangered Species Act (FESA) designates threatened and endangered animals and plants and provides measures for their protection and recovery. Under FESA, "take" of listed animal and plant species in areas under federal jurisdiction is prohibited without obtaining a federal permit. FESA defines "take" as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct" (16 U.S.C. 1531). Harm includes any act that actually kills or injures fish or wildlife, including significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife. Activities that damage (i.e., harm) the habitat of listed wildlife species require approval from USFWS for terrestrial species. If critical habitat has been designated under FESA for listed species, impacts to areas that contain the primary

constituent elements identified for the species, whether or not it is currently present, is also prohibited without obtaining a federal permit. FESA Sections 7 and 10 provide two pathways for obtaining permission to take listed species.

Under Section 7 of FESA, a federal agency that authorizes, funds, or carries out a project that "may affect" a listed species or its critical habitat must consult with the USFWS. For example, the ACOE must issue a permit for projects impacting waters or wetlands under ACOE jurisdiction. In a Section 7 consultation, the lead agency (e.g., ACOE) prepares a biological assessment that analyzes whether the project is likely to adversely affect listed wildlife or plant species or their critical habitat, and it proposes suitable avoidance, minimization, or compensatory mitigation measures. If the action would adversely affect the species, USFWS has up to 135 days to complete the consultation process and develop a biological opinion determining whether the project is likely to jeopardize the continued existing species or result in adverse modification of critical habitat. If a "no jeopardy" opinion is provided, "the action agency may proceed with the action as proposed, provided no incidental take is anticipated. If incidental take is anticipated, the agency or the applicant must comply with the reasonable and prudent measures and implementing terms and conditions in the Service's incidental take statement to avoid potential liability for any incidental take" (USFWS 1998). If a jeopardy or adverse modification opinion is provided, the USFWS may suggest "reasonable and prudent alternatives for eliminating the jeopardy or adverse modification of critical habitat in the opinion" or "choose to take other action if it believes, after a review of the biological opinion and the best available scientific information, such action satisfies section 7(a)(2)" (USFWS 1998).

Under Section 10 of FESA, private parties with no federal nexus may obtain an incidental take permit to harm listed wildlife species incidental to the lawful operation of a project. To obtain an incidental take permit, the applicant must develop a habitat conservation plan (HCP) that specifies impacts to listed species, provides minimization and mitigation measures and funding, and discusses alternatives considered and the reasons why such alternatives are not being used.

If the USFWS finds the HCP will not appreciably reduce the likelihood of the survival and recovery of the species, it will issue an incidental take permit. Issuance of incidental take permits requires the USFWS to conduct an internal Section 7 consultation, thus triggering coverage of any listed plant species or critical habitat present on site (thus listed plants on private property are protected under FESA if a listed animal is present). Unlike a Section 7 consultation, USFWS is not constrained by a time limit to issue an incidental take permit.

**Migratory Bird Treaty Act**

The Migratory Bird Treaty Act implements international treaties between the United States and other nations that protect migratory birds (including their eggs and nests) from killing, hunting,

pursuing, capturing, selling, and shipping, unless expressly authorized or permitted. The list of migratory birds is extensive, including American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), and northern mockingbird (*Mimus polyglottos*) (16 U.S.C. 703–712).

### 2.2.2 State

**California Endangered Species Act**

The CDFW administers the California Endangered Species Act (CESA) (California Fish and Game Code, Section 2050 et seq.), which prohibits the take of plant and animal species designated by the Fish and Game Commission as endangered or threatened in the State of California. Under CESA, Section 86, take is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA Section 2053 stipulates that state agencies may not approve projects that will "jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat which would prevent jeopardy."

CESA Sections 2080 through 2085 address the taking of threatened, endangered, or candidate species by stating, "No person shall import into this state, export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the Commission determines to be an endangered species or a threatened species, or attempt any of those acts, except as otherwise provided in this chapter, the Native Plant Protection Act (California Fish and Game Code, Sections 1900–1913), or the California Desert Native Plants Act (Food and Agricultural Code, Section 80001)."

**California Environmental Quality Act**

CEQA was enacted in 1970 to provide for full disclosure of environmental impacts to the public before issuance of a permit by state and local public agencies. Qualifying projects include zoning ordinances, issuance of conditional use permits, variances, and the approval of tentative subdivision maps. If a project is regulated under CEQA, the developer completes necessary studies and designs for the project and identifies the state lead agency for the project. The lead agency conducts an initial study that identifies the environmental impacts of the project and determines whether these impacts are significant. In some cases, the lead agency may skip the preparation of the initial study and proceed directly to the preparation of an environmental impact report (EIR). The lead agency may prepare a negative declaration if it finds no significant impacts, a mitigated negative declaration if it revises the project to avoid or mitigate significant impacts, or an EIR if it finds significant, unmitigated impacts.

The EIR is subject to more extensive public comment and provides information on the potentially significant impacts, lists ways to minimize these impacts, and discusses alternatives to the project. CEQA only provides a public review process, and projects with significant impacts may be approved if the lead agency makes a finding of overriding considerations.

In addition to state-listed or federally listed species, special-status plants and animals receive consideration under CEQA. Special-status species are discussed further in Section 4.3.

**California Fish and Game Code**

***Birds and Mammals***

According to Sections 3511 and 4700 of the California Fish and Game Code, which regulate birds and mammals, respectively, a "fully protected" species may not be taken or possessed, and "incidental takes" of these species are not authorized. However, the CDFW may authorize taking of those species for necessary scientific research, including efforts to recover fully protected, threatened, or endangered species, and may authorize the live capture and relocation of those species pursuant to a permit for the protection of livestock. Examples of fully protected species include the white-tailed kite (*Elanus leucurus*).

***Resident and Migratory Birds***

The California Fish and Game Code provides protection for wildlife species. It states that no mammal, bird, reptile, amphibian, or fish species listed as fully protected can be "taken or possessed at any time." In addition, CDFW affords protection over the destruction of nests and eggs of native bird species (Section 3503), and it states that no birds in the orders of *Falconiformes* or *Strigiformes* (birds of prey) can be taken, possessed, or destroyed (Section 3503.5). CDFW cannot issue permits or licenses that authorize the take of any fully protected species, except under certain circumstances, such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock (Section 3511). Separate from federal and state designations of species, CDFW designates certain vertebrate species as Species of Special Concern based on declining population levels, limited ranges, and/or continuing threats that have made them vulnerable to extinction.

***California Native Plant Protection Act***

The California Native Plant Protection Act of 1977 (California Fish and Game Code, Sections 1900–1913) directed the CDFW to carry out the legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The act gave the California Fish and Game Commission the power to designate native plants as endangered or rare and protect these plants

from take. When CESA was passed in 1984, it expanded on the original Native Plant Protection Act, enhanced legal protection for plants, and created the categories of threatened and endangered species to parallel FESA. CESA converted all rare animals into the act as threatened species but did not do so for rare plants, which resulted in three listing categories for plants in California: rare, threatened, and endangered. The Native Plant Protection Act remains part of the California Fish and Game Code, and mitigation measures for impacts to rare plants are specified in a formal agreement between CDFW and the project proponent.

***California Natural Community Conservation Planning Act***

The California Natural Community Conservation Planning (NCCP) Act provides for regional planning to conserve listed and candidate species, their habitats, and natural communities through habitat-based conservation measures while allowing economic growth and development (California Fish and Game Code, Section 2800–2835). The initial application of the NCCP Act was in coastal sage scrub habitat in Southern California, home to the California gnatcatcher (*Polioptila californica*); it has subsequently been applied to the CALFED Bay–Delta Program and others in Northern California.

The Southern California coastal sage scrub NCCP region consists of 11 subregions, which may be further divided into subareas corresponding to the boundaries of participating jurisdictions or landowners. In each subregion and subarea, landowners, environmental organizations, and local agencies participate in collaborative planning to develop a conservation plan acceptable to USFWS and CDFW. The NCCP conservation requires threat impacts be mitigated to a level that contributes to the recovery of listed species, rather than just avoiding jeopardy.

***Porter-Cologne Water Quality Control Act***

The intent of the Porter-Cologne Water Quality Control Act (California Water Code, Section 13000 et seq.) is to protect water quality and the beneficial uses of water, and it applies to both surface water and groundwater. Under this law, the State Water Resource Control Board develops statewide water quality plans, and the RWQCB develops basin plans that identify beneficial uses, water quality objectives, and implementation plans. The RWQCBs have the primary responsibility to implement the provisions of both statewide and basin plans. Waters regulated under the Porter-Cologne Water Quality Control Act include isolated waters that are no longer regulated by the ACOE. Developments with impacts to jurisdictional waters must demonstrate compliance with the goals of the act by developing Stormwater Pollution Prevention Plans, Standard Urban Storm Water Mitigation Plans, and other measures in order to obtain a CWA Section 401 certification.

***Streambed Alteration Agreement***

The CDFW must be notified prior to beginning any activity that would obstruct or divert the natural flow of, use material from, or deposit or dispose of material into a river, stream, or lake, whether permanent, intermittent, or ephemeral waterbodies under Section 1602 of the California Fish and Game Code. The CDFW has 30 days to review the proposed actions and propose measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by the CDFW and the applicant is the Streambed Alteration Agreement. The conditions of a Streambed Alteration Agreement and a CWA Section 404 permit often overlap.

### 2.2.3 Local/City of Escondido

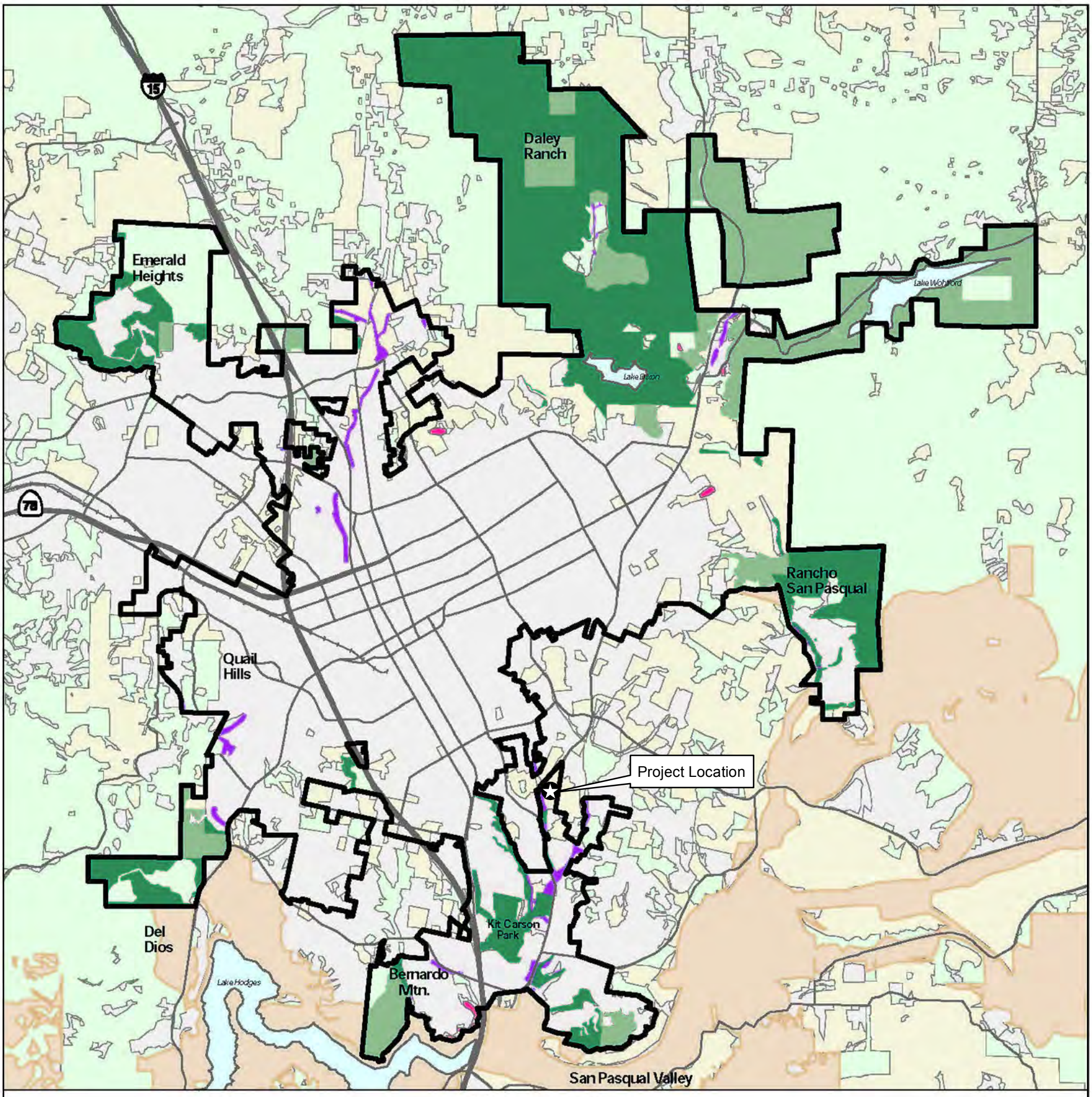
The *Public Review Draft Escondido Subarea Plan* (Subarea Plan) (Ogden and CBI 2001) is intended to be consistent with the region's Multiple Habitat Conservation Program (MHCP) and with the plans prepared by the entities participating in the MHCP.

The MHCP is a comprehensive conservation planning process that addresses the needs of multiple plant and animal species in northwestern San Diego County. The MHCP encompasses the cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista. Its goal is to conserve approximately 19,000 acres of habitat, of which roughly 8,800 acres (46%) are already in public ownership and contribute toward the habitat preserve system for the protection of more than 80 rare, threatened, or endangered species. The MHCP Subregional Plan and Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR) were adopted and certified by the SANDAG Board of Directors on March 28, 2003 (SANDAG 2003).

The Subarea Plan comprehensively addresses how the City will conserve natural vegetation communities and special-status plant and wildlife species pursuant to the California NCCP Act. The Subarea Plan qualifies as a stand-alone document to implement the MHCP and forms the basis for an implementing agreement, which will be the legally binding agreement between the City of Escondido and the wildlife agencies.

The project boundary is located within the southern portion of the Subarea Plan (Figure 4). It is not located within the Biological Core and Linkage Area (BCLA) (see Figure 3-2 of the Subarea Plan). The project boundary is located outside of any Focused Planning Areas (FPAs); however, the stream channel that runs adjacent to the southwestern portion of the project boundary is designated as a Constrained Lands (Wetlands) Outside the FPA (see Figure 4-1 of the Subarea Plan and Figure 4 below). The Constrained Lands designation includes lands with steep slopes and wetlands regulated by ACOE federal wetland permitting requirements and the MHCP "no

net loss of wetlands" policy (Ogden and CBI 2001). The City of Escondido is not moving forward with the Subarea Plan at this time, so there is no take coverage afforded under the Subarea Plan or the MHCP.




# Figure 4-1
# City of Escondido Subarea Plan
# Focused Planning Area (FPA) and Constrained Lands Outside the FPA

- Natural Habitats
- Agricultural Land
- Developed and Disturbed Land
- Hardline Focused Planning Area (90% and greater Conservation)
- Softline Focused Planning Area (Less than 90% Conservation)
- Constrained Lands (Wetlands) Outside the FPA
- Constrained Land (Slopes > 35%) Outside the FPA
- MSCP Habitat Preserve Planning Area

San Diego ASSOCIATION OF GOVERNMENTS
May 29, 2001

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SOURCE: City of Escondido, 1999

**FIGURE 4**
**Subarea Plan**

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# 3 METHODS

Data regarding biological resources present within the project boundary were obtained through a review of pertinent literature and through field reconnaissance; both are described in detail below.

## 3.1 Literature Review

Dudek reviewed literature to determine the existing biological resources within the vicinity of the project boundary using the California Natural Diversity Data Base (CNDDB) (CDFW 2016a), USFWS occurrence data (USFWS 2016), and information from the California Native Plant Society (CNPS 2016). Species included in Table 3-2, MHCP Species Occurring or Potentially Occurring in Escondido, of the Subarea Plan (Ogden and CBI 2001) were also incorporated within the special-status species tables. The purpose of this review was to determine if special-status plant and wildlife species were known to occur on site or in the nearby vicinity of the project boundary and what constraints these occurrences might have on the property.[2]

Baseline hydrology information was obtained from the USGS 7.5-minute quadrangles, National Hydrography Dataset (USGS 2016), and *Water Quality Control Plan for the San Diego Basin (9)* (CRWQCB 2011).

## 3.2 Field Reconnaissance

Dudek biologist Callie Ford conducted a reconnaissance-level field survey of the proposed project on June 24, 2016, and a formal jurisdictional delineation on July 14, 2016. The surveys included mapping the vegetation communities, determining potential for special-status plant species occurrences on site, and a jurisdictional delineation of aquatic resources.

### 3.2.1 Resource Mapping

Vegetation communities were mapped in the field directly onto a 200-scale (1 inch = 200 feet) false-color digital orthographic map of the property (Bing 2016). These boundaries and locations were digitized by Dudek geographic information system (GIS) technician Randy Deodat using ArcGIS software.

Vegetation community classifications used in this report follow Holland (1986) and Oberbauer et al. (2008), with modifications to accommodate the lack of conformity of the observed

[2] A search of the USGS 7.5-minute Escondido quadrangle and surrounding 8 quadrangles (San Marcos, Valley Center, Rodriguez Mountain, Rancho Santa Fe, San Pasqual, Del Mar, Poway and San Vicente Reservoir) was conducted for the CNDDB and CNPS searches; and a 3-mile radius search was conducted for the USFWS occurrence data.

communities to those of Holland. Vegetation communities and land covers were typically mapped using 0.10-acre minimum mapping units.

### 3.2.2 Flora

No focused rare plant surveys were conducted in the project boundary, but the site visits were conducted when the species potentially present would be detectable. All plant species encountered during the reconnaissance survey and jurisdictional delineation were identified and recorded. Latin and common names for plant species with a California Rare Plant Rank (CRPR) (formerly CNPS List) follow the CNPS On-Line Inventory of Rare, Threatened, and Endangered Plants of California (CNPS 2016). For plant species without a CRPR, Latin names follow the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2015) and common names follow the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service Plants Database (USDA 2015). A list of plant species observed on the property is presented in Appendix A.

### 3.2.3 Fauna

Wildlife species detected during the reconnaissance survey were recorded. Binoculars (10×42 power) were used to aid in the identification of observed wildlife, and any special-status species observed or detected were mapped. In addition to species actually detected, expected wildlife use of the site was determined by known habitat preferences of local species and knowledge of their relative distributions in the area. Latin and common names of animals follow Crother (2012) for reptiles and amphibians, American Ornithologists' Union (AOU 2015) for birds, Wilson and Reeder (2005) for mammals, North American Butterfly Association (NABA 2012) or San Diego Natural History Museum (SDNHM 2002) for butterflies, and Moyle (2002) for fish. A list of wildlife species observed on the property is presented in Appendix B.

### 3.2.4 Jurisdictional Wetlands Delineation

A formal jurisdictional delineation was conducted by Dudek biologist Callie Ford on July 14, 2016. Ms. Ford delineated the extent of jurisdictional aquatic resources within the project boundary. Jurisdictional boundaries were mapped in the field directly onto a 200-foot-scale (1 inch = 200 feet) aerial photograph (Bing 2016) or using a Trimble GeoXT GPS with submeter accuracy. Additionally, site-specific surveying provided further define the limits of the jurisdictional resources. The delineation defined areas under the jurisdiction of the CDFW pursuant to Sections 1600–1603 of the California Fish and Game Code, under the jurisdiction of the ACOE pursuant to Section 404 of the federal CWA, and under jurisdiction of RWQCB

pursuant to CWA Section 401 and the Porter-Cologne Act. The ACOE wetland delineation was performed in accordance with ACOE methodology (ACOE 1987, 2008; ACOE and EPA 2008).

Specifically, the methodology used for each jurisdiction or regulating agency, including the ACOE, CDFW, and RWQCB, is described below.

The ACOE wetlands delineation was performed in accordance with the 1987 *U.S. Army Corps of Engineers Wetlands Delineation Manual* (ACOE 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (ACOE 2008), and guidance provided by the ACOE and EPA on the geographic extent of jurisdiction based on the U.S. Supreme Court's interpretation of the CWA (ACOE and EPA 2008). The ACOE and RWQCB, pursuant to the federal CWA, include all areas supporting all three wetlands criteria described in the ACOE manual: hydric soils, hydrology, and hydrophytic vegetation. The RWQCB may also take jurisdiction over surface waters lacking ACOE regulation pursuant to the state Porter-Cologne Act. These areas generally include areas with at least one of the three wetlands indicators but that are isolated from a tributary of navigable water through lack of evidence of surface water hydrology. Jurisdiction of the RWQCB is coincident with the ACOE in accordance with the federal CWA, except in cases where a resource is determined to be isolated from navigable waters of the United States and where the RWQCB may take jurisdiction under the state Porter-Cologne Act. A predominance of hydrophytic vegetation, where associated with a stream channel, was used to determine CDFW-regulated riparian areas. Streambeds under the jurisdiction of CDFW were delineated using the Cowardin method of waters classification, which defines waters boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology).

Collectively, areas under the jurisdiction of the ACOE, RWQCB, and CDFW are termed jurisdictional aquatic resources. A more detailed description of the methods is provided below.

Jurisdictional determinations were made at four sampling points (Figure 5) to determine which areas are under the jurisdiction of the regulatory agencies mentioned above. The extent of jurisdictional aquatic resources was determined by mapping the areas with similar vegetation and topography to sampled locations.

#### *3.2.4.1 Hydrophytic Vegetation*

Seasonal changes in species composition, human land-use practices, wildfires, and other natural disturbances can adversely affect the hydrophytic vegetation determination. During the delineation, a sampling point was considered positive for hydrophytic vegetation if it passed the basic dominance test (Indicator 1), meaning that more than 50% of the dominant species present

were characterized as either obligate, facultative wetland, and/or facultative per the *Arid West 2016 Regional Wetland Plant List* (Lichvar et al 2016). In those cases where the dominance test failed, the vegetation parameter was re-evaluated using the prevalence index (Indicator 2), which takes into account all plant species in the community, not just dominants. All plant species observed during the surveys were identified and recorded.

#### *3.2.4.2 Hydric Soils*

According to the National Technical Committee for Hydric Soils, hydric soils are "soils that are formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (USDA 1994). Soil pits were prepared using a "sharp shooter" shovel to determine if hydric soils were present. The presence of hydric soils was determined through consultations with the 1987 ACOE manual, *Field Indicators of Hydric Soils in the United States Version 7.0 with Updates* (USDA 2013), ACOE's *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (*Version 2.0*) (ACOE 2008), and Munsell Soil Color Charts. Where feasible, soil pits were prepared to depths ranging from 10 to 16 inches, and dry soils were moistened to obtain the most accurate color. Excavated soils were examined for evidence of hydric conditions, including low chroma values and mottling, vertical streaking, sulfidic odor, and high organic matter content in the upper horizon. Evidence of previous ponding or flooding was assessed along with the slope, slope shape, existing landform characteristics, soil material/composition, and hydrophytic vegetation to determine if hydric soils were present.

#### *3.2.4.3 Hydrology*

Per the guidelines prescribed in the Arid West supplement (ACOE 2008), wetland hydrology indicators are separated into four major groups: groups A, B, C, and D. Group A indicators are based on direct observations of surface flow, ponding, and soil saturation/groundwater. Group B indicators include evidence that the project boundary has been or is currently subjected to ponding, including water marks, drift deposits, and sediment deposits. Group C indicators include signs of previous and/or current saturation, including oxidized rhizospheres surrounding living roots and the presence of reduced iron or sulfur, both of which are indicative of extended periods of soil saturation. Group D indicators consist of "vegetation and soil features that are indicative of current rather than historic wet conditions and include a shallow aquitard and results of the Facultative (FAC)-Neutral test" (ACOE 2008). Each group is subdivided into primary and secondary categories based on their frequency and reliability to occur in the Arid West region. Signs of hydrology were investigated in the project boundary.

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**FIGURE 5**

**Biological Resources**

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JULY 2016

Bear Valley Parkway Specific Alignment Plan Biological Technical Report

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# 4 RESULTS OF SURVEY

## 4.1 Botany – Plant Communities and Floral Diversity

The project boundary primarily consists of Bear Valley Parkway, a paved two- to four-lane road (mapped as developed), as well as disturbed habitat and southern coast live oak riparian forest adjacent to Bear Valley Parkway (Table 1; Figure 5).

**Table 1**
**Impacts to Vegetation Communities and Land Covers**

| Habitat Type | Acres (East) | Acres (West) | Total Acres |
|---|---|---|---|
| *Wetlands/Riparian Areas* | | | |
| Southern Coast Live Oak Riparian Forest (SCLO) | 0.09 | 0.10 | 0.19 |
| *Other Land Covers* | | | |
| Disturbed Habitat (DH) | — | 1.02 | 1.02 |
| Developed Land (DEV) | 0.10 | 1.29 | 1.39 |
| **Total*** | **0.20** | **2.40** | **2.60** |

* Total may not add due to rounding.

### 4.1.1 Southern Coast Live Oak Riparian Forest (61310)

Southern coast live oak riparian forest is an open to locally dense evergreen riparian woodland dominated by coast live oak (*Quercus agrifolia*). Compared to other riparian communities, southern coast live oak riparian forest is generally richer in herbs and poorer in understory shrubs. This community occurs on fine-grained, rich alluvium on bottomlands and outer floodplains along larger streams.

Southern coast live oak riparian forest occurs in small areas along the perennial/intermittent stream channel that flows adjacent to the project boundary. On site, southern coast live oak riparian forest is dominated by coast live oak, scattered palm trees (*Washingtonia robusta* and *Phoenix dactylifera*), poison oak (*Toxicodendron diversilobum*), and velvet ash (*Fraxinus velutina*). Because it is associated with the stream channel, all southern coast live oak riparian forest within the project boundary is considered under the jurisdiction of CDFW.

### 4.1.2 Disturbed Habitat (11300)

Disturbed habitat typically occurs in areas where soils have been recently or repeatedly disturbed by grading or compaction resulting in the growth of very few native perennials. The disturbed habitat in the project boundary includes the areas adjacent to Bear Valley Parkway

that are dominated by non-native annual weedy species and a dirt road that crosses the adjacent stream channel in the southern portion of the project boundary. There is a very small portion of disturbed coastal sage scrub (0.04 acre) that is dominated by black mustard (*Brassica nigra*) and ripgut brome (*Bromus diandrus*) and did not meet the minimum mapping unit of 0.10 acre for special-status vegetation communities; therefore, it is not mapped as a separate vegetation community.

### 4.1.3 Developed Land (12000)

Developed land refers to areas supporting manmade structures, including homes, yards, roadways, and other highly modified lands supporting structures associated with dwellings or other permanent structures. Within the project boundary, developed land refers to Bear Valley Parkway and adjacent residences.

### 4.1.4 Floral Diversity

A total of 25 species of vascular plants, 8 native (32%) and 17 non-native (68%), were recorded from the site. The complete list of plant species identified on site is provided as Appendix A.

## 4.2 Zoology – Wildlife Diversity

Because the project boundary is primarily developed land (53%), there is limited suitability to support upland and riparian species. The small patches of southern coast live oak riparian forest that are within the project footprint are part of a larger riparian area, and it is possible some species could use these outer portions as habitat; this includes common riparian woodland species, such as birds, nesting raptors, and small mammals. Ruderal plant species on site may provide some foraging and/or nesting habitat for small birds, such as house finch (*Carpodacus mexicanus*) and bushtit (*Pheucticus melanocephalus*). The larger patches of disturbed habitat along the northwestern side of Bear Valley Parkway could provide foraging habitat for a variety of upland birds, reptiles, and small mammals such as California ground squirrel (*Spermophilus (Otospermophilus) beecheyi*). Fifteen wildlife species were observed during the surveys (Appendix B).

### 4.2.1 Birds

Ten bird species were observed during the survey. Typical species observed on site include American crow (*Corvus brachyrhynchos*), lesser goldfinch (*Spinus psaltria*), Anna's hummingbird (*Calypte anna*), and northern mockingbird (*Mimus polyglottos*). A red-tailed hawk (*Buteo jamaicensis*) was observed, and other raptors may use the site. Raptors could potentially nest in the oak woodland.

### 4.2.2 Reptiles and Amphibians

One reptile, common side-blotched lizard (*Uta stansburiana*), and no amphibian species were recorded during surveys; however, common reptiles that likely occur on site include western fence lizard (*Sceloporus occidentalis*) and gopher snake (*Pituophis melanoleucus*). Treefrogs (*Pseudacris regilla, P. cadaverina*) may use the stream channels adjacent to the site.

### 4.2.3 Mammals

Three common species of mammals were recorded on site: California ground squirrel (*Spermophilus beecheyi*), Virginia opossum (*Didelphis virginiana*), and coyote (*Canis latrans*). Other mammals adapted to living in areas near human disturbance, such as striped skunk (*Mephitis mephitis*), Botta's pocket gopher (*Thomomys bottae*), raccoon (*Procyon lotor*), and mule deer (*Odocoileus hemionus*) may also occur on the site.

### 4.2.4 Invertebrates

One butterfly, checkered white (*Pontia protodice*), was recorded on site; however, common butterflies that could occur on site include swallowtail species (*Papilio* spp.), cabbage butterfly (*Pieris rapae*), west coast lady (*Vanessa annabella*), painted lady (*Vanessa cardui*), and buckeye (*Junonia coenia*).

## 4.3 Special-Status Biological Resources/Regulated Resources

Endangered, rare, or threatened plant species, as defined in CEQA Guidelines Section 15380(b) (14 CCR 15000 et seq.), are referred to as "special-status plant species" in this report and include (1) endangered or threatened plant species recognized in the context of CESA and FESA; and (2) plant species with a CRPR 1 or 2 designation (CDFW 2016b, 2016c; CNPS 2016).

Appendix C lists the special-status plant species reported in the USGS 7.5-minute Escondido quadrangle and the surrounding eight topographic quadrangles (CNPS and CNDDB occurrences). Species included in Table 3-2, MHCP Species Occurring or Potentially Occurring in Escondido, of the Subarea Plan were also incorporated within the special-status species tables (Ogden and CBI 2001). This appendix also includes an analysis of each of these special-status species' occurrence or potential to occur based on known range, habitat associations, preferred soil substrate, life form, elevation, and blooming period.

Endangered, rare, or threatened wildlife species, as defined in CEQA Guidelines, Section 15380(b) (14 CCR 15000 et seq.), are referred to as "special-status wildlife species" and, as used in this report, include (1) endangered or threatened wildlife species recognized in the context of

CESA and FESA; (2) California Species of Special Concern, as designated by the CDFW (2016d); and (3) mammals and birds that are fully protected species, as described in California Fish and Game Code, Sections 4700 and 3511; (4) species included in the Subarea Plan; (5) species documented by other organizations as being rare.

Appendix D lists occurrences of special-status wildlife species reported in the USGS 7.5-minute Escondido quadrangle and the surrounding eight topographic quadrangles resulting from a CNDDB search (CDFW 2016a) and from Table 3-2 of the Subarea Plan (Ogden and CBI 2001). Appendix D describes these species' potential to occur in the project boundary based on the range, presence of suitable habitat, and life history of the species.

### 4.3.1 Special-Status Plant Species

No special-status plant species were detected during the reconnaissance survey or jurisdictional delineation. A rare plant survey was not conducted because the site supports limited suitable habitat and contains low diversity of plant species. There is one special-status plant species with moderate potential to occur within the project boundary: San Diego ambrosia (*Ambrosia pumila*). This species is typically found within riparian habitats or disturbed areas with sandy soils, which the project boundary supports; however, this species was not observed during the reconnaissance survey. The potential for the other special-status plants is low or not expected due to the high level of developed and disturbed habitat that exists on site (see Appendix C).

### 4.3.2 Special-Status Wildlife Species

Although no special-status wildlife species were observed on site during the reconnaissance survey or jurisdictional delineation, there are several that have a moderate to high potential to occur.

The southern coast live oak riparian forest would be expected to receive general use by wildlife. The perennial/intermittent stream adjacent to the project site could provide a water source and associated habitat for a number of special-status wildlife species that could then also use the project boundary for foraging or nesting requirements or dispersal purposes.

**Special-Status Mammals**

Two species have moderate potential to use the project boundary, western red bat (*Lasiurus blossevillii*) and San Diego blacktailed jackrabbit (*Lepus californicus bennettii*). The western red bat has potential to forage in habitat edges along riparian areas and therefore has potential to roost in trees occurring on site. The San Diego black-tailed jackrabbit prefers open and disturbed areas, which the project boundary contains and which are adjacent to the project boundary.

No special-status mammals have a high potential to occur in the project boundary.

**Special-Status Birds**

No special-status bird species were observed on site, but some have the potential to occur. Cooper's hawk (*Accipiter cooperii*) has a high potential to occur in the oak woodland. Special-status bird species that have a moderate potential to occur include burrowing owl (*Athene cunicularia*) and white-tailed kite (*Elanus leucurus*) (see Appendix D).

A number of special-status bird species, as described in Appendix D, have moderate or low potential to use the project boundary due to its size, connectivity to other undeveloped areas, and potential perching, roosting, and nesting locations within the coast live oak trees.

The major nesting opportunities for raptors are along the southwestern border of the project boundary where the riparian habitat is located; however, no special-status raptors were observed during any of the surveys.

**Special-Status Amphibians and Reptiles**

There is only one area on site that provides a regular water source—the perennial stream along the southeastern portion of the project boundary. It has low potential to support special-status amphibians due to the level of disturbance surrounding the project boundary and its small size.

No special-status reptile species were observed or have high potential to occur. There are several with moderate potential, including two-striped garter snake (*Thamnophis hammondii*; a California Species of Special Concern), orange-throated whiptail (*Aspidoscelis hyperythra*), and coastal whiptail (*Aspidoscelis tigris stejnegeri*; a California Species of Special Concern).

### 4.3.3 Wildlife Corridors and Habitat Linkages

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the migration of animals. Wildlife corridors contribute to population viability by assuring continual exchange of genes between populations, providing access to adjacent habitat areas for foraging and mating, and providing routes for recolonization of habitat after local extirpation or ecological catastrophes (e.g., fires). Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation. Habitat linkages provide a potential route for gene flow and long-term dispersal of plants and animals and may serve as primary habitat for smaller animals, such as reptiles and amphibians. Habitat linkages may be continuous habitat or discrete habitat islands that function as stepping stones for dispersal.

While the project boundary may provide for localized wildlife movement along the adjacent stream channel, most of the project boundary consists of disturbed habitat, and surrounding areas are developed. Although there is a perennial/intermittent stream that flows through a small portion of the site, there are no major aquatic resources on site that would be attractive for wildlife use and movement.

Analysis of wildlife movement on a regional basis is based on Figure 4-1 of the Subarea Plan. The perennial/intermittent stream on site is considered a Constrained Wetlands Outside the FPA and flows south to Kit Carson Park, which is a Hardline Focused Planning Area. Wildlife movement is assumed to occur via the areas east of the project boundary designated as Natural Lands and MSCP Habitat Preserve (Ogden and CBI 2001, Figure 4-1). Other wildlife movement could occur to the south around the Lake Hodges MSCP Habitat Preserve. The wildlife movement is somewhat fragmented, but mobile species such as birds would be able to traverse the off-site rural residential properties, connect to the drainage that flows south, and connect to the regional corridor that includes Kit Carson Park and the Lake Hodges and San Dieguito River to the south and east.

### 4.3.4 Jurisdictional Aquatic Resources

The potential jurisdictional aquatic resources studied as part of the survey include southern coast live oak riparian forest occurring along the stream channel east of Bear Valley Parkway (outside of the project boundary). The southern coast live oak riparian forest did not show signs of wetland hydrology, hydric soils, or hydrophytic vegetation (see sampling points 1B and 2B). However, since this vegetation community is associated with the stream channel, it is considered riparian habitat under the jurisdiction of CDFW.

The riparian areas under CDFW jurisdiction within the project boundary are shown in Table 2 and Figure 4.

**Table 2**
**Jurisdictional Aquatic Resources**

| Location | CDFW Riparian Area |
|---|---|
| Bear Valley Parkway (East) | 0.09 acre |
| Bear Valley Parkway (West) | 0.10 acre |
| **Total Jurisdictional Area** | **0.19 acre** |

The wetlands determination forms used to support these classifications are provided in Appendix E.

# 5 ANTICIPATED PROJECT IMPACTS

This section addresses direct and indirect impacts to biological resources that would result from implementation of the proposed project.

**Direct impacts** refer to 100% permanent loss of a biological resource. For purposes of this report, the entire project boundary is part of the proposed alignment footprint and would be directly impacted. Direct impacts are shown on Figure 4.

**Indirect impacts** are reasonably foreseeable effects caused by project implementation on remaining or adjacent biological resources outside the direct project impacts. Indirect impacts include short-term effects related to construction activities and long-term or chronic effects related to the road alignment. In most cases, indirect effects are not quantified, but in some cases, quantification might be included, such as using a noise contour to quantify indirect impacts to nesting birds.

## 5.1 Direct Impacts

### 5.1.1 Vegetation Communities

Short-term, construction-related, or temporary direct impacts to vegetation communities would primarily result from construction activities. Clearing, trampling, or grading of vegetation outside designated construction zones could occur in the absence of avoidance and mitigation measures. These potential effects could damage vegetation communities and alter their ecosystem, creating gaps in vegetation that allow exotic, non-native plant species to become established, thus increasing soil compaction and leading to soil erosion.

Direct impacts to vegetation communities within the project boundary would occur as a result of road widening and grading activities. Table 1 in Section 4.1 summarizes the direct impacts to the vegetation communities.

### 5.1.2 Special-Status Plants

No special-status plants were observed within the project boundary. Due to the high level of disturbance within the project boundary and because the single species with moderate potential to occur, San Diego ambrosia, would likely occur outside the impact area and was not observed during the visits during June and July, it is not expected that implementation of the proposed project would result in impacts to special-status plant species.

### 5.1.3 Special-Status Wildlife

No special-status wildlife species were detected on site. Two raptors, red-shouldered hawk and American kestrel (*Falco sparverius*), were detected foraging in the area. While these species are not considered special status and are fairly common in Southern California, raptors as a group are considered special status, and Section 3503.5 of the California Fish and Game Code specifically prohibits the unauthorized take of raptors and raptor nests.

Implementation of the proposed project would not result in potential direct impacts to the special-status wildlife species that have moderate to high potential to occur because these species occur within the native habitat found on site, such as southern coast live oak riparian forest, and the vast majority of impacts are within disturbed areas. This native habitat provides foraging and nesting habitat for birds and limited habitat for mammal species.

### 5.1.4 Habitat Linkages/Wildlife Corridors

As described in Section 4.3.3, the project boundary does not function as a major habitat linkage or wildlife corridor but likely serves as a local wildlife corridor for common terrestrial and avian species. The proposed project would directly impact movement for urban-adapted species that use the oak trees and disturbed areas (e.g., raccoon, striped skunk, and coyote); however, these species can continue to use the areas outside of the proposed project for movement between habitat types. Wildlife species also tend to utilize drainages for movement. Impacts to the patches of southern coast live oak riparian forest are largely to the outer edges and canopy cover within the vegetation community, and potential impacts to wildlife movement would be minimal.

### 5.1.5 Jurisdictional Aquatic resources

Short-term, construction-related, or temporary direct impacts to jurisdictional aquatic resources would primarily result from construction activities. Clearing, trampling, or grading of vegetation outside designated construction zones could occur in the absence of avoidance and mitigation measures. These potential effects could damage individual plants and alter their ecosystem, creating gaps in vegetation that allow exotic, non-native plant species to become established, thus increasing soil compaction and leading to soil erosion.

Direct impacts to jurisdictional aquatic resources within the project boundary would occur as a result of road widening and grading activities. Table 2 in Section 4.3.4 summarizes the impacts to jurisdictional aquatic resources within the project boundary and totals 0.19 acre of southern coast live oak riparian forest subject to the jurisdiction of the CDFW.

## 5.2 Indirect Impacts

### 5.2.1 Vegetation Communities and Special-Status Plants

**Short-Term Indirect Impacts**

Potential short-term or temporary indirect impacts to vegetation communities within the project boundary would primarily result from construction activities and include impacts related to or resulting from the generation of fugitive dust; changes in hydrology resulting from construction, including sedimentation and erosion; and the introduction of chemical pollutants (including herbicides). Potential short-term indirect impacts could affect native vegetation communities within the project boundary. These impacts are described in detail below.

***Generation of Fugitive Dust.*** Excessive dust can decrease the vigor and productivity of vegetation through effects on light, penetration, photosynthesis, respiration, transpiration, increased penetration of phytotoxic gaseous pollutants, and increased incidence of pests and diseases.

***Changes in Hydrology.*** Construction could result in hydrologic and water-quality-related impacts adjacent to and downstream of the project impacts. Hydrologic alterations include changes in flow rates and patterns in drainages and dewatering, which may affect adjacent downstream aquatic, wetland, and riparian vegetation communities. Water-quality impacts include chemical-compound pollution (fuel, oil, lubricants, paints, release agents, and other construction materials), erosion, and excessive sedimentation. Direct impacts, as described previously, can also remove native vegetation and increase runoff from Bear Valley Parkway, resulting in increased erosion and transport of surface matter into vegetation communities. Altered erosion, increased surface flows, and underground seepage can allow for the establishment of non-native plants. Changed hydrologic conditions can also alter seed bank characteristics and modify habitat for ground-dwelling fauna that may disperse seed.

***Chemical Pollutants.*** Erosion and chemical pollution (releases of fuel, oil, lubricants, paints, release agents, and other construction materials) may affect native vegetation communities. The use of chemical pollutants can decrease the number of plant pollinators, increase the existence of non-native plants, and cause damage to and destruction of native plants.

**Long-Term Indirect Impacts**

Long-term (operation-related) or permanent indirect impacts could result from the proximity of the proposed project to adjacent native vegetation communities (i.e., southern coast live oak riparian forest) after construction. Permanent indirect impacts that could affect native vegetation

communities include chemical pollutants, altered hydrology, non-native invasive species, and increased human activity. Each of these potential indirect impacts is discussed below.

***Chemical Pollutants.*** The effects of chemical pollutants on vegetation communities are described above. During landscaping activities, herbicides may be used to prevent vegetation from reoccurring around structures. However, weed control treatments shall include only legally permitted chemical, manual, and mechanical methods. Additionally, the herbicides used during landscaping activities will be contained within the project boundary.

***Altered Hydrology.*** Water would be used for landscaping purposes that may alter the on-site hydrologic regime. These hydrologic alterations may affect special-status vegetation communities and special-status plant communities. Altered hydrology can allow for the establishment of non-native plants and invasion by Argentine ants (*Linepithema humile*), which can compete with native ant species that could be seed dispersers or plant pollinators. However, the water, and associated runoff, used during landscaping activities will be contained within vegetated swales, and long-term indirect impacts associated with altered hydrology are not expected.

***Non-Native, Invasive Plant and Animal Species.*** Invasive plant species that thrive in edge habitats are a well-documented problem in Southern California and throughout the United States. Bossard et al. (2000) list several adverse effects of non-native species in natural open areas, including exotic plant competition for light, water, and nutrients and the formation of thatches that block sunlight from reaching smaller native plants. The project proposes to include erosion-control hydroseed composed of non-invasive plant species to avoid these adverse impacts.

***Increased Human Activity.*** The alignment project is proposed to meet the increased traffic use along Bear Valley Parkway. A safety fence will be installed along the riparian area and will minimize human disturbance in the native riparian habitat.

### 5.2.2 Special-Status Wildlife

**Short-Term Indirect Impacts**

Short-term, construction-related, or temporary indirect impacts to special-status wildlife species that have moderate or high potential to occur (see Appendix D) would primarily result from construction activities. Potential temporary indirect impacts could occur as a result of generation of fugitive dust, noise, chemical pollutants, increased human activity, and non-native animal species.

***Generation of Fugitive Dust.*** Dust and applications for fugitive dust control can impact vegetation surrounding the limits of grading, resulting in changes in the community structure and function. These changes could result in impacts to suitable habitat for special-status wildlife species.

***Noise.*** Construction-related noise could occur from equipment used during vegetation clearing and the construction of the road. Noise impacts can have a variety of indirect impacts on wildlife species, including increased stress, weakened immune systems, altered foraging behavior, displacement due to startle, degraded communication with conspecifics (e.g., masking), damaged hearing from extremely loud noises, and increased vulnerability to predators (Lovich and Ennen 2011; Brattstrom and Bondello 1983, cited in Lovich and Ennen 2011).

***Chemical Pollutants.*** Accidental spills of hazardous chemicals could contaminate nearby surface waters and groundwater and indirectly impact wildlife species through poisoning or altering suitable habitat.

***Increased Human Activity.*** Construction activities can deter wildlife from using habitat areas near the proposed project footprint and increase the potential for vehicle collisions.

***Non-Native Animal Species.*** Trash from construction-related activities could attract invasive predators, such as ravens and coyotes, which could impact wildlife species within the project boundary.

**Long-Term Indirect Impacts**

Potential long-term or permanent indirect impacts on special-status wildlife species that have moderate or high potential to occur (see Appendix D) include non-native, invasive plant and animal species; increased human activity; and altered hydrology.

***Non-Native, Invasive Plant and Animal Species.*** Invasive plant species that thrive in edge habitats are a well-documented problem in Southern California and throughout the United States. Bossard et al. (2000) list several adverse effects of non-native species in natural open areas, including the fact that exotic plants compete for light, water, and nutrients and can create a thatch that blocks sunlight from reaching smaller native plants. The project proposes to include erosion-control hydroseed composed of non-invasive plant species to avoid these adverse impacts. In addition, trash can attract invasive predators, such as ravens and coyotes, which could impact the wildlife species in the native habitat within and adjacent to the project boundary.

***Increased Human Activity.*** The alignment project is proposed to meet the increased traffic use along Bear Valley Parkway. The riparian habitat on the east side of Bear Valley Parkway will be fenced in order to deter human activity.

***Altered Hydrology.*** Water would be used for landscaping purposes that may alter the hydrologic regime of the adjacent stream channel. These hydrologic alterations may affect special-status wildlife species. Altered hydrology can allow for the establishment of non-native plants and invasion by Argentine ants, which can compete with native ant species that could be seed dispersers or plant pollinators. Changes in plant composition could affect the native vegetation communities and wildlife habitat. However, the water, and associated runoff, used during landscaping activities will be contained within vegetated swales, and long-term indirect impacts associated with altered hydrology are not expected.

### 5.2.3 Habitat Linkages/Movement Corridors

**Short-Term Indirect Impacts**

Short-term indirect impacts to habitat connectivity and wildlife corridors could result from lighting and increased human activity.

***Increased Human Activity.*** Project construction would likely take place during the daytime and would not affect wildlife species such as mammals that are most active in evenings and nighttime. Wildlife species such as birds, rabbits, and lizards are active in the daytime but use a variety of habitats and could continue using other areas adjacent to the project boundary for wildlife movement.

***Lighting.*** No nighttime lighting is planned during construction.

**Long-Term Indirect Impacts**

Long-term indirect impacts include fencing of the project boundary and lighting.

***Fencing.*** A safety fence will be installed along the riparian area and will minimize human disturbance in the native riparian habitat. The fence will permit wildlife movement.

***Lighting.*** Street lights are proposed as part of the project, but locations are unknown at this time.

### 5.2.4 Jurisdictional Aquatic Resources

**Short-Term Indirect Impacts**

Potential short-term or temporary indirect impacts to jurisdictional aquatic resources in the project boundary would primarily result from construction activities and include impacts related to or resulting from the generation of fugitive dust; changes in hydrology resulting from construction, including sedimentation and erosion; and the introduction of chemical pollutants (including herbicides). Potential short-term indirect impacts that could affect all the jurisdictional aquatic resources that occur on the project boundary are described in detail as follows.

***Generation of Fugitive Dust.*** As stated previously, excessive dust can decrease the vigor and productivity of vegetation through effects on light, penetration, photosynthesis, respiration, and transpiration, as well as increased penetration of phytotoxic gaseous pollutants and increased incidence of pests and diseases.

***Changes in Hydrology.*** Construction could result in hydrologic and water-quality-related impacts adjacent to and downstream of the construction area. The effects of changes in hydrology would be similar to those described in Section 5.2.1.

***Chemical Pollutants.*** Erosion and chemical pollution (releases of fuel, oil, lubricants, paints, release agents, and other construction materials) may affect jurisdictional aquatic resources. The use of chemical pollutants can decrease the number of plant pollinators, increase the existence of non-native plants, and cause damage to and destruction of native plants.

**Long-Term Indirect Impacts**

Long-term (operation-related) or permanent indirect impacts could result from the proximity of the proposed project to adjacent jurisdictional aquatic resources after construction. Permanent indirect impacts that could affect jurisdictional aquatic resources include generation of fugitive dust, habitat fragmentation, chemical pollutants, altered hydrology, non-native invasive species, increased human activity, and alteration of the natural fire regime. Each of these potential indirect impacts is discussed below.

***Chemical Pollutants.*** The effects of chemical pollutants on jurisdictional aquatic resources are described above.

***Altered Hydrology.*** Water used for landscaping purposes may alter the on-site hydrologic regime. These hydrologic alterations may affect jurisdictional aquatic resources. However, the water, and associated runoff, used during landscaping activities will be contained

within vegetated swales, and long-term indirect impacts associated with altered hydrology are not expected.

***Non-Native, Invasive Plant and Animal Species.*** The effects of chemical pollutants would be similar to those described in Section 5.2.1. The project proposes to include erosion control hydroseed composed of non-invasive plant species to avoid these adverse impacts.

***Increased Human Activity.*** The effects of increased human activity would be similar to those described in Section 5.2.1. An increased human population increases the risk for damage to jurisdictional aquatic resources. However, the riparian area on the east side of Bear Valley Parkway will be fenced in order to deter human activity.

# 6 ANALYSIS OF SIGNIFICANCE

## 6.1 Explanation of Findings of Significance

Impacts to vegetation communities, special-status plants, special-status wildlife, and wildlife movement must be quantified and analyzed to determine whether such impacts are significant under CEQA. CEQA Guidelines Section 15064(b) states that an ironclad definition of "significant" effect is not possible, because the significance of an activity may vary with the setting. Appendix G of the CEQA Guidelines, however, does provide "examples of consequences which may be deemed to be a significant effect on the environment" (14 CCR 15064(e)). These effects include substantial effects on rare or endangered species of animal or plant or the habitat of the species. CEQA Guidelines Section 15065(a) is also helpful in defining whether a project may have "a significant effect on the environment." Under that section, a proposed project may have a significant effect on the environment if the project has the potential to (1) substantially degrade the quality of the environment, (2) substantially reduce the habitat of a fish or wildlife species, (3) cause a fish or wildlife population to drop below self-sustaining levels, (4) threaten to eliminate a plant or animal community, or (5) reduce the number or restrict the range of a rare or endangered plant or animal.

The following are the significance thresholds for biological resources provided in the CEQA Guidelines Appendix G environmental checklist, which states that a project could potentially have a significant effect if it:

- Has a substantial adverse effect, either directly or through habitat modifications, on any species identified as being a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFG[3] or USFWS
- Has a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFG or USFWS
- Has a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means
- Interferes substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impedes the use of native wildlife nursery sites

[3] Although CDFG changed its name to CDFW in January 2013, this report retains language from the CEQA Guidelines Appendix G, which refers to the agency as CDFG. The two are synonymous.

- Conflicts with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflicts with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan

The evaluation of whether or not an impact to a particular biological resource is significant must consider both the resource itself and the role of that resource in a regional context. Substantial impacts are those that contribute to, or result in, permanent loss of an important resource, such as a population of a rare plant or animal. Impacts may be important locally because they result in an adverse alteration of existing site conditions but considered not significant because they do not contribute substantially to the permanent loss of that resource regionally. The severity of an impact is the primary determinant of whether or not that impact can be mitigated to a less-than-significant level.

## 6.2 Vegetation Communities

***Direct Impacts.*** The proposed project would result in 2.60 acres of on-site direct impacts to vegetation communities and land covers, including developed land, disturbed habitat, and southern live oak riparian forest. The majority of impacts would be to developed land and disturbed habitat, with minimal impacts to native vegetation communities. Impacts to 0.19 acre of southern live oak riparian forest are considered significant (**Impact BIO-1**).

***Indirect Impacts.*** Potential short-term or temporary indirect impacts to southern coast live oak riparian forest in the project boundary would primarily result from construction activities and include impacts related to or resulting from the generation of fugitive dust; changes in hydrology resulting from construction, including sedimentation and erosion; and the introduction of chemical pollutants (including herbicides). It is assumed, however, that standard construction best management practices (BMPs) and construction-related minimization measures to control dust, erosion, and runoff will be implemented and will ameliorate these effects. Therefore, a significant impact would be avoided through these measures.

Long-term (operation-related) or permanent indirect impacts could result from the proximity of the proposed project to southern coast live oak riparian forest after construction. Permanent indirect impacts that could affect southern coast live oak riparian forest include chemical pollutants, altered hydrology, non-native invasive species, and increased human activity. The following project design features will ensure that these potentially significant impacts will be avoided: (1) fencing along the east side of Bear Valley Parkway will be included to preclude humans from traveling into the adjacent riparian areas; (2) landscaping (hydroseed) adjacent to preserved land will not include species listed as high or moderate on the California Invasive Plant Council (Cal-IPC 2013);

(3) proper selection, design, placement, and utilization of BMPs, including source control (i.e., signage and trash enclosures) and site design BMPs; and (4) attenuation of flows from increased runoff from the proposed project through energy dissipation.

## 6.3 Special-Status Plants

***Direct Impacts.*** In determining significance, the significance threshold applied to plants is whether the project would have a substantial adverse effect on the special-status species. While no special-status plant species were detected on site during surveys, there is moderate potential for one species to occur (see Appendix C). Potential impacts to individual species are not considered significant because much of the impacted habitat is already disturbed and low quality, with minimal impacts to the outer edge of the riparian area on site. San Diego ambrosia is typically found within riparian areas. The proposed project would impact the outer edge of the riparian habitat on site; therefore, direct impacts to these species are not expected.

***Indirect Impacts***. Potential long-term or permanent indirect impacts to special-status plant species include non-native, invasive plant and animal species; increased human activity; and altered hydrology. The following project design features will ensure that these potentially significant impacts will be avoided: (1) fencing along the east side of Bear Valley Parkway will be included preclude humans from traveling into the areas to be preserved; (2) landscaping (hydroseed) adjacent to preserved land will not include species listed as high or moderate on the California Invasive Plant Council (Cal-IPC 2013); (3) proper selection, design, placement and utilization of BMPs, including source control, treatment control, and site design (i.e., landscaping) BMPs; and (4) attenuation of flows from increased runoff from site development through energy dissipation.

## 6.4 Special-Status Wildlife

***Direct Impacts.*** In determining significance, the significance threshold applied to wildlife is whether the project would have a substantial adverse effect on the special-status species. While no special-status wildlife species were detected on site during surveys, there is potential for some species to occur (see Appendix D). It is unlikely that direct impacts would occur to these special-status species because the native habitat will be avoided and impacts would be limited to developed and disturbed areas. If construction activities occur during the bird-breeding season (typically February 1 through September 15), impacts to migratory birds or destruction of active migratory bird nests and/or eggs would be considered a significant impact because they are protected under the Migratory Bird Treaty Act (**Impact BIO-2**).

***Indirect Impacts.*** Short-term, construction-related indirect impacts to special-status wildlife species that have moderate to high potential to occur (see Appendix D) that would primarily

result from construction activities, including fugitive dust, chemical pollutants, increased human activity, and non-native animal species would be avoided through the project design features listed in Sections 6.2 and 6.3. Potential indirect impacts from construction-related noise to nesting special-status birds or raptors would be considered a significant impact (**Impact BIO-3**).

Potential long-term or permanent indirect impacts to special-status wildlife species that have moderate or high potential to occur (see Appendix D) associated with non-native, invasive plant and animal species; increased human activity; and altered hydrology would be avoided through the project design features listed in Sections 6.2 and 6.3. Based on the minimal use of the impacted areas for wildlife movement through the site, habitat fragmentation would not be considered a significant impact.

## 6.5 Habitat Linkages/Wildlife Corridors

***Direct Impacts.*** As mentioned previously, the project boundary does not serve as a major wildlife corridor or habitat linkage. Moreover, there would be minimal impacts to the southern live oak riparian forest within the project boundary (0.19 acre), and the impacts would primarily be to canopy cover and the outer edge along Bear Valley Parkway. Therefore, there would not be direct significant impacts to this minor local habitat linkage/wildlife corridor.

***Indirect Impacts.*** Significant short-term indirect impacts to the minor local habitat linkage/wildlife corridor would be avoided through standard construction BMPs and construction-related minimization measures as discussed above. Potential long-term indirect impacts to will be avoided through the project design features as mentioned above in Section 5.2.

## 6.6 Jurisdictional Aquatic Resources

***Direct Impacts.*** Jurisdictional aquatic resources, as described in Sections 3.2.4 and 4.3.4, are considered special status and regulated by state and federal agencies. The direct impacts to these jurisdictional areas are considered significant. Implementation of the proposed project would result in direct impacts to 0.19 acre of southern coast live oak riparian forest subject to CDFW jurisdiction. These impacts are considered significant (**Impact BIO-4**).

***Indirect Impacts.*** Potential short-term indirect impacts to jurisdictional aquatic resources in the project boundary that would primarily result from construction activities, including fugitive dust; changes in hydrology resulting from construction, including sedimentation and erosion; and the introduction of chemical pollutants (including herbicides) would be avoided through the project design features listed in Sections 6.2 and 6.3.

Long-term indirect impacts to jurisdictional aquatic resources, including chemical pollutants, altered hydrology, non-native invasive species, increased human activity, and alteration of the natural fire regime would be avoided through the project design features listed in Sections 6.2 and 6.3. Because the jurisdictional resources on site include only the edges of southern coast live oak riparian forest, potential indirect impacts associated with fragmentation from other jurisdictional resources are not considered a significant impact.

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# 7 MITIGATION

## 7.1 Vegetation Communities

**Impact BIO-1** (direct impacts to southern coast live oak riparian forest) will be mitigated through establishment or enhancement of riparian habitat or through a mitigation bank as described in **MM-1**.

**MM-1** The project applicant shall establish/enhance southern coast live oak riparian forest (or similar vegetation community) at a suitable location at a 1:1 to 3:1 mitigation ratio.[4] If establishment or enhancement is unavailable or not practical, the project applicant shall secure mitigation credits at an approved mitigation bank at a 1:1 to 3:1 mitigation ratio. Details will be finalized as part of the permit application process.

## 7.2 Special-Status Plants

No mitigation is proposed for impacts to special-status plants because direct impacts to special-status plants are not expected to occur.

## 7.3 Special-Status Wildlife

Potential impacts **BIO-2** (direct impacts to nesting birds) and **BIO-3** (indirect impacts to nesting birds) will be mitigated through pre-construction nesting bird surveys and appropriate buffers around active nests regulated by the Migratory Bird Treaty Act (**MM-2**).

**MM-2** If construction activity occurs during the breeding season (typically February 1 through September 15), a one-time biological survey for nesting bird species must be conducted within the project boundary and a 300-foot buffer within 72 hours prior to construction. This survey is necessary to assure avoidance of impacts to nesting raptors (e.g., Cooper's hawk and red-tailed hawk) and/or birds protected by the federal Migratory Bird Treaty Act. If any active nests are detected, the area will be flagged and mapped on the construction plans along with a minimum of a 25-foot buffer and up to a maximum of 300-foot buffer for raptors, as determined by the project biologist, and will be avoided until the nesting cycle is complete.

[4] Mitigation ratios for this habitat type are 1:1 to 3:1 according to the Table 5-2 in the *Public Review Draft Escondido Subarea Plan* (Ogden and CBI 2001). The project boundary lies outside any Focused Planning Area.

## 7.4 Habitat Linkages/Wildlife Corridors

No mitigation is proposed for impacts to habitat linkages/wildlife corridors because the proposed impacts are not considered significant.

## 7.5 Jurisdictional Aquatic Resources

**Impact BIO-4** (impacts to jurisdictional aquatic resources) will be mitigated through establishment/enhancement of southern coast live oak riparian forest (or similar vegetation community) at a suitable location at a 1:1 to 3:1 mitigation ratio or in an off-site mitigation bank (see **MM-1**), and compliance with state regulatory agencies (see **MM-3**), thus resulting in no net loss of acreage, function, and value of these resources.

**MM-3** To comply with state regulations for impacts to riparian habitat, the following agency permit is required, or verification that it is not required shall be obtained:

- A Section 1602 Streambed Alteration Agreement issued by the California Department of Fish and Wildlife for all project-related disturbances of any streambed and associated riparian habitat.

Permits are required to be obtained by the applicant before the impact to the resources.

# 8 ACKNOWLEDGMENTS

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# APPENDIX A

***Vascular Plant Species***
***Observed within the Project Boundary***

# APPENDIX A
# Vascular Plant Species Observed within the Project Boundary

## VASCULAR SPECIES

### MONOCOTS

***AGAVACEAE—AGAVE FAMILY***

*Yucca schidigera*—Mojave yucca

***ARECACEAE—PALM FAMILY***

* *Phoenix dactylifera*—date palm

* *Syagrus romanzoffiana*—queen palm

* *Washingtonia robusta*—Washington fan palm

***POACEAE—GRASS FAMILY***

* *Avena barbata*—slender oat

* *Bromus diandrus*—ripgut brome

* *Pennisetum setaceum*—crimson fountaingrass

* *Schismus barbatus*—common Mediterranean grass

### EUDICOTS

***ADOXACEAE—MUSKROOT FAMILY***

*Sambucus nigra*—black elderberry

***ANACARDIACEAE—SUMAC OR CASHEW FAMILY***

*Toxicodendron diversilobum*—Pacific poison oak

* *Schinus molle*—Peruvian peppertree

***ASTERACEAE—SUNFLOWER FAMILY***

*Artemisia californica*—coastal sagebrush

* *Carduus pycnocephalus*—Italian plumeless thistle

* *Centaurea melitensis*—Maltese star-thistle

* *Erigeron bonariensis*—asthmaweed

*Pseudognaphalium* sp. (dead)

***BRASSICACEAE—MUSTARD FAMILY***

* *Sisymbrium irio*—London rocket

* *Brassica nigra*—black mustard

* *Hirschfeldia incana*—shortpod mustard

***FAGACEAE—OAK FAMILY***

*Quercus agrifolia*—California live oak

***GERANIACEAE—GERANIUM FAMILY***

*Geranium* sp.

***LAMIACEAE—MINT FAMILY***

* *Marrubium vulgare*—horehound

***LYTHRACEAE—LOOSESTRIFE FAMILY***

* *Punica granatum*—pomegranate

***OLEACEAE—OLIVE FAMILY***

*Fraxinus velutina*—velvet ash

***POLYGONACEAE—BUCKWHEAT FAMILY***

*Eriogonum fasciculatum*—Eastern Mojave buckwheat

***ROSACEAE—ROSE FAMILY***

*Malus* sp.

*Prunus* sp.

***SALICACEAE—WILLOW FAMILY***

*Salix tracyi*—Tracy's willow

***SOLANACEAE—NIGHTSHADE FAMILY***

* *Nicotiana glauca*—tree tobacco

* signifies introduced (non-native) species

# APPENDIX B

*Cumulative List of Wildlife Species Observed within the Project Boundary*

# APPENDIX B
# Cumulative List of Wildlife Species Observed within the Project Boundary

## BIRD

### BUSHTITS

***AEGITHALIDAE—LONG-TAILED TITS AND BUSHTITS***

*Psaltriparus minimus*—bushtit

### EMBERIZINES

***EMBERIZIDAE—EMBERIZIDS***

*Pipilo maculatus*—spotted towhee

### FALCONS

***FALCONIDAE—CARACARAS AND FALCONS***

*Falco sparverius*—American kestrel

### FINCHES

***FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES***

*Spinus psaltria*—lesser goldfinch

### HAWKS

***ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES***

*Accipiter cooperii*—Cooper's hawk

*Buteo jamaicensis*—red-tailed hawk

### HUMMINGBIRDS

***TROCHILIDAE—HUMMINGBIRDS***

*Calypte anna*—Anna's hummingbird

### JAYS, MAGPIES AND CROWS

***CORVIDAE—CROWS AND JAYS***

*Aphelocoma californ*ica—California scrub-jay

*Corvus brachyrhynchos*—American crow

### MOCKINGBIRDS AND THRASHERS

***MIMIDAE—MOCKINGBIRDS AND THRASHERS***

*Mimus polyglottos*—northern mockingbird

## INVERTEBRATE

### BUTTERFLIES

***PIERIDAE—WHITES AND SULFURS***

*Pontia protodice*—checkered white

## MAMMAL

### CANIDS

***CANIDAE—WOLVES AND FOXES***

*Canis latrans*—coyote

### OPOSSUMS

***DIDELPHIDAE—NEW WORLD OPOSSUMS***

* *Didelphis virginiana*—Virginia opossum

### SQUIRRELS

***SCIURIDAE—SQUIRRELS***

*Spermophilus (Otospermophilus) beecheyi*—California ground squirrel

## REPTILE

### LIZARDS

***PHRYNOSOMATIDAE—IGUANID LIZARDS***

*Uta stanburiana*—common side-blotched lizard

* signifies introduced (non-native) species

# APPENDIX C

*Special-Status Plant Species Potential to Occur*

# APPENDIX C
# Special-Status Plant Species Potential to Occur

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Abronia maritima* | red sand-verbena | None/None/4.2/None | Coastal dunes/perennial herb/Feb–Nov/0–328 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Acanthomintha ilicifolia* | San Diego thorn-mint | FT/SE/1B.1/Covered | Chaparral, coastal scrub, valley and foothill grassland, vernal pools; clay, openings/annual herb/Apr–June/33–3150 | Not expected to occur. No coastal scrub or chaparral on site and suitable clay soils are absent. Species known to occur on Las Posas, Olivenhain, Redding, Huerhuero, Altamont, Ciendeba, and Linne soils (75 FR 50454 50496). Species known to occur within the vicinity.[2] |
| *Acmispon prostratus* | Nuttall's acmispon | None/None/1B.1/None | Coastal dunes, coastal scrub (sandy)/annual herb/Mar–June (July)/0–33 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Adolphia californica* | California adolphia | None/None/2B.1/None | Chaparral, coastal scrub, valley and foothill grassland; clay/perennial deciduous shrub/Dec–May/148–2428 | Not expected to occur. The site is located within the species' known elevation range; however, suitable habitat is limited in extent on site and is disturbed. Shrub would have been observed during surveys if present. Species is known to occur within the vicinity.[2] |
| *Agave shawii* var. *shawii* | Shaw's agave | None/None/2B.1/None | Coastal bluff scrub, coastal scrub/perennial leaf succulent/Sep–May/33–394 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Ambrosia pumila* | San Diego ambrosia | FE/None/1B.1/ Covered | Chaparral, coastal scrub, valley and foothill grassland, vernal pools; sandy loam or clay, often in disturbed areas, sometimes alkaline/perennial rhizomatous herb/Apr–Oct/66–1362 | Moderate potential to occur. Suitable sandy loam soils on site and the species is known to occur along drainages and river channels in western San Diego County (75 FR 74546 74604). Species is known to occur within the vicinity.[2] Site visit was conducted when the species would be detected; the species was not observed. |
| *Aphanisma blitoides* | aphanisma | None/None/1B.2/None | Coastal bluff scrub, coastal dunes, coastal scrub; sandy or gravelly/annual herb/Mar–June/3–1001 | Low potential to occur. The site is located within the species' known elevation range; however, there is no suitable habitat. |

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Arctostaphylos glandulosa* ssp. *crassifolia* | Del Mar manzanita | FE/None/1B.1/None | Chaparral (maritime, sandy)/perennial evergreen shrub/Dec–June/0–1198 | Not expected to occur. No suitable vegetation present. |
| *Arctostaphylos rainbowensis* | Rainbow manzanita | None/None/1B.1/None | Chaparral/perennial evergreen shrub/Dec–Mar/673–2198 | Not expected to occur. No suitable vegetation present and evergreen shrub would have been observed during surveys if present. |
| *Artemisia palmeri* | San Diego sagewort | None/None/4.2/None | Chaparral, coastal scrub, riparian forest, riparian scrub, riparian woodland; sandy, mesic/perennial deciduous shrub/(Feb) May–Sep/49–3002 | Low potential to occur. Perennial shrub would have been observed during surveys. Species is known to occur within the vicinity.[2] |
| *Asplenium vespertinum* | western spleenwort | None/None/4.2/None | Chaparral, cismontane woodland, coastal scrub; rocky/perennial rhizomatous herb/Feb–June/591–3281 | Low potential to occur. The site is located within the species' known elevation range however, suitable vegetation is not present and the site lacks rocky habitat. |
| *Astragalus oocarpus* | San Diego milk-vetch | None/None/1B.2/None | Chaparral (openings), cismontane woodland/perennial herb/May–Aug/1001–5000 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Astragalus tener* var. *titi* | coastal dunes milk-vetch | FE/SE/1B.1/None | Coastal bluff scrub (sandy), coastal dunes, coastal prairie (mesic); often vernally mesic areas/annual herb/Mar–May/3–164 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Atriplex coulteri* | Coulter's saltbush | None/None/1B.2/None | Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland; alkaline or clay/perennial herb/Mar–Oct/10–1509 | Not expected to occur. The site is located within the species' known elevation range; however, there is no suitable vegetation or soils found on site. |
| *Atriplex pacifica* | South Coast saltscale | None/None/1B.2/None | Coastal bluff scrub, coastal dunes, coastal scrub, playas/annual herb/Mar–Oct/0–459 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Atriplex parishii* | Parish's brittlescale | None/None/1B.1/None | Chenopod scrub, playas, vernal pools; alkaline/annual herb/June–Oct/82–6234 | Not expected to occur. No suitable vegetation present. |
| *Baccharis vanessae* | Encinitas baccharis | FT/SE/1B.1/Covered | Chaparral (maritime), cismontane woodland; sandstone/perennial deciduous shrub/Aug–Nov/197–2362 | Not expected to occur. Suitable vegetation is present; however, site lacks suitable soils and shrub would have been observed during surveys if present. Species is known to occur within the vicinity.[2] |

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Bergerocactus emoryi* | golden-spined cereus | None/None/2B.2/None | Closed-cone coniferous forest, chaparral, coastal scrub; sandy/perennial stem succulent/May–June/10–1296 | Not expected to occur. No suitable habitat found on site. |
| *Bloomeria clevelandii* | San Diego goldenstar | None/None/1B.1/Covered | Chaparral, coastal scrub, valley and foothill grassland, vernal pools; clay/perennial bulbiferous herb/Apr–May/164–1526 | Not expected to occur. No suitable habitat or clay soils found on site. Species is known to occur within the vicinity.[2] |
| *Brodiaea filifolia* | thread-leaved brodiaea | FT/SE/1B.1/Covered | Chaparral (openings), cismontane woodland, coastal scrub, playas, valley and foothill grassland, vernal pools; often clay/perennial bulbiferous herb/Mar–June/82–3675 | Low potential to occur. The site is located within the species' known elevation range and species is known to occur on Fallbrook soils; however, there is no suitable habitat found on site. Species is known to occur within the vicinity.[2] |
| *Brodiaea orcuttii* | Orcutt's brodiaea | None/None/1B.1/Covered | Closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, vernal pools; mesic, clay, sometimes serpentinite/perennial bulbiferous herb/May–July/98–5551 | Low potential to occur. The site is located within the species' known elevation range however, suitable vernal pools are absent. |
| *Calandrinia breweri* | Brewer's calandrinia | None/None/4.2/None | Chaparral, coastal scrub; sandy or loamy, disturbed sites and burns/annual herb/Mar–June/33–4003 | Low potential to occur. The site is located within the species' known elevation range, suitable soils are present and species is found within disturbed sites. However, it has not been documented in this area.[3] |
| *California macrophylla* | round-leaved filaree | None/None/1B.2/None | Cismontane woodland, valley and foothill grassland; clay/annual herb/Mar–May/49–3937 | Low potential to occur. The site is located within the species' known elevation range and suitable woodland is present; however, site lacks suitable soils. |
| *Calochortus dunnii* | Dunn's mariposa lily | None/SR/1B.2/None | Closed-cone coniferous forest, chaparral, valley and foothill grassland; gabbroic or metavolcanic, rocky/perennial bulbiferous herb/(Feb) Apr–June/607–6004 | Not expected to occur. No suitable vegetation present. Species is known to occur within the vicinity.[2] |
| *Camissoniopsis lewisii* | Lewis' evening-primrose | None/None/3/None | Coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; sandy or clay/annual herb/Mar–May (June)/0–984 | Low potential to occur. The site is located within the species' known elevation range and suitable vegetation is present; however, suitable vegetation and soils are absent. |

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Ceanothus cyaneus* | Lakeside ceanothus | None/None/1B.2/None | Closed-cone coniferous forest, chaparral/perennial evergreen shrub/Apr–June/771–2477 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. Evergreen shrub would have been observed during surveys if present. |
| *Ceanothus verrucosus* | wart-stemmed ceanothus | None/None/2B.2/Covered | Chaparral/perennial evergreen shrub/Dec–May/3–1247 | Not expected to occur. No suitable vegetation present and evergreen shrub would have been observed during surveys if present. Species is known to occur within the vicinity.[2] |
| *Centromadia parryi* ssp. *australis* | southern tarplant | None/None/1B.1/None | Marshes and swamps (margins), valley and foothill grassland (vernally mesic), vernal pools/annual herb/May–Nov/0–1575 | Low potential to occur. Site is located within the species' known elevation range; however, suitable vegetation is absent. Species is known to occur within the vicinity.[2] |
| *Centromadia pungens* ssp. *laevis* | smooth tarplant | None/None/1B.1/None | Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland; alkaline/annual herb/Apr–Sep/0–2100 | Low potential to occur. No suitable habitat found on site. Species is known to occur within the vicinity.[2] |
| *Chaenactis glabriuscula* var. *orcuttiana* | Orcutt's pincushion | None/None/1B.1/None | Coastal bluff scrub (sandy), coastal dunes/annual herb/Jan–Aug/0–328 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Chamaebatia australis* | southern mountain misery | None/None/4.2/None | Chaparral (gabbroic or metavolcanic)/perennial evergreen shrub/Nov–May/984–3346 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. Evergreen shrub would have been observed during surveys if present. |
| *Chloropyron maritimum* ssp. *maritimum* | salt marsh bird's-beak | FE/SE/1B.2/None | Coastal dunes, marshes and swamps (coastal salt)/annual herb (hemiparasitic)/May–Oct/0–98 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Chorizanthe leptotheca* | Peninsular spineflower | None/None/4.2/None | Chaparral, coastal scrub, lower montane coniferous forest; alluvial fan, granitic/annual herb/May–Aug/984–6234 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Chorizanthe orcuttiana* | Orcutt's spineflower | FE/SE/1B.1/None | Closed-cone coniferous forest, chaparral (maritime), coastal scrub; sandy openings/annual herb/Mar–May/10–410 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Chorizanthe polygonoides* var. *longispina* | long-spined spineflower | None/None/1B.2/None | Chaparral, coastal scrub, meadows and seeps, valley and foothill grassland, vernal pools; often clay/annual herb/Apr–July/98–5020 | Not expected to occur. No suitable vegetation or soils found on site. |
| *Cistanthe maritima* | seaside cistanthe | None/None/4.2/None | Coastal bluff scrub, coastal scrub, valley and foothill grassland; sandy/annual herb/(Feb) Mar–June (Aug)/16–984 | Not expected to occur. No suitable habitat found on site. |
| *Clarkia delicata* | delicate clarkia | None/None/1B.2/None | Chaparral, cismontane woodland; often gabbroic/annual herb/Apr–June/771–3281 | Low potential to occur. There is oak woodland present; however, the site is slightly outside of the species' known elevation range. Species is known to occur within the vicinity.[2] |
| *Clinopodium chandleri* | San Miguel savory | None/None/1B.2/None | Chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland; rocky, gabbroic, or metavolcanic/perennial shrub/Mar–July/394–3527 | Not expected to occur. The site is located within the species' known elevation range and suitable woodland is present; however, there are no suitable soils found on site. Shrub would have been observed during surveys if present. |
| *Comarostaphylis diversifolia* ssp. *diversifolia* | summer holly | None/None/1B.2/Covered | Chaparral, cismontane woodland/perennial evergreen shrub/Apr–June/98–2592 | Not expected to occur. Oak woodland is present and species is known to occur within the vicinity[2]; however, evergreen shrub would have been observed during surveys if present. |
| *Convolvulus simulans* | small-flowered morning-glory | None/None/4.2/None | Chaparral (openings), coastal scrub, valley and foothill grassland; clay, serpentinite seeps/annual herb/Mar–July/98–2297 | Low potential to occur. The site is located within the species' known elevation range; however, there is no suitable habitat present. |
| *Corethrogyne filaginifolia* var. *incana* | San Diego sand aster | None/None/1B.1/None | Coastal bluff scrub, chaparral, coastal scrub/perennial herb/June–Sep/10–377 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present. |
| *Corethrogyne filaginifolia* var. *linifolia* | Del Mar Mesa sand aster | None/None/1B.1/None | Coastal bluff scrub, chaparral (maritime, openings), coastal scrub; sandy/perennial herb/May–Sep/49–492 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present. |
| *Cylindropuntia californica* var. *californica* | snake cholla | None/None/1B.1/None | Chaparral, coastal scrub/perennial stem succulent/Apr–May/98–492 | Not expected to occur. The site is outside of the species' known elevation range and conspicuous stem succulent would have been observed during surveys if present. |

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Deinandra paniculata* | paniculate tarplant | None/None/4.2/None | Coastal scrub, valley and foothill grassland, vernal pools; usually vernally mesic, sometimes sandy/annual herb/Apr–Nov/82–3084 | Low potential to occur. The site is located within the species' known elevation range; however, there is no suitable habitat present. |
| *Dichondra occidentalis* | western dichondra | None/None/4.2/None | Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/perennial rhizomatous herb/(Jan) Mar–July/164–1640 | Not expected to occur. The site is located within the species' known elevation range; however, there is no suitable vegetation present. Species is known to occur within the vicinity.[2] |
| *Dudleya brevifolia* | short-leaved dudleya | None/SE/1B.1/None | Chaparral (maritime, openings), coastal scrub; Torrey sandstone/perennial herb/Apr–May/98–820 | Low potential to occur. The site is located within the species' known elevation range; however, there is no suitable habitat present. |
| *Dudleya variegata* | variegated dudleya | None/None/1B.2/Covered | Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay/perennial herb/Apr–June/10–1903 | Low potential to occur. The site is located within the species' known elevation range; however, there is no suitable habitat present. Species is known to occur within the vicinity.[2] |
| *Dudleya viscida* | sticky dudleya | None/None/1B.2/Covered | Coastal bluff scrub, chaparral, cismontane woodland, coastal scrub; rocky/perennial herb/May–June/33–1804 | Not expected to occur. No suitable soils found on site. Species is not known to occur within the vicinity.[2] |
| *Ericameria palmeri* var. *palmeri* | Palmer's goldenbush | None/None/1B.1/None | Chaparral, coastal scrub; mesic/perennial evergreen shrub/(July) Sep–Nov/98–1969 | Not expected to occur. Limited suitable vegetation found on site and conspicuous evergreen shrub would have been detected during surveys. Species is known to occur within the vicinity.[2] |
| *Eryngium aristulatum* var. *parishii* | San Diego button-celery | FE/SE/1B.1/None | Coastal scrub, valley and foothill grassland, vernal pools; mesic/annual / perennial herb/Apr–June/66–2034 | Not expected to occur. No suitable vernal pools found on site. Species is known to occur within the vicinity.[2] |
| *Euphorbia misera* | cliff spurge | None/None/2B.2/None | Coastal bluff scrub, coastal scrub, Mojavean desert scrub; rocky/perennial shrub/Dec–Aug (Oct)/33–1640 | Not expected to occur. No suitable vegetation or suitable soils found on site. |
| *Ferocactus viridescens* | San Diego barrel cactus | None/None/2B.1/Covered | Chaparral, coastal scrub, valley and foothill grassland, vernal pools/perennial stem succulent/May–June/10–1476 | Not expected to occur. No suitable habitat found on site and conspicuous stem succulent would have been observed during surveys. Species is known to occur within the vicinity.[2] |

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Frankenia palmeri* | Palmer's frankenia | None/None/2B.1/None | Coastal dunes, marshes and swamps (coastal salt), playas/perennial herb/May–July/0–33 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Geothallus tuberosus* | Campbell's liverwort | None/None/1B.1/None | Coastal scrub (mesic), vernal pools; soil/ephemeral liverwort/N.A./33–1969 | Not expected to occur. No vernal pools found on site. |
| *Githopsis diffusa* ssp. *filicaulis* | Mission Canyon bluecup | None/None/3.1/None | Chaparral (mesic, disturbed areas)/annual herb/Apr–June/1476–2297 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Grindelia hallii* | San Diego gumplant | None/None/1B.2/None | Chaparral, lower montane coniferous forest, meadows and seeps, valley and foothill grassland/perennial herb/May–Oct/607–5725 | Not expected to occur. No suitable vegetation present. |
| *Harpagonella palmeri* | Palmer's grapplinghook | None/None/4.2/None | Chaparral, coastal scrub, valley and foothill grassland; clay/annual herb/Mar–May/66–3133 | Not expected to occur. No suitable vegetation and no suitable soils found on site. |
| *Hazardia orcuttii* | Orcutt's hazardia | None/ST/1B.1/None | Chaparral (maritime), coastal scrub; often clay/perennial evergreen shrub/Aug–Oct/262–279 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Heterotheca sessiliflora* ssp. *sessiliflora* | beach goldenaster | None/None/1B.1/None | Chaparral (coastal), coastal dunes, coastal scrub/perennial herb/Mar–Dec/0–4019 | Not expected to occur. No suitable coastal dune habitat found on site No suitable habitat found on site; species not known to occur in the vicinity.[2] |
| *Holocarpha virgata* ssp. *elongata* | graceful tarplant | None/None/4.2/None | Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/annual herb/May–Nov/197–3609 | Low potential to occur. The site is located within the species' known elevation range; however, no suitable vegetation is present. Species is known to occur within the vicinity.[2] |
| *Hordeum intercedens* | vernal barley | None/None/3.2/None | Coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), vernal pools/annual herb/Mar–June/16–3281 | Not expected to occur. No coastal dune habitat or vernal pools found on site. |
| *Horkelia truncata* | Ramona horkelia | None/None/1B.3/None | Chaparral, cismontane woodland; clay, gabbroic/perennial herb/May–June/1312–4265 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Isocoma menziesii* var. *decumbens* | decumbent goldenbush | None/None/1B.2/None | Chaparral, coastal scrub (sandy, often in disturbed areas)/perennial shrub/Apr–Nov/33–443 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Iva hayesiana* | San Diego marsh-elder | None/None/2B.2/Covered | Marshes and swamps, playas/perennial herb/Apr–Oct/33–1640 | Not expected to occur. No suitable vegetation present. Species is known to occur within the vicinity.[2] |

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Juncus acutus* ssp. *leopoldii* | southwestern spiny rush | None/None/4.2/None | Coastal dunes (mesic), meadows and seeps (alkaline seeps), marshes and swamps (coastal salt)/perennial rhizomatous herb/(Mar) May–June/10–2953 | Not expected to occur. No suitable vegetation present. Species is known to occur within the vicinity.[2] |
| *Lasthenia glabrata* ssp. *coulteri* | Coulter's goldfields | None/None/1B.1/None | Marshes and swamps (coastal salt), playas, vernal pools/annual herb/Feb–June/3–4003 | Not expected to occur. No suitable vegetation present. |
| *Lepechinia cardiophylla* | heart-leaved pitcher sage | None/None/1B.2/None | Closed-cone coniferous forest, chaparral, cismontane woodland/perennial shrub/Apr–July/1706–4495 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Lepechinia ganderi* | Gander's pitcher sage | None/None/1B.3/None | Closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland; gabbroic or metavolcanic/perennial shrub/June–July/1001–3297 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat present. |
| *Lepidium virginicum* var. *robinsonii* | Robinson's pepper-grass | None/None/4.3/None | Chaparral, coastal scrub/annual herb/Jan–July/3–2904 | Low potential to occur. No suitable vegetation found on site is in a disturbed state. Species is known to occur within the vicinity.[2] |
| *Leptosiphon grandiflorus* | large-flowered leptosiphon | None/None/4.2/None | Coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland; usually sandy/annual herb/Apr–Aug/16–4003 | Low potential to occur. No suitable vegetation and soils found on site, but species is not known to occur within the vicinity.[2] |
| *Leptosyne maritima* | sea dahlia | None/None/2B.2/None | Coastal bluff scrub, coastal scrub/perennial herb/Mar–May/16–492 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Lycium californicum* | California box-thorn | None/None/4.2/None | Coastal bluff scrub, coastal scrub/perennial shrub/(Dec) Mar–Aug/16–492 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Microseris douglasii* ssp. *platycarpha* | small-flowered microseris | None/None/4.2/None | Cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay/annual herb/Mar–May/49–3510 | Low potential to occur. No suitable vegetation or soils found on site. |
| *Mimulus diffusus* | Palomar monkeyflower | None/None/4.3/None | Chaparral, lower montane coniferous forest; sandy or gravelly/annual herb/Apr–June/4003–6004 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Monardella hypoleuca* ssp. *lanata* | felt-leaved monardella | None/None/1B.2/None | Chaparral, cismontane woodland/perennial rhizomatous herb/June–Aug/984–5167 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Monardella viminea* | willowy monardella | FE/SE/1B.1/None | Chaparral, coastal scrub, riparian forest, riparian scrub, riparian woodland; alluvial ephemeral washes/perennial herb/June–Aug/164–738 | Low potential to occur. The site is located within the species' known elevation range; however. no suitable vegetation is found on site. |
| *Myosurus minimus* ssp. *apus* | little mousetail | None/None/3.1/None | Valley and foothill grassland, vernal pools (alkaline)/annual herb/Mar–June/66–2100 | Not expected to occur. No suitable vegetation present. |
| *Navarretia fossalis* | spreading navarretia | FT/None/1B.1/None | Chenopod scrub, marshes and swamps (assorted shallow freshwater), playas, vernal pools/annual herb/Apr–June/98–2149 | Not expected to occur. No suitable marshes or swamps found on site. |
| *Nemacaulis denudata* var. *denudata* | coast woolly-heads | None/None/1B.2/None | Coastal dunes/annual herb/Apr–Sep/0–328 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Nolina cismontana* | chaparral nolina | None/None/1B.2/None | Chaparral, coastal scrub; sandstone or gabbro/perennial evergreen shrub/(Mar) May–July/459–4183 | Not expected to occur. No suitable vegetation or soils found on site and perennial shrub would have been observed during surveys. |
| *Ophioglossum californicum* | California adder's-tongue | None/None/4.2/None | Chaparral, valley and foothill grassland, vernal pools (margins); mesic/perennial rhizomatous herb/(Dec) Jan–June/197–1722 | Not expected to occur. No suitable vegetation present. |
| *Orcuttia californica* | California Orcutt grass | FE/SE/1B.1/None | Vernal pools/annual herb/Apr–Aug/49–2165 | Not expected to occur. No suitable vegetation present. |
| *Orobanche parishii* ssp. *brachyloba* | short-lobed broomrape | None/None/4.2/None | Coastal bluff scrub, coastal dunes, coastal scrub; sandy/perennial herb (parasitic)/Apr–Oct/10–1001 | Low potential to occur. No suitable habitat found on site. |
| *Packera ganderi* | Gander's ragwort | None/SR/1B.2/None | Chaparral (burns, gabbroic outcrops)/perennial herb/Apr–June/1312–3937 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Pentachaeta aurea* ssp. *aurea* | golden-rayed pentachaeta | None/None/4.2/None | Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland, valley and foothill grassland/annual herb/Mar–July/262–6070 | Low potential to occur. The site is located within the species' known elevation range; however, no suitable vegetation is present. Species is known to occur within the vicinity.[2] |
| *Phacelia ramosissima* var. *austrolitoralis* | south coast branching phacelia | None/None/3.2/None | Chaparral, coastal dunes, coastal scrub, marshes and swamps (coastal salt); sandy, sometimes rocky/perennial herb/Mar–Aug/16–984 | Low potential to occur. No suitable habitat found on site. |
| *Phacelia stellaris* | Brand's star phacelia | None/None/1B.1/None | Coastal dunes, coastal scrub/annual herb/Mar–June/3–1312 | Low potential to occur. No suitable habitat found on site. |

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Pinus torreyana* ssp. *torreyana* | Torrey pine | None/None/1B.2/None | Closed-cone coniferous forest, chaparral; sandstone/perennial evergreen tree/N.A./246–525 | Not expected to occur. No suitable vegetation present or soils present. Evergreen tree would have been observed during surveys if present. |
| *Piperia cooperi* | chaparral rein orchid | None/None/4.2/None | Chaparral, cismontane woodland, valley and foothill grassland/perennial herb/Mar–June/49–5200 | Low potential to occur. No suitable vegetation present and the species is not known to occur within the vicinity.[2] |
| *Pogogyne abramsii* | San Diego mesa mint | FE/SE/1B.1/None | Vernal pools/annual herb/Mar–July/295–656 | Not expected to occur. No suitable vegetation present. |
| *Pogogyne nudiuscula* | Otay Mesa mint | FE/SE/1B.1/None | Vernal pools/annual herb/May–July/295–820 | Not expected to occur. No suitable vegetation present. |
| *Polygala cornuta* var. *fishiae* | Fish's milkwort | None/None/4.3/None | Chaparral, cismontane woodland, riparian woodland/perennial deciduous shrub/May–Aug/328–3281 | Low potential to occur. The site is located within the species' known elevation range; however, there is no suitable vegetation on site and perennial shrub would have been observed during surveys. |
| *Psilocarphus brevissimus* var. *multiflorus* | Delta woolly-marbles | None/None/4.2/None | Vernal pools/annual herb/May–June/33–1640 | Not expected to occur. No suitable vegetation present. |
| *Quercus cedrosensis* | Cedros Island oak | None/None/2B.2/None | Closed-cone coniferous forest, chaparral, coastal scrub/perennial evergreen tree/Apr–May/837–3150 | Not expected to occur. The site is outside of the species' known elevation range. Evergreen tree would have been observed during surveys if present. |
| *Quercus dumosa* | Nuttall's scrub oak | None/None/1B.1/None | Closed-cone coniferous forest, chaparral, coastal scrub; sandy, clay loam/perennial evergreen shrub/Feb–Apr (Aug)/49–1312 | Not expected to occur. No suitable vegetation present. Evergreen shrub would have been observed during surveys. |
| *Quercus engelmannii* | Engelmann oak | None/None/4.2/Covered | Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland/perennial deciduous tree/Mar–June/164–4265 | Not expected to occur. The site is located within species' known elevation range; however, there is no suitable vegetation present and deciduous tree would have been observed during surveys. Species is known to occur within the vicinity.[2] |
| *Salvia munzii* | Munz's sage | None/None/2B.2/None | Chaparral, coastal scrub/perennial evergreen shrub/Feb–Apr/377–3494 | Low potential to occur. No suitable vegetation found on site. |

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Selaginella cinerascens* | ashy spike-moss | None/None/4.1/None | Chaparral, coastal scrub/perennial rhizomatous herb/N.A./66–2100 | Not expected to occur. Species is known to occur within the vicinity[2]; however, there is no suitable vegetation found on site. |
| *Senecio aphanactis* | chaparral ragwort | None/None/2B.2/None | Chaparral, cismontane woodland, coastal scrub; sometimes alkaline/annual herb/Jan–Apr/49–2625 | Not expected to occur. No suitable vegetation present or soils found on site. Species not known from within the vicinity.[2] |
| *Sphaerocarpos drewei* | bottle liverwort | None/None/1B.1/None | Chaparral, coastal scrub; openings, soil/ephemeral liverwort/N.A./295–1969 | Not expected to occur. There is no suitable vegetation found on site and the species is not known from within the vicinity.[2] |
| *Stemodia durantifolia* | purple stemodia | None/None/2B.1/None | Sonoran desert scrub (often mesic, sandy)/perennial herb/Jan–Dec/591–984 | Not expected to occur. No suitable vegetation present. |
| *Stipa diegoensis* | San Diego County needle grass | None/None/4.2/None | Chaparral, coastal scrub; rocky, often mesic/perennial herb/Feb–June/33–2625 | Not expected to occur. No suitable vegetation or soils found on site. |
| *Suaeda esteroa* | estuary seablite | None/None/1B.2/None | Marshes and swamps (coastal salt)/perennial herb/May–Oct (Jan)/0–16 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Suaeda taxifolia* | woolly seablite | None/None/4.2/None | Coastal bluff scrub, coastal dunes, marshes and swamps (margins of coastal salt)/perennial evergreen shrub/Jan–Dec/0–164 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Tetracoccus dioicus* | Parry's tetracoccus | None/None/1B.2/Covered | Chaparral, coastal scrub/perennial deciduous shrub/Apr–May/541–3281 | Not expected to occur. No suitable vegetation is present. Shrub would have been observed during surveys if present. |
| *Texosporium sancti-jacobi* | woven-spored lichen | None/None/3/None | Chaparral (openings); on soil, small mammal pellets, dead twigs, and on *Selaginella* spp./crustose lichen (terricolous)/N.A./951–2165 | Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present. |
| *Triquetrella californica* | coastal triquetrella | None/None/1B.2/None | Coastal bluff scrub, coastal scrub; soil/moss/N.A./33–328 | Not expected to occur. The site is outside of the species' known elevation range. |
| *Viguiera laciniata* | San Diego County viguiera | None/None/4.2/None | Chaparral, coastal scrub/perennial shrub/Feb–June (Aug)/197–2461 | Not expected to occur. There is no suitable vegetation found on site and conspicuous shrub would have been detected. Species is known to occur within the vicinity.[2] |

| Scientific Name | Common Name | Status[1] Federal/State/CRPR/ Escondido Subarea Plan | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Xanthisma junceum* | rush-like bristleweed | None/None/4.3/None | Chaparral, coastal scrub/perennial herb/June–Jan/787–3281 | Not expected to occur. The site is outside of the species' known elevation range. Species is known to occur within the vicinity.[2] |

1 **Status Legend:**
**Federal**
FE: Federally listed as endangered
FT: Federally listed as threatened
FC: Federal Candidate for listing
**State**
SE: State listed as endangered
ST: State listed as threatened
SR: State Rare
**CRPR**
CRPR 1A: Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere
CRPR 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
CRPR 2A: Plants Presumed Extirpated in California, But More Common Elsewhere
CRPR 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
CRPR 3: Plants About Which More Information is Needed - A Review List
CRPR 4: Plants of Limited Distribution - A Watch List
.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)
**Multiple Habitat Conservation Program (MHCP) Escondido Subarea Plan**
Covered: MHCP species occurring or potentially occurring in Escondido

2 **Potential to Occur Designations:**
Found within the vicinity: Escondido quadrangle
Found within the region: CNDDB 9-quad search

3 San Diego Natural History Museum. 2016. "San Diego Plant Atlas." Accessed October 2016. http://www.sdplantatlas.org/.

# APPENDIX D

*Special-Status Wildlife Potential to Occur*

# APPENDIX D
# Special-Status Wildlife Species Potential To Occur

| Scientific Name | Common Name | Status[1] Federal/State/MHCP Subarea Plan/Other | Primary Habitat Associations | Status on Site or Potential to Occur[2] |
|---|---|---|---|---|
| *Amphibians* | | | | |
| *Anaxyrus californicus* | Arroyo toad | FE/SSC/None/None | Stream channels for breeding(typically 3rd order); adjacent stream terraces and uplands for foraging and wintering | Low potential to occur. Although the site is adjacent to a perennial/intermittent stream it lacks the stream terraces to be considered suitable habitat. There is a USFWS occurrence of this species within 3 miles of the project site. |
| *Scaphiopus (= Spea ) hammondi* | Western spadefoot toad | None/ SSC/Covered/None | Most common in grasslands, coastal sage scrub near rain pools or vernal pools; riparian habitats | Low potential to occur. No suitable grasslands coastal sage scrub or vernal pools occur on site. Found within the vicinity.[2] |
| *Reptiles* | | | | |
| *Actinemys marmorata* | Western pond turtle | None/SSC/Covered/None | Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter | Low potential to occur on site. Limited suitable habitat present, the adjacent perennial/intermittent stream did not contain water during survey. Found within the vicinity.[2] |
| *Aspidoscelis hyperythra* | Orange-throated whiptail | None/WL/Covered/None | Chaparral Cismontane woodland, coastal scrub | Moderate potential to occur in on site. Found within the vicinity.[2] |
| *Aspidoscelis tigris stejnegeri* | Coastal whiptail | None/SSC/None/None | Coastal sage scrub, chaparral, grassland, juniper and oak woodland | Moderate potential to occur in on site Found within the vicinity.[2] |
| *Crotalus ruber* | Red-diamond rattlesnake | None/SSC/None/None | Variety of shrub habitats where there is heavy brush, large rocks, or boulders | Low potential to occur on site. Found within the vicinity.[2] |
| *Phrynosoma blainvillii* | Blainville's horned lizard | None/SSC/Covered/None | Coastal sage scrub, annual grassland, chaparral, oak and riparian woodland, coniferous forest | Low potential to occur. Limited suitable habitat occurs on site. Found within the vicinity.[2] |
| *Salvadora hexalepis virgultea* | Coast patch-nosed snake | None/SSC/None/None | Chaparral, washes, sandy flats, rocky areas | Low potential to occur. No chaparral or sandy washes occur on site. |
| *Thamnophis hammondii* | Two-striped garter snake | None/SSC/None/None | Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools | Moderate potential to occur. Suitable habitat on site. |

| Scientific Name | Common Name | Status[1] Federal/State/MHCP Subarea Plan/Other | Primary Habitat Associations | Status on Site or Potential to Occur[2] |
|---|---|---|---|---|
| *Birds* | | | | |
| *Accipiter cooperii* (nesting) | Cooper's hawk | None/WL/Covered/None | Cismontane woodland, riparian forest, riparian woodland, upper montane coniferous forest | High potential to occur. Suitable coast live oak woodland is found on site. |
| *Agelaius tricolor* (nesting colony) | Tricolored blackbird | BCC/SSC/Covered/None | Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony. | Low potential to occur. No open water found on site. Found within the vicinity.[2] |
| *Aimophila ruficeps canescens* | Southern California rufous-crowned sparrow | None/WL/Covered/None | Chaparral, coastal scrub | Low potential to occur. No chaparral or coastal sage scrub found on site. Found within the vicinity.[2] |
| *Ammodramus savannarum* (nesting) | Grasshopper sparrow | None/SSC/Covered/None | Valley and foothill grassland | Low potential to occur. No grassland found on site. |
| *Aquila chrysaetos* (nesting and wintering) | Golden eagle | BCC/FP, WL/ Covered/None | Open country, especially hilly and mountainous regions; grassland, coastal sage scrub, chaparral, oak savannas, open coniferous forest | Low potential to forage, low potential to nest on site. The site is open with oak woodland but due to the limited space and surrounding residential development unlikely to support nesting or suitable foraging habitat. Species typically requires inaccessible nesting sites that are more isolated from development than the site can provide. |
| *Artemisiospiza belli belli* | Bell's sage sparrow | BCC/WL/Covered/None | Chaparral, coastal scrub | Low potential to occur. No chaparral or coastal sage scrub found on site. Found within the vicinity.[2] |
| *Athene cunicularia* (burrow sites) | Burrowing owl | BCC/SSC/Covered/None | Grassland, lowland scrub, agriculture, coastal dunes and other artificial open areas | Moderate potential to occur on site. Site contains open areas and adjacent areas include potentially suitable habitat, however, no suitable burrows were observed during surveys. Found within the vicinity.[2] |
| *Buteo swainsoni* (nesting) | Swainson's hawk | BCC/ST/None/None | Nests in open woodland and savanna, riparian and in isolated large trees; forages in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture | Low potential to forage; no potential to nest. Suitable foraging habitat occurs on site, however very limited in size. Found within the vicinity.[2] |

| Scientific Name | Common Name | Status[1] Federal/State/MHCP Subarea Plan/Other | Primary Habitat Associations | Status on Site or Potential to Occur[2] |
|---|---|---|---|---|
| *Campylorhynchus brunneicapillus sandiegensis* | Coastal cactus wren | BCC/SSC/Covered/None | Southern cactus scrub, maritime succulent scrub, cactus thickets in coastal sage scrub. In arid parts of westward-draining slopes of Southern California. | Not expected to occur. No suitable habitat on site for nesting. Found within the vicinity.[2] |
| *Charadrius alexandrinus nivosus* (nesting) | Western snowy plover (coastal population) | FT, BCC/SSC/None/None | Nests primarily on coastal beaches, in flat open areas, with sandy or saline substrates; less commonly in salt pans, dredged spoil disposal sites, dry salt ponds and levees | Not expected to occur. No suitable coastal beaches, site is 14 miles inland. |
| *Coccyzus americanus occidentalis* (nesting) | Western yellow-billed cuckoo | FT, BCC/SE/None/None | Nests in dense, wide riparian woodlands and forest with well-developed understories | No expected to occur. The oak woodland on site is not suitable for this species. Found within the vicinity.[2] |
| *Elanus leucurus* (nesting) | White-tailed kite | None/FP/None/None | Open grasslands, savanna-like habitats, agriculture, wetlands, oak woodlands, riparian | Moderate potential to occur. Some suitable oak woodland present on site, but it is close to residential areas and human activity. |
| *Empidonax traillii extimus* | Southwestern willow flycatcher | FE/SE/Covered/None | Riparian woodlands along streams and rivers with mature, dense stands of willows or alders; may nest in thickets dominated by tamarisk | Low potential to occur in on site along drainage. No willow thickets found on site along adjacent intermittent stream. Found within the vicinity.[2] There is a USFWS occurrence of this species within 3 miles of the project site. |
| *Icteria virens (*nesting) | Yellow-breasted chat | None/SSC/Covered/None | Dense, relatively wide riparian woodlands and thickets of willows, vine tangles and dense brush. | Low potential to occur. No willow thickets found on site. Found within the vicinity.[2] |
| *Laterallus jamaicensis coturniculus* | California black rail | BCC/ST, FP/None/None | Saline, brackish, and fresh emergent wetlands mostly in central coastal California | Not expected to occur. No suitable habitat on site. |
| *Passerculus sandwichensis beldingi* | Belding's savannah sparrow | None/SE/None/None | Scattered southern coastal salt marsh wetlands in southwestern California | Not expected to occur. No suitable habitat on site. |
| *Plegadis chihi* (nesting colony) | White-faced ibis | None/WL/Covered/None | Marsh and swamp, wetlands | Not expected to occur on site. No suitable marsh and swamp habitat present on site. Found within the vicinity.[2] |

| Scientific Name | Common Name | Status[1] Federal/State/MHCP Subarea Plan/Other | Primary Habitat Associations | Status on Site or Potential to Occur[2] |
|---|---|---|---|---|
| *Polioptila californica californica* | Coastal California gnatcatcher | FT/SSC/Covered/None | Coastal sage scrub, coastal sage scrub-chaparral mix, coastal sage scrub-grassland ecotone, riparian in late summer | Not expected to occur on site. No suitable coastal sage scrub habitat occurs on site. Found within the vicinity.[2] There is a USFWS occurrence of this species within 3 miles of the project site. |
| *Rallus obsoletus levipes* | Ridgeway's Rail (formerly Light-footed clapper rail) | FE/SE, FP/None/None | Coastal saline emergent wetlands along southern California from Santa Barbara Co. to San Diego Co. | Not expected to occur. No suitable habitat on site. |
| *Sternula antillarum browni* (nesting colony) | California least tern | FE/SE, FP/None/None | Breeding colonies located in marine and estuarine shores and in abandoned salt ponds and estuarine shores. Feeds in nearby waters. | Not expected to occur. No suitable habitat on site. |
| *Vireo bellii pusillus* | Least Bell's vireo | FE/SE/Covered/None | Nests in southern willow scrub with dense cover within 1-2 meters of the ground; habitat includes willows, cottonwoods, baccharis, wild blackberry or mesquite on desert areas | Low potential to occur on site. Oak woodland on site does not contain willows. Found within the vicinity.[2] There is a USFWS occurrence of this species within 3 miles of the project site. |
| *Fishes* | | | | |
| *Gila orcuttii* | Arroyo chub | None/SSC/None/None | Warm, fluctuating streams with slow-moving or backwater sections of warm to cool streams at depths >40 centimeters (16 inches); substrates of sand or mud | Not expected to occur. The adjacent stream lacked water within study area. Species is native to the streams and rivers of the Los Angeles plain in southern California. |
| *Mammals* | | | | |
| *Antrozous pallidus* | Pallid bat | None/SSC/None/ WBWG: H | Grasslands, shrublands, woodlands, forests; most common in open dry habitats with rocky outcrops for roosting. Found throughout low elevations of California, except for high Sierra Nevada and northwestern corner of the state south to Mendocino Co. | Not expected to roost on site due to lack of rocky outcrops. Moderate potential to forage on site. Found within the vicinity.[2] |

| Scientific Name | Common Name | Status[1] Federal/State/MHCP Subarea Plan/Other | Primary Habitat Associations | Status on Site or Potential to Occur[2] |
|---|---|---|---|---|
| *Chaetodipus californicus femoralis* | Dulzura pocket mouse | None/SSC/None/None | Coastal sage scrub, chaparral, riparian-scrub ecotone; more mesic areas | Not expected to occur. Upland areas are highly disturbed from past agricultural operations. Found within the vicinity.[2] |
| *Chaetodipus fallax fallax* | Northwestern San Diego pocket mouse | None/SSC/Covered/None | Coastal sage scrub, grassland, sage scrub-grassland ecotones, sparse chaparral; rocky substrates, loams and sandy loams | Low potential to occur on site. No coastal sage scrub habitat occurs on site. Upland areas are highly disturbed from past agricultural operations. |
| *Choeronycteris mexicana* | Mexican long-tongued bat | None/SSC/None/ WBWG: H | Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon-juniper woodland. Roosts in caves, mines, and buildings. Summer resident in San Diego Co. In southwestern US, typically observed in oak-conifer woodlands and semi desert grasslands. | Not expected to roost on site due to lack of suitable roosting habitat. Low potential to forage on site because species is rare in western San Diego County. |
| *Corynorhinus townsendii* | Townsend's big-eared bat | None/ CT, SSC/Covered/ WBWG: H | Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, also man-made structures and tunnels. | Low potential to roost and forage on site. Found within the vicinity.[2] |
| *Dipodomys stephensi* | Stephens' kangaroo rat | FE/ST/Covered/None | Coastal scrub, valley and foothill grassland | No potential to occur. No grassland available on site. Nearest populations are in Fallbrook and on Camp Pendleton, which are separated from the Project site by highly unsuitable land uses (intensive agriculture and urban development) and unsuitable vegetation (chaparral and dense coastal scrub). |
| *Euderma maculatum* | Spotted bat | None/SSC/None/ WBWG: H | Arid deserts, grasslands and mixed conifer forests at elevations from below sea level to 10,000 feet. Roosts sites are cracks, crevices and caves, usually high in fractured rock cliffs. | No potential to roost on site due to lack of suitable roosting habitat. Low potential to forage on site. |

| Scientific Name | Common Name | Status[1] Federal/State/MHCP Subarea Plan/Other | Primary Habitat Associations | Status on Site or Potential to Occur[2] |
|---|---|---|---|---|
| *Eumops perotis californicus* | Western mastiff bat | None/SSC/Covered/ WBWG: H | Primarily a cliff-dwelling species. Roosts under exfoliating rock slabs, or in small colonies in cracks and small holes in boulders and buildings. | Not expected to roost on site due to lack of suitable roosting habitat. Moderate potential to forage on site. Found within the vicinity.[2] |
| *Lasiurus blossevillii* | Western red bat | None/SSC/None/ WBWG: H | Roosts in forests and woodlands and feeds over grasslands, shrublands, open woodlands and forests, and croplands. Roosts sites are often in edge habitats adjacent to streams, fields or urban areas. | Moderate potential to roost and forage on site. Suitable woodlands adjacent to channel occur on site. |
| *Lasiurus cinereus* | Hoary bat | None/None/None/ WBWG: M | Broadleaved upland forest. Cismontane woodland. Lower montane coniferous forest. North coast coniferous forest. | No potential to roost due to lack of suitable roosting habitat. Low potential to forage on site. Found within the vicinity.[2] |
| *Lasionycteris noctivagans* | Silver-haired bat | None/None/None/ WBWG: M | Old growth forest, maternity roosts in trees (primarily woodpecker hollows), large diameter snags 50 ft above ground; hibernates in hollow trees, under sloughing bark, in rock crevices, and occasionally in buildings, mines and caves; forages in or near coniferous or mixed deciduous forest, often following stream or river drainages | Not expected to roost on site due to lack of suitable roosting habitat. Low potential to forage on site due to lack of suitable foraging habitat. |
| *Lasiurus xanthinus* | Western yellow bat | None/SSC/None/ WBWG: H | Valley foothill riparian, desert riparian, desert wash, and palm oasis habitats below 2,000 feet. Display a particular association with palms and desert riparian oases. Prefer tree-roosting under palm leaves, but also have been documented using cottonwood. | Not expected to roost on site due to lack of suitable roosting habitat. Low potential to forage on site. Species very uncommon in western San Diego County. Found within the vicinity.[2] |

| Scientific Name | Common Name | Status[1] Federal/State/MHCP Subarea Plan/Other | Primary Habitat Associations | Status on Site or Potential to Occur[2] |
|---|---|---|---|---|
| *Lepus californicus bennettii* | San Diego black-tailed jackrabbit | None/SSC/Covered/None | Arid habitats with open ground; grasslands, coastal sage scrub, agriculture, disturbed areas, rangelands | Moderate potential to occur. Site contains open areas and adjacent areas are composed of open habitat but the site lacks grassland or coastal sage scrub habitat. Found within the vicinity.[2] |
| *Myotis ciliolabrum* | Western small-footed myotis | None/None/None/ WBWG: M | Caves, old mines, abandoned buildings | Not expected to roost on site due to lack of suitable roosting habitat. Moderate potential to forage on site. |
| *Myotis evotis* | Long-eared myotis | None/None/None/ WBWG: M | Roosts in buildings, crevices, under bark, and snags. Caves used as night roosts. Feeds along habitat edges, in open habitats, and over water. Occurs primarily along entire coast and in Sierra Nevada, Cascades, Great Basin, and 0-2700 m | Not expected to roost on site due to lack of suitable roosting habitat. Moderate potential to forage on site. |
| *Myotis yumanensis* | Yuma myotis | None/None/None/ WBWG: LM | Lower montane coniferous forest. Riparian forest. Riparian woodland. Upper montane coniferous forest. | Low potential to roost on site due to presence of riparian woodland. Moderate potential to forage on site. Found within the vicinity.[2] |
| *Neotoma lepida intermedia* | San Diego desert woodrat | None/SSC/None/None | Coastal sage scrub, chaparral, pinyon-juniper woodland with rock outcrops, cactus thickets, dense undergrowth | Low potential to occur due to the disturbed suitable habitat on site. Found within the vicinity.[2] |
| *Nyctinomops femorosaccus* | Pocketed free-tailed bat | None/SSC/None/ WBWG: M | Rocky desert areas with high cliffs or rock outcrops; pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, palm oasis | Not expected to roost on site due to lack of suitable roosting habitat. Low potential to forage on site; more common in desert areas. Found within the vicinity.[2]. |
| *Nyctinomops macrotis* | Big free-tailed bat | None/SSC/None/ WBWG: MH | Rugged, rocky canyons in arid landscapes. Primarily roosts in crevices in rocks in cliffs, but also documented using buildings, caves and tree cavities. | Not expected to roost on site due to lack of suitable roosting habitat. Moderate potential to forage on site. Found in vicinity.[2] |

| Scientific Name | Common Name | Status[1] Federal/State/MHCP Subarea Plan/Other | Primary Habitat Associations | Status on Site or Potential to Occur[2] |
|---|---|---|---|---|
| *Perognathus longimembris pacificus* | Pacific pocket mouse | FE/SSC/None/None | Coastal dunes, river alluvium, coastal sage scrub with firm sandy soils; along immediate coast in San Diego, Orange, and Los Angeles Cos. | No potential to occur. Site is well east and south of current known range for this species, including Camp Pendleton and Dana Point in Orange County. |
| *Taxidea taxus* | American badger | None/SSC/None/None | Dry, open treeless areas, grasslands, coastal sage scrub, especially with friable soils throughout California | Low potential to occur. Limited suitable habitat occurs on site. Found within the vicinity.[2] |
| *Invertebrates* | | | | |
| *Branchinecta sandiegonensis* | San Diego fairy shrimp | FE/None/None/None | Small, shallow vernal pools, occasionally ditches and road ruts | Not expected to occur. No vernal pools on site. |
| *Euphydryas editha quino* | Quino checkerspot | FE/None/Covered/None | Sunny openings within chaparral and coastal sage shrublands in parts of Riverside and San Diego counties. Need high densities of food plants *Plantago erecta, P. insularis, Orthocarpus purpurascens* | Not expected to occur. Site is located outside of the USFWS-identified survey area; and no host plants observed during surveys. There is a USFWS occurrence of this species within 3 miles of the project site. |
| *Streptocephalus woottoni* | Riverside fairy shrimp | FE/None/None/None | Deep, long-lived vernal pools, vernal pool-like seasonal ponds, stock ponds; warm water pools that have low to moderate dissolved solids; in patches of grassland or agriculture interspersed in coastal sage scrub vegetation in Southern California. | Not expected to occur. No vernal pools on site. |

The federal and state status of species is based on the Special Animals List (July 2016), California Department of Fish and Wildlife.

[1] **Status Designations**

**Federal:**

| | |
|---|---|
| FC | Candidate for federal listing as threatened or endangered |
| (FD) | Federally-delisted; monitored for five years |
| FE | Federally-listed Endangered |
| FPT | Federally-proposed threatened |

**State:**

| | |
|---|---|
| SSC | California Species of Special Concern |
| CT | California Candidate Threatened |
| FP | California Department of Fish and Game Fully Protected Species |

WL California Department of Fish and Game Watch List Species
SE State-listed as Endangered
ST State-listed as Threatened
(SD) State-delisted

**Multiple Habitat Conservation Program (MHCP) Draft Escondido Subarea Plan:**

Covered MHCP species occurring or potentially occurring in Escondido; plan is draft thus no take authorized for proposed covered species (Table 3-2)

**Other:**

**WBWG Western Bat Working Group**
L: Species is stable globally but there may be localized conservation concerns.
M: Species warrants closer evaluation, research, and conservation actions
H: Species are imperiled or are at high risk of imperilment

**AFS American Fisheries Society**
EN: Endangered
TH: Threatened
VU: Vulnerable

[2] **Potential to Occur Designations:**
Found within the vicinity: Escondido quadrangle
Found within the region: CNDDB 9-quad search

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# APPENDIX E

*Routine Wetland Determination Data Forms*

# WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Bear Valley Parkway Specific Alignment City/County: Escondido/San Diego Sampling Date: 7/14/2016

Applicant/Owner: Spieth-Wohlford Inc. State: CA Sampling Point: 1A

Investigator(s): Callie Ford (Dudek) Section, Township, Range: Section 26, Township 12S, Range 2W

Landform (hillslope, terrace, etc.): Channel Local relief (concave, convex, none): None Slope (%):

Subregion (LRR): C - Mediterranean California Lat: 33°05'42.01"N Long: 117°03'31.49" W Datum:

Soil Map Unit Name: Ramona Sandy Loam NWI classification: Freshwater Forested Shrub Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ◉ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ○ | No ◉ | |
| Hydric Soil Present? | Yes ○ | No ◉ | **Is the Sampled Area within a Wetland?** Yes ○ No ◉ |
| Wetland Hydrology Present? | Yes ◉ | No ○ | |

Remarks: Long-term drought in region.

## VEGETATION

| Tree Stratum (Use scientific names.) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| Total Cover: | % | | |
| **Sapling/Shrub Stratum** | | | |
| 1. *Washingtonia robusta* | 1 | No | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| Total Cover: | 1 % | | |
| **Herb Stratum** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| Total Cover: | % | | |
| **Woody Vine Stratum** | | | |
| 1. | | | |
| 2. | | | |
| Total Cover: | % | | |

% Bare Ground in Herb Stratum 99 % % Cover of Biotic Crust %

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | 0 |
| FACW species | 1 | x 2 = | 2 |
| FAC species | | x 3 = | 0 |
| FACU species | | x 4 = | 0 |
| UPL species | | x 5 = | 0 |
| Column Totals: | 1 (A) | | 2 (B) |

Prevalence Index = B/A = 2.00

**Hydrophytic Vegetation Indicators:**

- ☐ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

**Hydrophytic Vegetation Present?** Yes ○ No ◉

Remarks: Leaf litter and bare ground in channel bottom.

## SOIL

Sampling Point: 1A

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture[3] | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10 YR 3/4 | 100 | | | | | Sand | |
| 2-6 | 10 YR 2/2 | 99 | 5 YR 4/6 | 1 | C | M | Sandy loam | |
| 6-9 | 10 YR 3/4 | 100 | | | | | Sand | |
| 9-18 | 10 YR 2/2 | 100 | | | | | Sandy loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils[4]:**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**

Type: Rock

Depth (inches): 18 in +

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

**Wetland Hydrology Present?** Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Surface water at culvert only.

# WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Bear Valley Parkway Specific Alignment | City/County: Escondido/San Diego | Sampling Date: 7/14/2016

Applicant/Owner: Spieth-Wohlford Inc. | State: CA | Sampling Point: 1B

Investigator(s): Callie Ford (Dudek) | Section, Township, Range: Section 26, Township 12S, Range 2W

Landform (hillslope, terrace, etc.): Channel | Local relief (concave, convex, none): None | Slope (%): 0

Subregion (LRR): C - Mediterranean California | Lat: 33°05'42.03"N | Long: 117°03'31.20" W | Datum:

Soil Map Unit Name: Ramona Sandy Loam | NWI classification: Freshwater Forested Shrub Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ◉ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ○ | No ◉ | |
| Hydric Soil Present? | Yes ○ | No ◉ | **Is the Sampled Area within a Wetland?** Yes ○ No ◉ |
| Wetland Hydrology Present? | Yes ○ | No ◉ | |

Remarks: Long-term drought in region.

## VEGETATION

| Tree Stratum (Use scientific names.) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Quercus agrifolia* | 60 | Yes | Not Listed |
| 2. *Washingtonia robusta* | 25 | Yes | FACW |
| 3. *Phoenix dactylifera* | 15 | No | Not Listed |
| 4. *Fraxinus velutina* | 2 | No | FAC |
| Total Cover: | 102% | | |
| **Sapling/Shrub Stratum** | | | |
| 1. *Quercus agrifolia* | 80 | Yes | Not Listed |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| Total Cover: | 80 % | | |
| **Herb Stratum** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| Total Cover: | % | | |
| **Woody Vine Stratum** | | | |
| 1. | | | |
| 2. | | | |
| Total Cover: | % | | |

% Bare Ground in Herb Stratum 90 % | % Cover of Biotic Crust %

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 % (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | 0 |
| FACW species | 25 | x 2 = | 50 |
| FAC species | 2 | x 3 = | 6 |
| FACU species | | x 4 = | 0 |
| UPL species | 155 | x 5 = | 775 |
| Column Totals: | 182 (A) | | 831 (B) |

Prevalence Index = B/A = 4.57

**Hydrophytic Vegetation Indicators:**

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

**Hydrophytic Vegetation Present?** Yes ○ No ◉

Remarks: Leaf litter included in bare ground percentage in herb stratum.

## SOIL

Sampling Point: 1B

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture[3] | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 10 YR 3/3 | 100 | | | | | Loamy sand | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils[4]:**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**

Type: Riprap

Depth (inches): 8 in +

**Hydric Soil Present?** Yes ○ No ◉

Remarks: The bank is stabilized with riprap.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

**Wetland Hydrology Present?** Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

# WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Bear Valley Parkway Specific Alignment City/County: Escondido/San Diego Sampling Date: 7/14/2016

Applicant/Owner: Spieth-Wohlford Inc. State: CA Sampling Point: 2A

Investigator(s): Callie Ford (Dudek) Section, Township, Range: Section 26, Township 12S, Range 2W

Landform (hillslope, terrace, etc.): Channel Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 33°05'40.80"N Long: 117°03'31.27" W Datum:

Soil Map Unit Name: Ramona Sandy Loam NWI classification: Freshwater Forested Shrub Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ◉ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ○ | No ◉ | |
| Hydric Soil Present? | Yes ○ | No ◉ | **Is the Sampled Area within a Wetland?** Yes ○ No ◉ |
| Wetland Hydrology Present? | Yes ◉ | No ○ | |

Remarks: Long-term drought in region.

## VEGETATION

| Tree Stratum (Use scientific names.) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| Total Cover: | % | | |
| **Sapling/Shrub Stratum** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| Total Cover: | % | | |
| **Herb Stratum** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| Total Cover: | % | | |
| **Woody Vine Stratum** | | | |
| 1. | | | |
| 2. | | | |
| Total Cover: | % | | |

% Bare Ground in Herb Stratum 100% % Cover of Biotic Crust %

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | 0 |
| FACW species | | x 2 = | 0 |
| FAC species | | x 3 = | 0 |
| FACU species | | x 4 = | 0 |
| UPL species | | x 5 = | 0 |
| Column Totals: | (A) | | 0 (B) |

Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

**Hydrophytic Vegetation Present?** Yes ○ No ◉

Remarks: Leaf litter, riprap, and bare ground in channel bottom.

## SOIL

Sampling Point: 2A

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture[3] | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10 YR 3/4 | 100 | | | | | Loamy sand | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils:[4]**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**

Type: Riprap

Depth (inches): 2 in +

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

**Wetland Hydrology Present?** Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

# WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Bear Valley Parkway Specific Alignment City/County: Escondido/San Diego Sampling Date: 7/14/2016

Applicant/Owner: Spieth-Wohlford Inc. State: CA Sampling Point: 2B

Investigator(s): Callie Ford (Dudek) Section, Township, Range: Section 26, Township 12S, Range 2W

Landform (hillslope, terrace, etc.): Channel Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 33°05'40.81"N Long: 117°03'31.17" W Datum:

Soil Map Unit Name: Ramona Sandy Loam NWI classification: Freshwater Forested Shrub Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ◉ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

## SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ○ | No ◉ | |
| Hydric Soil Present? | Yes ○ | No ◉ | **Is the Sampled Area within a Wetland?** Yes ○ No ◉ |
| Wetland Hydrology Present? | Yes ○ | No ◉ | |

Remarks: Long-term drought in region.

## VEGETATION

| Tree Stratum (Use scientific names.) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Quercus agrifolia* | 80 | Yes | Not Listed |
| 2. *Washingtonia robusta* | 5 | No | FACW |
| 3. | | | |
| 4. | | | |
| Total Cover: | 85 % | | |
| **Sapling/Shrub Stratum** | | | |
| 1. *Toxicodendron diversilobum* | 25 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| Total Cover: | 25 % | | |
| **Herb Stratum** | | | |
| 1. *Pennisetum setaceum* | 1 | No | Not Listed |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| Total Cover: | 1 % | | |
| **Woody Vine Stratum** | | | |
| 1. | | | |
| 2. | | | |
| Total Cover: | % | | |

% Bare Ground in Herb Stratum 60 % % Cover of Biotic Crust %

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | | x 1 = | 0 |
| FACW species | 5 | x 2 = | 10 |
| FAC species | | x 3 = | 0 |
| FACU species | 25 | x 4 = | 100 |
| UPL species | 81 | x 5 = | 405 |
| Column Totals: | 111 (A) | | 515 (B) |

Prevalence Index = B/A = 4.64

**Hydrophytic Vegetation Indicators:**

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

**Hydrophytic Vegetation Present?** Yes ○ No ◉

Remarks: Leaf litter included in bare ground in herb stratum.

## SOIL

Sampling Point: 2B

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture[3] | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10 YR 3/3 | 100 | | | | | Sandy loam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

**Indicators for Problematic Hydric Soils:[4]**

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

**Restrictive Layer (if present):**

Type: Hard soil

Depth (inches): 6 in +

**Hydric Soil Present?** Yes ○ No ◉

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

**Wetland Hydrology Present?** Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

# Appendix D Arborist Report – Bear Valley Parkway (March 2016)

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# Arborist Report – Bear Valley Parkway, Escondido

*Prepared for:*

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**MARCH 2016**

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# TABLE OF CONTENTS


**Section** **Page No.**

**1 INTRODUCTION....1**
1.1 Site Description....1
1.2 Project Description....1

**2 METHODS....7**
2.1 Individual Tree Evaluation....7
2.2 Scope of Work Limitations....8

**3 OBSERVATIONS....9**
3.1 Individual Trees....9

**4 POTENTIAL TREE IMPACTS....11**
4.1 Regulatory Definitions and Requirements....11
4.1.1 City of Escondido....11
4.1.2 Migratory Bird Treaty Act....12
4.2 Impacts....12
4.2.1 On-Site Project Direct Tree Impacts....13
4.2.2 Indirect Tree Impacts....14
4.2.3 Total Project Tree Impacts....15

**5 MITIGATION....17**
5.1 Proposed Mitigation Program....17
5.2 Mitigation Details....17
5.3 Mitigation Discussion....18
5.4 Tree Removal Permit....19

**6 CONCLUSIONS....21**

**7 REFERENCES....23**


## APPENDICES


A Tree Location Exhibit
B Photograph Log
C Tree Data Matrix
D Tree Locations by Impact Type
E Mitigation Measures
F Landscape Concept Plans

# TABLE OF CONTENTS (CONTINUED)

**Page No.**

## TABLES

1 Summary of Trees at Project Site ....9
2 Summary of All Direct Tree Impacts – Bear Valley Parkway, Escondido ....13
3 Summary of Direct Tree Impacts from Bear Valley Parkway Road and Walkway Improvements ....14
4 Summary of Indirect Tree Impacts – Bear Valley Parkway, Escondido ....15
5 Summary of All Direct Tree Impacts – Bear Valley Creek, Escondido ....15
6 Landscape Tree Replacement Calculation ....18
7 Recommended Landscape Planting Quantities ....18

## FIGURES

1 Regional Map ....3
2 Vicinity Map ....5

# 1 INTRODUCTION

This arborist report summarizes Dudek's field evaluation of trees within and adjacent to the proposed Bear Valley Parkway residential development project (project) site located in Escondido, California. Evaluated trees, including native oak trees, meeting the City of Escondido's definition of trees when measured at four-and-one-half feet (DBH) above the tree's natural grade as required by Chapter 33 (Zoning), Article 55 (Grading and Erosion Control) of the City of Escondido's Municipal Code (Ordinance 2001-21). Oaks measuring more than 4 inches in DBH and ornamental trees more than 8 inches in DBH were included in the evaluation. This report includes a discussion of tree evaluation methods, a summary of findings, identification of anticipated impacts, and tree impact mitigation recommendations consistent with the City of Escondido's Municipal Code (Ordinance 2001-21) and the tree removal permit process for the City of Escondido (City). The primary focus of Dudek's field evaluation was to evaluate trees located on the project site that are considered "protected" or "mature" based on the definition in the City's Municipal Code and that would be affected by the proposed development.

Dudek staff certified by the International Society of Arboriculture (ISA) as Certified Arborists completed the field evaluations on April 17, 2015. The survey area includes 182 protected trees and 307 "mature" trees, 110 of which would require removal for project-related improvements. Based on the City's Municipal Code (City of Escondido 2014) and the site's conditions of approval, a minimum of 195 replacement trees would be required to mitigate project-related tree impacts.

## 1.1 Site Description

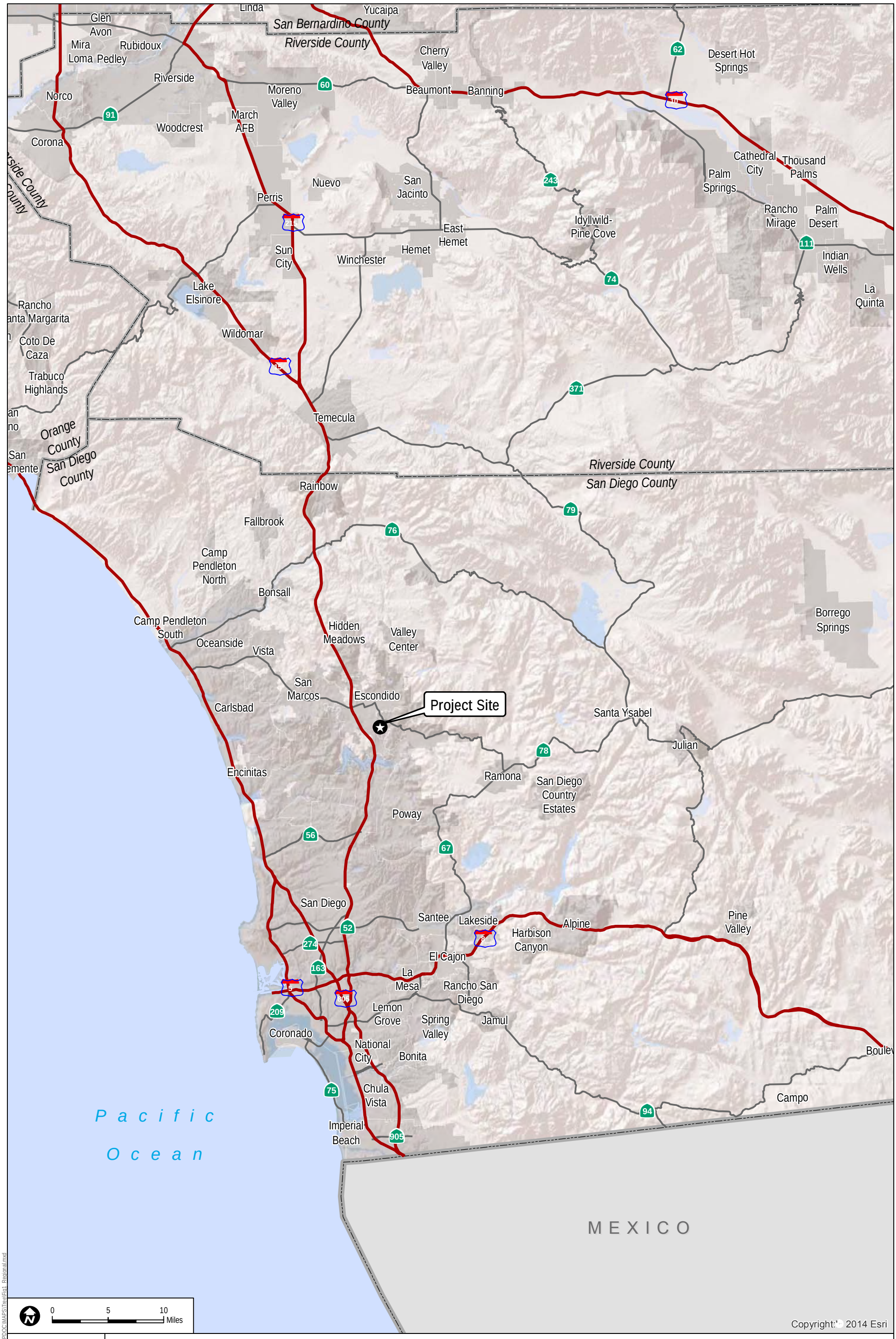
The project site is located off Bear Valley Parkway at 661 Bear Valley Parkway near Zlatibor Ranch Road in Escondido, San Diego County, California (Figure 1). The property encompasses approximately 40.9 acres and is located on the U.S. Geological Survey 7.5-minute Escondido quadrangle map in Section 26, Township 12S, and Range 2W. The majority of the project site was once an avocado orchard, but the orchard was removed and now the site is considered disturbed habitat. There is one residence on site in the central portion of the property that is currently occupied. The remaining portions of the site are undeveloped. Southern coast live oak riparian forest and southern cactus scrub in the southern portion of the project site are the only areas that support native vegetation.

## 1.2 Project Description

The project would consist of a proposed subdivision of 40.9 acres into 55 residential lots, each containing a minimum of 10,000 square feet. In addition to the residential lots, the project proposes two private street lots, seven open space lots, and one recreation lot. Private open space would occupy 19.47 acres. A main recreation area would be constructed near the secondary

access point. Pedestrian linkages would be via non-curb-adjacent private streets where walkways would be separated from vehicle traffic by privately maintained parkways. This system would tie into the public Bear Valley Parkway sidewalk system.

The project would take access from Bear Valley Parkway at the intersection of Zlatibor Ranch Road and Bear Valley Parkway. A secondary, gated emergency ingress and egress would be provided on the east side of Bear Valley Parkway, northerly of the intersection of Bear Valley Parkway and Encino. The project would include frontage right-of-way dedication to complete a 51-foot-wide right-of-way from the center line of the existing Bear Valley Parkway right-of-way. In addition, the project would be obligated to construct frontage improvements along Bear Valley Parkway consisting of a curb, gutter, sidewalk, parkway, bike lane, and one full travel lane with transitions that would tie into existing improvements. A portion of these frontage improvement would be located off site of the subject property (Figure 2).




DUDEK

7833

2015

**FIGURE 1**

**Regional Map**

Bear Valley Parkway Project - Arborist Report

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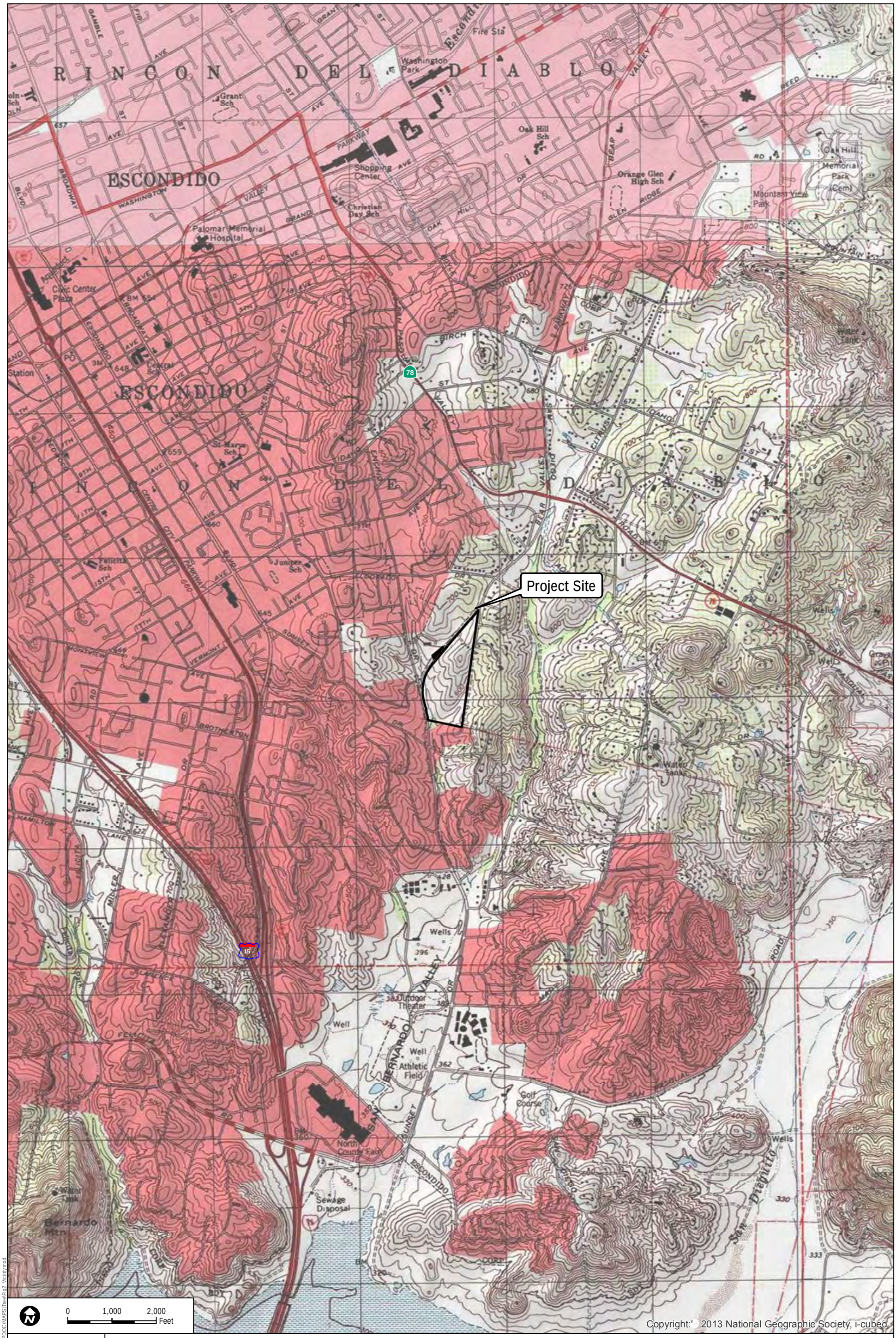


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SOURCE: USGS 7.5-Minute Series Escondido Quadrangle.

**FIGURE 2**

**Vicinity Map**

Bear Valley Parkway Project - Arborist Report

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# 2 METHODS

## 2.1 Individual Tree Evaluation

Consistent with Chapter 33 (Zoning), Article 55 (Grading and Erosion Control) of the City's Municipal Code (Ordinance 2001-21), this arborist report is based on information compiled through field reconnaissance and a review of appropriate site reference materials, including aerial photography, U.S. Geological Survey topographic maps, and digital ortho-quarter quadrangle data. Dudek ISA Certified Arborists conducted a tree survey on the project site on April 17, 2015.

The City's Municipal Code protects all "mature" trees, as defined in Section 33-1502. Mature trees, according to Section 33-1502, include all native oak trees larger than 4 inches DBH and ornamental trees larger than 8 inches DBH.

All trees meeting the City's definition of "mature" or "native" located on the project site were assessed, tagged, inventoried, mapped, and plotted on a tree location exhibit (Appendix A). A representative sample of trees was photographed (Appendix B) to document their current conditions. All inventoried trees were tagged with an aluminum tag bearing a unique identification number. Tree tags were placed on the trunk of each inventoried tree. These numbers correspond to the tree locations presented in Appendix A and the tree data matrix in Appendix C.

Concurrent with tree mapping efforts, Dudek arborists collected tree attribute data, including species, quantity of individual trunks, individual trunk diameters, overall height, canopy extent, and general health and structural conditions. Diameter measurements were collected using the standard protocol outlined by the Council of Tree and Landscape Appraisers in the Guide for Plant Appraisal (ISA 2000). Trunk diameter measurements were collected at 4.5 feet (54 inches) above the ground along the trunk axis, with one common exception. In cases where a tree's trunk was located on a slope, the 4.5-foot distance was approximated as the average of the shortest and longest sides of the trunk (i.e., the uphill side and downhill side of a tree's trunk, respectively), and the measurement was made at the circumference of the trunk at that point. Tree height measurements were ocular estimates made by experienced field arborists. Tree canopy diameters were typically estimated by "pacing-off" the measurement based on the investigator's knowledge of his/her stride length or by visually estimating the canopy width. The tree crown diameter measurements were made along an imaginary line intersecting the tree trunk that best approximated the average canopy diameter.

Pursuant to the Guide for Plant Appraisal (ISA 2000), tree health and structure were evaluated based on five tree components: roots, trunk(s), scaffold branches, small branches, and foliage.

Each component of the tree was assessed for health factors such as insect, fungal, or pathogen damage; fire damage; mechanical damage; presence of decay; presence of wilted or dead leaves; and wound closure. Components were graded as good, fair, poor, or dead, with "good" representing no apparent problems, and "dead" representing a dying and/or dead tree. This method of tree condition rating is comprehensive and results in ratings that are useful for determining the status of trees based on common standards. Trees in natural settings have important habitat value, as evidenced by numerous cavity nesters and insects that thrive on and within oak trees, even when they are considered in poor structural or health condition. This assessment focused on tree condition relating to health and structure to analyze potential project impacts, and, where necessary, to provide recommendations for mitigating potential tree hazards such as trees with weak limb attachments, cavities and rot, or excessive lean.

Upon completion of field data collection and mapping, raw global positioning system (GPS) data was post-processed using GPS Pathfinder Office (v 5.40), and individual tree location data were compiled and updated in geographic information systems (GIS) software. The digital tree locations were linked to individual tree identification numbers and associated tree attribute data. This data set was then evaluated using ArcGIS (v. 10.1) software to determine the position of individual trees relative to the proposed project development areas. Data resulting from this analysis were used to determine individual tree impact totals.

## 2.2 Scope of Work Limitations

No root crown excavations or investigations, aerial evaluations, or internal probing was performed during the tree assessment. Therefore, the presence or absence of internal decay or other hidden inferiorities in individual trees could not be confirmed. It is recommended that any large tree proposed for preservation in an area that receives human use be thoroughly inspected for internal or subterranean decay by a qualified ISA Certified Arborist before finalizing preservation plans. Because the development site will be graded and all trees removed in the direct vicinity of the residences, we do not anticipate the need for extensive tree studies. There are large trees within the riparian zone to the south of the site that will be retained. These trees are in locations that are natural and would not be typically provided extensive internal or aerial evaluations unless they would be heavily used by humans. That is not anticipated to be the case for this project.

# 3 OBSERVATIONS

## 3.1 Individual Trees

There are 489 trees representing 14 different species located within the project tree survey area that meet the City's criteria as a "mature" tree. As Table 1 indicates, most of the inventoried trees are not native to California: tree of heaven (*Ailanthus altissima*), red gum eucalyptus (*Eucalyptus camaldulensis*), common fig (*Ficus carica*), Arizona ash (*Fraxinus velutina*), jacaranda (*Jacaranda mimisifolia*), Chinese flame tree (*Koelreuteria bipinnata*), crape myrtle (*Lagertroemia indica*), Chinaberry (*Melia azedarach*), Canary Island date palm (*Phoenix canariensis*), red willow (*Salix laevigata* ), Peruvian pepper (*Schinus molle*), Brazilian pepper (*Schinus terebinthifolius*), and Mexican fan palm (*Washingtonia robusta*). Mature and protected native trees found on site consist of coast live oak (*Quercus agrifolia*). Table 1 provides a summary of the 14 species mapped and evaluated within the tree survey area. The Tree Location Exhibit in Appendix A presents the location of the individual trees mapped and assessed for the project.

Overall, the trees exhibit growth and structural conditions that are typical of their locations as both landscape and natural trees. The trees include various trunk and branch maladies, as well as varying health and structural conditions. As presented in the Tree Information Matrix in Appendix C, most of the individually mapped trees, 85.89% (420 trees), exhibit fair health condition; 7.16% (35 trees) are in good health condition; and 6.95% (34 trees) are in poor health. Dead trees were not evaluated during the tree inventory. Structurally, 2.04% (10 trees) of the individually mapped trees are considered to exhibit good structure, 93.05 % (455 trees) exhibit fair structure, and 4.9% (24 trees) exhibit poor structure. Good condition trees exhibit acceptable vigor, healthy foliage, and adequate structure, and lack of any major maladies. Fair condition trees are typical, with few maladies but declining vigor. Poor condition trees exhibit declining vigor, unhealthy foliage, poor branch structure, and/or excessive lean.

**Table 1**
**Summary of Trees at Project Site**

| Scientific Name | Common Name | Number of Trees |
|---|---|---|
| *Ailanthus altissima* | Tree of heaven | 1 |
| *Eucalyptus camaldulensis* | Red gum eucalyptus | 2 |
| *Ficus carica* | Common fig | 1 |
| *Fraxinus velutina* | Arizona ash | 2 |
| *Jacaranda mimisifolia* | Jacaranda | 2 |
| *Koelreuteria bipinnata* | Chinese flame tree | 2 |
| *Lagertroemia indica* | Crape myrtle | 3 |
| *Melia azedarach* | Chinaberry | 4 |

**Table 1**
**Summary of Trees at Project Site**

| Scientific Name | Common Name | Number of Trees |
|---|---|---|
| *Phoenix canariensis* | Canary Island date palm | 27 |
| *Quercus agrifolia* | Coast live oak | 327 |
| *Salix laevigata* | Red willow | 23 |
| *Schinus molle* | Peruvian pepper | 2 |
| *Schinus terebinthifolius* | Brazilian pepper | 13 |
| *Washingtonia robusta* | Mexican fan palm | 80 |
| | **Total** | **489** |

Trees within the tree survey area vary in size and stature according to species and available growing space. The coast live oak trees on site are primarily single-stemmed with trunk diameters ranging from 4 to 43 inches dbh. Multi-stemmed oak trees with two to five stems have diameters of up to 34 inches dbh. Single- and multi-stemmed ornamental landscape tree species have combined trunk diameters between 4 and 56 inches dbh. Tree heights vary from 3 to 75 feet. The immature Mexican fan palms found on site are the smallest trees. Taller trees (40-plus feet) are represented primarily by red gum eucalyptus, coast live oak, Peruvian pepper, red willow, Canary Island palm, Chinese flame tree, Arizona ash, and Mexican fan palm. Tree canopy extents range from 1 foot to nearly 60 feet. Nearly 45% of the trees on site exhibit canopy spreads that are greater than 20 feet across at their widest points.

# 4 POTENTIAL TREE IMPACTS

## 4.1 Regulatory Definitions and Requirements

The following section summarizes the relevant policies regulating tree impact and removal associated with the project.

### 4.1.1 City of Escondido

Tree protection, removal, and replacement standards are included in the City's General Plan (City of Escondido 2012) and in Chapter 33 (Zoning), Article 55 (Grading and Erosion Control) of the City's Municipal Code (Ordinance 2001-21). The Escondido General Plan recognizes oak trees and other mature trees, as defined below, as significant aesthetic and ecological resources deserving protection within the boundaries of the City. Sections 33-1502 and 33-1068 of the City's Municipal Code set forth rules and standards related to mature tree removal, protection, and replacement.

**Section 33-1502 (Definitions)**

1. A ***mature tree*** is any self-supporting woody perennial plant, native or ornamental, with a single well-defined stem or multiple stems supporting a crown of branches.
   a. The single stem, or one of multiple stems, of any oak tree (*Quercus* species) shall have a DBH of 4 inches or greater.
   b. All other mature trees shall have a DBH of 8 inches, or greater, for a single stem or one of the multiple stems.
2. A ***protected tree*** is any oak (*Quercus* species) that has a ten-inch or greater DBH, or any other tree species or individual specimen listed on the historic register, or determined to substantially contribute to the historic character of a property or structure listed on the local historic register, pursuant to Article 40 of the Escondido Zoning Code.

**Section 33-1068 (Vegetation Clearing and Protection)**

The purpose of Section 33-1068 is to establish regulations and standards for the preservation, protection, and selected removal of mature and protected trees. A vegetation removal permit is required prior to clearing, pruning, or destroying vegetation, and prior to any encroachments by construction activities that disturb the root system within the dripline[1] of mature trees. Issuance

[1] The dripline is the area directly under the outer circumference of the tree branches. This is where the feeder roots are located that take up water and nutrients for the tree.

of a vegetation removal permit requires the submittal of a tree survey and a tree replacement and/or protection plan.

**Section 33-1069 (Vegetation Protection and Replacement)**

Pursuant to Section 33-1069, every feasible effort and measure to avoid damage to existing trees to remain on site must be taken by the owner and developer during clearing, grading, and construction activities. If mature trees cannot be preserved on site, they must be replaced at a minimum ratio of 1:1. Protected oak trees must be replaced at a minimum ratio of 2:1. However, the number, size, and species of replacement trees can be determined on a case-by-case basis by the City's Director of Planning and Building.

### 4.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 requires tree removal and potentially disturbing construction activities to occur during certain months to avoid harassment of nesting birds. According to this act, no construction or other disturbing activities can occur within 500 feet of an active bird nest from January through June each year. Biological surveys are typically required to provide clearance for project initiation.

## 4.2 Impacts

Tree impacts were determined through use of GIS technology to determine the locations of trees relative to the project impact areas (limits of grading). Impacts were further determined based on Dudek arborists' experience with native and non-native trees, and the typical reactions of trees to disturbances such as soil compaction, excavation, and remedial grading. The impact analysis results presented herein were used for developing appropriate mitigation measures for the project.

Impacts to trees can be classified as either direct or indirect. Direct impacts to trees related to site improvements are typically the result of physical injuries or changes caused by construction machinery. Direct impacts include tree removal, root damage, soil excavation and compaction, grade changes, loss of canopy, and trunk wounds, among others. Indirect impacts to trees are the result of changes to the site that may cause tree decline, even when the tree is not directly injured. Indirect impacts include alterations to stream flow rates, diversion of groundwater flow, introduction of exotic plant species, and alterations to disturbance regimes. Wider-scale alterations to the area near trees and specific changes that occur around the trees are important considerations.

In general, there is a great deal of variation in tolerance to construction impacts among tree species, ages, and conditions. It is important to know how a certain tree, based on its species, age, and condition, will respond to different types of disturbance. The trees in the proposed project area are of varying ages and conditions. Mature specimens are typically more sensitive to

root disturbance and grade changes. In general, healthy trees will respond better to changes in their growing environment. Trees of poor health or stressed conditions may not be vigorous enough to cope with direct or indirect impacts from construction activities.

Impacts totals presented herein are based on conceptual disturbance limits and development plans as of the date of this Arborist Report. As such, the actual number of trees that are subject to direct and indirect impacts may change as the detailed site planning process proceeds.

### 4.2.1 Project Direct Tree Impacts

For the purposes of this report, direct impacts are those associated with tree removal or encroachment within the dripline. Tree removal is expected to be required when the trunk is located inside or within 2 feet of the proposed limits of grading. Encroachment is expected when soil and roots are disturbed within the tree protected zone (canopy drip line plus 5 feet or 15 feet from trunk, whichever is greater). Table 2 summarizes the total number of trees by species that are expected to be subject to direct construction-related impacts. The locations of impacted trees, by impact type, are presented in the map in Appendix D. Measures to minimize the extent of impact to preserved trees are provided in Appendix E.

**Table 2**
**Summary of All Direct Tree Impacts – Bear Valley Parkway, Escondido**

| Scientific Name | Common Name | Removal | Encroachment |
|---|---|---|---|
| *Ailanthus altissima* | Tree of heaven | 1 | 0 |
| *Eucalyptus camaldulensis* | Red gum | 2 | 0 |
| *Jacaranda mimisifolia* | Jacaranda | 2 | 0 |
| *Koelreuteria bipinnata* | Chinese flame tree | 1 | 1 |
| *Lagerstroemia indica* | Crape myrtle | 3 | 0 |
| *Melia azedarach* | Chinaberry | 4 | 0 |
| *Phoenix canariense* | Canary Island date palm | 1 | 1 |
| *Quercus agrifolia* | Coast live oak | 60 (32)* | 32 (14)* |
| *Salix laevigata* | Red willow | 1 | 0 |
| *Schinus molle* | Peruvian pepper | 0 | 1 |
| *Schinus terebinthifolious* | Brazilian pepper | 13 | 0 |
| *Washingtonia robusta* | Mexican fan palm | 22 | 4 |
| | **Totals** | **110 (32)*** | **39 (14)*** |

* Number in parenthesis represents the quantity of removals that meet the City's criteria of a "protected tree" and is included in the totals.

#### *4.2.1.1 Tree Impact Summary*

Based on proposed project development plans (including road and walkway improvements), it is estimated that 110 (22.5%) mature trees will require removal, 39 (7.9%) will experience

encroachment into the tree protected zone, 81 (16.6%) will be indirectly impacted, and 259 (53.0%) will be preserved in place with no direct impacts. Of the 110 trees identified for removal, 32 meet the criteria for classification as a protected tree, as defined by the City. Of the 39 encroached upon trees, 14 meet size criteria to be classified as protected trees.

Of the 60 trees identified for removal in the Bear Valley Parkway road and walkway improvements (on-site impacts excluded), 29 meet the criteria for classification as a protected tree, as defined by the City. Of the 28 encroached upon trees, 14 meet size criteria to be classified as protected trees. Table 3 presents only the number of trees expected to be directly impacted by the Bear Valley Parkway road and walkway improvements.

**Table 3**
**Summary of Direct Tree Impacts from Bear Valley Parkway Road and Walkway Improvements**

| Scientific Name | Common Name | Removal | Encroachment |
|---|---|---|---|
| *Koelreuteria bipinnata* | Chinese flame tree | 1 | 1 |
| *Phoenix canariensis* | Canary Island palm | 0 | 1 |
| *Quercus agrifolia* | Coast live oak | 55 (29) | 22 (14) |
| *Salix laevigata* | Red willow | 1 | 0 |
| *Washingtonia robusta* | Mexican fan palm | 3 | 4 |
| **Totals** | | **60 (29)*** | **28 (14)*** |

* Number in parenthesis represents the quantity of removals that meet the City's criteria of a "protected tree" and is included in the cell total.

### 4.2.2 Indirect Tree Impacts

Indirect impacts to trees are the result of changes to the site that may cause tree decline, even when the tree is not directly injured. Site-wide changes affecting trees include diverting runoff and stormwater, creating retention and detention ponds, relocating streams or making improvements to streams, lowering or raising water tables, altering the capacity for soil moisture recharge, removing vegetation, and damming underground water flow (Matheny and Clark 1998). For the purposes of this report, indirect tree impacts are expected for trees within 25 feet of the project's limits of grading and not subject to removal or encroachment. Trees located in fuel modification zones are also typically considered indirectly impacted; however, no trees are located in proposed fuel modification zones that would not be otherwise impacted (removal or encroachment).

Other potential indirect impacts may include firewood harvesting, vandalism, and deliberate or accidental wildfire ignition in oak-willow woodland drainage areas. These potential indirect impacts are not typically considered significant and can be minimized by implementing woodland management and protection measures, including educational material provided to

homeowners and long-term management of oak-willow-dominated habitat on the site. For this project, the educational materials along with on-going management and maintenance that will be provided to this biological area are considered adequate to reduce the potential indirect impacts to less than significant.

Table 4 presents the number of trees expected to be indirectly impacted by the proposed project on site and road and walkway improvements. If any encroached-upon trees fail during the 5-year monitoring period, it will be replaced at City replacement ratios.

**Table 4**
**Summary of Indirect Tree Impacts – Bear Valley Parkway, Escondido**

| Scientific Name | Common Name | Indirect Impacts |
|---|---|---|
| *Phoenix canariensis* | Canary Island palm | 5 |
| *Quercus agrifolia* | Coast live oak | 52 (14)* |
| *Salix laevigata* | Red willow | 4 |
| *Washingtonia robusta* | Mexican fan palm | 20 |
| | **Total** | **81** |

* Number in parenthesis represents the quantity of removals that meet the City's criteria of a "protected tree" and is included in the cell total.

### 4.2.3 Total Project Tree Impacts

For comparison, Table 5 summarizes the total number of trees, by species, that are expected to be subject to direct construction-related impacts, encroachments, and indirect impacts. Based on the proposed project and Bear Valley Parkway road and walkway improvements, it is estimated that 110 trees would require removal and an additional 39 trees would be preserved in place with protections, but encroached upon. In addition, it is estimated that 81 trees could be indirectly impacted by the proposed project. The locations of impacted trees, by impact type, for the proposed improvements, are presented in the map in Appendix D. Measures to minimize the extent of impacts to preserved trees are provided in Appendix E.

**Table 5**
**Summary of All Direct Tree Impacts – Bear Valley Creek, Escondido**

| Scientific Name | Common Name | Removal | Encroachment | Indirect Impacts |
|---|---|---|---|---|
| *Ailanthus altissima* | Tree of heaven | 1 | 0 | 0 |
| *Eucalyptus camaldulensis* | Red gum | 2 | 0 | 0 |
| *Jacaranda mimisifolia* | Jacaranda | 2 | 0 | 0 |
| *Koelreuteria bipinnata* | Chinese flame tree | 1 | 1 | 0 |
| *Lagerstroemia indica* | Crape myrtle | 3 | 0 | 0 |
| *Melia azedarach* | Chinaberry | 4 | 0 | 0 |
| *Phoenix canariense* | Canary Island date palm | 1 | 1 | 5 |
| *Quercus agrifolia* | Coast live oak | 60 (32)* | 32 (14)* | 52 (14)* |

**Table 5**
**Summary of All Direct Tree Impacts – Bear Valley Creek, Escondido**

| Scientific Name | Common Name | Removal | Encroachment | Indirect Impacts |
|---|---|---|---|---|
| *Salix laevigata* | Red willow | 1 | 0 | 4 |
| *Schinus molle* | Peruvian pepper | 0 | 1 | 0 |
| *Schinus terebinthifolious* | Brazilian pepper | 13 | 0 | 0 |
| *Washingtonia robusta* | Mexican fan palm | 22 | 4 | 20 |
| | **Totals** | **110 (32)*** | **39 (14)*** | **81 (14)*** |

* Number in parenthesis represents the quantity of removals that meet the City's criteria of a "protected tree" and is included in the cell total.

# 5 MITIGATION

Section 33-1069 of the City's Municipal Code identifies tree replacement standards for projects affecting mature and/or protected trees. Minimum mitigation planting requirements for removal and encroachment on 103 mature trees (1:1 replacement ratio) and 46 protected trees (2:1 replacement ratio) is 195 trees (138 coast live oaks and 57 other suitable native or ornamental species).

The proposed project's tree mitigation program focuses on preservation (the project will preserve more than 69.6% of the trees on site), restoration and enhancement of preserved oak trees/stands through sustainable tree plantings, and native tree planting in the transition area between open space and developed areas throughout the proposed project site.

## 5.1 Proposed Mitigation Program

The proposed mitigation program was designed to provide mitigation for direct impacts to 103 mature trees and 46 protected trees associated with the Bear Valley Parkway Project. The goal of the proposed mitigation program is to offset tree impacts through a sustainable, customized plan that is suitable for the site's unique opportunities for oak tree preservation, enhancement, and establishment. Dudek recommends that the tree mitigation program focus on the inclusion of native and ornamental trees (e.g., larger container sizes (15-gallon), deep tree pots, "D40" pots, 24-inch boxes) within project landscape areas. Tree species recommended for individual mitigation include coast live oak, blue elderberry (*Sambucus mexicana*), western redbud (*Cercis occidentalis*), desert museum palo verde (*Cercidium* "desert museum"), flowering pear (*Pyrus calleryana* "Chanticleer"), and New Zealand Christmas tree (*Metrosideros excels*). Use of a variety of species will result in a more robust tree population that is less susceptible to pests and disease that typically are host-species-specific.

## 5.2 Mitigation Details

As indicated in Table 6, the total number of plantings required to meet the intent of the City's tree protection and replacement requirements is 195 trees. Therefore, the mitigation program proposes that a minimum of 195 trees (including coast live oak and other suitable native or ornamental species) are planted within the development landscape areas, as presented in the Landscape Concept Plan (Appendix F). Table 7 provides recommended replacement species and totals for the 149 individually impacted trees. The 773 landscape trees provide mitigation for the 149 individual tree impacts from the site at a ratio of 5.2:1. The 5.2:1 mitigation ratio exceeds the minimum required City replacement ratio of 2:1. Many of the trees being removed are either invasive species, fire hazards, or undesirable for their performance and/or susceptibility to pests. Therefore, Table 6 provides a list of species that are not invasives, are acceptable by fire agencies, and that are anticipated to perform well in the community's landscape.

**Table 6**
**Landscape Tree Replacement Calculation**

| Trees Impacted | | | | |
|---|---|---|---|---|
| *Tree Type* | *Grading Related* | *Replacement Ratio* | *Replacement Species* | *Total Number Replacement Trees* |
| *Ailanthus altisima* | 1 | 1:1 | Ornamental | 1 |
| *Eucalyptus camaldulensis* | 2 | 1:1 | Ornamental | 2 |
| *Jacaranda mimisifolia* | 2 | 1:1 | Ornamental | 2 |
| *Koelreuteria bipinnata* | 2 | 1:1 | Ornamental | 2 |
| *Lagerstroemia indica* | 3 | 1:1 | Ornamental | 3 |
| *Melia azedarach* | 4 | 1:1 | Ornamental | 4 |
| *Phoenix canariensis* | 2 | 1:1 | Ornamental | 2 |
| *Quercus agrifolia* | 92 | 1:1 and 2:1 | *Quercus agrifolia* | 138 |
| *Salix laevigata* | 1 | 1:1 | *Sambucus mexicana* | 1 |
| *Schinus molle* | 1 | 1:1 | Ornamental | 1 |
| *Schinus terebinthifolius* | 13 | 1:1 | Ornamental | 13 |
| *Washingtonia robusta* | 26 | 1:1 and 2:1 | Ornamental | 26 |
| **Minimum Required Escondido Mitigation Tree Plantings** | | | | **195** |

**Table 7**
**Recommended Landscape Planting Quantities**

| Trees Impacted | | | |
|---|---|---|---|
| *Tree Type* | *Common Name* | *Size* | *Replacement Quantity* |
| *Cercidium* (desert museum) | Desert museum palo verde | 15 gallons | 4 |
| *Cercis occidentalis* | Western redbud | 15 gallons | 147 |
| *Metrosideros excels* | New Zealand Christmas tree | 24-inch box | 197 |
| *Pyrus calleryana* (Chanticleer) | Flowering pear | 24-inch box | 57 |
| *Sambucus mexicana* | Blue elderberry | 15 gallons | 144 |
| *Quercus agrifolia* | Coast live oak | 24-inch box | 224 |
| **Minimum Proposed Landscape Plantings** | | | **773** |

* Replacement species will be a combination of native oak and elderberry in the riparian areas, and native oak and other landscape trees within the urbanized areas of the project site.

## 5.3 Mitigation Discussion

The total number of mitigation trees proposed (773 trees) for anticipated tree impacts is considered more than appropriate, and results in a minimum of 5.2:1 replacement, which is higher than the 1:1 and 2:1 replacement ratios as required by the City. Therefore, no additional mitigation is recommended. Note that the potentially indirectly impacted trees are considered to be impacted at levels that are less than significant with the inclusion of community riparian woodland educational materials and ongoing management of the area as a biological open space.

**Tree Relocation**

Relocation of impacted trees was analyzed during the tree assessment, and a single tree is considered a "candidate." However, tree relocation is not a requirement of the City. As the landscape plan is finalized, if the individual candidate tree can be relocated, it will be evaluated further. Tree relocation is a stressful process for native oaks, and unless they are superior specimens, it is preferable to purchase large, nursery-grown trees as a replacement.

## 5.4 Tree Removal Permit

Consistent with Section 33-1068 of the City's Municipal Code (City of Escondido 2014), a vegetation removal permit is required prior to clearing, pruning, or destroying vegetation, and prior to any encroachments by construction activities that disturb the root system within the dripline of mature trees.

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# 6 CONCLUSIONS

Dudek inventoried and evaluated 489 mature and protected trees within the Bear Valley Parkway residential redevelopment project site. A total of 149 trees would be impacted by the proposed project. Tree impacts associated with the project would be mitigated through replacement tree planting, as defined in the City's General Plan and in Chapter 33 (Zoning), Article 55 (Grading and Erosion Control) of the City's Municipal Code (Ordinance 2001-21) and in the Conditions of Approval for Sub 13-0003, Sub 13-0010, Sub 13-0011, and Tract 889. In total, 195 trees should be planted to mitigate for project-related impacts. Planting locations, types, and maintenance must be consistent with the Conditions of Approval for Sub 13-0003, Sub 13-0010, Sub 13-0011, and Tract 889. The recommended tree mitigation/replacement meets the minimum requirements of the City's Tree Protection Ordinance (City of Escondido 2014).

**Arborist's Statement**

This report provides conclusions and recommendations based on an examination of the trees and surrounding site by ISA Certified Arborists. Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees.

No root crown excavations or investigations or internal probing was performed during the tree assessments. Therefore, the presence or absence of internal decay or other hidden inferiorities in individual trees could not be confirmed. It is recommended that any large tree proposed for preservation in an area that receives human use be thoroughly inspected for internal or subterranean decay by a qualified arborist before finalizing preservation plans.

Arborists cannot detect every condition that could possibly lead to the failure of a tree. Trees are living organisms that fail in ways not fully understood. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances or for a specified period. There are no guarantees that a tree's condition will not change over a short or long period due to weather or cultural or environmental conditions. Trees can be managed but not controlled.

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# 7 REFERENCES

City of Escondido. 2012. City of Escondido General Plan. May 2012. http://www.escondido.org/general-plan.aspx.

City of Escondido. 2014. Escondido Municipal Code. http://www.qcode.us/codes/escondido/.

ISA (International Society of Arboriculture). 2000. *Guide for Plant Appraisal* (9th Edition).

Matheny and Clark. 1998. Trees and Development. A Technical Guide to Preservation of Trees During Land Development. ISBN: 1-881956-20-2. International Society of Arboriculture, Champaign, Illinois. www.isa-arbor.com 183.

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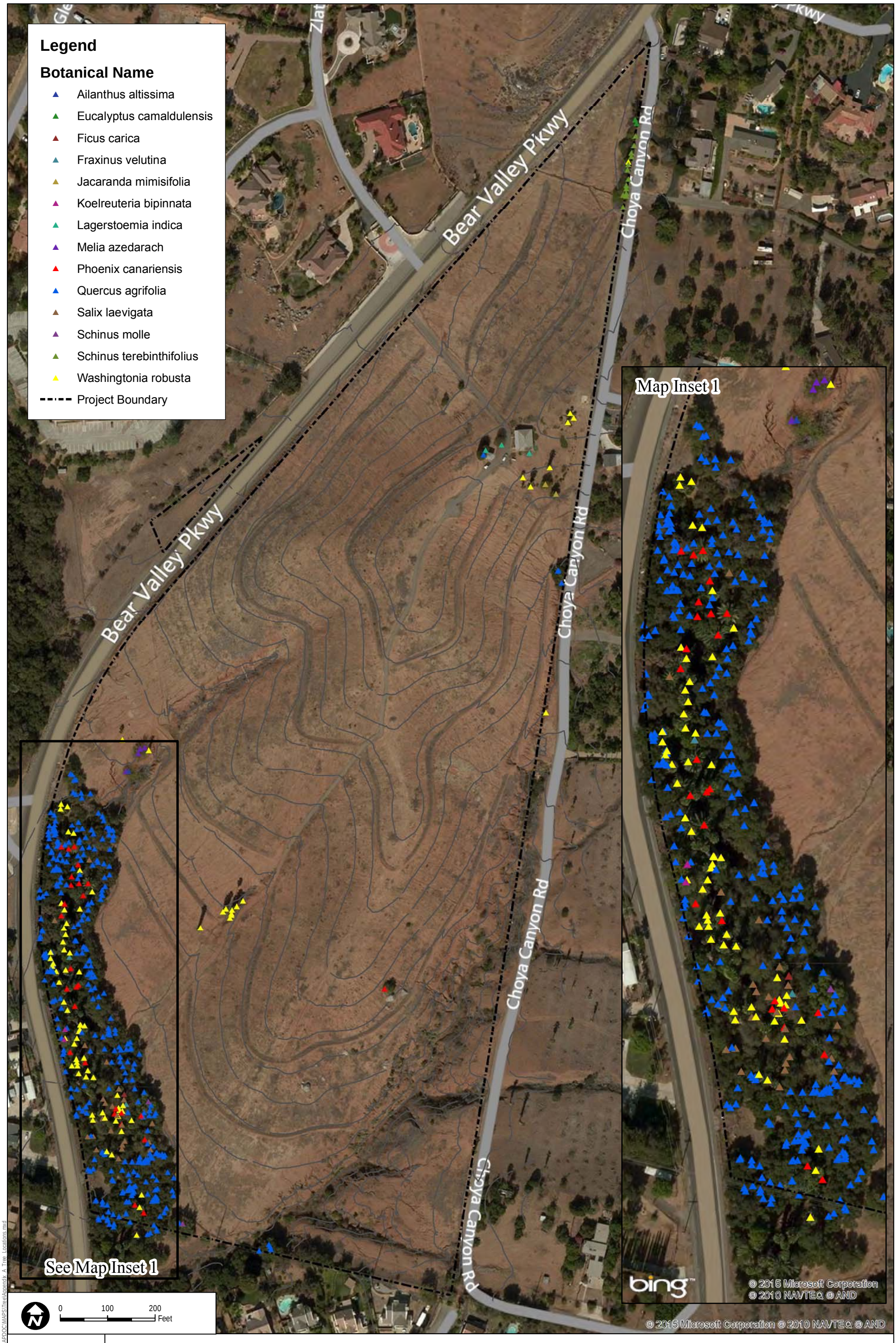
# APPENDIX A

*Tree Location Exhibit*




DUDEK

7833

September 2015

SOURCE: World Imagery, SANGIS

**Appendix A**

**Tree Locations**

Bear Valley Parkway Project - Arborist Report

Path: Z:\Projects\7833\MAPDOC\MAPS\Tree\Appendix_A_Tree_Locations.mxd

# APPENDIX B

*Photograph Log*

# Photograph Log

Arborist Report – Bear Valley Project

Photograph 1: View of riparian woodland

Photograph 2: View of riparian woodland

Photograph 3: View of riparian woodland

Photograph 4: View of open ground and Mexican fan palms

Photograph 5: View of riparian oak woodland and open ground

Photograph 6: View of riparian oak woodland and open ground

Photograph 7: View of riparian oak woodland

Photograph 8: View of riparian oak woodland

Photograph 9: View of riparian woodland and surrounding open ground

Photograph 10: View of coast live oak and buildings

Photograph 11: View of riparian oak woodland

Photograph 12: View of riparian oak woodland

# APPENDIX C

*Tree Data Matrix*

## Appedix C - Tree Information Matrices

| Tree # | Botanical Name | Common Name | Stems | D.B.H (in.)* | Individual Stem Diameter at Breast Height (in.) | | | | | Height (ft.) | Canopy (ft.) | Health | Structure | Protected | Tree Disposition | Mitigation Requirement | Notes | X | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D1 | D2 | D3 | D4 | D5 | | | | | | | | | | |
| 1 | *Eucalyptus camaldulensis* | Red gum eucalyptus | 1 | 13 | 13 | | | | | 50 | 20 | Fair | Poor | | Remove - Grading | 1 | | 6315084.04 | 1981608.96 |
| 2 | *Eucalyptus camaldulensis* | Red gum eucalyptus | 2 | 11.4018 | 11 | 3 | | | | 30 | 20 | Fair | Poor | | Remove - Grading | 1 | | 6315086.96 | 1981601.22 |
| 3 | *Schinus terebinthifolius* | Brazillian pepper | 5 | 5.19615 | 1 | 2 | 3 | 3 | 2 | 10 | 16 | Fair | Fair | | Remove - Grading | 1 | Multi-stemmed | 6315084.58 | 1981575.56 |
| 4 | *Schinus terebinthifolius* | Brazillian pepper | 5 | 7.87401 | 6 | 2 | 3 | 3 | 2 | 10 | 16 | Fair | Fair | | Remove - Grading | 1 | Multi-stemmed | 6315081.62 | 1981555.47 |
| 5 | *Schinus terebinthifolius* | Brazillian pepper | 2 | 8.48528 | 6 | 6 | | | | 12 | 16 | Fair | Fair | | Remove - Grading | 1 | Multi-stemmed | 6315076.03 | 1981540.07 |
| 6 | *Schinus terebinthifolius* | Brazillian pepper | 5 | 6.32456 | 3 | 3 | 3 | 2 | 3 | 12 | 16 | Fair | Fair | | Remove - Grading | 1 | Multi-stemmed | 6315075.76 | 1981532.11 |
| 7 | *Washingtonia robusta* | Mexican fan palm | 1 | 16 | 16 | | | | | 40 | 12 | Fair | Fair | | Remove - Grading | 1 | | 6315069.55 | 1981520.75 |
| 8 | *Schinus terebinthifolius* | Brazillian pepper | 5 | 6.08276 | 4 | 3 | 2 | 2 | 2 | 13 | 12 | Fair | Fair | | Remove - Grading | 1 | Multi-stemmed | 6315069.78 | 1981514.88 |
| 9 | *Schinus terebinthifolius* | Brazillian pepper | 2 | 7.2111 | 6 | 4 | | | | 13 | 12 | Poor | Poor | | Remove - Grading | 1 | Multi-stemmed | 6315067.82 | 1981503.89 |
| 10 | *Schinus terebinthifolius* | Brazillian pepper | 5 | 4.47214 | 2 | 2 | 2 | 2 | 2 | 13 | 12 | Fair | Fair | | Remove - Grading | 1 | Multi-stemmed | 6315069.57 | 1981484.48 |
| 11 | *Schinus terebinthifolius* | Brazillian pepper | 5 | 5.91608 | 3 | 3 | 3 | 2 | 2 | 13 | 12 | Fair | Fair | | Remove - Grading | 1 | Multi-stemmed | 6315065.21 | 1981471.39 |
| 12 | *Schinus terebinthifolius* | Brazillian pepper | 5 | 6.85565 | 4 | 3 | 3 | 3 | 2 | 14 | 16 | Fair | Fair | | Remove - Grading | 1 | Multi-stemmed | 6315065.44 | 1981465.15 |
| 13 | *Schinus terebinthifolius* | Brazillian pepper | 5 | 6.85565 | 4 | 3 | 3 | 3 | 2 | 14 | 16 | Fair | Fair | | Remove - Grading | 1 | Multi-stemmed | 6315065.11 | 1981454.38 |
| 14 | *Schinus terebinthifolius* | Brazillian pepper | 5 | 6.85565 | 4 | 3 | 3 | 3 | 2 | 14 | 16 | Fair | Fair | | Remove - Grading | 1 | Multi-stemmed | 6315058.41 | 1981451.2 |
| 15 | *Schinus terebinthifolius* | Brazillian pepper | 5 | 6.85565 | 4 | 3 | 3 | 3 | 2 | 14 | 16 | Fair | Fair | | Remove - Grading | 1 | Multi-stemmed | 6315064.46 | 1981449.83 |
| 16 | *Schinus terebinthifolius* | Brazillian pepper | 5 | 6.85565 | 4 | 3 | 3 | 3 | 2 | 12 | 14 | Fair | Fair | | Remove - Grading | 1 | Multi-stemmed | 6315058.64 | 1981425.33 |
| 17 | *Washingtonia robusta* | Mexican fan palm | 1 | 13 | 13 | | | | | 10 | 10 | Fair | Fair | | Remove - Grading | 1 | | 6314946.7 | 1980990.92 |
| 18 | *Washingtonia robusta* | Mexican fan palm | 1 | 13 | 13 | | | | | 10 | 10 | Fair | Fair | | Remove - Grading | 1 | | 6314954.25 | 1980980.72 |
| 19 | *Washingtonia robusta* | Mexican fan palm | 1 | 13 | 13 | | | | | 12 | 10 | Fair | Fair | | Remove - Grading | 1 | | 6314941.85 | 1980971.73 |
| 20 | *Washingtonia robusta* | Mexican fan palm | 1 | 17 | 17 | | | | | 35 | 10 | Fair | Fair | | Remove - Grading | 1 | | 6314904.21 | 1980876.49 |
| 21 | *Jacaranda mimisifolia* | Jacaranda | 4 | 10.3923 | 9 | 3 | 3 | 3 | | 18 | 15 | Fair | Fair | | Remove - Grading | 1 | | 6314916.8 | 1980820.43 |
| 22 | *Jacaranda mimisifolia* | Jacaranda | 1 | 8.2 | 8.2 | | | | | 18 | 15 | Fair | Fair | | Remove - Grading | 1 | | 6314894.41 | 1980840.89 |
| 23 | *Washingtonia robusta* | Mexican fan palm | 1 | 15 | 15 | | | | | 30 | 10 | Fair | Fair | | Remove - Grading | 1 | | 6314863.52 | 1980835.92 |
| 24 | *Washingtonia robusta* | Mexican fan palm | 1 | 16 | 16 | | | | | 8 | 9 | Fair | Fair | | Remove - Grading | 1 | | 6314847.1 | 1980854.8 |
| 25 | *Lagerstoemia indica* | Lagerstoemia indica | 3 | 7.07107 | 4 | 3 | 5 | | | 16 | 14 | Fair | Fair | | Remove - Grading | 1 | | 6314861.09 | 1980907.59 |
| 26 | *Lagerstoemia indica* | Lagerstoemia indica | 5 | 9.43398 | 4 | 5 | 4 | 4 | 4 | 16 | 16 | Good | Fair | | Remove - Grading | 1 | | 6314802.61 | 1980924.61 |
| 27 | *Lagerstoemia indica* | Lagerstoemia indica | 5 | 9.43398 | 4 | 5 | 4 | 4 | 4 | 16 | 16 | Good | Fair | | Remove - Grading | 1 | | 6314768.82 | 1980913.29 |
| 28 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | 24 | 20 | Good | Fair | Yes | Remove - Grading | 2 | Relocation candidate | 6314764.59 | 1980904.36 |
| 29 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 9 | 8 | Fair | Poor | | Remove - Grading | 1 | | 6314920.59 | 1980657.95 |
| 30 | *Quercus agrifolia* | Coast live oak | 1 | 25.8 | 25.8 | | | | | 20 | 33 | Good | Fair | Yes | Remove - Grading | 2 | | 6314922.76 | 1980659.09 |
| 31 | *Quercus agrifolia* | Coast live oak | 2 | 10.6301 | 8 | 7 | | | | 18 | 16 | Good | Fair | Yes | Remove - Grading | 2 | | 6314928.57 | 1980633.18 |
| 32 | *Washingtonia robusta* | Mexican fan palm | 1 | 8 | 8 | | | | | 7 | 8 | Good | Fair | | Remove - Grading | 2 | | 6314896.08 | 1980359.47 |
| 33 | *Phoenix canariensis* | Canary island date palm | 1 | 36 | 36 | | | | | 4 | 20 | Good | Fair | | Remove - Grading | 2 | | 6314555.32 | 1979776.07 |
| 34 | *Washingtonia robusta* | Mexican fan palm | 1 | 12 | 12 | | | | | 10 | 10 | Good | Good | | Remove - Grading | 2 | | 6314256.98 | 1979962.48 |
| 35 | *Washingtonia robusta* | Mexican fan palm | 1 | 12 | 12 | | | | | 20 | 12 | Good | Good | | Remove - Grading | 2 | | 6314243.72 | 1979951.31 |
| 36 | *Washingtonia robusta* | Mexican fan palm | 1 | 19 | 19 | | | | | 40 | 12 | Good | Good | | Remove - Grading | 1 | | 6314234.14 | 1979943.54 |
| 37 | *Washingtonia robusta* | Mexican fan palm | 1 | 19 | 19 | | | | | 25 | 12 | Good | Good | | Remove - Grading | 2 | | 6314232.88 | 1979936.58 |
| 38 | *Washingtonia robusta* | Mexican fan palm | 1 | 10 | 10 | | | | | 23 | 12 | Good | Good | | Remove - Grading | 1 | | 6314232.89 | 1979933.1 |
| 39 | *Washingtonia robusta* | Mexican fan palm | 1 | 12 | 12 | | | | | 23 | 12 | Good | Good | | Remove - Grading | 2 | | 6314229.46 | 1979926.69 |
| 40 | *Washingtonia robusta* | Mexican fan palm | 1 | 12 | 12 | | | | | 23 | 12 | Good | Good | | Remove - Grading | 2 | | 6314220.63 | 1979946.47 |
| 41 | *Washingtonia robusta* | Mexican fan palm | 1 | 12 | 12 | | | | | 23 | 12 | Good | Good | | Remove - Grading | 2 | | 6314214.85 | 1979940.28 |

## Appedix C - Tree Information Matrices

| Tree # | Botanical Name | Common Name | Stems | D.B.H (in.)* | Individual Stem Diameter at Breast Height (in.) | | | | | Height (ft.) | Canopy (ft.) | Health | Structure | Protected | Tree Disposition | Mitigation Requirement | Notes | X | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D1 | D2 | D3 | D4 | D5 | | | | | | | | | | |
| 42 | *Washingtonia robusta* | Mexican fan palm | 1 | 12 | 12 | | | | | 28 | 12 | Good | Good | | Remove - Grading | 1 | | 6314166.95 | 1979905.99 |
| 43 | *Washingtonia robusta* | Mexican fan palm | 1 | 9 | 9 | | | | | 30 | 12 | Good | Good | | Remove - Grading | 2 | | 6314057.88 | 1980280.53 |
| 44 | *Melia azedarach* | Chinaberry | 3 | 14.0712 | 9 | 9 | 6 | | | 30 | 30 | Good | Fair | | Remove - Grading | 1 | | 6314049.92 | 1980286.25 |
| 45 | *Melia azedarach* | Chinaberry | 4 | 10.0995 | 5 | 5 | 6 | 4 | | 30 | 30 | Good | Fair | | Remove - Grading | 1 | | 6314040.25 | 1980283.19 |
| 46 | *Melia azedarach* | Chinaberry | 5 | 15 | 10 | 8 | 6 | 4 | 3 | 18 | 30 | Good | Fair | | Remove - Grading | 1 | | 6314036.24 | 1980274.35 |
| 48 | *Melia azedarach* | Chinaberry | 2 | 10.3923 | 6 | 6 | | | 6 | 18 | 30 | Good | Fair | | Remove - Grading | 1 | | 6314009.83 | 1980235.99 |
| 49 | *Quercus agrifolia* | Coast live oak | 1 | 10 | 10 | | | | | 12 | 18 | Fair | Fair | | Indirect - BVP | N/A | | 6313935.03 | 1980188.6 |
| 50 | *Quercus agrifolia* | Coast live oak | 1 | 10 | 10 | | | | | 28 | 20 | Fair | Fair | | Indirect - BVP | N/A | | 6313917.12 | 1980179.23 |
| 51 | *Quercus agrifolia* | Coast live oak | 1 | 10 | 10 | | | | | 28 | 20 | Fair | Fair | | Indirect - BVP | N/A | | 6313904.8 | 1980186.59 |
| 52 | *Quercus agrifolia* | Coast live oak | 1 | 10 | 10 | | | | | 28 | 20 | Fair | Fair | | Indirect - BVP | N/A | | 6313916.23 | 1980189.06 |
| 53 | *Quercus agrifolia* | Coast live oak | 2 | 7.61577 | 7 | 3 | | | | 30 | 15 | Fair | Fair | | Indirect - BVP | N/A | | 6313899.16 | 1980191.08 |
| 55 | *Quercus agrifolia* | Coast live oak | 2 | 14.1421 | 10 | 10 | | | | 20 | 30 | Fair | Fair | Yes | Encroachment - Bear Valley Parkway | 2 | | 6313900.97 | 1980216.54 |
| 54 | *Quercus agrifolia* | Coast live oak | 2 | 5.65685 | 4 | 4 | | | | 6 | 12 | Fair | Fair | | Indirect - BVP | N/A | | 6313904.86 | 1980217.76 |
| 56 | *Quercus agrifolia* | Coast live oak | 4 | 16.8819 | 12 | 10 | 4 | 5 | | 25 | 30 | Fair | Fair | | Remove - Bear Valley Parkway | 1 | | 6313897.52 | 1980228.89 |
| 57 | *Quercus agrifolia* | Coast live oak | 3 | 14.4568 | 8 | 8 | 9 | | | 30 | 30 | Fair | Fair | | Remove - Bear Valley Parkway | 1 | | 6313893.28 | 1980230.99 |
| 47 | *Ailanthus altissima* | Tree of heaven | 4 | 5.56776 | 3 | 3 | 3 | 2 | | 16 | 16 | Poor | Fair | | Remove - Grading | 1 | | 6314015.47 | 1980236.91 |
| 48 | *Washingtonia robusta* | Mexican fan palm | 1 | 10 | 10 | | | | | 8 | 8 | Good | Fair | | Remove - Grading | 2 | | 6314002.57 | 1980302.33 |
| 59 | *Washingtonia robusta* | Mexican fan palm | 5 | 23.8537 | 10 | 10 | 9 | 12 | 12 | 20 | 30 | Good | Fair | | Remove - Bear Valley Parkway | 1 | | 6313886.87 | 1980161.82 |
| 60 | *Washingtonia robusta* | Mexican fan palm | 1 | 10 | 10 | | | | | 14 | 12 | Good | Fair | | Remove - Bear Valley Parkway | 1 | | 6313873.55 | 1980166.96 |
| 61 | *Washingtonia robusta* | Mexican fan palm | 1 | 9 | 9 | | | | | 7 | 10 | Good | Fair | | Remove - Bear Valley Parkway | 2 | | 6313872.43 | 1980157.07 |
| 62 | *Quercus agrifolia* | Coast live oak | 1 | 12 | 12 | | | | | 25 | 24 | Good | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313852.09 | 1980149.33 |
| 63 | *Quercus agrifolia* | Coast live oak | 2 | 8.48528 | 6 | 6 | | | | 12 | 18 | Good | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313859.53 | 1980143.6 |
| 64 | *Quercus agrifolia* | Coast live oak | 2 | 13.4536 | 10 | 9 | | | | 23 | 24 | Good | Fair | | Remove - Bear Valley Parkway | 1 | | 6313862.06 | 1980131.94 |
| 65 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 10 | 10 | Good | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313849.02 | 1980120.55 |
| 66 | *Quercus agrifolia* | Coast live oak | 1 | 5 | 5 | | | | | 10 | 10 | Good | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313860.1 | 1980122.79 |
| 67 | *Quercus agrifolia* | Coast live oak | 2 | 4.24264 | 3 | 3 | | | | 10 | 10 | Good | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313859.65 | 1980114.02 |
| 68 | *Quercus agrifolia* | Coast live oak | 1 | 9 | 9 | | | | | 23 | 12 | Good | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313857.61 | 1980115.77 |
| 69 | *Quercus agrifolia* | Coast live oak | 1 | 9 | 9 | | | | | 23 | 12 | Poor | Poor | | Remove - Bear Valley Parkway | 1 | | 6313855.98 | 1980108.9 |
| 70 | *Quercus agrifolia* | Coast live oak | 1 | 8 | 8 | | | | | 28 | 12 | Fair | Fair | | Encroachment - Bear Valley Parkway | 1 | | 6313861.5 | 1980110.47 |
| 71 | *Quercus agrifolia* | Coast live oak | 1 | 8 | 8 | | | | | 22 | 12 | Fair | Fair | | Encroachment - Bear Valley Parkway | 1 | | 6313862.41 | 1980103.89 |
| 72 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 23 | 12 | Fair | Fair | | Encroachment - Bear Valley Parkway | 1 | | 6313859.22 | 1980100.76 |
| 73 | *Quercus agrifolia* | Coast live oak | 1 | 5 | 5 | | | | | 15 | 12 | Fair | Poor | | Remove - Bear Valley Parkway | 1 | | 6313847.08 | 1980108.22 |
| 74 | *Quercus agrifolia* | Coast live oak | 3 | 16.7631 | 10 | 10 | 9 | | | 15 | 18 | Fair | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313846.77 | 1980101.51 |
| 75 | *Quercus agrifolia* | Coast live oak | 1 | 8 | 8 | | | | | 17 | 10 | Poor | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313848.56 | 1980093.62 |
| 76 | *Quercus agrifolia* | Coast live oak | 1 | 9 | 9 | | | | | 17 | 10 | Poor | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313845.37 | 1980077.18 |
| 77 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 16 | 5 | Fair | Fair | | Indirect - BVP | N/A | | 6313868.86 | 1980084.57 |
| 78 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 16 | 5 | Poor | Fair | | Indirect - BVP | N/A | | 6313865.65 | 1980087.2 |
| 79 | *Quercus agrifolia* | Coast live oak | 2 | 21.9317 | 15 | 16 | | | | 40 | 20 | Poor | Poor | | Encroachment - Bear Valley Parkway | 1 | Bees | 6313867.73 | 1980085.65 |
| 80 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 12 | 8 | Poor | Poor | Yes | Indirect - BVP | N/A | | 6313870.2 | 1980078.23 |
| 81 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 18 | 8 | Fair | Fair | | Indirect - BVP | N/A | | 6313864.92 | 1980077.38 |
| 82 | *Phoenix canariensis* | Canary island date palm | 1 | 18 | 18 | | | | | 6 | 20 | Fair | Fair | | Indirect - BVP | N/A | | 6313874.26 | 1980076 |
| 83 | *Quercus agrifolia* | Coast live oak | 1 | 12 | 12 | | | | | 25 | 20 | Fair | Fair | | Preservation | N/A | | 6313889.64 | 1980085.64 |

## Appedix C - Tree Information Matrices

| Tree # | Botanical Name | Common Name | Stems | D.B.H (in.)* | Individual Stem Diameter at Breast Height (in.) | | | | | Height (ft.) | Canopy (ft.) | Health | Structure | Protected | Tree Disposition | Mitigation Requirement | Notes | X | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D1 | D2 | D3 | D4 | D5 | | | | | | | | | | |
| 84 | *Phoenix canariensis* | Canary island date palm | 1 | 19 | 19 | | | | | 10 | 20 | Fair | Fair | | Preservation | N/A | | 6313900.95 | 1980076.78 |
| 85 | *Phoenix canariensis* | Canary island date palm | 1 | 19 | 19 | | | | | 12 | 20 | Fair | Fair | | Preservation | N/A | | 6313889.49 | 1980071.29 |
| 86 | *Quercus agrifolia* | Coast live oak | 1 | 10 | 10 | | | | | 20 | 12 | Fair | Fair | | Indirect - BVP | N/A | | 6313881.56 | 1980079.98 |
| 87 | *Quercus agrifolia* | Coast live oak | 1 | 10 | 10 | | | | | 30 | 15 | Fair | Fair | | Preservation | N/A | | 6313887.07 | 1980060.91 |
| 88 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 20 | 4 | Poor | Poor | | Indirect - BVP | N/A | | 6313871.03 | 1980059.39 |
| 89 | *Quercus agrifolia* | Coast live oak | 1 | 12 | 12 | | | | | 30 | 25 | Good | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313853.53 | 1980067.08 |
| 90 | *Quercus agrifolia* | Coast live oak | 1 | 10 | 10 | | | | | 30 | 23 | Fair | Fair | | Remove - Bear Valley Parkway | 1 | | 6313853.21 | 1980064.76 |
| 91 | *Quercus agrifolia* | Coast live oak | 4 | 13.3791 | 8 | 4 | 3 | 9 | 3 | 24 | 20 | Fair | Fair | Yes | Encroachment - Bear Valley Parkway | 2 | | 6313857.53 | 1980052.95 |
| 92 | *Quercus agrifolia* | Coast live oak | 2 | 16.2788 | 12 | 11 | | | | 28 | 30 | Fair | Fair | | Remove - Bear Valley Parkway | 1 | | 6313848.38 | 1980040.48 |
| 93 | *Quercus agrifolia* | Coast live oak | 1 | 8 | 8 | | | | | 30 | 14 | Fair | Fair | Yes | Indirect - BVP | N/A | | 6313865.91 | 1980049.8 |
| 94 | *Quercus agrifolia* | Coast live oak | 1 | 7 | 7 | | | | | 26 | 12 | Fair | Fair | Yes | Indirect - BVP | N/A | | 6313877.02 | 1980047.82 |
| 95 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 22 | 8 | Poor | Fair | | Preservation | N/A | | 6313885.38 | 1980045.64 |
| 96 | *Quercus agrifolia* | Coast live oak | 1 | 8 | 8 | | | | | 20 | 8 | Fair | Fair | Yes | Indirect - BVP | N/A | | 6313863.93 | 1980033.85 |
| 97 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 16 | 8 | Fair | Fair | | Indirect - BVP | N/A | | 6313857.09 | 1980027.24 |
| 98 | *Quercus agrifolia* | Coast live oak | 1 | 17 | 17 | | | | | 30 | 45 | Fair | Fair | Yes | Encroachment - Bear Valley Parkway | 2 | | 6313862.58 | 1980027.77 |
| 99 | *Quercus agrifolia* | Coast live oak | 1 | 10 | 10 | | | | | 20 | 20 | Fair | Fair | Yes | Indirect - BVP | N/A | | 6313868.76 | 1980028.58 |
| 100 | *Quercus agrifolia* | Coast live oak | 1 | 10 | 10 | | | | | 20 | 20 | Fair | Fair | Yes | Indirect - BVP | N/A | | 6313870.96 | 1980027.71 |
| 101 | *Quercus agrifolia* | Coast live oak | 1 | 7 | 7 | | | | | 20 | 12 | Fair | Fair | Yes | Indirect - BVP | N/A | | 6313873.56 | 1980011.56 |
| 102 | *Quercus agrifolia* | Coast live oak | 1 | 7 | 7 | | | | | 20 | 12 | Fair | Fair | Yes | Preservation | N/A | | 6313898.64 | 1980031.09 |
| 103 | *Washingtonia robusta* | Mexican fan palm | 1 | 14 | 14 | | | | | 35 | 12 | Fair | Fair | | Preservation | N/A | | 6313912.69 | 1980027.25 |
| 104 | *Quercus agrifolia* | Coast live oak | 1 | 9 | 9 | | | | | 20 | 12 | Fair | Fair | | Preservation | N/A | | 6313912.83 | 1980018.6 |
| 105 | *Phoenix canariensis* | Canary island date palm | 2 | 24.7588 | 18 | 17 | | | | 20 | 30 | Fair | Fair | | Preservation | N/A | | 6313895.51 | 1980013.43 |
| 106 | *Quercus agrifolia* | Coast live oak | 1 | 22 | 22 | | | | | 55 | 53 | Fair | Fair | | Preservation | N/A | | 6313908.8 | 1980009.91 |
| 107 | *Phoenix canariensis* | Canary island date palm | 1 | 36 | 36 | | | | | 18 | 20 | Fair | Fair | | Preservation | N/A | | 6313910.83 | 1979998.94 |
| 108 | *Phoenix canariensis* | Canary island date palm | 1 | 30 | 30 | | | | | 8 | 20 | Fair | Fair | | Preservation | N/A | | 6313894.09 | 1979995.39 |
| 109 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 12 | 10 | Fair | Fair | Yes | Indirect - BVP | N/A | | 6313872.02 | 1980002.64 |
| 110 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | 30 | 20 | Fair | Fair | Yes | Indirect - BVP | N/A | | 6313866.26 | 1979994.29 |
| 111 | *Quercus agrifolia* | Coast live oak | 1 | 9 | 9 | | | | | 18 | 20 | Fair | Fair | Yes | Indirect - BVP | N/A | | 6313864.2 | 1979997.76 |
| 112 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | 22 | 20 | Fair | Fair | Yes | Preservation | N/A | | 6313884.68 | 1979996.96 |
| 113 | *Quercus agrifolia* | Coast live oak | 1 | 17 | 17 | | | | | 40 | 20 | Fair | Fair | Yes | Preservation | N/A | | 6313873.65 | 1979979.85 |
| 114 | *Washingtonia robusta* | Mexican fan palm | 1 | 9 | 9 | | | | | 6 | 12 | Fair | Fair | | Preservation | N/A | | 6313873.95 | 1979957.97 |
| 115 | *Washingtonia robusta* | Mexican fan palm | 1 | 13 | 13 | | | | | 70 | 12 | Fair | Fair | | Preservation | N/A | | 6313880.62 | 1979944.31 |
| 116 | *Phoenix canariensis* | Canary island date palm | 1 | 32 | 32 | | | | | 12 | 20 | Fair | Fair | | Preservation | N/A | | 6313880.71 | 1979956.43 |
| 117 | *Phoenix canariensis* | Canary island date palm | 2 | 45.2548 | 32 | 32 | | | | 45 | 40 | Fair | Fair | | Indirect - BVP | N/A | | 6313873.33 | 1979931.78 |
| 118 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 16 | 13 | Fair | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313842.71 | 1979978.81 |
| 119 | *Quercus agrifolia* | Coast live oak | 1 | 9 | 9 | | | | | 20 | 12 | Fair | Fair | | Remove - Bear Valley Parkway | 1 | | 6313828.68 | 1979985.23 |
| 120 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 10 | 8 | Poor | Fair | | Remove - Bear Valley Parkway | 1 | | 6313834.74 | 1979972.68 |
| 121 | *Quercus agrifolia* | Coast live oak | 1 | 15 | 15 | | | | | 30 | 20 | Poor | Fair | | Remove - Bear Valley Parkway | 1 | | 6313826.98 | 1979969.65 |
| 122 | *Quercus agrifolia* | Coast live oak | 1 | 8 | 8 | | | | | 20 | 12 | Poor | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313834.77 | 1979899.04 |
| 123 | *Quercus agrifolia* | Coast live oak | 2 | 14.4222 | 8 | 12 | | | | 35 | 30 | Fair | Fair | | Remove - Bear Valley Parkway | 1 | | 6313833.97 | 1979901.15 |
| 124 | *Quercus agrifolia* | Coast live oak | 2 | 4.47214 | 4 | 2 | | | | 12 | 8 | Fair | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313830.97 | 1979925.53 |
| 125 | *Salix laevigata* | Red willow | 1 | 20 | 20 | | | | | 30 | 30 | Fair | Fair | | Indirect - BVP | N/A | | 6313860.03 | 1979922.03 |

## Appedix C - Tree Information Matrices

| Tree # | Botanical Name | Common Name | Stems | D.B.H (in.)* | Individual Stem Diameter at Breast Height (in.) | | | | | Height (ft.) | Canopy (ft.) | Health | Structure | Protected | Tree Disposition | Mitigation Requirement | Notes | X | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D1 | D2 | D3 | D4 | D5 | | | | | | | | | | |
| 126 | *Quercus agrifolia* | Coast live oak | 2 | 10 | 8 | 6 | | | | 12 | 10 | Poor | Fair | | Remove - Bear Valley Parkway | 1 | | 6313830.21 | 1979887.73 |
| 127 | *Quercus agrifolia* | Coast live oak | 2 | 10 | 8 | 6 | | | | 14 | 10 | Poor | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313828.61 | 1979882.42 |
| 128 | *Quercus agrifolia* | Coast live oak | 1 | 7 | 7 | | | | | 14 | 10 | Poor | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313841.96 | 1979852.17 |
| 129 | *Quercus agrifolia* | Coast live oak | 2 | 19.2094 | 15 | 12 | | | | 35 | 30 | Poor | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313837.53 | 1979849.84 |
| 130 | *Quercus agrifolia* | Coast live oak | 1 | 5 | 5 | | | | | 24 | 18 | Fair | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313841.47 | 1979847.95 |
| 131 | *Quercus agrifolia* | Coast live oak | 1 | 15 | 15 | | | | | 30 | 18 | Fair | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313840.16 | 1979847.17 |
| 132 | *Quercus agrifolia* | Coast live oak | 1 | 12 | 12 | | | | | 30 | 18 | Fair | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313840.56 | 1979843.4 |
| 133 | *Quercus agrifolia* | Coast live oak | 1 | 10 | 10 | | | | | 30 | 18 | Fair | Fair | Yes | Encroachment - Bear Valley Parkway | 2 | | 6313852.89 | 1979854.84 |
| 134 | *Washingtonia robusta* | Mexican fan palm | 1 | 14 | 14 | | | | | 35 | 12 | Fair | Fair | | Indirect - BVP | N/A | | 6313851.43 | 1979854.15 |
| 135 | *Washingtonia robusta* | Mexican fan palm | 2 | 14.1421 | 10 | 10 | | | | 30 | 20 | Fair | Fair | | Encroachment - Bear Valley Parkway | 2 | | 6313851.38 | 1979841.49 |
| 136 | *Quercus agrifolia* | Coast live oak | 1 | 12 | 12 | | | | | 35 | 30 | Fair | Fair | Yes | Encroachment - Bear Valley Parkway | 2 | | 6313856 | 1979831.59 |
| 137 | *Quercus agrifolia* | Coast live oak | 2 | 12.7279 | 9 | 9 | | | | 28 | 30 | Fair | Fair | Yes | Encroachment - Bear Valley Parkway | 2 | | 6313856.71 | 1979827.73 |
| 138 | *Washingtonia robusta* | Mexican fan palm | 1 | 12 | 12 | | | | | 65 | 12 | Fair | Fair | | Encroachment - Bear Valley Parkway | 1 | | 6313854.8 | 1979825.6 |
| 139 | *Washingtonia robusta* | Mexican fan palm | 1 | 12 | 12 | | | | | 65 | 12 | Fair | Fair | | Indirect - BVP | N/A | | 6313856.57 | 1979830.86 |
| 140 | *Quercus agrifolia* | Coast live oak | 1 | 9 | 9 | | | | | 20 | 8 | Fair | Fair | Yes | Encroachment - Bear Valley Parkway | 2 | | 6313852.1 | 1979818.43 |
| 141 | *Quercus agrifolia* | Coast live oak | 3 | 5.38516 | 4 | 3 | 2 | | | 20 | 12 | Fair | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313845.19 | 1979814.18 |
| 142 | *Quercus agrifolia* | Coast live oak | 1 | 18 | 18 | | | | | 40 | 40 | Fair | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313851.67 | 1979814.33 |
| 143 | *Washingtonia robusta* | Mexican fan palm | 1 | 16 | 16 | | | | | 65 | 12 | Fair | Fair | | Indirect - BVP | N/A | | 6313862.92 | 1979813.94 |
| 144 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 20 | 8 | Fair | Fair | Yes | Encroachment - Bear Valley Parkway | 2 | | 6313856.77 | 1979813.37 |
| 145 | *Washingtonia robusta* | Mexican fan palm | 1 | 15 | 15 | | | | | 70 | 12 | Fair | Fair | | Indirect - BVP | N/A | | 6313882.84 | 1979817.19 |
| 146 | *Quercus agrifolia* | Coast live oak | 1 | 12 | 12 | | | | | 30 | 24 | Fair | Fair | | Remove - Bear Valley Parkway | 1 | | 6313838.48 | 1979795.67 |
| 147 | *Quercus agrifolia* | Coast live oak | 3 | 21.5639 | 14 | 13 | 10 | | | 30 | 30 | Fair | Fair | | Remove - Bear Valley Parkway | 1 | | 6313857.84 | 1979785.8 |
| 148 | *Phoenix canariensis* | Canary island date palm | 2 | 43.8634 | 32 | 30 | | | | 20 | 30 | Fair | Fair | | Indirect - BVP | N/A | | 6313885.54 | 1979775.95 |
| 149 | *Washingtonia robusta* | Mexican fan palm | 1 | 12 | 12 | | | | | 70 | 12 | Fair | Fair | | Indirect - BVP | N/A | | 6313869.25 | 1979790.66 |
| 150 | *Quercus agrifolia* | Coast live oak | 1 | 13 | 13 | | | | | 35 | 20 | Fair | Fair | | Remove - Bear Valley Parkway | 1 | | 6313855.78 | 1979749.96 |
| 151 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | 30 | 25 | Fair | Fair | | Remove - Bear Valley Parkway | 1 | | 6313861.3 | 1979753.03 |
| 152 | *Quercus agrifolia* | Coast live oak | 1 | 12 | 12 | | | | | 16 | 12 | Fair | Fair | | Encroachment - Bear Valley Parkway | 1 | | 6313872.65 | 1979755.92 |
| 153 | *Washingtonia robusta* | Mexican fan palm | 1 | 32 | 32 | | | | | 20 | 24 | Fair | Fair | | Indirect - BVP | N/A | | 6313879.12 | 1979748.9 |
| 154 | *Washingtonia robusta* | Mexican fan palm | 1 | 25 | 25 | | | | | 30 | 20 | Fair | Fair | | Indirect - BVP | N/A | | 6313886.8 | 1979731.88 |
| 155 | *Quercus agrifolia* | Coast live oak | 1 | 13 | 13 | | | | | 16 | 30 | Fair | Fair | Yes | Encroachment - Bear Valley Parkway | 2 | | 6313874.42 | 1979736.3 |
| 156 | *Quercus agrifolia* | Coast live oak | 2 | 17.6918 | 13 | 12 | | | | 25 | 30 | Fair | Fair | | Remove - Bear Valley Parkway | 1 | | 6313865.79 | 1979714.34 |
| 157 | *Quercus agrifolia* | Coast live oak | 1 | 8 | 8 | | | | | 30 | 16 | Fair | Fair | | Remove - Bear Valley Parkway | 1 | | 6313867.77 | 1979694.58 |
| 158 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 20 | 8 | Fair | Fair | Yes | Indirect - BVP | N/A | | 6313886.03 | 1979694.61 |
| 159 | *Koelreuteria bipinnata* | Chinese flame tree | 1 | 10 | 10 | | | | | 50 | 30 | Poor | Fair | | Encroachment - Bear Valley Parkway | 2 | | 6313881.9 | 1979691.42 |
| 160 | *Washingtonia robusta* | Mexican fan palm | 1 | 32 | 32 | | | | | 30 | 30 | Good | Fair | | Encroachment - Bear Valley Parkway | 2 | | 6313881.5 | 1979672.63 |
| 161 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | 35 | 28 | Fair | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313874.9 | 1979673.1 |
| 162 | *Koelreuteria bipinnata* | Chinese flame tree | 1 | 11 | 11 | | | | | 45 | 20 | Fair | Fair | | Remove - Bear Valley Parkway | 1 | | 6313879.96 | 1979669.99 |
| 163 | *Washingtonia robusta* | Mexican fan palm | 1 | 16 | 16 | | | | | 30 | 12 | Fair | Fair | | Preservation | N/A | | 6313912.6 | 1979691.81 |
| 164 | *Washingtonia robusta* | Mexican fan palm | 1 | 16 | 16 | | | | | 30 | 12 | Fair | Fair | | Indirect - BVP | N/A | | 6313910.9 | 1979687.15 |
| 165 | *Washingtonia robusta* | Mexican fan palm | 1 | 13 | 13 | | | | | 60 | 12 | Fair | Fair | | Preservation | N/A | | 6313913.73 | 1979701.44 |
| 166 | *Washingtonia robusta* | Mexican fan palm | 1 | 13 | 13 | | | | | 60 | 12 | Fair | Fair | | Preservation | N/A | | 6313914.75 | 1979700.96 |
| 167 | *Washingtonia robusta* | Mexican fan palm | 1 | 13 | 13 | | | | | 25 | 12 | Fair | Fair | | Preservation | N/A | | 6313923.02 | 1979699.71 |

## Appedix C - Tree Information Matrices

| Tree # | Botanical Name | Common Name | Stems | D.B.H (in.)* | Individual Stem Diameter at Breast Height (in.) | | | | | Height (ft.) | Canopy (ft.) | Health | Structure | Protected | Tree Disposition | Mitigation Requirement | Notes | X | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D1 | D2 | D3 | D4 | D5 | | | | | | | | | | |
| 168 | *Quercus agrifolia* | Coast live oak | 1 | 25 | 25 | | | | | 30 | 30 | Fair | Fair | | Preservation | N/A | | 6313916.99 | 1979685.07 |
| 169 | *Salix laevigata* | Red willow | 1 | 13 | 13 | | | | | 45 | 30 | Fair | Fair | | Preservation | N/A | | 6313923.2 | 1979657.4 |
| 170 | *Quercus agrifolia* | Coast live oak | 1 | 15 | 15 | | | | | 30 | 28 | Fair | Fair | | Preservation | N/A | | 6313935.14 | 1979646.11 |
| 171 | *Washingtonia robusta* | Mexican fan palm | 1 | 12 | 12 | | | | | 75 | 12 | Fair | Fair | | Preservation | N/A | | 6313941.56 | 1979591.03 |
| 172 | *Washingtonia robusta* | Mexican fan palm | 1 | 13 | 13 | | | | | 75 | 12 | Fair | Fair | | Indirect - BVP | N/A | | 6313926.23 | 1979592.52 |
| 173 | *Washingtonia robusta* | Mexican fan palm | 1 | 13 | 13 | | | | | 75 | 12 | Fair | Fair | | Indirect - BVP | N/A | | 6313910.68 | 1979599.28 |
| 174 | *Phoenix canariensis* | Canary island date palm | 1 | 40 | 40 | | | | | 24 | 30 | Fair | Fair | | Indirect - BVP | N/A | | 6313924.2 | 1979622.11 |
| 175 | *Washingtonia robusta* | Mexican fan palm | 1 | 12 | 12 | | | | | 25 | 12 | Fair | Fair | | Indirect - BVP | N/A | | 6313921.91 | 1979631.42 |
| 176 | *Washingtonia robusta* | Mexican fan palm | 1 | 14 | 14 | | | | | 70 | 12 | Fair | Fair | | Indirect - BVP | N/A | | 6313905.15 | 1979628.92 |
| 177 | *Washingtonia robusta* | Mexican fan palm | 1 | 14 | 14 | | | | | 70 | 12 | Fair | Fair | | Indirect - BVP | N/A | | 6313906.91 | 1979622.77 |
| 178 | *Washingtonia robusta* | Mexican fan palm | 1 | 14 | 14 | | | | | 40 | 12 | Fair | Fair | | Indirect - BVP | N/A | | 6313907.76 | 1979615.09 |
| 179 | *Washingtonia robusta* | Mexican fan palm | 1 | 14 | 14 | | | | | 65 | 12 | Fair | Fair | | Preservation | N/A | | 6313929.93 | 1979605.43 |
| 180 | *Washingtonia robusta* | Mexican fan palm | 1 | 13 | 13 | | | | | 65 | 12 | Fair | Fair | | Encroachment - Bear Valley Parkway | 1 | | 6313896.12 | 1979615.2 |
| 181 | *Phoenix canariensis* | Canary island date palm | 1 | 32 | 32 | | | | | 10 | 25 | Fair | Fair | | Encroachment - Bear Valley Parkway | 2 | | 6313892.01 | 1979643.13 |
| 182 | *Washingtonia robusta* | Mexican fan palm | 1 | 10 | 10 | | | | | 70 | 12 | Fair | Fair | | Indirect - BVP | N/A | | 6313906.61 | 1979672.59 |
| 183 | *Washingtonia robusta* | Mexican fan palm | 1 | 11 | 11 | | | | | 70 | 12 | Fair | Fair | | Indirect - BVP | N/A | | 6313900.74 | 1979660.87 |
| 184 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 24 | 8 | Fair | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313879.15 | 1979648.4 |
| 185 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 14 | 6 | Fair | Fair | | Remove - Bear Valley Parkway | 1 | | 6313879.33 | 1979642.81 |
| 186 | *Quercus agrifolia* | Coast live oak | 1 | 9 | 9 | | | | | 24 | 12 | Fair | Fair | | Remove - Bear Valley Parkway | 1 | | 6313877.56 | 1979638.73 |
| 187 | *Quercus agrifolia* | Coast live oak | 1 | 13 | 13 | | | | | 28 | 16 | Fair | Fair | | Remove - Bear Valley Parkway | 1 | | 6313876.76 | 1979625.69 |
| 188 | *Quercus agrifolia* | Coast live oak | 3 | 9.43398 | 9 | 2 | 2 | | | 12 | 12 | Fair | Poor | | Remove - Bear Valley Parkway | 1 | | 6313883.04 | 1979603.18 |
| 189 | *Quercus agrifolia* | Coast live oak | 2 | 16.9706 | 12 | 12 | | | | 25 | 25 | Fair | Fair | | Remove - Bear Valley Parkway | 1 | | 6313893.89 | 1979566.54 |
| 190 | *Quercus agrifolia* | Coast live oak | 2 | 15.2643 | 13 | 8 | | | | 30 | 16 | Fair | Fair | | Remove - Bear Valley Parkway | 1 | | 6313895.18 | 1979548.39 |
| 191 | *Quercus agrifolia* | Coast live oak | 1 | 8 | 8 | | | | | 20 | 14 | Fair | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313906.67 | 1979564.94 |
| 192 | *Quercus agrifolia* | Coast live oak | 1 | 10 | 10 | | | | | 40 | 20 | Fair | Fair | | Indirect - BVP | N/A | | 6313922.18 | 1979572.19 |
| 193 | *Quercus agrifolia* | Coast live oak | 2 | 18.3848 | 13 | 13 | | | | 40 | 30 | Fair | Fair | | Indirect - BVP | N/A | | 6313932.58 | 1979536.45 |
| 194 | *Quercus agrifolia* | Coast live oak | 1 | 11 | 11 | | | | | 38 | 28 | Fair | Fair | Yes | Encroachment - Bear Valley Parkway | 2 | | 6313925.8 | 1979528.03 |
| 195 | *Quercus agrifolia* | Coast live oak | 1 | 10 | 10 | | | | | 32 | 20 | Fair | Fair | Yes | Encroachment - Bear Valley Parkway | 2 | | 6313928.09 | 1979515.67 |
| 196 | *Quercus agrifolia* | Coast live oak | 1 | 12 | 12 | | | | | 20 | 20 | Fair | Fair | Yes | Encroachment - Bear Valley Parkway | 2 | | 6313919.35 | 1979520.18 |
| 197 | *Quercus agrifolia* | Coast live oak | 3 | 13.1529 | 10 | 8 | 3 | | | 20 | 20 | Fair | Fair | | Remove - Bear Valley Parkway | 1 | | 6313911.7 | 1979526.06 |
| 198 | *Washingtonia robusta* | Mexican fan palm | 1 | 12 | 12 | | | | | 65 | 12 | Fair | Fair | | Indirect - BVP | N/A | | 6313940.38 | 1979500.47 |
| 199 | *Washingtonia robusta* | Mexican fan palm | 1 | 12 | 12 | | | | | 65 | 12 | Fair | Fair | | Indirect - BVP | N/A | | 6313938.84 | 1979511.11 |
| 200 | *Quercus agrifolia* | Coast live oak | 1 | 15 | 15 | | | | | 30 | 25 | Fair | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313905.32 | 1979512.98 |
| 201 | *Quercus agrifolia* | Coast live oak | 2 | 17.0294 | 13 | 11 | | | | 35 | 35 | Fair | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313906.53 | 1979509.3 |
| 202 | *Salix laevigata* | Red willow | 1 | 12 | 12 | | | | | 5 | 30 | Fair | Fair | | Indirect - BVP | N/A | | 6313940.89 | 1979465.69 |
| 203 | *Quercus agrifolia* | Coast live oak | 1 | 36 | 36 | | | | | 45 | 50 | Fair | Fair | | Encroachment - Bear Valley Parkway | 1 | | 6313936.71 | 1979466.73 |
| 204 | *Salix laevigata* | Red willow | 1 | 32 | 32 | | | | | 25 | 35 | Fair | Fair | | Remove - Bear Valley Parkway | 2 | | 6313929.21 | 1979464.15 |
| 205 | *Salix laevigata* | Red willow | 1 | 15 | 15 | | | | | 30 | 35 | Fair | Fair | | Indirect - BVP | N/A | | 6313947.67 | 1979436.89 |
| 206 | *Quercus agrifolia* | Coast live oak | 1 | 15 | 15 | | | | | 38 | 35 | Fair | Fair | Yes | Preservation | N/A | | 6313965.23 | 1979430.23 |
| 207 | *Quercus agrifolia* | Coast live oak | 1 | 16 | 16 | | | | | 35 | 30 | Fair | Fair | | Indirect - BVP | N/A | | 6313960.14 | 1979432.94 |
| 208 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 6 | 20 | Fair | Poor | | Indirect - BVP | N/A | | 6313961.78 | 1979429.9 |
| 209 | *Quercus agrifolia* | Coast live oak | 1 | 11 | 11 | | | | | 40 | 25 | Fair | Fair | Yes | Preservation | N/A | | 6313965.2 | 1979426.8 |

## Appedix C - Tree Information Matrices

| Tree # | Botanical Name | Common Name | Stems | D.B.H (in.)* | Individual Stem Diameter at Breast Height (in.) | | | | | Height (ft.) | Canopy (ft.) | Health | Structure | Protected | Tree Disposition | Mitigation Requirement | Notes | X | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D1 | D2 | D3 | D4 | D5 | | | | | | | | | | |
| 210 | *Washingtonia robusta* | Mexican fan palm | 1 | 15 | 15 | | | | | 70 | 12 | Fair | Fair | | Preservation | N/A | | 6313969.55 | 1979433.25 |
| 211 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | 30 | 28 | Fair | Fair | | Encroachment - Bear Valley Parkway | 1 | | 6313943.74 | 1979416.99 |
| 212 | *Washingtonia robusta* | Mexican fan palm | 1 | 13 | 13 | | | | | 65 | 12 | Fair | Fair | | Preservation | N/A | | 6313980.14 | 1979426.39 |
| 213 | *Salix laevigata* | Red willow | 3 | 17 | 12 | 9 | 8 | | | 35 | 40 | Fair | Fair | | Preservation | N/A | | 6313994.83 | 1979418.03 |
| 214 | *Quercus agrifolia* | Coast live oak | 2 | 14.2127 | 11 | 9 | | | | 30 | 28 | Fair | Poor | Yes | Preservation | N/A | | 6314002.37 | 1979394.83 |
| 215 | *Quercus agrifolia* | Coast live oak | 3 | 22.561 | 14 | 13 | 12 | | | 37 | 45 | Fair | Fair | Yes | Indirect - BVP | N/A | | 6313979.7 | 1979393.53 |
| 216 | *Quercus agrifolia* | Coast live oak | 2 | 10.6301 | 8 | 7 | | | | 20 | 12 | Fair | Fair | Yes | Indirect - BVP | N/A | | 6313984.02 | 1979372.49 |
| 217 | *Quercus agrifolia* | Coast live oak | 1 | 11 | 11 | | | | | 22 | 18 | Fair | Fair | Yes | Indirect - BVP | N/A | | 6313981.63 | 1979375.39 |
| 218 | *Quercus agrifolia* | Coast live oak | 3 | 4.89898 | 4 | 2 | 2 | | | 16 | 12 | Fair | Fair | Yes | Encroachment - Bear Valley Parkway | 2 | | 6313941.47 | 1979397.22 |
| 219 | *Quercus agrifolia* | Coast live oak | 4 | 7.07107 | 4 | 4 | 3 | 3 | | 16 | 15 | Fair | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313934.81 | 1979392.9 |
| 220 | *Quercus agrifolia* | Coast live oak | 2 | 7.2111 | 6 | 4 | | | | 16 | 15 | Fair | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313930.45 | 1979396.45 |
| 221 | *Quercus agrifolia* | Coast live oak | 2 | 7.28011 | 7 | 2 | 0 | 0 | 0 | 16 | 18 | Fair | Fair | Yes | Remove - Bear Valley Parkway | 2 | | 6313947.18 | 1979331.01 |
| 222 | *Quercus agrifolia* | Coast live oak | 5 | 23.8118 | 14 | 9 | 15 | 4 | 7 | 30 | 36 | Fair | Fair | | Remove - Bear Valley Parkway | 1 | | 6313945.98 | 1979329.83 |
| 223 | *Quercus agrifolia* | Coast live oak | 2 | 3.16228 | 3 | 1 | | | | 12 | 8 | Fair | Fair | | Encroachment - Bear Valley Parkway | 1 | | 6313960.86 | 1979328.55 |
| 224 | *Quercus agrifolia* | Coast live oak | 1 | 7 | 7 | | | | | 24 | 8 | Fair | Fair | Yes | Encroachment - Bear Valley Parkway | 2 | | 6313960.99 | 1979322.63 |
| 225 | *Quercus agrifolia* | Coast live oak | 2 | 3.60555 | 3 | 2 | | | | 12 | 8 | Poor | Fair | Yes | Preservation | N/A | | 6313970.62 | 1979321.26 |
| 226 | *Quercus agrifolia* | Coast live oak | 1 | 7 | 7 | | | | | 18 | 16 | Poor | Fair | | Preservation | N/A | | 6313973.53 | 1979307.18 |
| 227 | *Quercus agrifolia* | Coast live oak | 1 | 9 | 9 | | | | | 20 | 16 | Fair | Fair | | Preservation | N/A | | 6313983.46 | 1979301.6 |
| 228 | *Quercus agrifolia* | Coast live oak | 1 | 11 | 11 | | | | | 24 | 16 | Fair | Fair | Yes | Preservation | N/A | | 6313995.83 | 1979297.58 |
| 229 | *Quercus agrifolia* | Coast live oak | 1 | 5 | 5 | | | | | 18 | 8 | Fair | Fair | | Preservation | N/A | | 6314010.71 | 1979303.42 |
| 230 | *Quercus agrifolia* | Coast live oak | 1 | 5 | 5 | | | | | 20 | 8 | Fair | Fair | Yes | Preservation | N/A | | 6314010.27 | 1979302.94 |
| 231 | *Quercus agrifolia* | Coast live oak | 4 | 34.4964 | 25 | 12 | 14 | 15 | | 35 | 40 | Good | Fair | Yes | Preservation | N/A | | 6314010.5 | 1979327.41 |
| 232 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | 30 | 25 | Fair | Fair | Yes | Preservation | N/A | | 6314022.4 | 1979341.05 |
| 233 | *Quercus agrifolia* | Coast live oak | 1 | 10 | 10 | | | | | 20 | 12 | Fair | Fair | | Preservation | N/A | | 6314017.21 | 1979328.1 |
| 235 | *Phoenix canariensis* | Canary island date palm | 2 | 45.9674 | 32 | 33 | | | | 25 | 40 | Fair | Fair | | Preservation | N/A | | 6314028.94 | 1979321.18 |
| 234 | *Quercus agrifolia* | Coast live oak | 1 | 12 | 12 | | | | | 35 | 20 | Fair | Fair | | Preservation | N/A | | 6314011.81 | 1979328.04 |
| 236 | *Washingtonia robusta* | Mexican fan palm | 1 | 14 | 14 | | | | | 30 | 12 | Fair | Fair | | Preservation | N/A | | 6314039.06 | 1979315.85 |
| 237 | *Phoenix canariensis* | Canary island date palm | 1 | 32 | 32 | | | | | 20 | 25 | Fair | Fair | | Preservation | N/A | | 6314047.43 | 1979304.74 |
| 238 | *Quercus agrifolia* | Coast live oak | 2 | 4.24264 | 3 | 3 | | | | 12 | 8 | Poor | Fair | Yes | Preservation | N/A | | 6314024.42 | 1979346.34 |
| 239 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 16 | 6 | Poor | Fair | Yes | Preservation | N/A | | 6314026.16 | 1979349.22 |
| 240 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 16 | 6 | Fair | Fair | | Preservation | N/A | | 6314024.57 | 1979352.41 |
| 241 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 28 | 8 | Fair | Fair | | Preservation | N/A | | 6314022.84 | 1979354.46 |
| 242 | *Quercus agrifolia* | Coast live oak | 1 | 11 | 11 | | | | | 36 | 22 | Fair | Fair | Yes | Preservation | N/A | | 6314017.96 | 1979352.33 |
| 243 | *Quercus agrifolia* | Coast live oak | 1 | 8 | 8 | | | | | 24 | 16 | Fair | Fair | Yes | Preservation | N/A | | 6314013.42 | 1979351.78 |
| 244 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 20 | 10 | Fair | Fair | | Preservation | N/A | | 6314003.8 | 1979350.01 |
| 245 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 20 | 10 | Fair | Fair | | Preservation | N/A | | 6314002.57 | 1979346.41 |
| 246 | *Quercus agrifolia* | Coast live oak | 1 | 9 | 9 | | | | | 28 | 16 | Fair | Fair | Yes | Preservation | N/A | | 6314018.12 | 1979360.17 |
| 247 | *Quercus agrifolia* | Coast live oak | 1 | 5 | 5 | | | | | 20 | 8 | Poor | Poor | | Preservation | N/A | | 6314027.05 | 1979359.57 |
| 248 | *Quercus agrifolia* | Coast live oak | 3 | 10.4881 | 9 | 5 | 2 | | | 38 | 35 | Fair | Fair | Yes | Preservation | N/A | | 6314030.19 | 1979361.44 |
| 249 | *Quercus agrifolia* | Coast live oak | 1 | 16 | 16 | | | | | 40 | 45 | Fair | Fair | Yes | Preservation | N/A | | 6314027.56 | 1979348.88 |
| 250 | *Quercus agrifolia* | Coast live oak | 1 | 5 | 5 | | | | | 13 | 8 | Fair | Fair | Yes | Preservation | N/A | | 6314017.77 | 1979372.88 |
| 251 | *Quercus agrifolia* | Coast live oak | 2 | 12.8062 | 8 | 10 | | | | 30 | 24 | Fair | Fair | Yes | Preservation | N/A | | 6314015.43 | 1979385.94 |

## Appedix C - Tree Information Matrices

| Tree # | Botanical Name | Common Name | Stems | D.B.H (in.)* | Individual Stem Diameter at Breast Height (in.) | | | | | Height (ft.) | Canopy (ft.) | Health | Structure | Protected | Tree Disposition | Mitigation Requirement | Notes | X | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D1 | D2 | D3 | D4 | D5 | | | | | | | | | | |
| 252 | *Quercus agrifolia* | Coast live oak | 1 | 8 | 8 | | | | | 35 | 18 | Fair | Fair | Yes | Preservation | N/A | | 6314026.78 | 1979391.77 |
| 253 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 28 | 18 | Fair | Fair | | Preservation | N/A | | 6314035.14 | 1979384.74 |
| 254 | *Quercus agrifolia* | Coast live oak | 1 | 24 | 24 | | | | | 38 | 40 | Fair | Fair | | Preservation | N/A | | 6314052.39 | 1979370.63 |
| 255 | *Quercus agrifolia* | Coast live oak | 1 | 7 | 7 | | | | | 24 | 12 | Fair | Fair | Yes | Preservation | N/A | | 6314066.54 | 1979382.96 |
| 256 | *Quercus agrifolia* | Coast live oak | 1 | 9 | 9 | | | | | 30 | 24 | Fair | Fair | | Preservation | N/A | | 6314075.17 | 1979374.25 |
| 257 | *Quercus agrifolia* | Coast live oak | 1 | 22 | 22 | | | | | 40 | 33 | Fair | Fair | Yes | Preservation | N/A | | 6314077.05 | 1979355.38 |
| 258 | *Quercus agrifolia* | Coast live oak | 1 | 9 | 9 | | | | | 35 | 20 | Fair | Fair | Yes | Preservation | N/A | | 6314072.06 | 1979352.93 |
| 259 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 18 | 8 | Fair | Fair | Yes | Preservation | N/A | | 6314056.08 | 1979344.01 |
| 260 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | 45 | 30 | Fair | Fair | Yes | Preservation | N/A | | 6314072.51 | 1979338.89 |
| 261 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 16 | 8 | Fair | Fair | | Preservation | N/A | | 6314075.58 | 1979336.81 |
| 262 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 16 | 8 | Fair | Fair | Yes | Preservation | N/A | | 6314075.38 | 1979333.29 |
| 263 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 22 | 14 | Fair | Fair | Yes | Preservation | N/A | | 6314075.62 | 1979329.92 |
| 264 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 22 | 14 | Fair | Fair | Yes | Preservation | N/A | | 6314067.83 | 1979331.78 |
| 265 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 22 | 14 | Fair | Fair | Yes | Preservation | N/A | | 6314067.13 | 1979331.07 |
| 266 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 22 | 14 | Fair | Fair | Yes | Preservation | N/A | | 6314065.65 | 1979329.3 |
| 267 | *Washingtonia robusta* | Mexican fan palm | 1 | 10 | 10 | | | | | 16 | 12 | Fair | Fair | | Preservation | N/A | | 6314043 | 1979342.12 |
| 268 | *Quercus agrifolia* | Coast live oak | 3 | 20.7123 | 14 | 13 | 8 | | | 33 | 40 | Fair | Fair | Yes | Preservation | N/A | | 6314098.34 | 1979390.2 |
| 269 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 10 | 8 | Fair | Fair | | Preservation | N/A | | 6314111.37 | 1979378.7 |
| 270 | *Quercus agrifolia* | Coast live oak | 1 | 5 | 5 | | | | | 10 | 8 | Fair | Fair | | Preservation | N/A | | 6314108.25 | 1979351.52 |
| 271 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | 30 | 32 | Fair | Fair | | Preservation | N/A | | 6314110.22 | 1979341.32 |
| 272 | *Quercus agrifolia* | Coast live oak | 1 | 11 | 11 | | | | | 23 | 24 | Fair | Fair | | Preservation | N/A | | 6314095.28 | 1979314.7 |
| 273 | *Quercus agrifolia* | Coast live oak | 2 | 14.2127 | 11 | 9 | | | | 23 | 24 | Fair | Fair | | Preservation | N/A | | 6314095.49 | 1979314.44 |
| 274 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 15 | 8 | Fair | Fair | Yes | Preservation | N/A | | 6314091.32 | 1979305.67 |
| 275 | *Quercus agrifolia* | Coast live oak | 2 | 14.8661 | 10 | 11 | | | | 18 | 24 | Fair | Fair | | Preservation | N/A | | 6314082.21 | 1979298.1 |
| 276 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | 35 | 40 | Fair | Fair | Yes | Preservation | N/A | | 6314069.27 | 1979279.04 |
| 277 | *Quercus agrifolia* | Coast live oak | 1 | 16 | 16 | | | | | 24 | 27 | Fair | Fair | | Preservation | N/A | | 6314075.2 | 1979270.38 |
| 278 | *Quercus agrifolia* | Coast live oak | 2 | 16.9706 | 12 | 12 | | | | 24 | 27 | Fair | Fair | Yes | Preservation | N/A | | 6314076.09 | 1979267.31 |
| 279 | *Quercus agrifolia* | Coast live oak | 1 | 5 | 5 | | | | | 24 | 8 | Fair | Fair | Yes | Preservation | N/A | | 6314061.83 | 1979263.22 |
| 280 | *Quercus agrifolia* | Coast live oak | 2 | 8.544 | 8 | 3 | | | | 22 | 20 | Fair | Fair | Yes | Preservation | N/A | | 6314055.32 | 1979259.78 |
| 281 | *Washingtonia robusta* | Mexican fan palm | 1 | 12 | 12 | | | | | 75 | 12 | Fair | Fair | | Preservation | N/A | | 6314032.8 | 1979258.22 |
| 282 | *Quercus agrifolia* | Coast live oak | 1 | 12 | 12 | | | | | 30 | 20 | Fair | Fair | Yes | Preservation | N/A | | 6314018.75 | 1979285.58 |
| 283 | *Quercus agrifolia* | Coast live oak | 1 | 12 | 12 | | | | | 35 | 20 | Fair | Fair | Yes | Preservation | N/A | | 6313984 | 1979275.43 |
| 284 | *Quercus agrifolia* | Coast live oak | 1 | 11 | 11 | | | | | 35 | 20 | Fair | Fair | Yes | Preservation | N/A | | 6313985.36 | 1979281.61 |
| 285 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 20 | 12 | Fair | Fair | Yes | Preservation | N/A | | 6313975.18 | 1979281.38 |
| 286 | *Quercus agrifolia* | Coast live oak | 1 | 5 | 5 | | | | | 20 | 12 | Fair | Fair | Yes | Preservation | N/A | | 6313971.33 | 1979289.07 |
| 287 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | 30 | 38 | Fair | Fair | | Preservation | N/A | | 6313971.38 | 1979292.53 |
| 288 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 20 | 38 | Fair | Fair | | Preservation | N/A | | 6313962.36 | 1979296.9 |
| 289 | *Quercus agrifolia* | Coast live oak | 1 | 5 | 5 | | | | | 16 | 12 | Fair | Fair | Yes | Preservation | N/A | | 6313953.27 | 1979290.47 |
| 290 | *Quercus agrifolia* | Coast live oak | 1 | 12 | 12 | | | | | 20 | 18 | Fair | Fair | Yes | Preservation | N/A | | 6313951.84 | 1979294.47 |
| 291 | *Quercus agrifolia* | Coast live oak | 2 | 17.0294 | 13 | 11 | | | | 30 | 28 | Fair | Fair | Yes | Preservation | N/A | | 6314122.5 | 1979283.45 |
| 292 | *Schinus molle* | Peruvian pepper | 2 | 42.9418 | 38 | 20 | | | | 30 | 40 | Fair | Fair | | Preservation | N/A | | 6314129.89 | 1979282.05 |
| 293 | *Quercus agrifolia* | Coast live oak | 2 | 10 | 8 | 6 | | | | 28 | 30 | Fair | Fair | | Preservation | N/A | | 6314291.16 | 1979224.14 |

## Appedix C - Tree Information Matrices

| Tree # | Botanical Name | Common Name | Stems | D.B.H (in.)* | Individual Stem Diameter at Breast Height (in.) | | | | | Height (ft.) | Canopy (ft.) | Health | Structure | Protected | Tree Disposition | Mitigation Requirement | Notes | X | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D1 | D2 | D3 | D4 | D5 | | | | | | | | | | |
| 294 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | 20 | 25 | Fair | Fair | Yes | Preservation | N/A | | 6314311.63 | 1979237.28 |
| 295 | *Quercus agrifolia* | Coast live oak | 1 | 22 | 22 | | | | | 38 | 45 | Fair | Fair | Yes | Preservation | N/A | | 6314314.33 | 1979233.45 |
| 296 | *Quercus agrifolia* | Coast live oak | 1 | 19 | 19 | | | | | 30 | 38 | Fair | Fair | Yes | Preservation | N/A | | 6314315.87 | 1979227.24 |
| 297 | *Quercus agrifolia* | Coast live oak | 2 | 16.4012 | 13 | 10 | | | | 24 | 30 | Fair | Fair | | Preservation | N/A | | 6314090.19 | 1979421.82 |
| 298 | *Quercus agrifolia* | Coast live oak | 1 | 13 | 13 | | | | | 28 | 30 | Fair | Fair | Yes | Preservation | N/A | | 6314080.84 | 1979425.57 |
| 299 | *Quercus agrifolia* | Coast live oak | 3 | 17.3781 | 11 | 10 | 9 | | | 30 | 34 | Fair | Fair | | Preservation | N/A | | 6314062.28 | 1979422.3 |
| 300 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | 34 | 36 | Fair | Fair | Yes | Preservation | N/A | | 6314056.28 | 1979416.71 |
| 301 | *Quercus agrifolia* | Coast live oak | 3 | 5.83095 | 4 | 3 | 3 | | | 20 | 16 | Fair | Fair | Yes | Preservation | N/A | | 6314056.35 | 1979411.78 |
| 302 | *Quercus agrifolia* | Coast live oak | 2 | 5.83095 | 5 | 3 | | | | 20 | 16 | Fair | Fair | Yes | Preservation | N/A | | 6314052.79 | 1979416.53 |
| 303 | *Quercus agrifolia* | Coast live oak | 2 | 12.8062 | 10 | 8 | | | | 20 | 26 | Fair | Fair | | Preservation | N/A | | 6314049.51 | 1979413 |
| 304 | *Quercus agrifolia* | Coast live oak | 1 | 11 | 11 | | | | | 20 | 26 | Fair | Fair | Yes | Preservation | N/A | | 6314046.84 | 1979410.17 |
| 305 | *Quercus agrifolia* | Coast live oak | 1 | 7 | 7 | | | | | 20 | 12 | Fair | Fair | Yes | Preservation | N/A | | 6314036.05 | 1979411.7 |
| 306 | *Quercus agrifolia* | Coast live oak | 1 | 8 | 8 | | | | | 18 | 12 | Fair | Fair | Yes | Preservation | N/A | | 6314036.79 | 1979413.03 |
| 307 | *Quercus agrifolia* | Coast live oak | 1 | 12 | 12 | | | | | 30 | 25 | Fair | Fair | | Preservation | N/A | | 6314040.64 | 1979412.16 |
| 308 | *Quercus agrifolia* | Coast live oak | 1 | 8 | 8 | | | | | 10 | 12 | Fair | Fair | | Preservation | N/A | | 6314039.62 | 1979421.46 |
| 309 | *Quercus agrifolia* | Coast live oak | 2 | 13.8924 | 12 | 7 | | | | 45 | 40 | Fair | Fair | | Preservation | N/A | | 6314023.29 | 1979411.83 |
| 310 | *Quercus agrifolia* | Coast live oak | 1 | 10 | 10 | | | | | 25 | 40.02 | Fair | Fair | Yes | Preservation | N/A | | 6314008.28 | 1979412.88 |
| 311 | *Salix laevigata* | Red willow | 1 | 9 | 9 | | | | | 35 | 14 | Fair | Fair | | Preservation | N/A | | 6314001.42 | 1979438.97 |
| 312 | *Salix laevigata* | Red willow | 2 | 13.4536 | 9 | 10 | | | | 35 | 30 | Fair | Fair | | Preservation | N/A | | 6314002.4 | 1979447.07 |
| 313 | *Salix laevigata* | Red willow | 3 | 13.3041 | 7 | 8 | 8 | | | 35 | 50 | Fair | Fair | | Preservation | N/A | | 6314007.39 | 1979455.35 |
| 314 | *Phoenix canariensis* | Canary island date palm | 2 | 50.9117 | 36 | 36 | | | | 18 | 45 | Fair | Fair | | Preservation | N/A | | 6314049.68 | 1979458.08 |
| 315 | *Salix laevigata* | Red willow | 1 | 18 | 18 | | | | | 45 | 40 | Fair | Fair | | Preservation | N/A | | 6314058.61 | 1979453.51 |
| 316 | *Quercus agrifolia* | Coast live oak | 1 | 12 | 12 | | | | | 25 | 20 | Fair | Fair | Yes | Preservation | N/A | | 6314055.37 | 1979449.57 |
| 317 | *Quercus agrifolia* | Coast live oak | 1 | 9 | 9 | | | | | 30 | 20 | Fair | Fair | Yes | Preservation | N/A | | 6314067.34 | 1979444.97 |
| 318 | *Salix laevigata* | Red willow | 1 | 11 | 11 | | | | | 38 | 25 | Fair | Fair | | Preservation | N/A | | 6314061.58 | 1979437.33 |
| 319 | *Quercus agrifolia* | Coast live oak | 1 | 8 | 8 | | | | | 30 | 18 | Fair | Fair | | Preservation | N/A | | 6314060.89 | 1979429.36 |
| 320 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 18 | 6 | Fair | Fair | | Preservation | N/A | | 6314066.1 | 1979419.81 |
| 321 | *Quercus agrifolia* | Coast live oak | 1 | 8 | 8 | | | | | 28 | 20 | Fair | Fair | Yes | Preservation | N/A | | 6314073.45 | 1979428.71 |
| 322 | *Quercus agrifolia* | Coast live oak | 1 | 8 | 8 | | | | | 28 | 18 | Fair | Fair | Yes | Preservation | N/A | | 6314073.86 | 1979430.33 |
| 323 | *Quercus agrifolia* | Coast live oak | 1 | 10 | 10 | | | | | 20 | 16 | Fair | Fair | Yes | Preservation | N/A | | 6314075.8 | 1979430.87 |
| 324 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | 38 | 20 | Fair | Fair | Yes | Preservation | N/A | | 6314086.71 | 1979427.5 |
| 325 | *Quercus agrifolia* | Coast live oak | 1 | 9 | 9 | | | | | 5 | 6 | Poor | Poor | | Preservation | N/A | | 6314092.63 | 1979425.72 |
| 326 | *Quercus agrifolia* | Coast live oak | 1 | 7 | 7 | | | | | 20 | 6 | Fair | Fair | Yes | Preservation | N/A | | 6314056.27 | 1979478.94 |
| 327 | *Salix laevigata* | Red willow | 1 | 12 | 12 | | | | | 30 | 25 | Fair | Fair | | Indirect - Grading | N/A | | 6314065.81 | 1979493.86 |
| 328 | *Quercus agrifolia* | Coast live oak | 2 | 16.4012 | 13 | 10 | | | | 20 | 24 | Fair | Fair | | Encroachment - Grading | 1 | | 6314070.43 | 1979510.88 |
| 329 | *Quercus agrifolia* | Coast live oak | 1 | 12 | 12 | | | | | 22 | 20 | Fair | Fair | | Encroachment - Grading | 1 | | 6314073.31 | 1979515.35 |
| 330 | *Quercus agrifolia* | Coast live oak | 1 | 8 | 8 | | | | | 24 | 24 | Fair | Fair | | Indirect - Grading | N/A | | 6314060.74 | 1979520.38 |
| 331 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 20 | 12 | Fair | Fair | Yes | Preservation | N/A | | 6314059.53 | 1979509.66 |
| 332 | *Quercus agrifolia* | Coast live oak | 1 | 15 | 15 | | | | | 40 | 45 | Fair | Fair | Yes | Preservation | N/A | | 6314048.92 | 1979516.2 |
| 333 | *Quercus agrifolia* | Coast live oak | 2 | 8.48528 | 6 | 6 | | | | 12 | 10 | Poor | Poor | | Preservation | N/A | | 6314046.08 | 1979507.6 |
| 334 | *Phoenix canariensis* | Canary island date palm | 1 | 38 | 38 | | | | | 10 | 20 | Poor | Poor | | Preservation | N/A | | 6314042.12 | 1979509.46 |
| 335 | *Quercus agrifolia* | Coast live oak | 1 | 13 | 13 | | | | | 38 | 22 | Poor | Poor | Yes | Preservation | N/A | | 6314036.53 | 1979538.58 |

## Appedix C - Tree Information Matrices

| Tree # | Botanical Name | Common Name | Stems | D.B.H (in.)* | Individual Stem Diameter at Breast Height (in.) | | | | | Height (ft.) | Canopy (ft.) | Health | Structure | Protected | Tree Disposition | Mitigation Requirement | Notes | X | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D1 | D2 | D3 | D4 | D5 | | | | | | | | | | |
| 336 | *Quercus agrifolia* | Coast live oak | 1 | 11 | 11 | | | | | 25 | 1 | Fair | Fair | | Encroachment - Grading | 1 | | 6314063.09 | 1979531.24 |
| 337 | *Schinus molle* | Peruvian pepper | 1 | 42 | 42 | | | | | 45 | 50 | Fair | Fair | | Encroachment - Grading | 1 | | 6314057.62 | 1979538.77 |
| 338 | *Washingtonia robusta* | Mexican fan palm | 1 | 15 | 15 | | | | | 65 | 12 | Fair | Fair | | Preservation | N/A | | 6314021.85 | 1979500.27 |
| 339 | *Quercus agrifolia* | Coast live oak | 1 | 10 | 10 | | | | | 12 | 30 | Fair | Fair | | Preservation | N/A | | 6314014.59 | 1979516.96 |
| 340 | *Fraxinus velutina* | Arizona ash | 1 | 12 | 12 | | | | | 50 | 30 | Fair | Fair | | Preservation | N/A | | 6314010.73 | 1979532.85 |
| 341 | *Washingtonia robusta* | Mexican fan palm | 1 | 10 | 10 | | | | | 12 | 10 | Fair | Fair | | Preservation | N/A | | 6314003.78 | 1979530.53 |
| 342 | *Washingtonia robusta* | Mexican fan palm | 1 | 12 | 12 | | | | | 12 | 10 | Fair | Fair | | Preservation | N/A | | 6314002.37 | 1979519.13 |
| 343 | *Washingtonia robusta* | Mexican fan palm | 1 | 12 | 12 | | | | | 65 | 12 | Fair | Fair | | Preservation | N/A | | 6313996.29 | 1979521.3 |
| 344 | *Salix laevigata* | Red willow | 1 | 14 | 14 | | | | | 30 | 20 | Fair | Fair | | Preservation | N/A | | 6313981.58 | 1979529.06 |
| 345 | *Washingtonia robusta* | Mexican fan palm | 1 | 13 | 13 | | | | | 3 | 12 | Fair | Fair | | Preservation | N/A | | 6313993.84 | 1979508.56 |
| 346 | *Phoenix canariensis* | Canary island date palm | 1 | 32 | 32 | | | | | 25 | 18 | Fair | Fair | | Preservation | N/A | | 6314000.47 | 1979515.53 |
| 347 | *Washingtonia robusta* | Mexican fan palm | 1 | 14 | 14 | | | | | 20 | 12 | Fair | Fair | | Preservation | N/A | | 6313994.63 | 1979525.58 |
| 348 | *Phoenix canariensis* | Canary island date palm | 1 | 38 | 38 | | | | | 12 | 12 | Fair | Fair | | Preservation | N/A | | 6313989.14 | 1979524.27 |
| 349 | *Washingtonia robusta* | Mexican fan palm | 1 | 14 | 14 | | | | | 65 | 12 | Fair | Fair | | Preservation | N/A | | 6313960.61 | 1979516.38 |
| 350 | *Salix laevigata* | Red willow | 1 | 32 | 32 | | | | | 20 | 25 | Fair | Fair | | Preservation | N/A | | 6313961 | 1979503.86 |
| 351 | *Washingtonia robusta* | Mexican fan palm | 1 | 15 | 15 | | | | | 12 | 10 | Fair | Fair | | Preservation | N/A | | 6313965.97 | 1979504.68 |
| 352 | *Phoenix canariensis* | Canary island date palm | 1 | 36 | 36 | | | | | 12 | 18 | Fair | Fair | | Preservation | N/A | | 6313985.92 | 1979513.81 |
| 353 | *Salix laevigata* | Red willow | 1 | 32 | 32 | | | | | 55 | 40 | Fair | Fair | | Preservation | N/A | | 6313991.55 | 1979510.17 |
| 354 | *Washingtonia robusta* | Mexican fan palm | 2 | 21.2132 | 15 | 15 | | | | 30 | 24 | Fair | Fair | | Preservation | N/A | | 6313988.7 | 1979499 |
| 355 | *Phoenix canariensis* | Canary island date palm | 1 | 36 | 36 | | | | | 18 | 28 | Fair | Fair | | Preservation | N/A | | 6314000.6 | 1979491.42 |
| 356 | *Salix laevigata* | Red willow | 1 | 18 | 18 | | | | | 30 | 25 | Fair | Fair | | Preservation | N/A | | 6314001.86 | 1979489.72 |
| 357 | *Washingtonia robusta* | Mexican fan palm | 1 | 18 | 18 | | | | | 12 | 12 | Fair | Fair | | Preservation | N/A | | 6314001.04 | 1979476.89 |
| 358 | *Salix laevigata* | Red willow | 1 | 11 | 11 | | | | | 20 | 30 | Fair | Fair | | Preservation | N/A | | 6313978.19 | 1979478.1 |
| 359 | *Salix laevigata* | Red willow | 1 | 15 | 15 | | | | | 45 | 28 | Fair | Fair | | Preservation | N/A | | 6313966.46 | 1979535.47 |
| 360 | *Salix laevigata* | Red willow | 1 | 10 | 10 | | | | | 12 | 10 | Fair | Fair | | Preservation | N/A | | 6313962.28 | 1979544.36 |
| 361 | *Salix laevigata* | Red willow | 1 | 25 | 25 | | | | | 60 | 30 | Fair | Fair | | Preservation | N/A | | 6314005.62 | 1979542.85 |
| 362 | *Washingtonia robusta* | Mexican fan palm | 1 | 12 | 12 | | | | | 20 | 12 | Fair | Fair | | Preservation | N/A | | 6313991.88 | 1979552.34 |
| 363 | *Salix laevigata* | Red willow | 1 | 18 | 18 | | | | | 15 | 15 | Fair | Fair | | Preservation | N/A | | 6313995.11 | 1979565.55 |
| 364 | *Ficus carica* | Fig tree | 1 | 8 | 8 | | | | | 30 | 20 | Fair | Fair | | Preservation | N/A | | 6314006.29 | 1979554.39 |
| 365 | *Quercus agrifolia* | Coast live oak | 1 | 12 | 12 | | | | | 34 | 18 | Fair | Fair | | Preservation | N/A | | 6314029.1 | 1979566.1 |
| 366 | *Quercus agrifolia* | Coast live oak | 2 | 19.2094 | 12 | 15 | | | | 30 | 50 | Fair | Fair | | Preservation | N/A | | 6314023.92 | 1979586.03 |
| 367 | *Quercus agrifolia* | Coast live oak | 1 | 9 | 9 | | | | | 25 | 18 | Fair | Fair | | Encroachment - Grading | 1 | | 6314048.64 | 1979558.59 |
| 368 | *Quercus agrifolia* | Coast live oak | 1 | 5 | 5 | | | | | 40 | 15 | Fair | Fair | | Preservation | N/A | | 6313974.81 | 1979566.79 |
| 369 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | 35 | 15 | Fair | Fair | | Preservation | N/A | | 6313992.32 | 1979579.57 |
| 370 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 35 | 20 | Fair | Fair | | Preservation | N/A | | 6314008.77 | 1979600.66 |
| 371 | *Quercus agrifolia* | Coast live oak | 1 | 15 | 15 | | | | | 35 | 30 | Fair | Fair | | Preservation | N/A | | 6314009.21 | 1979585.59 |
| 372 | *Quercus agrifolia* | Coast live oak | 2 | 13.4536 | 10 | 9 | | | | 30 | 40 | Fair | Fair | | Indirect - Grading | N/A | | 6314013.87 | 1979623.86 |
| 373 | *Quercus agrifolia* | Coast live oak | 1 | 13 | 13 | | | | | 30 | 28 | Fair | Fair | | Preservation | N/A | | 6314004.07 | 1979613.9 |
| 374 | *Quercus agrifolia* | Coast live oak | 1 | 36 | 36 | | | | | 40 | 60 | Fair | Fair | | Preservation | N/A | | 6313980 | 1979623.18 |
| 375 | *Salix laevigata* | Red willow | 1 | 12 | 12 | | | | | 14 | 15 | Fair | Fair | | Preservation | N/A | | 6313969.45 | 1979623.2 |
| 376 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 14 | 8 | Fair | Fair | | Preservation | N/A | | 6313997.75 | 1979633.92 |
| 377 | *Quercus agrifolia* | Coast live oak | 1 | 10 | 10 | | | | | 30 | 24 | Fair | Fair | | Preservation | N/A | | 6313998.04 | 1979624.58 |

## Appedix C - Tree Information Matrices

| Tree # | Botanical Name | Common Name | Stems | D.B.H (in.)* | Individual Stem Diameter at Breast Height (in.) | | | | | Height (ft.) | Canopy (ft.) | Health | Structure | Protected | Tree Disposition | Mitigation Requirement | Notes | X | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D1 | D2 | D3 | D4 | D5 | | | | | | | | | | |
| 378 | *Quercus agrifolia* | Coast live oak | 1 | 10 | 10 | | | | | 30 | 24 | Fair | Fair | | Indirect - Grading | N/A | | 6314025.39 | 1979608.51 |
| 379 | *Quercus agrifolia* | Coast live oak | 1 | 13 | 13 | | | | | 30 | 24 | Fair | Fair | | Encroachment - Grading | 1 | | 6314028.18 | 1979619.63 |
| 380 | *Quercus agrifolia* | Coast live oak | 1 | 11 | 11 | | | | | 35 | 22 | Fair | Fair | | Remove - Grading | 1 | | 6314038.77 | 1979639.5 |
| 381 | *Quercus agrifolia* | Coast live oak | 1 | 13 | 13 | | | | | 28 | 16 | Fair | Fair | | Encroachment - Grading | 1 | | 6314020 | 1979650.32 |
| 382 | *Quercus agrifolia* | Coast live oak | 1 | 11 | 11 | | | | | 32 | 18 | Fair | Fair | | Encroachment - Grading | 1 | | 6314021.17 | 1979652.52 |
| 383 | *Quercus agrifolia* | Coast live oak | 1 | 13 | 13 | | | | | 32 | 28 | Fair | Fair | | Encroachment - Grading | 1 | | 6314019.74 | 1979664.83 |
| 384 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 14 | 8 | Fair | Fair | | Indirect - Grading | N/A | | 6314014.03 | 1979660.81 |
| 385 | *Quercus agrifolia* | Coast live oak | 1 | 9 | 9 | | | | | 25 | 12 | Fair | Fair | | Indirect - Grading | N/A | | 6314011.13 | 1979649.75 |
| 386 | *Quercus agrifolia* | Coast live oak | 2 | 5.65685 | 4 | 4 | | | | 20 | 12 | Fair | Fair | | Indirect - Grading | N/A | | 6313995.74 | 1979654.46 |
| 387 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 14 | 8 | Fair | Fair | | Indirect - Grading | N/A | | 6314000.12 | 1979648.23 |
| 388 | *Quercus agrifolia* | Coast live oak | 1 | 8 | 8 | | | | | 22 | 14 | Fair | Fair | | Preservation | N/A | | 6313986.62 | 1979646.78 |
| 389 | *Quercus agrifolia* | Coast live oak | 1 | 12 | 12 | | | | | 35 | 28 | Fair | Fair | | Preservation | N/A | | 6313965.11 | 1979650.46 |
| 390 | *Quercus agrifolia* | Coast live oak | 1 | 9 | 9 | | | | | 12 | 14 | Fair | Fair | | Indirect - Grading | N/A | | 6313988.42 | 1979683.08 |
| 391 | *Quercus agrifolia* | Coast live oak | 1 | 16 | 16 | | | | | 30 | 30 | Fair | Fair | | Indirect - Grading | N/A | | 6313987.69 | 1979691.05 |
| 392 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 14 | 8 | Fair | Fair | | Preservation | N/A | | 6313976.52 | 1979680.28 |
| 393 | *Quercus agrifolia* | Coast live oak | 1 | 13 | 13 | | | | | 38 | 32 | Fair | Fair | | Preservation | N/A | | 6313974.87 | 1979688.74 |
| 394 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | 30 | 22 | Fair | Fair | | Preservation | N/A | | 6313972.27 | 1979682.01 |
| 395 | *Quercus agrifolia* | Coast live oak | 1 | 15 | 15 | | | | | 45 | 20 | Fair | Fair | | Preservation | N/A | | 6313961.93 | 1979675.76 |
| 396 | *Quercus agrifolia* | Coast live oak | 2 | 11.3137 | 8 | 8 | | | | 30 | 28 | Fair | Fair | | Preservation | N/A | | 6313945.37 | 1979679.21 |
| 397 | *Quercus agrifolia* | Coast live oak | 4 | 28.5132 | 14 | 14 | 14 | 15 | | 28 | 35 | Fair | Fair | | Preservation | N/A | | 6313973.09 | 1979694.42 |
| 398 | *Quercus agrifolia* | Coast live oak | 3 | 21.6564 | 15 | 10 | 12 | | | 30 | 30 | Poor | Poor | | Indirect - Grading | N/A | | 6313978.28 | 1979714.83 |
| 399 | *Quercus agrifolia* | Coast live oak | 1 | 22 | 22 | | | | | 45 | 50 | Poor | Poor | | Preservation | N/A | | 6313951.92 | 1979739.18 |
| 400 | *Phoenix canariensis* | Canary island date palm | 1 | 32 | 32 | | | | | 20 | 20 | Poor | Poor | | Indirect - BVP | N/A | | 6313902.32 | 1979739.85 |
| 401 | *Quercus agrifolia* | Coast live oak | 1 | 16 | 16 | | | | | 30 | 20 | Fair | Fair | | Preservation | N/A | | 6313941.09 | 1979755.59 |
| 402 | *Quercus agrifolia* | Coast live oak | 1 | 10 | 10 | | | | | 12 | 20 | Fair | Fair | | Preservation | N/A | | 6313952.79 | 1979759.9 |
| 403 | *Quercus agrifolia* | Coast live oak | 3 | 3 | 2 | 1 | 2 | | | 10 | 6 | Fair | Fair | | Preservation | N/A | | 6313959.04 | 1979765.74 |
| 404 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 30 | 20 | Fair | Fair | | Preservation | N/A | | 6313936.52 | 1979774.59 |
| 405 | *Quercus agrifolia* | Coast live oak | 1 | 12 | 12 | | | | | 20 | 20 | Fair | Fair | | Preservation | N/A | | 6313944.61 | 1979778.83 |
| 406 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | 35 | 40 | Fair | Fair | | Preservation | N/A | | 6313930.91 | 1979786.08 |
| 407 | *Phoenix canariensis* | Canary island date palm | 1 | 32 | 32 | | | | | 20 | 20 | Fair | Fair | | Preservation | N/A | | 6313909.5 | 1979784.08 |
| 408 | *Phoenix canariensis* | Canary island date palm | 1 | 32 | 32 | | | | | 20 | 20 | Fair | Fair | | Preservation | N/A | | 6313905.6 | 1979780.39 |
| 409 | *Quercus agrifolia* | Coast live oak | 3 | 16.7929 | 13 | 8 | 7 | | | 25 | 20 | Fair | Fair | | Preservation | N/A | | 6313943.88 | 1979803.35 |
| 410 | *Quercus agrifolia* | Coast live oak | 1 | 16 | 16 | | | | | 40 | 30 | Fair | Fair | | Preservation | N/A | | 6313938.05 | 1979802.28 |
| 411 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 16 | 8 | Fair | Fair | | Preservation | N/A | | 6313929.64 | 1979808.09 |
| 412 | *Washingtonia robusta* | Mexican fan palm | 1 | 12 | 12 | | | | | 60 | 12 | Fair | Fair | | Preservation | N/A | | 6313911.38 | 1979813.54 |
| 413 | *Phoenix canariensis* | Canary island date palm | 1 | 32 | 32 | | | | | 25 | 25 | Fair | Fair | | Preservation | N/A | | 6313893.37 | 1979820.14 |
| 414 | *Quercus agrifolia* | Coast live oak | 1 | 13 | 13 | | | | | 24 | 25 | Fair | Fair | | Preservation | N/A | | 6313933.6 | 1979811.66 |
| 415 | *Quercus agrifolia* | Coast live oak | 2 | 10.7703 | 10 | 4 | | | | 35 | 20 | Fair | Fair | | Preservation | N/A | | 6313938.14 | 1979812.28 |
| 416 | *Quercus agrifolia* | Coast live oak | 1 | 11 | 11 | | | | | 20 | 18 | Fair | Fair | | Preservation | N/A | | 6313936.32 | 1979826.02 |
| 417 | *Quercus agrifolia* | Coast live oak | 3 | 9.38083 | 6 | 6 | 4 | | | 20 | 22 | Fair | Fair | | Preservation | N/A | | 6313932.65 | 1979836.53 |
| 418 | *Quercus agrifolia* | Coast live oak | 2 | 14.8661 | 10 | 11 | | | | 28 | 30 | Fair | Fair | | Preservation | N/A | | 6313933.15 | 1979838.67 |
| 419 | *Quercus agrifolia* | Coast live oak | 1 | 9 | 9 | | | | | 20 | 12 | Fair | Fair | | Preservation | N/A | | 6313926.04 | 1979825.68 |

## Appedix C - Tree Information Matrices

| Tree # | Botanical Name | Common Name | Stems | D.B.H (in.)* | Individual Stem Diameter at Breast Height (in.) | | | | | Height (ft.) | Canopy (ft.) | Health | Structure | Protected | Tree Disposition | Mitigation Requirement | Notes | X | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D1 | D2 | D3 | D4 | D5 | | | | | | | | | | |
| 420 | *Quercus agrifolia* | Coast live oak | 1 | 15 | 15 | | | | | 45 | 40 | Fair | Fair | | Preservation | N/A | | 6313906.54 | 1979851.96 |
| 421 | *Fraxinus velutina* | Arizona ash | 1 | 10 | 10 | | | | | 45 | 20 | Fair | Fair | | Preservation | N/A | | 6313890.79 | 1979844.08 |
| 422 | *Washingtonia robusta* | Mexican fan palm | 2 | 16.4012 | 13 | 10 | | | | 45 | 12 | Fair | Fair | | Preservation | N/A | | 6313891.95 | 1979852.5 |
| 423 | *Washingtonia robusta* | Mexican fan palm | 1 | 13 | 13 | | | | | 75 | 12 | Fair | Fair | | Indirect - BVP | N/A | | 6313879.64 | 1979858.81 |
| 424 | *Washingtonia robusta* | Mexican fan palm | 1 | 13 | 13 | | | | | 75 | 12 | Fair | Fair | | Preservation | N/A | | 6313877.49 | 1979875.92 |
| 425 | *Washingtonia robusta* | Mexican fan palm | 1 | 15 | 15 | | | | | 75 | 12 | Fair | Fair | | Preservation | N/A | | 6313879.09 | 1979905.33 |
| 426 | *Washingtonia robusta* | Mexican fan palm | 1 | 15 | 15 | | | | | 55 | 12 | Fair | Fair | | Preservation | N/A | | 6313884.64 | 1979915.84 |
| 427 | *Washingtonia robusta* | Mexican fan palm | 1 | 15 | 15 | | | | | 55 | 12 | Fair | Fair | | Preservation | N/A | | 6313882.76 | 1979891.36 |
| 428 | *Quercus agrifolia* | Coast live oak | 2 | 19.105 | 14 | 13 | | | | 30 | 25 | Fair | Fair | | Preservation | N/A | | 6313902.61 | 1979878.78 |
| 429 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | 30 | 20 | Fair | Fair | | Preservation | N/A | | 6313905.41 | 1979877.63 |
| 430 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 8 | 6 | Poor | Poor | | Preservation | N/A | | 6313917.56 | 1979852.61 |
| 431 | *Quercus agrifolia* | Coast live oak | 1 | 10 | 10 | | | | | 14 | 4 | Poor | Poor | | Preservation | N/A | | 6313923.36 | 1979864.77 |
| 432 | *Quercus agrifolia* | Coast live oak | 5 | 24.779 | 14 | 15 | 11 | 6 | 6 | 30 | 35 | Poor | Poor | | Preservation | N/A | | 6313927.14 | 1979860.13 |
| 433 | *Quercus agrifolia* | Coast live oak | 1 | 12 | 12 | | | | | 30 | 16 | Poor | Poor | | Preservation | N/A | | 6313920.27 | 1979865.52 |
| 434 | *Quercus agrifolia* | Coast live oak | 2 | 3.16228 | 3 | 1 | | | | 16 | 12 | Fair | Fair | | Preservation | N/A | | 6313914.9 | 1979899.65 |
| 435 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 20 | 8 | Fair | Fair | | Preservation | N/A | | 6313900.53 | 1979907.82 |
| 436 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 20 | 8 | Fair | Fair | | Preservation | N/A | | 6313910.04 | 1979914.6 |
| 437 | *Quercus agrifolia* | Coast live oak | 1 | 20 | 20 | | | | | 45 | 55 | Fair | Fair | | Preservation | N/A | | 6313917.08 | 1979923.32 |
| 438 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | 24 | 18 | Fair | Fair | | Preservation | N/A | | 6313920.84 | 1979933.8 |
| 439 | *Quercus agrifolia* | Coast live oak | 1 | 16 | 16 | | | | | 38 | 40 | Fair | Fair | | Preservation | N/A | | 6313930.47 | 1979926.39 |
| 440 | *Washingtonia robusta* | Mexican fan palm | 1 | 12 | 12 | | | | | 16 | 12 | Fair | Fair | | Preservation | N/A | | 6313912.71 | 1979946.52 |
| 441 | *Quercus agrifolia* | Coast live oak | 1 | 15 | 15 | | | | | 35 | 25 | Fair | Fair | | Preservation | N/A | | 6313931.26 | 1979944.26 |
| 442 | *Quercus agrifolia* | Coast live oak | 2 | 19.105 | 13 | 14 | | | | 30 | 25 | Fair | Fair | | Preservation | N/A | | 6313930.13 | 1979956.24 |
| 443 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | 12 | 25 | Fair | Fair | | Preservation | N/A | | 6313937.89 | 1979960.18 |
| 444 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | 38 | 25 | Fair | Fair | | Indirect - Grading | N/A | | 6313957.06 | 1979966.15 |
| 445 | *Quercus agrifolia* | Coast live oak | 1 | 11 | 11 | | | | | 18 | 12 | Fair | Fair | | Indirect - Grading | N/A | | 6313960.74 | 1979974.49 |
| 446 | *Quercus agrifolia* | Coast live oak | 2 | 13.9284 | 13 | 5 | | | | 18 | 15 | Fair | Fair | | Indirect - Grading | N/A | | 6313959.25 | 1979977.45 |
| 447 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 8 | 4 | Fair | Fair | | Indirect - Grading | N/A | | 6313960.08 | 1979985.7 |
| 448 | *Washingtonia robusta* | Mexican fan palm | 1 | 14 | 14 | | | | | 65 | 12 | Fair | Fair | | Preservation | N/A | | 6313938.84 | 1979981.79 |
| 449 | *Phoenix canariensis* | Canary island date palm | 1 | 32 | 32 | | | | | 18 | 20 | Fair | Fair | | Preservation | N/A | | 6313919.55 | 1979973.44 |
| 450 | *Phoenix canariensis* | Canary island date palm | 1 | 32 | 32 | | | | | 24 | 20 | Fair | Fair | | Preservation | N/A | | 6313930.35 | 1979999.39 |
| 451 | *Quercus agrifolia* | Coast live oak | 1 | 7 | 7 | | | | | 22 | 8 | Fair | Fair | | Indirect - Grading | N/A | | 6313966.65 | 1979992.79 |
| 452 | *Quercus agrifolia* | Coast live oak | 1 | 19 | 19 | | | | | 35 | 40 | Fair | Fair | | Encroachment - Grading | 1 | | 6313975.67 | 1980018.01 |
| 453 | *Quercus agrifolia* | Coast live oak | 1 | 22 | 22 | | | | | 30 | 38 | Fair | Fair | | Indirect - Grading | N/A | | 6313965.43 | 1980012.27 |
| 454 | *Quercus agrifolia* | Coast live oak | 1 | 18 | 18 | | | | | 28 | 30 | Fair | Fair | | Encroachment - Grading | 1.00 | | 6313975.11 | 1980036 |
| 455 | *Quercus agrifolia* | Coast live oak | 2 | 13.4536 | 10 | 9 | | | | 25 | 28 | Fair | Fair | | Preservation | N/A | | 6313963.9 | 1980040.69 |
| 456 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 14 | 8 | Fair | Fair | | Preservation | N/A | | 6313951.73 | 1980044.04 |
| 457 | *Quercus agrifolia* | Coast live oak | 1 | 15 | 15 | | | | | 35 | 20 | Fair | Fair | | Preservation | N/A | | 6313940.6 | 1980038.77 |
| 458 | *Quercus agrifolia* | Coast live oak | 2 | 14.4222 | 12 | 8 | | | | 30 | 24 | Fair | Fair | | Preservation | N/A | | 6313949.9 | 1980048.35 |
| 459 | *Salix laevigata* | Red willow | 1 | 14 | 14 | | | | | 25 | 20 | Fair | Fair | | Preservation | N/A | | 6313933.1 | 1980049.14 |
| 460 | *Phoenix canariensis* | Canary island date palm | 1 | 14 | 14 | | | | | 6 | 18 | Fair | Fair | | Preservation | N/A | | 6313909.21 | 1980039.35 |
| 461 | *Quercus agrifolia* | Coast live oak | 1 | 9 | 9 | | | | | 35 | 14 | Fair | Fair | | Preservation | N/A | | 6313915.53 | 1980048.32 |

## Appedix C - Tree Information Matrices

| Tree # | Botanical Name | Common Name | Stems | D.B.H (in.)* | Individual Stem Diameter at Breast Height (in.) | | | | | Height (ft.) | Canopy (ft.) | Health | Structure | Protected | Tree Disposition | Mitigation Requirement | Notes | X | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D1 | D2 | D3 | D4 | D5 | | | | | | | | | | |
| 462 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 18 | 6 | Fair | Fair | | Preservation | N/A | | 6313921.16 | 1980060.22 |
| 463 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 18 | 6 | Fair | Fair | | Preservation | N/A | | 6313908.85 | 1980057.6 |
| 464 | *Quercus agrifolia* | Coast live oak | 1 | 13 | 13 | | | | | 30 | 22 | Fair | Fair | | Preservation | N/A | | 6313918.36 | 1980073.59 |
| 465 | *Quercus agrifolia* | Coast live oak | 2 | 12.53 | 11 | 6 | | | | 30 | 18 | Fair | Fair | | Preservation | N/A | | 6313911.83 | 1980085.03 |
| 466 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 24 | 8 | Fair | Fair | | Preservation | N/A | | 6313912.33 | 1980090.77 |
| 467 | *Quercus agrifolia* | Coast live oak | 2 | 19.799 | 14 | 14 | | | | 40 | 28 | Fair | Fair | | Preservation | N/A | | 6313925.61 | 1980096.09 |
| 468 | *Quercus agrifolia* | Coast live oak | 1 | 43 | 43 | | | | | 40 | 30 | Fair | Fair | | Preservation | N/A | | 6313933.05 | 1980074.97 |
| 469 | *Quercus agrifolia* | Coast live oak | 1 | 9 | 9 | | | | | 14 | 8 | Fair | Fair | | Preservation | N/A | | 6313944 | 1980071.57 |
| 470 | *Washingtonia robusta* | Mexican fan palm | 1 | 12 | 12 | | | | | 20 | 10 | Fair | Fair | | Preservation | N/A | | 6313899.82 | 1980104.86 |
| 471 | *Washingtonia robusta* | Mexican fan palm | 1 | 12 | 12 | | | | | 20 | 10 | Fair | Fair | | Indirect - BVP | N/A | | 6313888.46 | 1980107.89 |
| 472 | *Quercus agrifolia* | Coast live oak | 1 | 8 | 8 | | | | | 15 | 12 | Fair | Fair | | Indirect - BVP | N/A | | 6313896.6 | 1980121.8 |
| 473 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 13 | 8 | Fair | Fair | | Preservation | N/A | | 6313906.82 | 1980112.64 |
| 474 | *Quercus agrifolia* | Coast live oak | 3 | 4.12311 | 3 | 2 | 2 | | | 13 | 8 | Fair | Fair | | Indirect - BVP | N/A | | 6313910.65 | 1980128.73 |
| 475 | *Quercus agrifolia* | Coast live oak | 1 | 5 | 5 | | | | | 14 | 10 | Fair | Fair | | Preservation | N/A | | 6313918.57 | 1980114.48 |
| 476 | *Quercus agrifolia* | Coast live oak | 1 | 6 | 6 | | | | | 14 | 5 | Fair | Fair | | Preservation | N/A | | 6313937.95 | 1980111.77 |
| 477 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 14 | 5 | Fair | Fair | | Preservation | N/A | | 6313942.44 | 1980103.17 |
| 478 | *Quercus agrifolia* | Coast live oak | 4 | 9.64365 | 4 | 6 | 5 | 4 | | 14 | 5 | Fair | Fair | | Indirect - Grading | N/A | | 6313976.71 | 1980070.71 |
| 479 | *Quercus agrifolia* | Coast live oak | 1 | 8 | 8 | | | | | 20 | 10 | Fair | Fair | | Indirect - Grading | N/A | | 6313982.59 | 1980090.85 |
| 480 | *Quercus agrifolia* | Coast live oak | 2 | 10 | 8 | 6 | | | | 20 | 10 | Fair | Fair | | Indirect - Grading | N/A | | 6313984.45 | 1980099.48 |
| 481 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | 35 | 20 | Fair | Fair | | Preservation | N/A | | 6313974.79 | 1980101.64 |
| 482 | *Quercus agrifolia* | Coast live oak | 1 | 11 | 11 | | | | | 15 | 10 | Fair | Fair | | Indirect - Grading | N/A | | 6313982.51 | 1980111 |
| 483 | *Quercus agrifolia* | Coast live oak | 2 | 3.16228 | 3 | 1 | | | | 12 | 6 | Fair | Fair | | Preservation | N/A | | 6313975.93 | 1980110.59 |
| 484 | *Quercus agrifolia* | Coast live oak | 2 | 17.8885 | 16 | 8 | | | | 40 | 50 | Fair | Fair | | Preservation | N/A | | 6313960.98 | 1980092.52 |
| 485 | *Quercus agrifolia* | Coast live oak | 1 | 15 | 15 | | | | | 25 | 24 | Fair | Fair | | Preservation | N/A | | 6313976.02 | 1980115.14 |
| 486 | *Quercus agrifolia* | Coast live oak | 1 | 9 | 9 | | | | | 20 | 14 | Fair | Fair | | Preservation | N/A | | 6313970.94 | 1980117.97 |
| 487 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | 13 | 8 | Fair | Fair | | Preservation | N/A | | 6313963.11 | 1980132.77 |
| 488 | *Quercus agrifolia* | Coast live oak | 1 | 9 | 9 | | | | | 18 | 12 | Fair | Fair | | Preservation | N/A | | 6313960.8 | 1980141.19 |
| 489 | *Quercus agrifolia* | Coast live oak | 1 | 12 | 12 | | | | | 18 | 12 | Fair | Fair | | Preservation | N/A | | 6313952.39 | 1980147.98 |

# APPENDIX D

*Tree Locations by Impact Type*

Choya Canyon Rd

Choya Canyon Rd

Choya Canyon Rd

Choya Canyon Rd

Bear Valley Pkwy

Bear Valley Pkwy

Basin

Encino Dr

## Legend

### Botanical Name

### Disposition

- Encroachment - Bear Valley Parkway (28)
- Encroachment - Grading (11)
- Indirect - BVP (60)
- Indirect - Grading (21)
- Preservation (259)
- Remove - Bear Valley Parkway (60)
- Remove - Grading (50)

### Impacts

**Impact_Type, Impact_Category**

- Development
- Fuel modification
- Off-Site
- Open Space
- No Impacts - Other Parcel

0 100 200 Feet

DUDEK

7833

SOURCE: Bing 2015

**Appendix D**

**Tree Impact Disposition**

BEAR VALLEY PARKWAYARBORIST REPORT

Path: Z:\Projects\7833\01\MAPDOC\MAPS\Tree Appendix_X_Tree Impact.mxd Disposition.mxd

# APPENDIX E

*Mitigation Measures*

*The following sections are included as general guidelines for tree protection from construction impacts. The measures presented should be monitored by arborists and enforced by contractors and developers for maximum benefit to the trees.*

## Tree Protection Measures Prior to Construction

Prior to any grading activity, preserved trees that fall within 500 feet of construction activity shall be protected by fencing and signage. All contractors shall be made aware of the tree protection measures.

Fencing: A 4-foot high, orange-webbing, polypropylene barricade fence with tree protection signs shall be erected around all trees (or tree groups) to be preserved. The protective fence should be installed ten feet beyond the dripline of the tree. This will delineate the tree protection area and prevent unwanted activity in and around the trees in order to reduce soil compaction in the root zones of the trees and other damage from heavy equipment. The fence webbing shall be secured to 6-foot, heavy gauge t-bar line posts, pounded in the ground a minimum of 18-inches and spaced 8-feet on-center. Fence webbing will be attached to t-bar posts with minimum 14-gage wire fastened to the top, middle and bottom of each post. Tree protection signs should be attached to every fourth post. The contractor shall maintain the fence to keep it upright, taut, and aligned at all times. Fencing shall be removed only after all construction activities are complete.

Pre-Construction Meeting: A pre-construction meeting shall be held between all contractors (including grading, tree removal/pruning, builders, etc.) and the arborist. The arborist will instruct the contractors on tree protection practices and answer any questions. All equipment operators and spotters, assistants, or those directing operators from the ground, shall provide written acknowledgement of their receiving tree protection training. This training shall include information on the location and marking of protected trees, the necessity of preventing damage, and the discussion of work practices that will accomplish such.

## Protection and Maintenance During Construction

Once construction activities have begun the following measures shall be adhered to:

Equipment Operation and Storage: Avoid heavy equipment operation around the trees. Operating heavy machinery around the root zones of trees will increase soil compaction, which decreases soil aeration and subsequently reduces water penetration in the soil. All heavy equipment and vehicles should, at minimum, stay out of the fenced tree protection zone, unless where specifically approved in writing and under the supervision of a Certified Arborist.

Storage and Disposal: Do not store or discard any supply or material, including paint, lumber, concrete overflow, etc. within the protection zone. Remove all foreign debris within the protection zone; it is important to leave the duff, mulch, chips, and leaves around the retained trees for water retention and nutrients. Avoid draining or leakage of equipment fluids near retained trees. Fluids such as: gasoline, diesel, oils, hydraulics, brake and transmission fluids, paint, paint thinners, and glycol (anti-freeze) should be disposed of properly. Keep equipment parked at least 50 feet away from retained trees to avoid the possibility of leakage of equipment fluids into the soil. The effect of toxic equipment fluids on the retained trees could lead to decline and death.

Grade Changes: Grade changes, including adding fill, are not permitted within the tree protection zone, without special written authorization and under supervision by a Certified Arborist. Lowering

the grade within this area will necessitate cutting main support and feeder roots, jeopardizing the health and structural integrity of the tree(s). Adding soil, even temporarily, on top of the existing grade will compact the soil further, and decrease both water and air availability to the trees' roots.

Moving Construction Materials: Care will be taken when moving equipment or supplies near the trees, especially overhead. Avoid damaging the tree(s) when transporting or moving construction materials and working around the tree (even outside of the fenced tree protection zone). Above ground tree parts that could be damaged (e.g., low limbs, trunks) should be flagged with red ribbon. If contact with the tree crown is unavoidable, prune the conflicting branch(es) using ISA standards.

Root Pruning: Except where specifically approved in writing, all trenching shall be outside of the fenced protection zone. Roots primarily extend in a horizontal direction forming a support base to the tree similar to the base of a wineglass. Where trenching is necessary in areas that contain tree roots, prune the roots using a Dosko root pruner or equivalent. All cuts should be clean and sharp, to minimize ripping, tearing, and fracturing of the root system. The trench should be made no deeper than necessary.

Irrigation: Trees that have been substantially root pruned (30% or more of their root zone) will require irrigation for the first twelve months. The first irrigation should be within 48 hours of root pruning. They should be deep watered every two to four weeks during the summer and once a month during the winter (adjust accordingly with rainfall). One irrigation cycle should thoroughly soak the root zones of the trees to a depth of 3 feet. The soil should dry out between watering; avoid keeping a consistently wet soil. Designate one person to be responsible for irrigating (deep watering) the trees. Check soil moisture with a soil probe before irrigating. Irrigation is best accomplished by installing a temporary above ground micro-spray system that will distribute water slowly (to avoid runoff) and evenly throughout the fenced protection zone ***but never soaking the area located within 6- feet of the tree trunk, especially during warmer months***.

Pruning: Do not prune any of the trees until all construction is completed. This will help protect the tree canopies from damage. All pruning shall be completed under the direction of an ISA Certified Arborist and using ISA guidelines. Only dead wood shall be removed from tree canopies.

Washing: During construction in summer and autumn months, wash foliage of trees adjacent to the construction sites with a strong water stream every two weeks in early hours before 10:00 a.m. to control mite and insect populations.

Inspection: An ISA Certified Arborist shall inspect the impacted preserved trees on a monthly basis during construction. A report comparing tree health and condition to the original, pre-construction baseline shall be submitted following each inspection. Photographs of representative trees are to be included in the report on a minimum annual basis.

## Maintenance After Construction

Once construction is complete the fencing may be removed and the following measures performed to sustain and enhance the vigor of the preserved trees.

Mulch: Provide a 4-inch mulch layer under the canopy of trees. Mulch should include clean, organic mulch that will provide long-term soil conditioning, soil moisture retention, and soil temperature control.

Pruning: The trees will not require regular pruning. Pruning should *only* be done to maintain clearance and remove broken, dead or diseased branches. Pruning shall only take place following a

recommendation by an ISA Certified Arborist and performed under the supervision of an ISA Certified Arborist. No more than 15% of the canopy shall be removed at any one time. All pruning shall conform to International Society of Arboriculture standards.

Watering: The natural trees that are not disturbed should not require regular irrigation, other than the twelve months following substantial root pruning. However, soil probing will be necessary to accurately monitor moisture levels. Especially in years with low winter rainfall, supplemental irrigation for the trees that sustained root pruning and any newly planted trees may be necessary. The trees should be irrigated *only* during the winter and spring months.

Watering Adjacent Plant Material: All plants near the trees shall be compatible with water requirements of said trees. The surrounding plants should be watered infrequently with deep soaks and allowed to dry out in-between, rather than frequent light irrigation. The soil shall not be allowed to become saturated or stay continually wet. Irrigation spray shall not hit the trunk of any tree. A 60-inch dry-zone shall be maintained around all tree trunks. An above ground micro-spray irrigation system is recommended over typical underground pop-up sprays.

Washing: Periodic washing of the foliage is recommended during construction but no more than once every two weeks. Washing should include the upper and lower leaf surfaces and the tree bark. This should continue beyond the construction period at a less frequent rate with a high-powered hose only in the early morning hours. Washing will help control dirt/dust buildup that can lead to mite and insect infestations.

Spraying: If the trees are maintained in a healthy state, regular spraying for insect or disease control should not be necessary. If a problem does develop, an ISA Certified Arborist should be consulted; the trees may require application of insecticides to prevent the intrusion of bark-boring beetles and other invading pests. All chemical spraying should be performed by a licensed applicator under the direction of a licensed pest control advisor.

Inspection: All trees that were impacted during construction within the tree protection zone should be monitored by an ISA Certified Arborist for the first five years after construction completion. The Arborist shall submit an annual report, photograph each tree and compare tree health and condition to the original, pre-construction baseline.

# APPENDIX F

*Landscape Concept Plans*

BEAR VALLEY PKWY

O.S. LOT "A"
2.39 AC

O.S. LOT "B"
1.18 AC

O.S. LOT "H"
8.05 AC

PARK

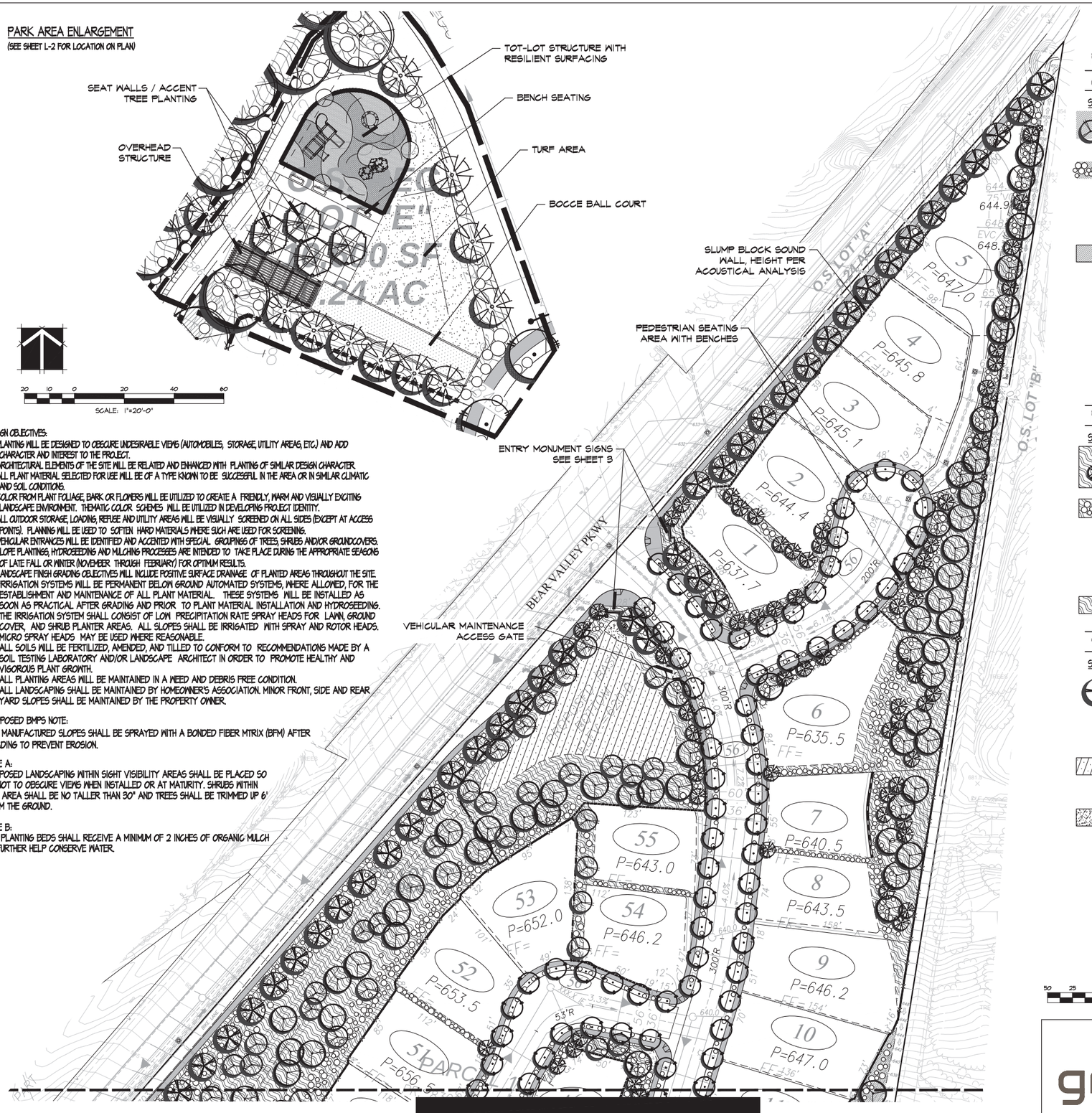
50' FUEL MOD

NOT A PART

## PARK AREA ENLARGEMENT

(SEE SHEET L-2 FOR LOCATION ON PLAN)




DESIGN OBJECTIVES:

1. PLANTING WILL BE DESIGNED TO OBSCURE UNDESIRABLE VIEWS (AUTOMOBILES, STORAGE, UTILITY AREAS, ETC.) AND ADD CHARACTER AND INTEREST TO THE PROJECT.
2. ARCHITECTURAL ELEMENTS OF THE SITE WILL BE RELATED AND ENHANCED WITH PLANTING OF SIMILAR DESIGN CHARACTER.
3. ALL PLANT MATERIAL SELECTED FOR USE WILL BE OF A TYPE KNOWN TO BE SUCCESSFUL IN THE AREA OR IN SIMILAR CLIMATIC AND SOIL CONDITIONS.
4. COLOR FROM PLANT FOLIAGE, BARK OR FLOWERS WILL BE UTILIZED TO CREATE A FRIENDLY, WARM AND VISUALLY EXCITING LANDSCAPE ENVIRONMENT. THEMATIC COLOR SCHEMES WILL BE UTILIZED IN DEVELOPING PROJECT IDENTITY.
5. ALL OUTDOOR STORAGE, LOADING, REFUSE AND UTILITY AREAS WILL BE VISUALLY SCREENED ON ALL SIDES (EXCEPT AT ACCESS POINTS). PLANNING WILL BE USED TO SOFTEN HARD MATERIALS WHERE SUCH ARE USED FOR SCREENING.
6. VEHICULAR ENTRANCES WILL BE IDENTIFIED AND ACCENTED WITH SPECIAL GROUPINGS OF TREES, SHRUBS AND/OR GROUNDCOVERS.
7. SLOPE PLANTINGS, HYDROSEEDING AND MULCHING PROCESSES ARE INTENDED TO TAKE PLACE DURING THE APPROPRIATE SEASONS OF LATE FALL OR WINTER (NOVEMBER THROUGH FEBRUARY) FOR OPTIMUM RESULTS.
8. LANDSCAPE FINISH GRADING OBJECTIVES WILL INCLUDE POSITIVE SURFACE DRAINAGE OF PLANTED AREAS THROUGHOUT THE SITE.
9. IRRIGATION SYSTEMS WILL BE PERMANENT BELOW GROUND AUTOMATED SYSTEMS, WHERE ALLOWED, FOR THE ESTABLISHMENT AND MAINTENANCE OF ALL PLANT MATERIAL. THESE SYSTEMS WILL BE INSTALLED AS SOON AS PRACTICAL AFTER GRADING AND PRIOR TO PLANT MATERIAL INSTALLATION AND HYDROSEEDING. THE IRRIGATION SYSTEM SHALL CONSIST OF LOW PRECIPITATION RATE SPRAY HEADS FOR LAWN, GROUND COVER, AND SHRUB PLANTER AREAS. ALL SLOPES SHALL BE IRRIGATED WITH SPRAY AND ROTOR HEADS. MICRO SPRAY HEADS MAY BE USED WHERE REASONABLE.
10. ALL SOILS WILL BE FERTILIZED, AMENDED, AND TILLED TO CONFORM TO RECOMMENDATIONS MADE BY A SOIL TESTING LABORATORY AND/OR LANDSCAPE ARCHITECT IN ORDER TO PROMOTE HEALTHY AND VIGOROUS PLANT GROWTH.
11. ALL PLANTING AREAS WILL BE MAINTAINED IN A WEED AND DEBRIS FREE CONDITION.
12. ALL LANDSCAPING SHALL BE MAINTAINED BY HOMEOWNER'S ASSOCIATION. MINOR FRONT, SIDE AND REAR YARD SLOPES SHALL BE MAINTAINED BY THE PROPERTY OWNER.

PROPOSED BMPS NOTE:

ALL MANUFACTURED SLOPES SHALL BE SPRAYED WITH A BONDED FIBER MTRIX (BFM) AFTER GRADING TO PREVENT EROSION.

NOTE A:

PROPOSED LANDSCAPING WITHIN SIGHT VISIBILITY AREAS SHALL BE PLACED SO AS NOT TO OBSCURE VIEWS WHEN INSTALLED OR AT MATURITY. SHRUBS WITHIN THIS AREA SHALL BE NO TALLER THAN 30" AND TREES SHALL BE TRIMMED UP 6' FROM THE GROUND.

NOTE B:

ALL PLANTING BEDS SHALL RECEIVE A MINIMUM OF 2 INCHES OF ORGANIC MULCH TO FURTHER HELP CONSERVE WATER.

## PLANTING LEGEND

### COASTAL SAGE SCRUB RE-VEGETATION AREAS

| SYMBOL | BOTANICAL | COMMON NAME | SIZE | WUCOLS | QTY. |
|---|---|---|---|---|---|
| | **TREES** | | | | |
| | QUERCUS AGRIFOLIA | CALIFORNIA LIVE OAK | 15 GAL. | L | 138 |
| | SAMBUCUS MEXICANA | BLUE ELDERBERRY | 24" BOX | L | 144 |
| | **SHRUBS** | | | | |
| | ARTEMISIA CALIFORNICA | COASTAL SAGEBRUSH | 1 GAL. | L | OUTSIDE OF BRUSH MANAGEMENT ZONES |
| | BACCHARIS SAROTHROIDES | DESERT BROOM | 1 GAL. | L | |
| | ERIOGONUM FASCICULATUM | FLAT TOP BUCKWHEAT | 1 GAL. | L | OUTSIDE OF BRUSH MANAGEMENT ZONES |
| | HETEROMELES ARBUTIFOLIA | TOYON | 5 GAL. | L | |
| | MALOSMA LAURINA | LAUREL SUMAC | 5 GAL. | L | |
| | RHUS INTEGRIFOLIA | LEMONADE BERRY | 5 GAL. | L | |
| | YUCCA WHIPPLEI | LORD'S CANDLE | 1 GAL. | L | |

**HYDROSEED MIX**

| BOTANICAL | COMMON NAME | PURITY | GERMINATION | LIVE SEED | LBS/ACRE |
|---|---|---|---|---|---|
| DICHELOSTEMMA CAPITATUM | BLUE DICKS | 90 | 80 | 80 | 4 |
| ESCHSCHOLZIA CALIFORNICA | CALIFORNIA POPPY | 98 | 80 | 85 | 2 |
| LASTHENIA CALIFORNICA | GOLDFIELDS | 90 | 85 | 85 | 3 |
| ELYMUS TRITICOIDES | CREEPING WILD RYE | 90 | 80 | 80 | 2 |
| LUPINUS BICOLOR | LUPINE | 98 | 85 | 90 | 3 |
| MELICA IMPERFECTA | MELIC | 80 | 60 | 70 | 2 |
| MUHLENBERGIA MICROSPERMA | LITTLESEED MUHLY | 80 | 60 | 50 | 4 OUTSIDE OF BRUSH MANAGEMENT ZONES |
| STIPA PULCHRA | PURPLE NEEDLEGRASS | 90 | 80 | 75 | 6 |
| PLANTAGO ERECTA | DOT-SEED PLANTAIN | 80 | 80 | 70 | 3 |
| SISYRINCHIUM BELLUM | BLUE-EYED GRASS | 95 | 75 | 80 | 4 |

### PRIVATE/H.O.A. DROUGHT TOLERANT SLOPE LANDSCAPE AREAS

| SYMBOL | BOTANICAL | COMMON NAME | SIZE | SPACING | WUCOLS | QTY. |
|---|---|---|---|---|---|---|
| | **TREES** | | | | | |
| | QUERCUS AGRIFOLIA | CALIFORNIA LIVE OAK | 15 GAL. | PER PLAN | L | 86 |
| | CERCIS OCCIDENTALIS | WESTERN REDBUD | 15 GAL. | PER PLAN | L | 147 |
| | CERCIDIUM 'DESERT MUSEUM' | DESERT MUSEUM PALO VERDE | 15 GAL. | PER PLAN | L | 4 |
| | **SHRUBS** | | | | | |
| | ALOE STRIATA | CORAL ALOE | 5 GAL. | PER PLAN | L | |
| | AGAVE ATTENUATA | FOXTAIL AGAVE | 5 GAL. | PER PLAN | L | |
| | ARBUTUS UNEDO | STRAWBERRY TREE | 5 GAL. | PER PLAN | L | |
| | CISTUS X PURPUREUS | ORCHID ROCKROSE | 5 GAL. | PER PLAN | L | |
| | MUHLENBERGIA C. 'REGAL MIST' | REGAL MIST GRASS | 1 GAL. | PER PLAN | M | OUTSIDE OF BRUSH MANAGEMENT ZONES |
| | SALVIA GREGGII | AUTUMN SAGE | 5 GAL. | PER PLAN | L | OUTSIDE OF BRUSH MANAGEMENT ZONES |
| | SALVIA LEUCANTHA | MEXICAN BUSH SAGE | 5 GAL. | PER PLAN | L | OUTSIDE OF BRUSH MANAGEMENT ZONES |
| | **GROUNDCOVER** | | | | | |
| | BACCHARIS P. 'TWIN PEAKS' | DWARF COYOTE BRUSH | FLATS | 18" O.C. | L | |
| | SENECIO MANDRALISCAE | BLUE CHALK STICKS | FLATS | 18" O.C. | L | |

### STREET / BIO-RETENTION / PARK LANDSCAPE AREAS

| SYMBOL | BOTANICAL | COMMON NAME | SIZE | SPACING | WUCOLS | QTY. |
|---|---|---|---|---|---|---|
| | **STREET TREES** | | | | | |
| | METROSIDEROS EXCELSA | NEW ZEALAND CHRISTMAS TREE | 24" BOX | PER PLAN | L | 197 |
| | PYRUS CALLERYANA 'CHANTICLEER' | FLOWERING PEAR | 24" BOX | PER PLAN | L | 57 |
| | PODOCARPUS GRACILIOR | FERN PINE | 24" BOX | PER PLAN | L | - |
| | QUERCUS AGRIFOLIA | COAST LIVE OAK | 24" BOX | PER PLAN | M | - |
| | QUERCUS ILEX | HOLLY OAK | 24" BOX | PER PLAN | L | - |
| | **BIO-RETENTION AREAS** | | | | | |
| | MUHLENBERGIA C. 'REGAL MIST' | REGAL MIST GRASS | 1 GAL. | PER PLAN | L | OUTSIDE OF BRUSH MANAGEMENT ZONES |
| | CAREX PRAEGRACILIS | FIELD SEDGE | FLATS | 18" O.C. | M | |
| | CAREX TUMULICOLA | BERKELEY SEDGE | FLATS | 18" O.C. | M | |
| | **TURF** | | | | | |
| | MARATHON II - SOD | | | | | |

### FENCING LEGEND

- MOW CURB
- 5' CMU WALL
- 5' WOOD/VINYL FENCE
- 5' TUBULAR STEEL FENCE
- 42" TUBULAR STEEL FENCE
- TRAIL FENCE

50 25 0 50 100 150
SCALE: 1"=50'-0"

GMP #14-122-00

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LANDSCAPE ARCHITECTURE & PLANNING

LANDSCAPE CONCEPT PLAN

# 661 BEAR VALLEY

City of Escondido, California

SHEET 2 OF 4

W.O. 2510-08

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## FENCING LEGEND

- MOW CURB
- 5' CMU WALL
- 5' WOOD/VINYL FENCE
- 5' TUBULAR STEEL FENCE
- 42" TUBULAR STEEL FENCE
- TRAIL FENCE

## PLANTING LEGEND

### COASTAL SAGE SCRUB RE-VEGETATION AREAS

| SYMBOL | BOTANICAL | COMMON NAME | SIZE | WUCOLS | QTY. |
|---|---|---|---|---|---|
| | **TREES** | | | | |
| | QUERCUS AGRIFOLIA | CALIFORNIA LIVE OAK | 15 GAL. | L | 138 |
| | SAMBUCUS MEXICANA | BLUE ELDERBERRY | 24" BOX | L | 144 |
| | **SHRUBS** | | | | |
| | ARTEMISIA CALIFORNICA | COASTAL SAGEBRUSH | 1 GAL. | L | OUTSIDE OF BRUSH MANAGEMENT ZONES |
| | BACCHARIS SAROTHROIDES | DESERT BROOM | 1 GAL. | L | |
| | ERIOGONUM FASCICULATUM | FLAT TOP BUCKWHEAT | 1 GAL. | L | OUTSIDE OF BRUSH MANAGEMENT ZONES |
| | HETEROMELES ARBUTIFOLIA | TOYON | 5 GAL. | L | |
| | MALOSMA LAURINA | LAUREL SUMAC | 5 GAL. | L | |
| | RHUS INTEGRIFOLIA | LEMONADE BERRY | 5 GAL. | L | |
| | YUCCA WHIPPLEI | LORD'S CANDLE | 1 GAL. | L | |

**HYDROSEED MIX**

| BOTANICAL | COMMON NAME | PURITY | GERMINATION | LIVE SEED | LBS/ACRE |
|---|---|---|---|---|---|
| DICHELOSTEMMA CAPITATUM | BLUE DICKS | 90 | 80 | 80 | 4 |
| ESCHSCHOLZIA CALIFORNICA | CALIFORNIA POPPY | 98 | 80 | 85 | 2 |
| LASTHENIA CALIFORNICA | GOLDFIELDS | 90 | 85 | 85 | 3 |
| ELYMUS TRITICOIDES | CREEPING WILD RYE | 90 | 80 | 80 | 2 |
| LUPINUS BICOLOR | LUPINE | 98 | 85 | 90 | 3 |
| MELICA IMPERFECTA | MELIC | 80 | 60 | 70 | 2 |
| MUHLENBERGIA MICROSPERMA | LITTLESEED MUHLY | 80 | 60 | 50 | 4 OUTSIDE OF BRUSH MANAGEMENT ZONES |
| STIPA PULCHRA | PURPLE NEEDLEGRASS | 90 | 80 | 75 | 6 |
| PLANTAGO ERECTA | DOT-SEED PLANTAIN | 80 | 80 | 70 | 3 |
| SISYRINCHIUM BELLUM | BLUE-EYED GRASS | 95 | 75 | 80 | 4 |

### PRIVATE/H.O.A. DROUGHT TOLERANT SLOPE LANDSCAPE AREAS

| SYMBOL | BOTANICAL | COMMON NAME | SIZE | SPACING | WUCOLS | QTY. |
|---|---|---|---|---|---|---|
| | **TREES** | | | | | |
| | QUERCUS AGRIFOLIA | CALIFORNIA LIVE OAK | 15 GAL. | PER PLAN | L | 86 |
| | CERCIS OCCIDENTALIS | WESTERN REDBUD | 15 GAL. | PER PLAN | L | 147 |
| | CERCIDIUM 'DESERT MUSEUM' | DESERT MUSEUM PALO VERDE | 15 GAL. | PER PLAN | L | 4 |
| | **SHRUBS** | | | | | |
| | ALOE STRIATA | CORAL ALOE | 5 GAL. | PER PLAN | L | |
| | AGAVE ATTENUATA | FOXTAIL AGAVE | 5 GAL. | PER PLAN | L | |
| | ARBUTUS UNEDO | STRAWBERRY TREE | 5 GAL. | PER PLAN | L | |
| | CISTUS X PURPUREUS | ORCHID ROCKROSE | 5 GAL. | PER PLAN | L | |
| | MUHLENBERGIA C. 'REGAL MIST' | REGAL MIST GRASS | 1 GAL. | PER PLAN | M | OUTSIDE OF BRUSH MANAGEMENT ZONES |
| | SALVIA GREGGII | AUTUMN SAGE | 5 GAL. | PER PLAN | L | OUTSIDE OF BRUSH MANAGEMENT ZONES |
| | SALVIA LEUCANTHA | MEXICAN BUSH SAGE | 5 GAL. | PER PLAN | L | OUTSIDE OF BRUSH MANAGEMENT ZONES |
| | **GROUNDCOVER** | | | | | |
| | BACCHARIS P. 'TWIN PEAKS' | DWARF COYOTE BRUSH | FLATS | 18" O.C. | L | |
| | SENECIO MANDRALISCAE | BLUE CHALK STICKS | FLATS | 18" O.C. | L | |

### STREET / BIO-RETENTION / PARK LANDSCAPE AREAS

| SYMBOL | BOTANICAL | COMMON NAME | SIZE | SPACING | WUCOLS | QTY. |
|---|---|---|---|---|---|---|
| | **STREET TREES** | | | | | |
| | METROSIDEROS EXCELSA | NEW ZEALAND CHRISTMAS TREE | 24" BOX | PER PLAN | L | 147 |
| | PYRUS CALLERYANA 'CHANTICLEER' | FLOWERING PEAR | 24" BOX | PER PLAN | L | 57 |
| | PODOCARPUS GRACILIOR | FERN PINE | 24" BOX | PER PLAN | L | - |
| | QUERCUS AGRIFOLIA | COAST LIVE OAK | 24" BOX | PER PLAN | M | - |
| | QUERCUS ILEX | HOLLY OAK | 24" BOX | PER PLAN | L | - |
| | **BIO-RETENTION AREAS** | | | | | |
| | MUHLENBERGIA C. 'REGAL MIST' | REGAL MIST GRASS | 1 GAL. | PER PLAN | L | OUTSIDE OF BRUSH MANAGEMENT ZONES |
| | CAREX PRAEGRACILIS | FIELD SEDGE | FLATS | 18" O.C. | M | |
| | CAREX TUMULICOLA | BERKELEY SEDGE | FLATS | 18" O.C. | M | |
| | **TURF** | | | | | |
| | MARATHON II - SOD | | | | | |

50 25 0 50 100 150

SCALE: 1"=50'-0"

GMP #14-122-00

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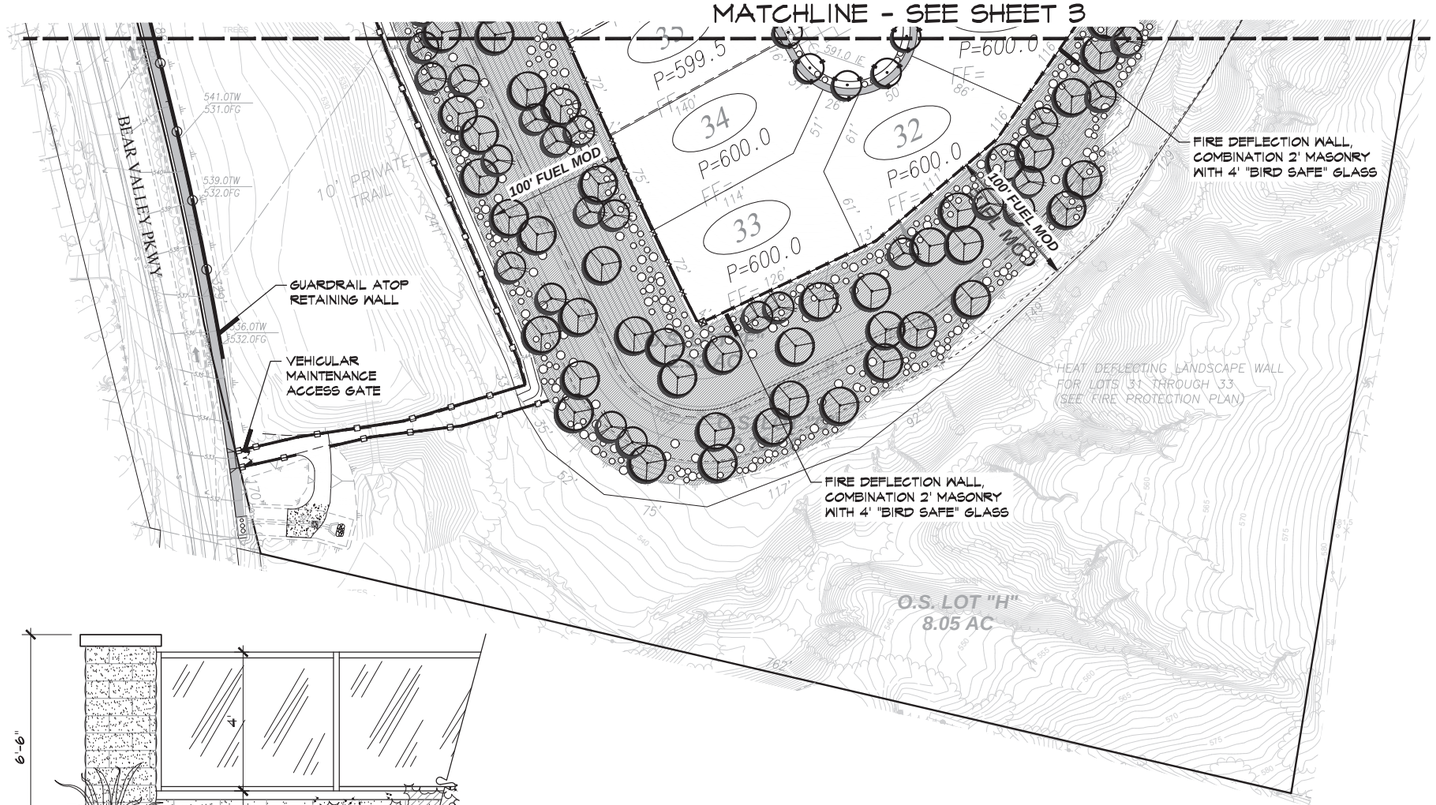
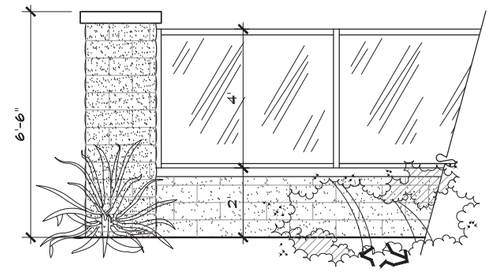
SHEET 3 OF 4

W.O. 2510-08




6' FIRE DEFLECTION WALL - 2' SLUMP BLOCK W/ WITH 4' "BIRD SAFE" GLASS

## PLANTING LEGEND

## COASTAL SAGE SCRUB RE-VEGETATION AREAS

| SYMBOL | BOTANICAL | COMMON NAME | SIZE | WUCOLS | QTY. | |
|---|---|---|---|---|---|---|
| | **TREES** | | | | | |
| | QUERCUS AGRIFOLIA | CALIFORNIA LIVE OAK | 15 GAL. | L | 138 | |
| | SAMBUCUS MEXICANA | BLUE ELDERBERRY | 24" BOX | L | 144 | |
| | **SHRUBS** | | | | | |
| | ARTEMISIA CALIFORNICA | COASTAL SAGEBRUSH | 1 GAL. | L | | OUTSIDE OF BRUSH MANAGEMENT ZONES |
| | BACCHARIS SAROTHROIDES | DESERT BROOM | 1 GAL. | L | | |
| | ERIOGONUM FASCICULATUM | FLAT TOP BUCKWHEAT | 1 GAL. | L | | OUTSIDE OF BRUSH MANAGEMENT ZONES |
| | HETEROMELES ARBUTIFOLIA | TOYON | 5 GAL. | L | | |
| | MALOSMA LAURINA | LAUREL SUMAC | 5 GAL. | L | | |
| | RHUS INTEGRIFOLIA | LEMONADE BERRY | 5 GAL. | L | | |
| | YUCCA WHIPPLEI | LORD'S CANDLE | 1 GAL. | L | | |

**HYDROSEED MIX**

| BOTANICAL | COMMON NAME | PURITY | GERMINATION | LIVE SEED | LBS/ACRE | |
|---|---|---|---|---|---|---|
| DICHELOSTEMMA CAPITATUM | BLUE DICKS | 90 | 80 | 80 | 4 | |
| ESCHSCHOLZIA CALIFORNICA | CALIFORNIA POPPY | 98 | 80 | 85 | 2 | |
| LASTHENIA CALIFORNICA | GOLDFIELDS | 90 | 85 | 85 | 3 | |
| ELYMUS TRITICOIDES | CREEPING WILD RYE | 90 | 80 | 80 | 2 | |
| LUPINUS BICOLOR | LUPINE | 98 | 85 | 90 | 3 | |
| MELICA IMPERFECTA | MELIC | 80 | 60 | 70 | 2 | |
| MUHLENBERGIA MICROSPERMA | LITTLESEED MUHLY | 80 | 60 | 50 | 4 | OUTSIDE OF BRUSH MANAGEMENT ZONES |
| STIPA PULCHRA | PURPLE NEEDLEGRASS | 90 | 80 | 75 | 6 | |
| PLANTAGO ERECTA | DOT-SEED PLANTAIN | 80 | 80 | 70 | 3 | |
| SISYRINCHIUM BELLUM | BLUE-EYED GRASS | 95 | 75 | 80 | 4 | |

## PRIVATE/H.O.A. DROUGHT TOLERANT SLOPE LANDSCAPE AREAS

| SYMBOL | BOTANICAL | COMMON NAME | SIZE | SPACING | WUCOLS | QTY. | |
|---|---|---|---|---|---|---|---|
| | **TREES** | | | | | | |
| | QUERCUS AGRIFOLIA | CALIFORNIA LIVE OAK | 15 GAL. | PER PLAN | L | 86 | |
| | CERCIS OCCIDENTALIS | WESTERN REDBUD | 15 GAL. | PER PLAN | L | 147 | |
| | CERCIDIUM 'DESERT MUSEUM' | DESERT MUSEUM PALO VERDE | 15 GAL. | PER PLAN | L | 4 | |
| | **SHRUBS** | | | | | | |
| | ALOE STRIATA | CORAL ALOE | 5 GAL. | PER PLAN | L | | |
| | AGAVE ATTENUATA | FOXTAIL AGAVE | 5 GAL. | PER PLAN | L | | |
| | ARBUTUS UNEDO | STRAWBERRY TREE | 5 GAL. | PER PLAN | L | | |
| | CISTUS X PURPUREUS | ORCHID ROCKROSE | 5 GAL. | PER PLAN | L | | |
| | MUHLENBERGIA C. 'REGAL MIST' | REGAL MIST GRASS | 1 GAL. | PER PLAN | M | | OUTSIDE OF BRUSH MANAGEMENT ZONES |
| | SALVIA GREGGII | AUTUMN SAGE | 5 GAL. | PER PLAN | L | | OUTSIDE OF BRUSH MANAGEMENT ZONES |
| | SALVIA LEUCANTHA | MEXICAN BUSH SAGE | 5 GAL. | PER PLAN | L | | OUTSIDE OF BRUSH MANAGEMENT ZONES |
| | **GROUNDCOVER** | | | | | | |
| | BACCHARIS P. 'TWIN PEAKS' | DWARF COYOTE BRUSH | FLATS | 18" O.C. | L | | |
| | SENECIO MANDRALISCAE | BLUE CHALK STICKS | FLATS | 18" O.C. | L | | |

## STREET / BIO-RETENTION / PARK LANDSCAPE AREAS

| SYMBOL | BOTANICAL | COMMON NAME | SIZE | SPACING | WUCOLS | QTY. | |
|---|---|---|---|---|---|---|---|
| | **STREET TREES** | | | | | | |
| | METROSIDEROS EXCELSA | NEW ZEALAND CHRISTMAS TREE | 24" BOX | PER PLAN | L | 197 | |
| | PYRUS CALLERYANA 'CHANTICLEER' | FLOWERING PEAR | 24" BOX | PER PLAN | L | 57 | |
| | PODOCARPUS GRACILIOR | FERN PINE | 24" BOX | PER PLAN | L | - | |
| | QUERCUS AGRIFOLIA | COAST LIVE OAK | 24" BOX | PER PLAN | M | - | |
| | QUERCUS ILEX | HOLLY OAK | 24" BOX | PER PLAN | L | - | |
| | **BIO-RETENTION AREAS** | | | | | | |
| | MUHLENBERGIA C. 'REGAL MIST' | REGAL MIST GRASS | 1 GAL. | PER PLAN | L | | OUTSIDE OF BRUSH MANAGEMENT ZONES |
| | CAREX PRAEGRACILIS | FIELD SEDGE | FLATS | 18" O.C. | M | | |
| | CAREX TUMULICOLA | BERKELEY SEDGE | FLATS | 18" O.C. | M | | |
| | **TURF** | | | | | | |
| | MARATHON II - SOD | | | | | | |

**SUMMARY OF LANDSCAPE CALCULATIONS:**

AREA

| | |
|---|---|
| Total Area of Site (sq. ft.) | 1,537,746 |
| Total Landscape Area (sq. ft.) | 460,368 |
| Total Area Landscapes + Turf (sq. ft.) | 2,605 |
| Turf to Landscape Area Ratio | 1% |

WATER USAGE

| | |
|---|---|
| Estimated Annual Water Usage (cu. Ft./yr) | 757,962.23 |
| Estimated Annual Water Usage (hcf/yr) | 7579.6223*2 |

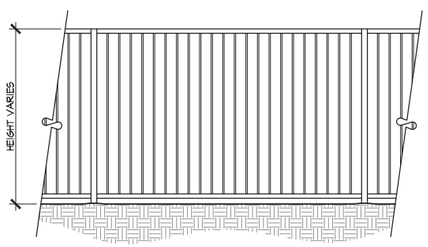
Monogram — METER "A" / CONTROLLER "A"

**ESTIMATED WATER USE**

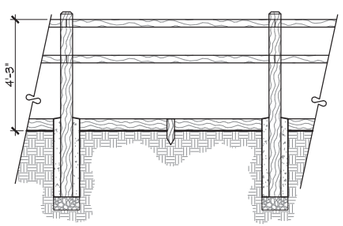
EWU (GPD) = $\frac{ETo \times PF \times HA \times .62}{IE}$

| | | | |
|---|---|---|---|
| ETo | = | 0.134 | AVG. DAILY Eto — 50 per year |
| PF | = | 0.5 | SHRUBS & GROUND COVER (SPRAY&ROTOR) |
| | | 0.8 | TURF (SPRAY & ROTOR) |
| | | 0.5 | SHRUBS (POINT SOURCE & DRIPLINE) |
| HA | = | | SEE BELOW FOR SQUARE FOOTAGE |
| 0.62 | = | | CONVERSION FACTOR OF INCHES TO GPD |
| IE | = | 0.85 | ROTORS |
| | | 0.6 | SPRAYS |
| | | 0.9 | DRIP |
| | | 0.85 | BUBBLERS |

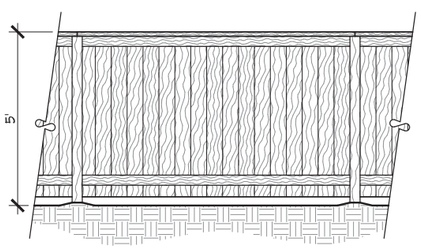
| ZONE TYPE | AREA (SQ FT) | | | |
|---|---|---|---|---|
| TURF ROTORS | 2,605 | EWU = (Eto x 0.8 x HA x .62)/.85 | 208.31 | GPD |
| SHRUB DRIP | 457,762 | EWU = (Eto x 0.5 x HA x .62)/.90 | 21,599.12 | GPD |
| TOTAL SQ. FEET: | 460,368 | EWU = | 21807.43 GPD | |
| ACRE | 10.57 | | 5,669,932 GPY* | 17.40 AC FT/yr |
| | *"EWU based on watering 5days per week, 52 weeks per year, with no effective rainfall" | | | 757962.23 CU.FT/yr |
| MAWA=Eto x 0.7 x AREA x 0.62 | | DAILY MAWA | 27.370 | |
| | | YEARLY MAWA | 9,989.986 GPY | 30.66 AC FT |



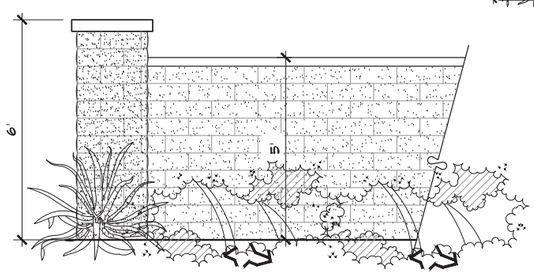

TUBULAR STEEL FENCE



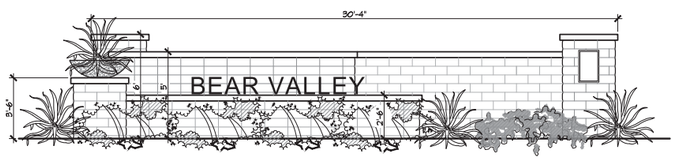

TRAIL FENCE




5'-0" WOOD/VINYL FENCE




6' SLUMP BLOCK PILASTER AND 5' SLUMP BLOCK WALL W/ STUCCO




BEAR VALLEY ENTRY MONUMENT

## FENCING LEGEND

- MOW CURB
- 5' CMU WALL
- 5' WOOD/VINYL FENCE
- 5' TUBULAR STEEL FENCE
- 42" TUBULAR STEEL FENCE
- TRAIL FENCE

50 25 0 50 100 150

SCALE: 1"=50'-0"

GMP #14-122-00

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LANDSCAPE ARCHITECTURE & PLANNING

LANDSCAPE CONCEPT PLAN

# 661 BEAR VALLEY

City of Escondido, California

SHEET 4 OF 4

W.O. 2510-08

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# Appendix E Arborist Report – Bear Valley Parkway Widening Project, Escondido (~~December 2016~~May 2017)

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# ARBORIST REPORT
## Bear Valley Parkway Widening Project, Escondido

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**MAY 2017**

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# TABLE OF CONTENTS


**Section** **Page No.**

**1 INTRODUCTION ..... 1**
1.1 Site Description ..... 1
1.2 Project Description ..... 1

**2 METHODS ..... 7**
2.1 Individual Tree Evaluation ..... 7
2.2 Scope of Work Limitations ..... 8

**3 OBSERVATIONS ..... 9**

**4 POTENTIAL TREE IMPACTS ..... 11**
4.1 Regulatory Definitions and Requirements ..... 11
4.1.1 City of Escondido ..... 11
4.1.2 Migratory Bird Treaty Act ..... 12
4.2 Impacts ..... 12
4.2.1 Project Direct Tree Impacts ..... 13
4.2.2 Indirect Tree Impacts ..... 14

**5 MITIGATION ..... 15**
5.1 Proposed Mitigation Program ..... 15
5.2 Mitigation Details ..... 15
5.3 Mitigation Discussion ..... 16
5.3.1 Tree Relocation ..... 16
5.3.2 Polyphagous and Kuroshio Shot Hole Borers ..... 17
5.4 Tree Removal Permit ..... 19

**6 CONCLUSIONS ..... 21**

**7 REFERENCES ..... 23**


## APPENDICES


A Tree Locations Exhibit
B Tree Information Matrix
C Tree Impacts
D Tree Protection Measures
E Potential Planting Locations

# TABLE OF CONTENTS (CONTINUED)

**Page No.**

## FIGURES

1 Regional Map ..... 3
2 Vicinity Map ..... 5

## TABLES

1 Summary of Trees at Project Site ..... 9
2 Summary of All Direct Tree Impacts – Bear Valley Parkway Widening, Escondido ..... 13
3 Landscape Tree Replacement Calculation ..... 15
4 Recommended Landscape Planting Quantities ..... 16
5 Tree Planting Species and PSHB/KSHB Host Status ..... 18

# 1 INTRODUCTION

This arborist report summarizes Dudek's field evaluation of trees within and adjacent to the proposed Bear Valley Parkway widening project (project) located in Escondido, California. Evaluated trees, including native oak trees, meeting the City of Escondido's (City's) definition of trees based on the diameter as measured at 4.5 feet above the tree's natural grade (diameter at breast height (DBH)) as required by Chapter 33 (Zoning), Article 55 (Grading and Erosion Control) of the City of Escondido's Municipal Code (Ordinance 2001-21). Oaks measuring more than 4 inches DBH and ornamental trees more than 8 inches DBH were included in the evaluation. This report includes a discussion of tree evaluation methods, a summary of findings, identification of anticipated impacts, and tree impact mitigation recommendations consistent with the City's Municipal Code (Ordinance 2001-21) and the tree removal permit process for the City. The primary focus of Dudek's field evaluation was to evaluate trees located on the project site that are considered "protected" or "mature" based on the definition in the City's Municipal Code and that would be affected by the proposed development.

Dudek staff certified by the International Society of Arboriculture (ISA) as Certified Arborists completed the field evaluations on November 22, 2016. The survey area includes 21 protected trees and 35 "mature" trees, 45 of which are directly impacted (removed or encroached) by the proposed project-related improvements. Based on the City's Municipal Code (City of Escondido 2014) and the site's conditions of approval, a minimum of 60 replacement trees would be required to mitigate project-related tree impacts.

## 1.1 Site Description

The project site is composed of two individual sites located off Bear Valley Parkway (BVP) at 661 Bear Valley Parkway near Zlatibor Ranch Road in Escondido, San Diego County, California (Figure 1, Regional Map). The first site (west site) is associated with the widening of BVP and is located on the west side of BVP between the intersection of Sunset Drive and Zlatibor Ranch Road. The second location (east site) associated with the widening of BVP and is located on the east side of BVP between Sunset Drive and the southern edge of the proposed Bear Valley Residential project site. The two locations are located on the U.S. Geological Survey 7.5-minute Escondido quadrangle map in Section 26, Township 12S, and Range 2W.

## 1.2 Project Description

The project would include frontage right-of-way dedication to complete a 51-foot-wide right-of-way from the centerline of the existing Bear Valley Parkway right-of-way. In addition, the project would include the obligation to construct frontage improvements along Bear Valley Parkway consisting of a curb, gutter, sidewalk, parkway, bike lane, and one full travel lane with transitions that would tie into existing improvements. A portion of these frontage improvements would be located off site of the subject property (Figure 2, Vicinity Map).

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7833

2016

**FIGURE 1**

**Regional Map**

Bear Valley Parkway Widening Project - Arborist Report

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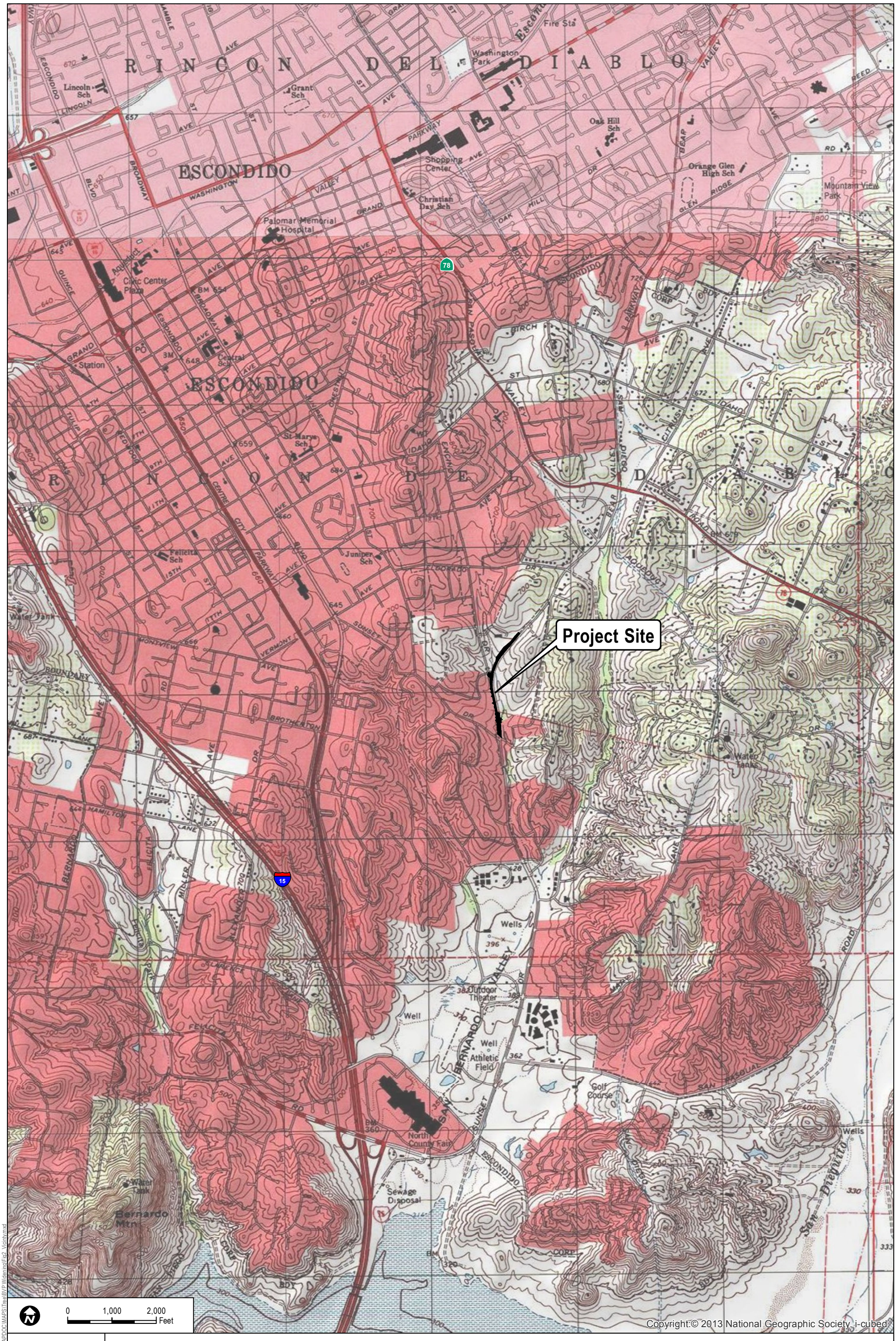


DUDEK

SOURCE: USGS 7.5-Minute Series Escondido Quadrangle.

**FIGURE 2**

**Vicinity Map**

7833

2016

Bear Valley Parkway Widening Project - Arborist Report

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# 2 METHODS

## 2.1 Individual Tree Evaluation

Consistent with Chapter 33 (Zoning), Article 55 (Grading and Erosion Control) of the City's Municipal Code (Ordinance 2001-21), this arborist report is based on information compiled through field reconnaissance and a review of appropriate site reference materials, including aerial photography, U.S. Geological Survey topographic maps, and digital ortho-quarter quadrangle data. Dudek ISA-Certified Arborists conducted a tree survey on the project site on November 22, 2016.

The City's Municipal Code protects all "mature" trees, as defined in Section 33-1502. Mature trees, according to Section 33-1502, include all native oak trees larger than 4 inches DBH and ornamental trees larger than 8 inches DBH.

All trees meeting the City's definition of "mature" or "native" located on the project site were assessed, tagged, inventoried, mapped, and plotted on a tree location exhibit (Appendix A). All inventoried trees were tagged with an aluminum tag bearing a unique identification number. Tree tags were placed on the trunk of each inventoried tree. These numbers correspond to the tree locations presented in Appendix A and the tree information matrix in Appendix B.

Concurrent with tree mapping efforts, Dudek arborists collected tree attribute data, including species, quantity of individual trunks, individual trunk diameters, overall height, canopy extent, and general health and structural conditions. Diameter measurements were collected using the standard protocol outlined by the Council of Tree and Landscape Appraisers in the Guide for Plant Appraisal (ISA 2000). Trunk diameter measurements were collected at 4.5 feet (54 inches) above the ground along the trunk axis, with one common exception. In cases where a tree's trunk was located on a slope, the 4.5-foot distance was approximated as the average of the shortest and longest sides of the trunk (i.e., the uphill side and downhill side of a tree's trunk, respectively), and the measurement was made at the circumference of the trunk at that point. Tree height measurements were ocular estimates made by experienced field arborists. Tree canopy diameters were typically estimated by pacing off the measurement based on the investigator's knowledge of his/her stride length or by visually estimating the canopy width. The tree crown diameter measurements were made along an imaginary line intersecting the tree trunk that best approximated the average canopy diameter.

Pursuant to the Guide for Plant Appraisal (ISA 2000), tree health and structure were evaluated based on five tree components: roots, trunk(s), scaffold branches, small branches, and foliage. Each component of the tree was assessed for health factors such as insect, fungal, or pathogen damage; fire damage; mechanical damage; presence of decay; presence of wilted or dead leaves;

and wound closure. Components were graded as good, fair, poor, or dead, with "good" representing no apparent problems, and "dead" representing a dying and/or dead tree. This method of tree condition rating is comprehensive and results in ratings that are useful for determining the status of trees based on common standards. Trees in natural settings have important habitat value, as evidenced by numerous cavity nesters and insects that thrive on and within oak trees, even when they are considered in poor structural or health condition. This assessment focused on tree condition relating to health and structure to analyze potential project impacts, and, where necessary, to provide recommendations for mitigating potential tree hazards such as trees with weak limb attachments, cavities and rot, or excessive lean.

Upon completion of field data collection and mapping, raw global positioning system (GPS) data was post-processed using GPS Pathfinder Office (v 5.40), and individual tree location data were compiled and updated in geographic information systems (GIS) software. The digital tree locations were linked to individual tree identification numbers and associated tree attribute data. This data set was then evaluated using ArcGIS (v. 10.1) software to determine the position of individual trees relative to the proposed project development areas. Data resulting from this analysis were used to determine individual tree impact totals.

## 2.2 Scope of Work Limitations

No root crown excavations or investigations, aerial evaluations, or internal probing was performed during the tree assessment. Therefore, the presence or absence of internal decay or other hidden inferiorities in individual trees could not be confirmed. It is recommended that any large tree proposed for preservation in an area that receives human use be thoroughly inspected for internal or subterranean decay by a qualified ISA Certified Arborist before finalizing preservation plans.

# 3 OBSERVATIONS

## Individual Trees

There are 56 trees representing nine individual species located within the project tree survey area that meet the City's criteria for a "mature" or "protected" tree. As Table 1 indicates, most of the inventoried trees are native to California. Tree species found on site consist primarily of ornamental trees. Ornamental trees found on site include ash (*Fraxinus* sp.), silk oak (*Grevillea robusta*), jacaranda (*Jacaranda mimosifolia*), Chinese juniper (*Juniperus chinensis*), Canary Island date palm (*Phoenix canariensis*), Brazilian pepper (*Schinus terebinthifolius*), Queen palm (*Syagrus romanzoffiana*), and Mexican fan palm (*Washingtonia robusta*). One native tree species, coast live oak (*Quercus agrifolia*), is found on the project site. Table 1 provides a summary of the nine species mapped and evaluated within the tree survey area. The tree location exhibit in Appendix A presents the location of the individual trees mapped and assessed for the project.

Overall, the trees exhibit growth and structural conditions that are typical of their locations as both landscape and natural trees. The trees include various trunk and branch maladies, as well as varying health and structural conditions. As presented in the tree information matrix in Appendix B, most of the individually mapped trees, 82% (46 trees), exhibit fair health condition; 7% (4 trees) are in good health condition; and 11% (6 trees) are in poor health. Dead trees were not evaluated during the tree inventory. Structurally, 7% (4 trees) of the individually mapped trees are considered to exhibit good structure, 64% (36 trees) exhibit fair structure, and 29% (16 trees) exhibit poor structure. Good condition trees exhibit acceptable vigor, healthy foliage, and adequate structure, and lack any major maladies. Fair condition trees are typical, with few maladies but declining vigor. Poor condition trees exhibit declining vigor, unhealthy foliage, poor branch structure, and/or excessive lean.

**Table 1**
**Summary of Trees at Project Site**

| Scientific Name | Common Name | Number of Trees |
|---|---|---|
| *Fraxinus* sp. | ash tree | 2 |
| *Grevillea robusta* | silk oak | 1 |
| *Jacaranda mimosifolia* | jacaranda | 2 |
| *Juniperus chinensis* | Chinese juniper | 1 |
| *Phoenix canariensis* | Canary Island date palm | 1 |
| *Quercus agrifolia* | coast live oak | 42 |
| *Schinus terebinthifolius* | Brazilian pepper | 1 |
| *Syagrus romanzoffiana* | queen palm | 3 |
| *Washingtonia robusta* | Mexican fan palm | 3 |
| | **Total** | **56** |

Trees within the tree survey area vary in size and stature according to species and available growing space. The coast live oak trees on site are primarily single-stemmed, with trunk diameters ranging from 4 to 33 inches DBH. Multi-stemmed oak trees with two to six stems have diameters of up to 48 inches DBH. Single- and multi-stemmed ornamental landscape tree species have combined trunk diameters between 4 and 48 inches DBH. Tree heights vary from 10 to 45 feet. Tree canopy extents range from 10 to nearly 60 feet across. Nearly 55% of the trees on site exhibit canopy spreads that are greater than 20 feet across at their widest points.

# 4 POTENTIAL TREE IMPACTS

## 4.1 Regulatory Definitions and Requirements

The following section summarizes the relevant policies regulating tree impact and removal associated with the project.

### 4.1.1 City of Escondido

Tree protection, removal, and replacement standards are included in the City's General Plan (City of Escondido 2012) and in Chapter 33 (Zoning), Article 55 (Grading and Erosion Control) of the City's Municipal Code (Ordinance 2001-21). The Escondido General Plan recognizes oak trees and other mature trees, as defined below, as significant aesthetic and ecological resources deserving protection within the boundaries of the City. Sections 33-1502 and 33-1068 of the City's Municipal Code set forth rules and standards related to mature tree removal, protection, and replacement.

**Section 33-1502 (Definitions)**

1. A *mature tree* is any self-supporting woody perennial plant, native or ornamental, with a single well-defined stem or multiple stems supporting a crown of branches.
    a. The single stem, or one of multiple stems, of any oak tree (*Quercus* species) shall have a DBH of 4 inches or greater.
    b. All other mature trees shall have a DBH of 8 inches, or greater, for a single stem or one of the multiple stems.
2. A *protected tree* is any oak (*Quercus* species) that has a ten-inch or greater DBH, or any other tree species or individual specimen listed on the historic register, or determined to substantially contribute to the historic character of a property or structure listed on the local historic register, pursuant to Article 40 of the Escondido Zoning Code.

**Section 33-1068 (Vegetation Clearing and Protection)**

The purpose of Section 33-1068 is to establish regulations and standards for the preservation, protection, and selected removal of mature and protected trees. A vegetation removal permit is required prior to clearing, pruning, or destroying vegetation, and prior to any encroachments by construction activities that disturb the root system within the dripline[1] of mature trees. Issuance of a vegetation removal permit requires the submittal of a tree survey and a tree replacement and/or protection plan.

[1] The dripline is the area directly under the outer circumference of the tree branches. This is where the feeder roots are located that take up water and nutrients for the tree.

**Section 33-1069 (Vegetation Protection and Replacement)**

Pursuant to Section 33-1069, every feasible effort and measure to avoid damage to existing trees to remain on site must be taken by the owner and developer during clearing, grading, and construction activities. If mature trees cannot be preserved on site, they must be replaced at a minimum ratio of 1:1. Protected oak trees must be replaced at a minimum ratio of 2:1. However, the number, size, and species of replacement trees can be determined on a case-by-case basis by the City's Director of Planning and Building.

### 4.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 requires tree removal and potentially disturbing construction activities to occur during certain months to avoid harassment of nesting birds. According to this act, no construction or other disturbing activities can occur within 500 feet of an active bird nest from January through June each year. Biological surveys are typically required to provide clearance for project initiation.

## 4.2 Impacts

Tree impacts were determined through use of GIS technology to determine the locations of trees relative to the project impact areas (limits of grading). Impacts were further determined based on Dudek arborists' experience with native and non-native trees, and the typical reactions of trees to disturbances such as soil compaction, excavation, and remedial grading. The impact analysis results presented herein were used for developing appropriate mitigation measures for the project.

Impacts to trees can be classified as either direct or indirect. Direct impacts to trees related to site improvements are typically the result of physical injuries or changes caused by construction machinery. Direct impacts include tree removal, root damage, soil excavation and compaction, grade changes, loss of canopy, and trunk wounds, among others. Indirect impacts to trees are the result of changes to the site that may cause tree decline, even when the tree is not directly injured. Indirect impacts include alterations to stream flow rates, diversion of groundwater flow, introduction of exotic plant species, and alterations to disturbance regimes. Wider-scale alterations to the area near trees and specific changes that occur around the trees are important considerations.

In general, there is a great deal of variation in tolerance to construction impacts among tree species, ages, and conditions. It is important to know how a certain tree, based on its species, age, and condition, will respond to different types of disturbance. The trees in the proposed project area are of varying ages and conditions. Mature specimens are typically more sensitive to root disturbance and grade changes. In general, healthy trees will respond better to changes in their growing environment. Trees of poor health or stressed conditions may not be vigorous enough to cope with direct or indirect impacts from construction activities.

Impacts totals presented herein are based on conceptual disturbance limits and development plans as of the date of this Arborist Report. As such, the actual number of trees that are subject to direct and indirect impacts may change as the detailed site planning process proceeds.

### 4.2.1 Project Direct Tree Impacts

For the purposes of this report, direct impacts are those associated with tree removal or encroachment within the dripline. Tree removal is expected to be required when the trunk is located inside or within 2 feet of the proposed limits of grading. Encroachment is expected when soil and roots are disturbed within the tree protected zone (canopy drip line plus 5 feet or 15 feet from trunk, whichever is greater). Table 2 summarizes the total number of trees by species that are expected to be subject to direct construction-related impacts. It should be noted that none of the newly inventoried trees located in area 2 (south of the project site) will be impacted by the proposed project. Locations of impacted trees, by impact type, are presented on the map in Appendix C. Measures to minimize the extent of impact to preserved trees are provided in Appendix D.

**Table 2**
**Summary of All Direct Tree Impacts – Bear Valley Parkway Widening, Escondido**

| Scientific Name | Common Name | Removal | Encroachment |
|---|---|---|---|
| *Fraxinus* sp. | ash tree | 2 | 0 |
| *Grevillea robusta* | silk oak | 1 | 0 |
| *Jacaranda mimosifolia* | jacaranda | 2 | 0 |
| *Juniperus chinensis* | Chinese juniper | 1 | 0 |
| *Phoenix canariensis* | Canary Island date palm | 1 | 0 |
| *Quercus agrifolia* | coast live oak | 28 (14)* | 3 (1)* |
| *Schinus terebinthifolius* | Brazilian pepper | 1 | 0 |
| *Syagrus romanzoffiana* | queen palm | 3 | 0 |
| *Washingtonia robusta* | Mexican fan palm | 3 | 0 |
| **Totals** | | **42 (14)*** | **3 (1)*** |

**Note:**
* Number in parenthesis represents the quantity of removals that meet the City's criteria of a "protected tree" and is included in the totals.

#### Tree Impact Summary

Based on proposed project development plans, it is estimated that 42 (75%) mature and protected trees will require removal, 3 (5%) will experience encroachment into the tree protected zone, 8 (15%) will be indirectly impacted, and 3 (5%) will be preserved in place with no direct impacts. Of the 42 trees identified for removal, 14 meet the criteria for classification as a protected tree, as defined by the City. Of the three encroached-upon trees, one meets the size criteria to be classified as a protected tree.

### 4.2.2 Indirect Tree Impacts

Indirect impacts to trees are the result of changes to the site that may cause tree decline, even when the tree is not directly injured. Site-wide changes affecting trees include diverting runoff and stormwater, creating retention and detention ponds, relocating streams or making improvements to streams, lowering or raising water tables, altering the capacity for soil moisture recharge, removing vegetation, and damming underground water flow (Matheny and Clark 1998). For the purposes of this report, indirect tree impacts are expected for trees within 25 feet of the project's limits of grading and not subject to removal or encroachment. Trees located in fuel modification zones are also typically considered indirectly impacted; however, no trees are located in proposed fuel modification zones that would not be otherwise impacted (removal or encroachment).

Other potential indirect impacts may include firewood harvesting, vandalism, and deliberate or accidental wildfire ignition in oak-willow woodland drainage areas. These potential indirect impacts are not typically considered significant and can be minimized by implementing woodland management and protection measures, including educational material provided to homeowners and long-term management of oak-willow-dominated habitat on the site. For this project, the educational materials along with on-going management and maintenance that will be provided to this biological area are considered adequate to reduce the potential indirect impacts to less than significant.

In total, eight coast live oak trees will be indirectly impacted by the project. Of the eight trees, three are considered protected by the City. None of the ornamental trees are anticipated to be indirectly impacted by the proposed project. Should any of the indirectly impacted trees fail within 5 years of project completion, they should be replaced in accordance with City requirements. Locations of impacted trees, by impact type, are presented on the map in Appendix C.

# 5 MITIGATION

Section 33-1069 of the City's Municipal Code identifies tree replacement standards for projects affecting mature and/or protected trees. Minimum mitigation planting requirements for removal and encroachment on 30 mature trees (1:1 replacement ratio) and 15 protected trees (2:1 replacement ratio) is 60 trees (46 coast live oaks and 14 other suitable native or ornamental species).

## 5.1 Proposed Mitigation Program

The proposed mitigation program was designed to provide mitigation for direct impacts to 30 mature trees and 15 protected trees associated with the proposed project. The goal of the proposed mitigation program is to offset tree impacts through a sustainable, customized plan that will enhance BVP and is suitable for the site. To meet the City's mitigation planting requirements for the removal and encroachment of trees, Dudek recommends planting 60 24-inch box native and ornamental trees species along BVP following completion of the proposed project. Tree species recommended for individual mitigation include coast live oak, western redbud (*Cercis occidentalis*), Desert Museum palo verde (*Parkinsonia* "Desert Museum"), flowering pear (*Pyrus calleryana* "Chanticleer"), and New Zealand Christmas tree (*Metrosideros excelsa*). Use of a variety of species will result in a more robust tree population that is less susceptible to pests and disease that typically are host-species specific.

## 5.2 Mitigation Details

As indicated in Table 3, the total number of plantings required to meet the intent of the City's tree protection and replacement requirements is 60 trees. Therefore, the mitigation program proposes that a minimum of 60 trees (including coast live oak and other suitable native or ornamental species) are planted in areas along BVP, as presented in Appendix E. Table 4 provides recommended replacement species and totals for the 45 individually impacted trees. The 60 landscape trees provide mitigation for the 45 individual tree impacts from the site at a ratio of 1:1 for mature trees and 2:1 for protected trees. The proposed mitigation ratio meets the minimum required City replacement ratio for the removal of 30 mature trees and 15 protected trees. Table 4 provides a list of species that are not invasive, are acceptable by fire agencies, and that are anticipated to perform well along BVP.

**Table 3**
**Landscape Tree Replacement Calculation**

| Trees Impacted | | | | |
|---|---|---|---|---|
| *Tree Type* | *Grading Related* | *Replacement Ratio* | *Replacement Species* | *Total Number Replacement Trees* |
| *Fraxinus* spp. | 2 | 1:1 | Ornamental | 2 |
| *Grevillea robusta* | 1 | 1:1 | Ornamental | 1 |

**Table 3**
**Landscape Tree Replacement Calculation**

| Trees Impacted | | | | |
|---|---|---|---|---|
| *Tree Type* | *Grading Related* | *Replacement Ratio* | *Replacement Species* | *Total Number Replacement Trees* |
| *Jacaranda mimosifolia* | 2 | 1:1 | Ornamental | 2 |
| *Juniperus chinensis* | 1 | 1:1 | Ornamental | 1 |
| *Phoenix canariensis* | 1 | 1:1 | Ornamental | 1 |
| *Quercus agrifolia* | 31 (15) | 1:1 and 2:1 | *Quercus agrifolia* | 46 |
| *Schinus terebinthifolius* | 1 | 1:1 | Ornamental | 1 |
| *Syagrus romanzoffiana* | 3 | 1:1 | Ornamental | 3 |
| *Washingtonia robusta* | 3 | 1:1 | Ornamental | 3 |
| **Minimum City-required mitigation tree plantings** | | | | **60** |

**Table 4**
**Recommended Landscape Planting Quantities**

| Trees Impacted | | | |
|---|---|---|---|
| *Tree Type* | *Common Name* | *Size* | *Replacement Quantity* |
| *Parkinsonia* (Desert Museum) | Desert Museum palo verde | 24-inch box | 3 |
| *Cercis occidentalis* | western redbud | 24-inch box | 4 |
| *Metrosideros excelsa* | New Zealand Christmas tree | 24-inch box | 4 |
| *Pyrus calleryana* (Chanticleer) | flowering pear | 24-inch box | 3 |
| *Quercus agrifolia* | coast live oak | 24-inch box | 46 |
| **Minimum proposed landscape plantings** | | | **60** |

## 5.3 Mitigation Discussion

The total number of mitigation trees proposed (60 trees) for anticipated tree impacts is considered appropriate, and meets the minimum City-required replacement ratio for the removal of 30 mature trees and 16 protected trees. However, should additional trees require removal to accommodate the proposed project, it is recommended that they be replaced in accordance with the City's tree removal mitigation requirement of 1:1 for mature trees and 2:1 for protected trees.

### 5.3.1 Tree Relocation

Relocation of impacted trees was analyzed during the tree assessment, and a single tree is considered a candidate. However, tree relocation is not a requirement of the City. As the landscape plan is finalized, if the individual candidate tree can be relocated, it will be evaluated further. Tree relocation is a stressful process for native oaks, and unless they are superior specimens, it is preferable to purchase large, nursery-grown trees as a replacement.

### 5.3.2 Polyphagous and Kuroshio Shot Hole Borers

These tree-boring insects have similar tendencies and are causing significant tree mortality in California. To date, the Kuroshio Shot Hole Borer (KSHB) has not been identified in San Diego County. The Polyphagous Shot Hole Borer (PSHB) occurs widely in San Diego County. This discussion focuses on PSHB, but its content is applicable to KSHB when it becomes established in San Diego County.

From University of California (http://ucanr.edu/sites/socaloakpests/Polyphagous_Shot_Hole_Borer/)

> PSHB is a new pest in Southern California. This boring beetle, from the group of beetles known as ambrosia beetles, drills into trees and brings with it a pathogenic fungus (Fusarium euwallacea), as well as other fungal species that may to help establish the colonies. The PSHB attacks many species of trees, but some trees are resistant to the fungus it carries. The beetle is dark brown to black and tiny, with females between 0.07 and 0.1 inches long, and males even smaller, usually about 0.05 inches long. Pregnant females bore through the tree's bark, creating galleries under the bark. They plant the fungus in these galleries, where it grows and spreads throughout a susceptible tree. The female then lays her eggs in these galleries and when the eggs hatch, the larvae eat the fungus. The larvae develop into adults in about a month. Many more of the larvae develop into females than males, and the females mate with the males (their brothers) while still in the gallery. The pregnant females then pick up some of the fungus in their mouths, and leave through the entry holes created by their mothers to start the process again.

Polyphagous and Kuroshio shot hole borers (PSHB and KSHB) are known to occur within San Diego County and the project area. These pests are actively spreading to a large number of host species, preferring willows (*Salix* sp.) and sycamore (*Platanus* sp.), but also utilizing a variety of other species. Tree mortality resulting from the Fusarium fungus it introduces into trees has been widespread and is anticipated to continue, if not become worse (California Urban Forest Council 2017). Efforts are under way to find methods for controlling these pests through biological, chemical, and other means (University of California Riverside 2017).

The Project site's trees were not observed to be hosting PSHB at the time tree inventories were completed. However, the riparian oak woodland areas of the site (Appendix A) could potentially become infested due to the presence of known host species. This infestation would be possible with or without the Project.

A total of 265 trees will be planted in the Project's landscape areas as well as on the periphery of existing native tree stands. Species that will be planted and their PSHB/KSHB host are presented in Table 5.

**Table 5**
**Tree Planting Species and PSHB/KSHB Host Status**

| Tree Type | Common Name | Known Host? |
|---|---|---|
| *Cercidium* (desert museum) | Desert museum palo verde | No |
| *Cercis occidentalis* | Western redbud | No |
| *Metrosideros excels* | New Zealand Christmas tree | No |
| *Pyrus calleryana* (Chanticleer) | Flowering pear | No |
| *Sambucus mexicana* | Blue elderberry | No |
| *Quercus agrifolia* | Coast live oak | Yes |

**Note:**
* Replacement species will be a combination of native oak and elderberry in the riparian areas, and native oak and other landscape trees within the urbanized areas of the project site.

Of these species, only the coast live oak is a known host of the PSHB and KSHB. That is not to say that the other trees could become hosts once preferred host species are no longer available, but as of the date of this response, the other proposed species for planting are not currently listed as hosts. The project must plant native oaks as mitigation due to City requirements. Other species have been selected based on their current exclusion to these pests' host lists.

The Project is unlikely to contribute significantly to the spread of either shot hole borer based on the activities associated with tree removals and tree planting at the site. The scale of the project's landscape plantings is insignificant compared to the known range of the shot hole borers. The PSHB may already be in the area of the Project, but was not detected on site during tree inventories. PSHB could spread into the area with or without the Project. The Project's potential impact on PSHB and KSHB spread is considered below the level of significance with the implementation of specific measures to minimize attracting or spreading PSHB.

**Best Management Practices to limit the spread of Shot Hole Borers**

The following measures will be implemented prior to, during, and following site activities to minimize PSHB and KSHB spread.

1. Provide education of on-site workers regarding shot hole borers and its spread (provided by the biological monitor)
2. Report sign of shot hole borer infestation to the CDFW and University of California Riverside's Eskalen Lab
3. Disinfect hand tools and machinery used to cut trees, chip trees, and process trees.
4. If infection is observed, the Project will remove infested/infected limbs to the extent feasible. If warranted, entire trees may require removal and would be coordinated with the City and or CDFW, as appropriate.

5. Avoid and minimize transportation of potential host tree materials.
6. Following tree felling for known host tree species within the disturbance area, the trees will be ground to less than one-inch diameter and solarized, prior to spreading on-site or delivering to a landfill.
7. Cut logs of known host species that are too large to be chipped/ground will be solarized before being removed from the site.
8. If acceptable, known host species material will be burned in lieu of other protective measures if determined to be preferred to chipping and solarization.
9. Post project landscapes will be maintained in good horticultural condition and trees will be provided necessary maintenance for establishment and growth.

## 5.4 Tree Removal Permit

Consistent with Section 33-1068 of the City's Municipal Code (City of Escondido 2014), a vegetation removal permit is required prior to clearing, pruning, or destroying vegetation, and prior to any encroachments by construction activities that disturb the root system within the dripline of mature trees.

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# 6 CONCLUSIONS

Dudek inventoried and evaluated 56 mature and protected trees within the Bear Valley Parkway widening project site. A total of 45 trees would be impacted by the proposed project. Tree impacts associated with the project would be mitigated through replacement tree planting, as defined in the City's General Plan and in Chapter 33 (Zoning), Article 55 (Grading and Erosion Control) of the City's Municipal Code (Ordinance 2001-21) and in the Conditions of Approval for Sub 13-0003, Sub 13-0010, Sub 13-0011, and Tract 889. In total, 60 trees should be planted to mitigate for project-related impacts. Planting locations, types, and maintenance must be consistent with the Conditions of Approval for Sub 13-0003, Sub 13-0010, Sub 13-0011, and Tract 889. The recommended tree mitigation/replacement meets the minimum requirements of the City's Tree Protection Ordinance (City of Escondido 2014).

**Arborist's Statement**

This report provides conclusions and recommendations based on an examination of the trees and surrounding site by ISA-Certified Arborists. Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees.

No root crown excavations or investigations or internal probing was performed during the tree assessments. Therefore, the presence or absence of internal decay or other hidden inferiorities in individual trees could not be confirmed. It is recommended that any large tree proposed for preservation in an area that receives human use be thoroughly inspected for internal or subterranean decay by a qualified arborist before finalizing preservation plans.

Arborists cannot detect every condition that could possibly lead to the failure of a tree. Trees are living organisms that fail in ways not fully understood. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances or for a specified period. There are no guarantees that a tree's condition will not change over a short or long period due to weather or cultural or environmental conditions. Trees can be managed but not controlled.

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# 7 REFERENCES

City of Escondido. 2012. *City of Escondido General Plan*. May 2012. http://www.escondido.org/general-plan.aspx.

City of Escondido. 2014. Escondido Municipal Code. http://www.qcode.us/codes/escondido/.

ISA (International Society of Arboriculture). 2000. *Guide for Plant Appraisal* (9th Edition).

Matheny and Clark. 1998. *Trees and Development: A Technical Guide to Preservation of Trees During Land Development*. ISBN: 1-881956-20-2. Champaign, Illinois: International Society of Arboriculture. www.isa-arbor.com 183.

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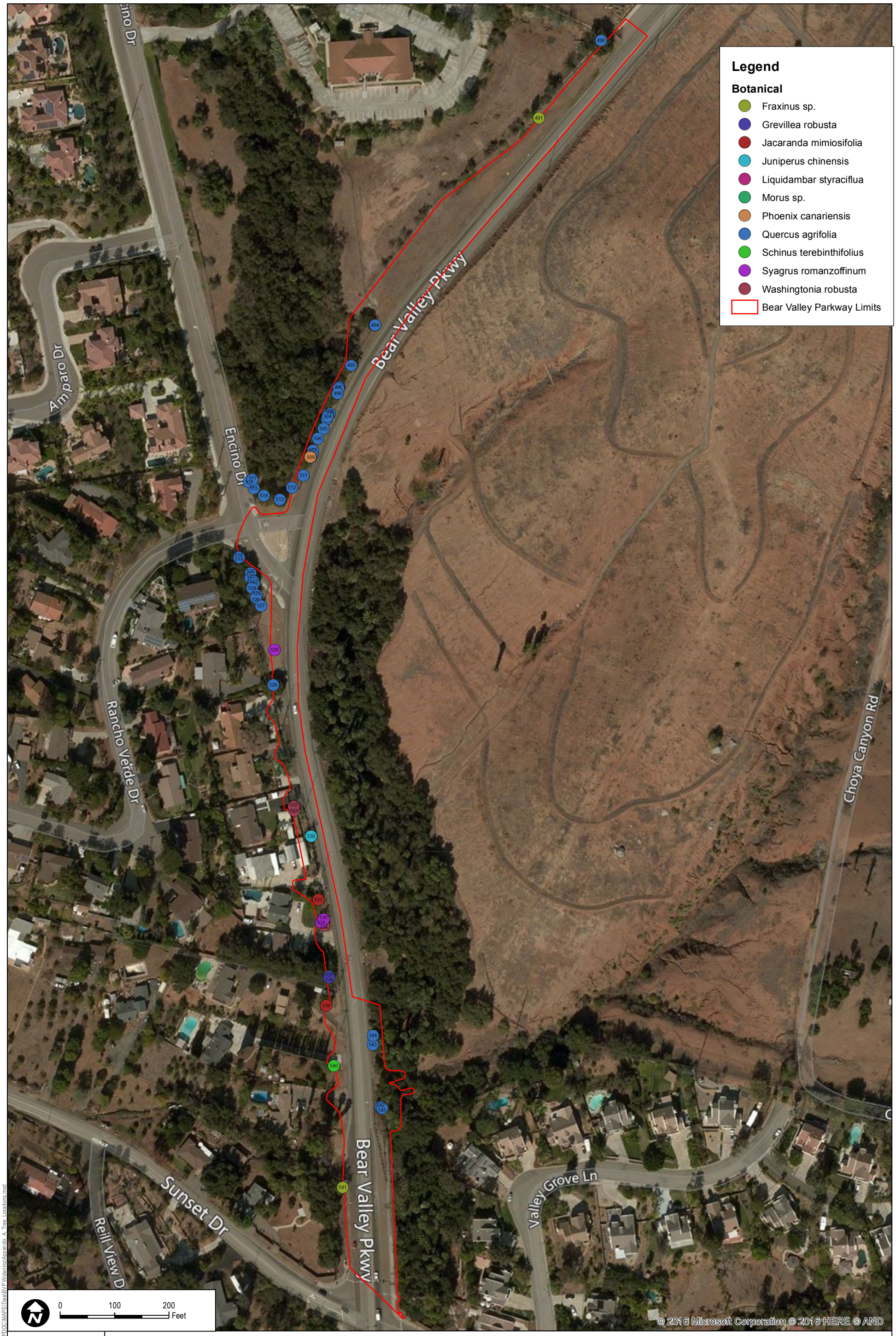
# APPENDIX A

*Tree Locations Exhibit*




DUDEK

SOURCE: World Imagery, SANGIS

**Appendix A**

**Tree Locations**

7833

2016

Bear Valley Parkway Widening Project - Arborist Report

Path: Z:\Projects\7833\01\MAPDOC\MAPS\Tree\BVP Widening\Appendix_A_Tree_Locations.mxd

# APPENDIX B

*Tree Information Matrix*

# Appendix B - Tree Information Matrices

| Tree No. | Botanical Name | Common Name | Stems | D.B.H (in.)* | Individual Stem Diameter (in.) | | | | | | Height (ft.) | Canopy (ft.) | Health | Structure | Protection Status | Tree Disposition | Mitigation Requirement (No. of trees) | Notes | X | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D1 | D2 | D3 | D4 | D5 | D6 | | | | | | | | | | |
| 490 | *Quercus agrifolia* | Coast live oak | 1 | 30.0 | 30 | | | | | | 30 | 40 | Fair | Fair | Protected | Remove - Bear Valley Parkway | 2 | 25ft from canopy out to street | 6314356.188 | 1981057.803 |
| 491 | *Fraxinus* sp. | Ash tree | 1 | 8.0 | 8 | | | | | | 30 | 20 | Poor | Fair | Mature | Remove - Bear Valley Parkway | 1 | | 6314241.617 | 1980914.709 |
| 492 | *Quercus agrifolia* | Coast live oak | 1 | 8.0 | 8 | | | | | | 20 | 15 | Poor | Poor | Mature | Remove - Bear Valley Parkway | 1 | | 6313941.136 | 1980535.33 |
| 493 | *Quercus agrifolia* | Coast live oak | 1 | 10.0 | 10 | | | | | | 25 | 20 | Poor | Poor | Protected | Remove - Bear Valley Parkway | 2 | | 6313940.799 | 1980534.598 |
| 494 | *Quercus agrifolia* | Coast live oak | 1 | 10 | 10 | | | | | | 25 | 20 | Poor | Poor | Protected | Remove - Bear Valley Parkway | 2 | | 6313941.251 | 1980535.267 |
| 495 | *Quercus agrifolia* | Coast live oak | 1 | 28 | 28 | | | | | | 30 | 40 | Fair | Fair | Protected | Remove - Bear Valley Parkway | 2 | 20ft canopy trunk to street | 6313897.722 | 1980460.991 |
| 496 | *Quercus agrifolia* | Coast live oak | 1 | 14 | 14 | | | | | | 25 | 15 | Fair | Poor | Protected | Remove - Bear Valley Parkway | 2 | | 6313875.322 | 1980421.668 |
| 497 | *Quercus agrifolia* | Coast live oak | 1 | 4 | 4 | | | | | | 20 | 10 | Fair | Fair | Mature | Remove - Bear Valley Parkway | 1 | | 6313875.048 | 1980420.714 |
| 498 | *Quercus agrifolia* | Coast live oak | 1 | 21 | 21 | | | | | | 40 | 35 | Fair | Fair | Protected | Remove - Bear Valley Parkway | 2 | 25ft canopy trunk to road | 6313874.558 | 1980418.538 |
| 499 | *Quercus agrifolia* | Coast live oak | 1 | 5 | 5 | | | | | | 20 | 10 | Fair | Fair | Mature | Remove - Bear Valley Parkway | 1 | | 6313872.876 | 1980409.568 |
| 500 | *Quercus agrifolia* | Coast live oak | 1 | 10 | 10 | | | | | | 25 | 15 | Fair | Poor | Protected | Remove - Bear Valley Parkway | 2 | | 6313858.088 | 1980372.94 |
| 501 | *Quercus agrifolia* | Coast live oak | 3 | 16.8 | 10 | 10 | 9 | 0 | 0 | 0 | 35 | 25 | Fair | Fair | Protected | Remove - Bear Valley Parkway | 2 | | 6313855.706 | 1980370.735 |
| 502 | *Quercus agrifolia* | Coast live oak | 1 | 6.0 | 6 | 0 | 0 | 0 | 0 | 0 | 15 | 10 | Fair | Fair | Mature | Remove - Bear Valley Parkway | 1 | | 6313852.233 | 1980362.636 |
| 503 | *Quercus agrifolia* | Coast live oak | 1 | 5.0 | 5 | 0 | 0 | 0 | 0 | 0 | 20 | 10 | Fair | Fair | Mature | Remove - Bear Valley Parkway | 1 | | 6313852.872 | 1980363.541 |
| 504 | *Quercus agrifolia* | Coast live oak | 1 | 8.0 | 8 | 0 | 0 | 0 | 0 | 0 | 25 | 15 | Fair | Fair | Mature | Remove - Bear Valley Parkway | 1 | | 6313854.579 | 1980367.438 |
| 505 | *Quercus agrifolia* | Coast live oak | 1 | 10.0 | 10 | 0 | 0 | 0 | 0 | 0 | 30 | 20 | Fair | Fair | Protected | Remove - Bear Valley Parkway | 2 | | 6313846.544 | 1980345.612 |
| 506 | *Quercus agrifolia* | Coast live oak | 2 | 9.2 | 7 | 6 | 0 | 0 | 0 | 0 | 30 | 20 | Fair | Fair | Mature | Remove - Bear Valley Parkway | 1 | | 6313836.508 | 1980327.494 |

| Appendix B - Tree Information Matrices | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tree No. | Botanical Name | Common Name | Stems | D.B.H (in.)* | Individual Stem Diameter (in.) | | | | | | Height (ft.) | Canopy (ft.) | Health | Structure | Protection Status | Tree Disposition | Mitigation Requirement (No. of trees) | Notes | X | Y |
| | | | | | D1 | D2 | D3 | D4 | D5 | D6 | | | | | | | | | | |
| 507 | *Quercus agrifolia* | Coast live oak | 2 | 9.2 | 7 | 6 | 0 | 0 | 0 | 0 | 25 | 20 | Fair | Fair | Mature | Remove - Bear Valley Parkway | 1 | | 6313827.303 | 1980305.748 |
| 508 | *Quercus agrifolia* | Coast live oak | 1 | 6.0 | 6 | 0 | 0 | 0 | 0 | 0 | 25 | 10 | Fair | Fair | Mature | Remove - Bear Valley Parkway | 1 | | 6313826.397 | 1980298.762 |
| 509 | *Quercus agrifolia* | Coast live oak | 2 | 17.7 | 12 | 13 | 0 | 0 | 0 | 0 | 30 | 30 | Fair | Fair | Protected | Remove - Bear Valley Parkway | 2 | 20ft canopy from trunk to road | 6313823.51 | 1980293.344 |
| 510 | *Phoenix canariensis* | Canary island date palm | 1 | 48.4 | 38 | 30 | 0 | 0 | 0 | 0 | 45 | 30 | Fair | Fair | Mature | Remove - Bear Valley Parkway | 1 | | 6313822.308 | 1980294.145 |
| 511 | *Quercus agrifolia* | Coast live oak | 2 | 22.7 | 15 | 17 | 0 | 0 | 0 | 0 | 45 | 35 | Poor | Fair | Protected | Remove - Bear Valley Parkway | 2 | | 6313810.013 | 1980259.612 |
| 512 | *Quercus agrifolia* | Coast live oak | 2 | 8.9 | 4 | 8 | 0 | 0 | 0 | 0 | 25 | 20 | Fair | Fair | Mature | Remove - Bear Valley Parkway | 1 | | 6313789.065 | 1980237.323 |
| 513 | *Quercus agrifolia* | Coast live oak | 4 | 15.6 | 8 | 9 | 7 | 7 | 0 | 0 | 25 | 20 | Fair | Fair | Protected | Remove - Bear Valley Parkway | 2 | | 6313766.877 | 1980215.82 |
| 514 | *Quercus agrifolia* | Coast live oak | 2 | 21.2 | 15 | 15 | 0 | 0 | 0 | 0 | 30 | 35 | Fair | Fair | Protected | Encroachment - Bear Valley Parkway | 2 | | 6313737.704 | 1980222.359 |
| 515 | *Quercus agrifolia* | Coast live oak | 2 | 14.2 | 9 | 11 | 0 | 0 | 0 | 0 | 20 | 15 | Poor | Fair | Protected | Preservation | N/A | | 6313719.251 | 1980235.998 |
| 516 | *Quercus agrifolia* | Coast live oak | 1 | 11.0 | 11 | 0 | 0 | 0 | 0 | 0 | 30 | 20 | Fair | Poor | Protected | Preservation | N/A | | 6313709.844 | 1980247.646 |
| 517 | *Quercus agrifolia* | Coast live oak | 2 | 17.7 | 12 | 13 | 0 | 0 | 0 | 0 | 30 | 25 | Fair | Fair | Protected | Preservation | N/A | | 6313716.226 | 1980251.904 |
| 518 | *Quercus agrifolia* | Coast live oak | 1 | 7.0 | 7 | 0 | 0 | 0 | 0 | 0 | 15 | 10 | Fair | Fair | Mature | Encroachment - Bear Valley Parkway | 1 | | 6313691.593 | 1980109.89 |
| 519 | *Quercus agrifolia* | Coast live oak | 1 | 7.0 | 7 | 0 | 0 | 0 | 0 | 0 | 15 | 10 | Fair | Fair | Mature | Encroachment - Bear Valley Parkway | 1 | | 6313691.791 | 1980108.802 |
| 520 | *Quercus agrifolia* | Coast live oak | 5 | 38.8 | 24 | 19 | 18 | 10 | 12 | 0 | 35 | 50 | Fair | Poor | Protected | Indirect - BVP | N/A | | 6313712.939 | 1980080.048 |
| 521 | *Quercus agrifolia* | Coast live oak | 1 | 4.0 | 4 | 0 | 0 | 0 | 0 | 0 | 15 | 10 | Fair | Poor | Mature | Indirect - BVP | N/A | | 6313712.426 | 1980071.601 |
| 522 | *Quercus agrifolia* | Coast live oak | 1 | 4.0 | 4 | 0 | 0 | 0 | 0 | 0 | 15 | 10 | Fair | Poor | Mature | Indirect - BVP | N/A | | 6313718.659 | 1980065.075 |
| 523 | *Quercus agrifolia* | Coast live oak | 1 | 7.0 | 7 | 0 | 0 | 0 | 0 | 0 | 20 | 10 | Fair | Poor | Mature | Indirect - BVP | N/A | | 6313718.969 | 1980061.204 |
| 524 | *Quercus agrifolia* | Coast live oak | 3 | 12.0 | 3 | 6 | 10 | 0 | 0 | 0 | 25 | 20 | Fair | Fair | Protected | Indirect - BVP | N/A | | 6313715.981 | 1980053.29 |
| 525 | *Quercus agrifolia* | Coast live oak | 1 | 4.0 | 4 | 0 | 0 | 0 | 0 | 0 | 15 | 20 | Fair | Fair | Mature | Indirect - BVP | N/A | | 6313724.503 | 1980040.185 |
| 526 | *Quercus agrifolia* | Coast live oak | 2 | 5.7 | 4 | 4 | 0 | 0 | 0 | 0 | 20 | 20 | Fair | Fair | Mature | Indirect - BVP | N/A | | 6313723.083 | 1980035.273 |
| 527 | *Quercus agrifolia* | Coast live oak | 2 | 12.8 | 10 | 8 | 0 | 0 | 0 | 0 | 20 | 25 | Fair | Fair | Protected | Indirect - BVP | N/A | | 6313732.294 | 1980021.018 |

| Appendix B - Tree Information Matrices | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tree No. | Botanical Name | Common Name | Stems | D.B.H (in.)* | Individual Stem Diameter (in.) | | | | | | Height (ft.) | Canopy (ft.) | Health | Structure | Protection Status | Tree Disposition | Mitigation Requirement (No. of trees) | Notes | X | Y |
| | | | | | D1 | D2 | D3 | D4 | D5 | D6 | | | | | | | | | | |
| 528 | *Quercus agrifolia* | Coast live oak | 1 | 33.0 | 33 | 0 | 0 | 0 | 0 | 0 | 35 | 30 | Fair | Fair | Protected | Remove - Bear Valley Parkway | 2 | canopy about 18ft from trunk to road | 6313754.588 | 1979874.624 |
| 529 | *Syagrus romanzoffinum* | Queen palm | 1 | 8.0 | 8 | 0 | 0 | 0 | 0 | 0 | 20 | 15 | Good | Good | Mature | Remove - Bear Valley Parkway | 1 | | 6313757.171 | 1979939.609 |
| 530 | *Juniperus chinensis* | Chinese juniper | 2 | 11.7 | 10 | 6 | 0 | 0 | 0 | 0 | 25 | 15 | Fair | Fair | Mature | Remove - Bear Valley Parkway | 1 | | 6313823.974 | 1979596.884 |
| 531 | *Washingtonia robusta* | Mexican fan palm | 1 | 14.0 | 14 | 0 | 0 | 0 | 0 | 0 | 30 | 10 | Good | Good | Mature | Remove - Bear Valley Parkway | 1 | | 6313793.057 | 1979644.578 |
| 532 | *Washingtonia robusta* | Mexican fan palm | 1 | 14.0 | 14 | 0 | 0 | 0 | 0 | 0 | 30 | 10 | Good | Good | Mature | Remove - Bear Valley Parkway | 1 | | 6313792.026 | 1979652.431 |
| 533 | *Jacaranda mimiosifolia* | Jacaranda | 1 | 10.0 | 10 | 0 | 0 | 0 | 0 | 0 | 40 | 30 | Fair | Fair | Mature | Remove - Bear Valley Parkway | 1 | | 6313836.891 | 1979481.289 |
| 534 | *Washingtonia robusta* | Mexican fan palm | 1 | 15.0 | 15 | 0 | 0 | 0 | 0 | 0 | 40 | 15 | Good | Good | Mature | Remove - Bear Valley Parkway | 1 | | 6313847.494 | 1979433.26 |
| 535 | *Syagrus romanzoffinum* | Queen palm | 1 | 9.0 | 9 | 0 | 0 | 0 | 0 | 0 | 20 | 15 | Fair | Fair | Mature | Remove - Bear Valley Parkway | 1 | | 6313843.172 | 1979439.447 |
| 536 | *Syagrus romanzoffinum* | Queen palm | 1 | 8.0 | 8 | 0 | 0 | 0 | 0 | 0 | 15 | 15 | Fair | Fair | Mature | Remove - Bear Valley Parkway | 1 | | 6313846.678 | 1979445.464 |
| 537 | *Quercus agrifolia* | Coast live oak | 1 | 26.0 | 26 | 0 | 0 | 0 | 0 | 0 | 45 | 35 | Fair | Fair | Protected | Remove - Bear Valley Parkway | 2 | | 6313856.815 | 1979340.071 |
| 538 | *Grevillea robusta* | Silk oak | 1 | 32.0 | 32 | 0 | 0 | 0 | 0 | 0 | 30 | 30 | Fair | Poor | Mature | Remove - Bear Valley Parkway | 1 | | 6313857.337 | 1979337.475 |
| 539 | *Jacaranda mimiosifolia* | Jacaranda | 1 | 11.0 | 11 | 0 | 0 | 0 | 0 | 0 | 40 | 25 | Fair | Fair | Mature | Remove - Bear Valley Parkway | 1 | | 6313851.708 | 1979286.652 |
| 540 | *Schinus terebinthifolius* | Brazillian pepper | 1 | 10.0 | 10 | 0 | 0 | 0 | 0 | 0 | 30 | 25 | Fair | Poor | Mature | Remove - Bear Valley Parkway | 1 | | 6313865.619 | 1979176.554 |
| 541 | *Fraxinus* sp. | Ash tree | 1 | 16.0 | 16 | 0 | 0 | 0 | 0 | 0 | 45 | 30 | Fair | Fair | Mature | Remove - Bear Valley Parkway | 1 | | 6313882.012 | 1978953.301 |
| 542 | *Quercus agrifolia* | Coast live oak | 3 | 5.2 | 3 | 3 | 3 | 0 | 0 | 0 | 15 | 10 | Fair | Poor | Mature | Remove - Bear Valley Parkway | 1 | | 6313951.611 | 1979100.584 |
| 543 | *Quercus agrifolia* | Coast live oak | 5 | 5.5 | 3 | 3 | 2 | 2 | 2 | 0 | 15 | 10 | Fair | Poor | Mature | Remove - Bear Valley Parkway | 1 | | 6313937.017 | 1979214.984 |
| 544 | *Quercus agrifolia* | Coast live oak | 6 | 2.4 | 1 | 1 | 1 | 1 | 1 | 1 | 15 | 10 | Fair | Poor | Mature | Remove - Bear Valley Parkway | 1 | | 6313937.462 | 1979231.683 |

| Appendix B - Tree Information Matrices | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tree No. | Botanical Name | Common Name | Stems | D.B.H (in.)* | Individual Stem Diameter (in.) | | | | | | Height (ft.) | Canopy (ft.) | Health | Structure | Protection Status | Tree Disposition | Mitigation Requirement (No. of trees) | Notes | X | Y |
| | | | | | D1 | D2 | D3 | D4 | D5 | D6 | | | | | | | | | | |
| 545 | *Quercus agrifolia* | Coast live oak | 4 | 3.9 | 2 | 3 | 1 | 1 | 0 | 0 | 15 | 10 | Fair | Poor | Mature | Remove - Bear Valley Parkway | 1 | | 6313954.229 | 1979098.198 |

# APPENDIX C

*Tree Impacts*

DUDEK

SOURCE: World Imagery, SANGIS

**Appendix C**

**Tree Impacts**

7833

2016

Bear Valley Parkway Widening Project - Arborist Report

Path: Z:\Projects\7833\01\MAPDOC\MAPS\Tree\BVPWideningAppendix_C_Tree_Locations.mxd

# APPENDIX D

*Tree Protection Measures*

*The following sections are included as general guidelines for tree protection from construction impacts. The measures presented should be monitored by arborists and enforced by contractors and developers for maximum benefit to the trees.*

## Tree Protection Measures Prior to Construction

Prior to any grading activity, preserved trees that fall within 500 feet of construction activity shall be protected by fencing and signage. All contractors shall be made aware of the tree protection measures.

Fencing: A 4-foot high, orange-webbing, polypropylene barricade fence with tree protection signs shall be erected around all trees (or tree groups) to be preserved. The protective fence should be installed ten feet beyond the dripline of the tree. This will delineate the tree protection area and prevent unwanted activity in and around the trees in order to reduce soil compaction in the root zones of the trees and other damage from heavy equipment. The fence webbing shall be secured to 6-foot, heavy gauge t-bar line posts, pounded in the ground a minimum of 18-inches and spaced 8-feet on-center. Fence webbing will be attached to t-bar posts with minimum 14-gage wire fastened to the top, middle and bottom of each post. Tree protection signs should be attached to every fourth post. The contractor shall maintain the fence to keep it upright, taut, and aligned at all times. Fencing shall be removed only after all construction activities are complete.

Pre-Construction Meeting: A pre-construction meeting shall be held between all contractors (including grading, tree removal/pruning, builders, etc.) and the arborist. The arborist will instruct the contractors on tree protection practices and answer any questions. All equipment operators and spotters, assistants, or those directing operators from the ground, shall provide written acknowledgement of their receiving tree protection training. This training shall include information on the location and marking of protected trees, the necessity of preventing damage, and the discussion of work practices that will accomplish such.

## Protection and Maintenance During Construction

Once construction activities have begun the following measures shall be adhered to:

Equipment Operation and Storage: Avoid heavy equipment operation around the trees. Operating heavy machinery around the root zones of trees will increase soil compaction, which decreases soil aeration and subsequently reduces water penetration in the soil. All heavy equipment and vehicles should, at minimum, stay out of the fenced tree protection zone, unless where specifically approved in writing and under the supervision of a Certified Arborist.

Storage and Disposal: Do not store or discard any supply or material, including paint, lumber, concrete overflow, etc. within the protection zone. Remove all foreign debris within the protection zone; it is important to leave the duff, mulch, chips, and leaves around the retained trees for water retention and nutrients. Avoid draining or leakage of equipment fluids near retained trees. Fluids such as: gasoline, diesel, oils, hydraulics, brake and transmission fluids, paint, paint thinners, and glycol (anti-freeze) should be disposed of properly. Keep equipment parked at least 50 feet away from retained trees to avoid the possibility of leakage of equipment fluids into the soil. The effect of toxic equipment fluids on the retained trees could lead to decline and death.

Grade Changes: Grade changes, including adding fill, are not permitted within the tree protection zone, without special written authorization and under supervision by a Certified Arborist. Lowering

the grade within this area will necessitate cutting main support and feeder roots, jeopardizing the health and structural integrity of the tree(s). Adding soil, even temporarily, on top of the existing grade will compact the soil further, and decrease both water and air availability to the trees' roots.

Moving Construction Materials: Care will be taken when moving equipment or supplies near the trees, especially overhead. Avoid damaging the tree(s) when transporting or moving construction materials and working around the tree (even outside of the fenced tree protection zone). Above ground tree parts that could be damaged (e.g., low limbs, trunks) should be flagged with red ribbon. If contact with the tree crown is unavoidable, prune the conflicting branch(es) using ISA standards.

Root Pruning: Except where specifically approved in writing, all trenching shall be outside of the fenced protection zone. Roots primarily extend in a horizontal direction forming a support base to the tree similar to the base of a wineglass. Where trenching is necessary in areas that contain tree roots, prune the roots using a Dosko root pruner or equivalent. All cuts should be clean and sharp, to minimize ripping, tearing, and fracturing of the root system. The trench should be made no deeper than necessary.

Irrigation: Trees that have been substantially root pruned (30% or more of their root zone) will require irrigation for the first twelve months. The first irrigation should be within 48 hours of root pruning. They should be deep watered every two to four weeks during the summer and once a month during the winter (adjust accordingly with rainfall). One irrigation cycle should thoroughly soak the root zones of the trees to a depth of 3 feet. The soil should dry out between watering; avoid keeping a consistently wet soil. Designate one person to be responsible for irrigating (deep watering) the trees. Check soil moisture with a soil probe before irrigating. Irrigation is best accomplished by installing a temporary above ground micro-spray system that will distribute water slowly (to avoid runoff) and evenly throughout the fenced protection zone ***but never soaking the area located within 6- feet of the tree trunk, especially during warmer months***.

Pruning: Do not prune any of the trees until all construction is completed. This will help protect the tree canopies from damage. All pruning shall be completed under the direction of an ISA Certified Arborist and using ISA guidelines. Only dead wood shall be removed from tree canopies.

Washing: During construction in summer and autumn months, wash foliage of trees adjacent to the construction sites with a strong water stream every two weeks in early hours before 10:00 a.m. to control mite and insect populations.

Inspection: An ISA Certified Arborist shall inspect the impacted preserved trees on a monthly basis during construction. A report comparing tree health and condition to the original, pre-construction baseline shall be submitted following each inspection. Photographs of representative trees are to be included in the report on a minimum annual basis.

## Maintenance After Construction

Once construction is complete the fencing may be removed and the following measures performed to sustain and enhance the vigor of the preserved trees.

Mulch: Provide a 4-inch mulch layer under the canopy of trees. Mulch should include clean, organic mulch that will provide long-term soil conditioning, soil moisture retention, and soil temperature control.

Pruning: The trees will not require regular pruning. Pruning should *only* be done to maintain clearance and remove broken, dead or diseased branches. Pruning shall only take place following a

recommendation by an ISA Certified Arborist and performed under the supervision of an ISA Certified Arborist. No more than 15% of the canopy shall be removed at any one time. All pruning shall conform to International Society of Arboriculture standards.

Watering: The natural trees that are not disturbed should not require regular irrigation, other than the twelve months following substantial root pruning. However, soil probing will be necessary to accurately monitor moisture levels. Especially in years with low winter rainfall, supplemental irrigation for the trees that sustained root pruning and any newly planted trees may be necessary. The trees should be irrigated *only* during the winter and spring months.

Watering Adjacent Plant Material: All plants near the trees shall be compatible with water requirements of said trees. The surrounding plants should be watered infrequently with deep soaks and allowed to dry out in-between, rather than frequent light irrigation. The soil shall not be allowed to become saturated or stay continually wet. Irrigation spray shall not hit the trunk of any tree. A 60-inch dry-zone shall be maintained around all tree trunks. An above ground micro-spray irrigation system is recommended over typical underground pop-up sprays.

Washing: Periodic washing of the foliage is recommended during construction but no more than once every two weeks. Washing should include the upper and lower leaf surfaces and the tree bark. This should continue beyond the construction period at a less frequent rate with a high-powered hose only in the early morning hours. Washing will help control dirt/dust buildup that can lead to mite and insect infestations.

Spraying: If the trees are maintained in a healthy state, regular spraying for insect or disease control should not be necessary. If a problem does develop, an ISA Certified Arborist should be consulted; the trees may require application of insecticides to prevent the intrusion of bark-boring beetles and other invading pests. All chemical spraying should be performed by a licensed applicator under the direction of a licensed pest control advisor.

Inspection: All trees that were impacted during construction within the tree protection zone should be monitored by an ISA Certified Arborist for the first five years after construction completion. The Arborist shall submit an annual report, photograph each tree and compare tree health and condition to the original, pre-construction baseline.

# APPENDIX E

*Potential Planting Locations*

DUDEK

7833

2016

SOURCE: World Imagery, SANGIS

**Appendix E**

**Potential Planting Locations**

Bear Valley Parkway Widening Project - Arborist Report

Path: Z:\Projects\7833\1\MAPDOC\MAPS\Tree\BVP-Widening\Appendix_E_Tree_Locations.mxd

# Appendix F Cultural Resources Survey and Evaluation of Built Environment for the Bear Valley Parkway Development (April 2016)

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# Cultural Resources Survey and Evaluation of Built Environment for the Bear Valley Parkway Development, Escondido, California

**FINAL VERSION**
**April 2016**

*Prepared for:*

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Environmental Services
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**ASM Project Number 26020**

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# Cultural Resources Survey and Evaluation of Built Environment for the Bear Valley Parkway Development, Escondido, California

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# TABLE OF CONTENTS

**Chapter** **Page**

**MANAGEMENT SUMMARY** ..... **iv**

**1. INTRODUCTION** ..... **1**

**2. SETTING AND BACKGROUND** ..... **5**

MODERN CONDITIONS ..... 5
GEOGRAPHY ..... 5
GEOLOGY AND SOILS ..... 5
BIOLOGY ..... 5
CULTURAL BACKGROUND ..... 5
Prehistoric Archaeology ..... 5
Ethnographic Evidence ..... 8
History ..... 9
RECORDS SEARCH RESULTS ..... 12
Previous Studies ..... 12
Previously Record Sites ..... 13
NATIVE AMERICAN CORRESPONDENCE ..... 14

**3. RESEARCH DESIGN AND METHODS** ..... **17**

RESEARCH DESIGN FOR PEDESTRIAN SURVEY ..... 17
PEDESTRIAN SURVEY FIELD METHODS ..... 17
ARCHITECTURAL HISTORY SURVEY FIELD METHODS ..... 18
HISTORIC ARCHIVAL RESEARCH METHODS ..... 18

**4. SURVEY RESULTS** ..... **19**

PEDESTRIAN SURVEY ..... 19
CA-SDI-12920 ..... 19
CA-SDI-21808 ..... 21
Isolate Artifacts ..... 25
RESULTS OF ARCHITECTURAL HISTORY SURVEY ..... 27

**5. FINDINGS** ..... **41**

**6. CRITERIA FOR EVALUATION** ..... **43**

NATIONAL REGISTER OF HISTORIC PLACES CRITERIA ..... 43
Integrity ..... 44
CALIFORNIA REGISTER OF HISTORICAL RESOURCES SIGNIFICANCE CRITERIA ..... 45
CITY OF ESCONDIDO HISTORICAL SITES ..... 45
CALIFORNIA ENVIRONMENTAL QUALITY ACT SIGNIFICANCE CRITERIA ..... 46

**7. RECOMMENDATIONS OF ELIGIBILITY** ..... **49**

**8. CONCLUSION** ..... **51**

**REFERENCES** ..... **53**

# TABLE OF CONTENTS

**Chapter** **Page**

**APPENDICES ..... 61**

APPENDIX A. Confidential SCIC Records Search Results
APPENDIX B. NAHC and Tribal Correspondence
APPENDIX C. Confidential DPR Site Records
APPENDIX D. Confidential Detailed Photo Log
APPENDIX E. Non-Confidential DPR Forms
APPENDIX F. Confidential Sketch Map of Bear Valley-ASM-01

# LIST OF FIGURES

**Page**

Figure 1. Bear Valley Parkway Residential Development Project vicinity map. ..... 1
Figure 2. Bear Valley Parkway Residential Development Project location map. ..... 2
Figure 3. Proposed grading exemption plan for the Bear Valley Parkway Residential Development Project. ..... 3
Figure 4. South facing overview from near the center of the project area showing the spare vegetation across the surveyed landscape. ..... 20
Figure 5. Possible concrete water supply feature for irrigation of former tree grove. ..... 20
Figure 6. Second concrete feature likely associated with pumping water into the grove. ..... 21
Figure 7. Southeast facing overview of newly recorded bedrock milling site, Bear Valley-ASM-01. ..... 22
Figure 8. Sketch map of Bear Valley-ASM-01 showing the site boundary and the location of the bedrock outcrops and milling features associated with the site. *(Figure moved to Confidential Appendix F.)*
Figure 9. Bedrock milling Feature 1 associated with Bear Valley-ASM-01. The milling slick is located just left of the north arrow. ..... 24
Figure 10. Bedrock milling Feature 2 associated with Bear Valley-ASM-01. The milling slick is located to the right of the north arrow. ..... 24
Figure 11. Baked earth likely from the burning of a palm. The dark ring in the center is likely where the trunk of the tree was. ..... 25
Figure 12. Medial handstone fragment isolate found in the southern portion of the project area designated in the field as BV-ASM-I-01. ..... 26
Figure 13. Handstone fragment isolate designated BV-ASM-I-02 found 3 meters from the handstone isolate. ..... 26
Figure 14. Overview from Bear Valley Parkway showing residence and detached garage, facing southeast. ..... 27
Figure 15. Front façade of residence, facing east. ..... 28
Figure 16. Residence, facing northeast. ..... 28
Figure 17. Front porch, facing north. ..... 29
Figure 18. Residence, facing north. ..... 30
Figure 19. Residence rear entry/exit with metal rolled awning, facing northwest. ..... 30
Figure 20. Residence, facing west. ..... 31
Figure 21. Residence with property overview, facing southwest. ..... 31
Figure 22. Residence with property overview, facing southwest. ..... 32
Figure 23. Residence, facing south. ..... 32
Figure 24. Example of exposed roof rafters. ..... 33
Figure 25. Example of original 6:6 sash windows. ..... 34

# LIST OF FIGURES

**Page**

Figure 26. Example of original 1:1 sash windows. ..... 34
Figure 27. Example of vent. ..... 35
Figure 28. Example of interior plaster work at door frame ..... 35
Figure 29. Inset iron board in kitchen. ..... 36
Figure 30. Example of interior bathroom door. ..... 36
Figure 31. Example of hardware. ..... 37
Figure 32. Detached garage, facing southwest. ..... 37
Figure 33. Detached garage, facing northeast. ..... 38
Figure 34. Detached garage, facing southwest. ..... 38
Figure 35. Interior roof wood-framing of detached garage. ..... 39

# LIST OF TABLES

**Page**

Table 1. Cultural Resource Reports Addressing Areas Intersecting Project Area ..... 12
Table 2. Previously Recorded Cultural Resources Within a 1-mi. Radius of the Project Area ..... 13
Table 3. Native American Contacts ..... 14

# MANAGEMENT SUMMARY

ASM Affiliates, Inc. (ASM) was subcontracted by Harris and Associates to conduct a Phase I/Class III archaeological inventory and a historic evaluation of the built environment associated with a proposed residential development project located within the property addressed as 661 Bear Valley Parkway in Escondido, California. This work was conducted to assist in compliance with the California Environmental Quality Act (CEQA), Section 106 of the National Historic Preservation Act (NHPA), and local regulations in the city of Escondido.

The investigation included a records search of the project area and a 1-mi. radius surrounding from the South Coastal Information Center (SCIC) of the California Historical Resources Information System (CHRIS), a search of the Sacred Lands Files at the Native American Heritage Commission (NAHC), an intensive pedestrian survey of the project area, a title search of the project property, archival research, and an evaluation of the significance of the built environment on the property for the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), and the City of Escondido Local Register of Historic Places or as a Local Historic Landmark. The intensive pedestrian survey and the evaluation of the buildings on the property were conducted on March 25, 2016.

During the pedestrian survey, ASM archaeologists identified one prehistoric site not previously recorded, consisting of two separate milling features, each with one milling slick. A DPR form recording the site attributes was submitted to the SCIC, and the site has been assigned the trinomial CA-SDI-21808. Two additional ground stone fragments were located approximately 80 m southwest of the newly recorded site and were recorded as an isolate find. The previously recorded historic site SDI-12920 that intersects the western boundary of the project area was not re-located due to increased vegetation, but an inspection of the site boundary as currently drawn in the GIS data from the SCIC suggests that the site is drawn much larger than the actual extent of the site.

ASM historians identified potentially historic buildings within the project area that include a residence and detached garage as well as associated irrigation features. The property had been used for growing citrus and avocados since 1938 and the buildings were constructed later, in 1946. After evaluation of these building, ASM recommends that they are not eligible for the NRHP, CRHR, City of Escondido Local Register of Historic Places, nor as a Local Historic Landmark.

The proposed residential development has the potential to impact the newly recorded bedrock milling site, as it falls within the proposed locations of Lots 28 and 30.

ASM recommends an evaluation of the newly recorded bedrock milling site and archaeological monitoring during grading of the project area in the case of unanticipated subsurface archaeological deposits. All field notes pertaining to the data collected during the current investigation are housed at ASM's Carlsbad office. Site records were submitted to the SCIC.

# 1. INTRODUCTION

ASM Affiliates, Inc. (ASM) was contracted by Harris and Associates to conduct a Phase I/Class III archaeological inventory and a historic evaluation of the built environment associated with a proposed residential development project located within the property addressed as 661 Bear Valley Parkway in Escondido, California. This work was conducted to assist in compliance with the California Environmental Quality Act (CEQA), Section 106 of the National Historic Preservation Act (NHPA), and local regulations in the city of Escondido.

The project area is located in the city of Escondido, San Diego County, California (Figure 1). Figure 2 shows the location of the project area as drawn on the 7.5-minute USGS Escondido quadrangle within an unsectioned portion of Township 12 South, Range 2 West. The proposed project consists of the subdivision of 40.9 acres into 55 residential lots, two private street lots, seven open- space lots, and one recreation lot (Figure 3). Each of the residential lots will contain a minimum area of 10,000 ft.$^2$. Private open space will occupy 19.47 acres of the 40.9 acre project area, and will include any environmental mitigation and buffer areas related to upland or wetland habitat, as well as two drainage basins to improve the quality of storm water crossing and exiting the site. Access to the project area from Bear Valley Parkway is proposed at the intersection of Zlatibor Ranch Road and Bear Valley Parkway. A secondary, gated emergency access road will be provided between the main access point and the intersection of Encino Drive and Bear Valley Parkway. The project includes a proposed Specific Alignment Plan for an alternative standard for Bear Valley Parkway (classified as a Major Road), as well as frontage improvements to include curb, gutter, sidewalk, parkway, and bike lane. The pedestrian walkway system inside the project area will tie into the public Bear Valley Parkway sidewalk system.

For the archaeological and historical investigations presented in this report, Mark Becker served as Project Manager. James Daniels served as the Principal Investigator. Shannon Davis served as architectural historian, and Sarah Stringer-Bowsher served as historian. Arthur Ramcharan served as archaeological field technician, and Shelly Nelson served as the Native American monitor.

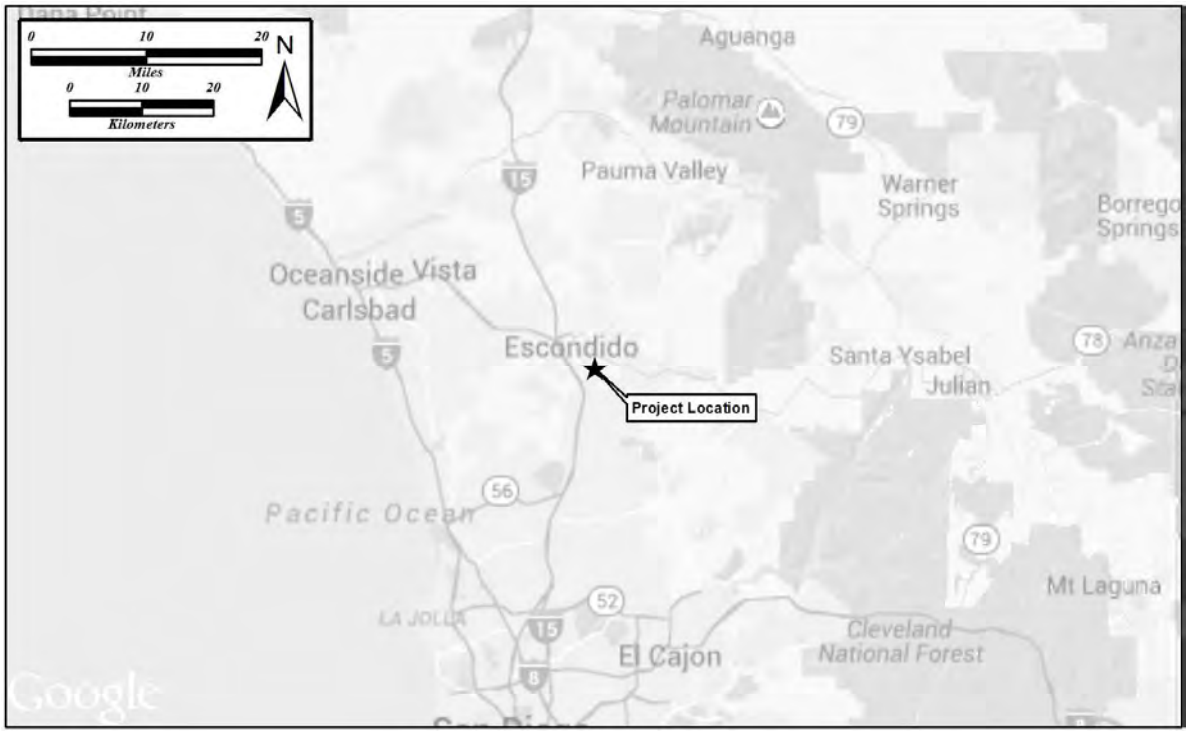


Figure 1. Bear Valley Parkway Residential Development Project vicinity map.

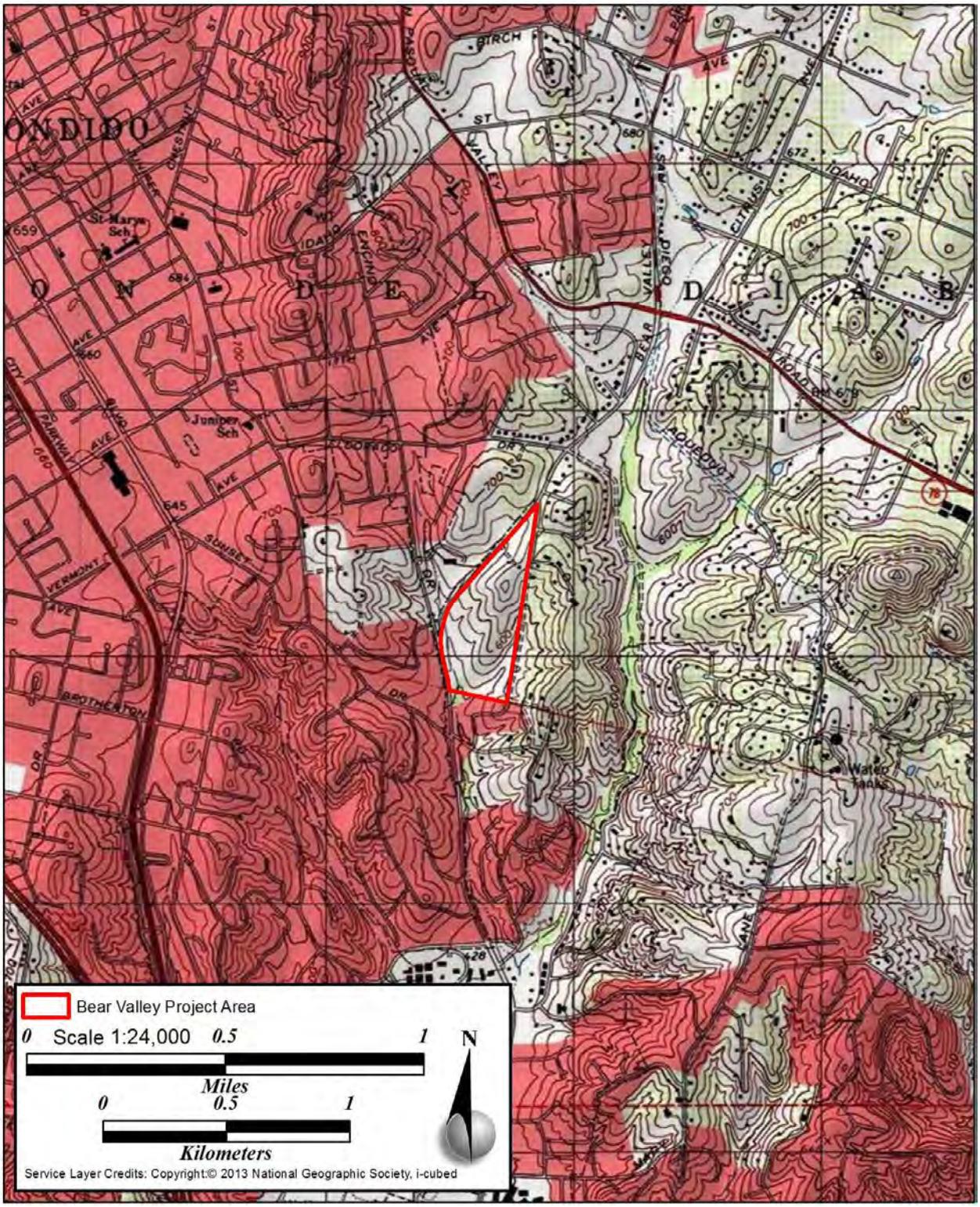


Figure 2. Bear Valley Parkway Residential Development Project location map.

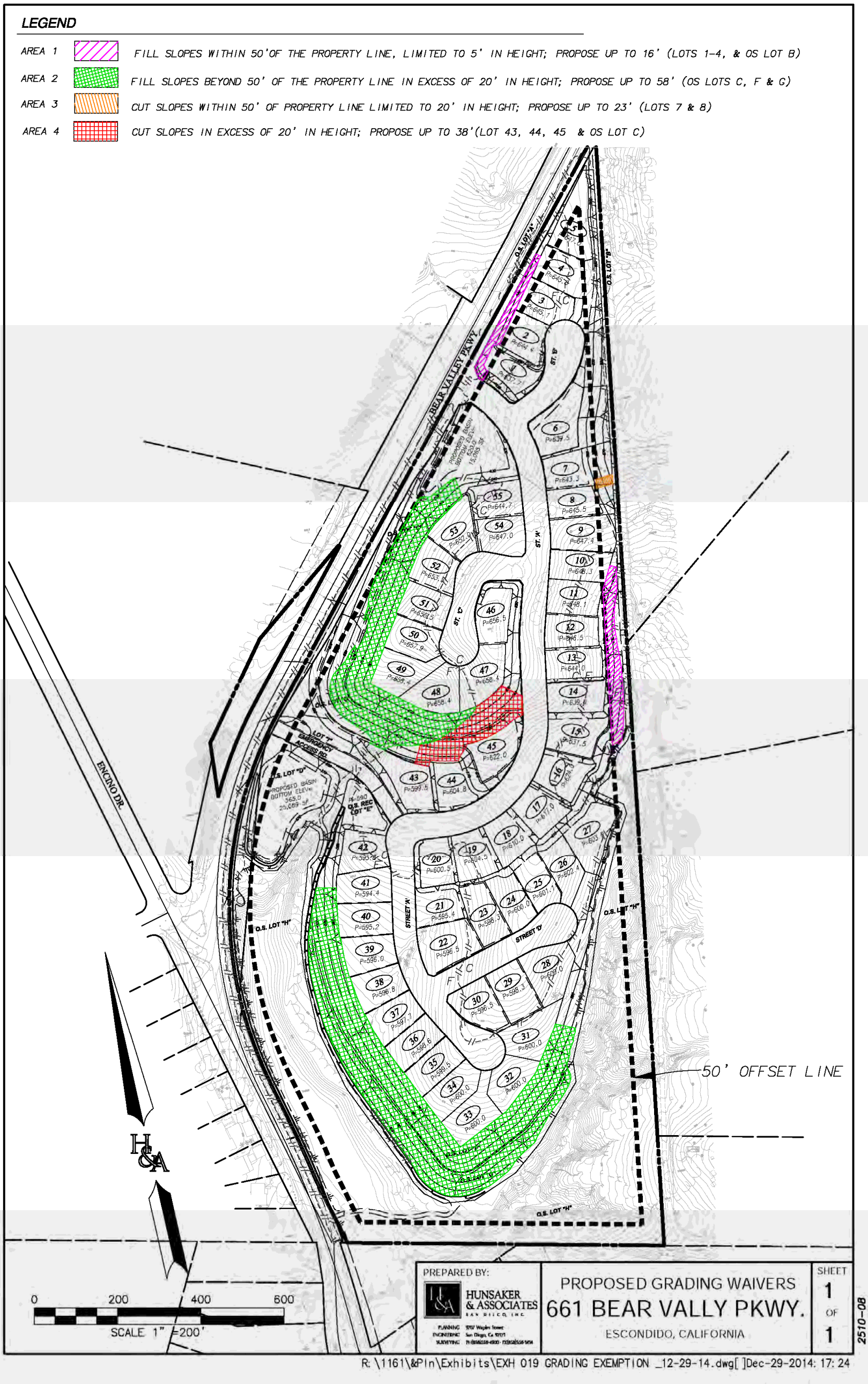


Figure 3. Proposed grading exemption plan for the Bear Valley Parkway Residential Development Project.

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# 2. SETTING AND BACKGROUND

This section provides a brief summary of the current conditions of the project area and a general description of both the natural and cultural environments in which archaeological resources were created and used in the surrounding project vicinity. The results of the records search conducted are also discussed, along with the results of correspondence with the Native American Heritage Commission (NAHC).

## MODERN CONDITIONS

The existing conditions of the project area consist of highly disturbed soils. The project area was mined for gold in the early 1900s and then subsequently used for agricultural grove purposes before the use was abandoned approximately 20 years ago. There is one existing residential structure on the site that would be demolished to accommodate the project.

## GEOGRAPHY

The 40.9-acre project area is located in the lower chaparral biotic zone in the Peninsular Ranges of southern California. Elevations in the project area range from approximately 525 ft. (~160 m) to 675 ft. (~206 m) above sea level, and the area is situated between two drainages that run north-south along Bear Valley Parkway and Choya Canyon Road. The project vicinity is bounded to the west by the city of Escondido, with Lake Hodges to the south and the San Dieguito River to the East.

## GEOLOGY AND SOILS

The project area lies within the southern California Peninsular Ranges. The geology of the area consists of plutonic rocks, consisting of Mesozoic granite, adamellite granodiorite, tonalite, and diorite (Rogers 1965). The soils in the area consist of Fallbrook sandy loam, 9 to 15 percent slopes, eroded (FaD2); Fallbrook sandy loam, 15 to 30 percent slopes, eroded (FaE2); Ramona sandy loam, 2 to 5 percent slopes (RaB); Ramona sandy loam, 9 to 15 percent slopes, eroded (RaD2); and Steep gullied land (StG) (USDA 2013).

## BIOLOGY

The project area is within the ecological section of southern California mountains and valleys and more specifically within the western granitic foothills subsection (M262Bn). The predominant plant communities in this region consist of mixed chaparral shrublands, coastal sagebrush series, coast live oak series, and chamise series. The fauna in the mammalian class include or once included mule deer, pronghorn, bighorn sheep, coyote, bobcat, mountain lion, ground squirrel and kangaroo rat. Birds in the region include hawks, eagles, owls, quail, mourning dove, mockingbird, jays, gulls, herons, crows, finches and sparrows (Digital-Desert n.d.).

## CULTURAL BACKGROUND

### Prehistoric Archaeology

Archaeological investigations in southern California have documented a diverse range of human adaptations extending from the late Pleistocene up to the time of European contact (e.g., Erlandson and Colten 1991; Erlandson and Glassow 1997; Erlandson and Jones 2002; Jones and Klar 2007; Moratto 1984). To describe and discuss this diversity, local investigators have proposed a variety of different chronologies and conceptual categories (periods, horizons, stages, phases, traditions, cultures, peoples, industries, complexes, and patterns), often with confusingly overlapping or vague terminology.

The prehistory of San Diego County is most frequently divided chronologically into three or four major periods. An Early Man stage, perhaps dating back tens of thousands of years, has been proposed. More generally accepted divisions include a Terminal Pleistocene/Early Holocene period (ca. 12,000-6000 B.C.) (Paleo-Indian stage; Clovis and San Dieguito patterns), a Middle/Late Holocene period (ca. 6000 B.C.-A.D. 800) (Archaic stage; La Jolla, Millingstone, Encinitas, and Pauma patterns), and a Late Prehistoric period (ca. A.D. 800-1769) (Archaic stage; San Luis Rey, Palomar, and Peninsular patterns).

### Hypothetical Early Man (pre-ca. 12,000 B.C.)

The antiquity of human occupation in the New World has been the subject of considerable interest and debate for more than a century. At present, the most widely accepted model is that humans first entered portions of the western hemisphere lying to the south of Alaska between about 15,000 and 12,000 B.C., either along the Pacific coastline or through an ice-free corridor between the retreating Cordilleran and Laurentide segments of the continental glacier in Canada, or along both routes. While there is no generally accepted evidence of human occupation in coastal southern California prior to about 11,000 B.C., ages estimated at 48,000 years and even earlier sometimes have been reported (e.g., Bada et al. 1974; Carter 1980). However, despite intense interest and the long history of research, no widely accepted evidence of human occupation of North America dating prior to about 12,000 B.C. has emerged.

Local claims for Early Man discoveries have generally been based either on the apparent crudeness of the lithic assemblages that were encountered or on the finds' apparent Pleistocene geological contexts (Carter 1957, 1980; Minshall 1976, 1989; Reeves et al. 1986). The amino acid racemization technique was used in the 1970s and early 1980s to assign Pleistocene ages to coastal southern California sites (Bada et al. 1974), but the technique's findings have been discredited by more recent accelerator mass spectrometry (AMS) radiocarbon dating (Taylor et al. 1985).

### Terminal Pleistocene/Early Holocene Period (ca. 12,000-6000 B.C.)

The earliest chronologically distinctive archaeological pattern recognized in most of North America is the Clovis pattern. Dated to around 11,500 B.C., Clovis assemblages are distinguished by fluted projectile points and other large bifaces, as well as extinct large mammal remains. At least three isolated fluted points have been reported within San Diego County, but their occurrence is very sparse and their dating and contexts are uncertain (Davis and Shutler 1969; Kline and Kline 2007; Rondeau et al. 2007).

The most widely recognized archaeological pattern within this period is termed San Dieguito and has been dated from at least as early as 8500 B.C. to perhaps around 6000 B.C. (Rogers 1966; True and Bouey 1990; Warren 1966; Warren et al. 2008). The San Dieguito pattern was originally defined near the central coast of San Diego County, and its presence has been reported through extensive areas to the east, but few traces are recognized on or near the northern coast of San Diego County. Proposed characteristics to distinguish San Dieguito flaked lithic assemblages include large projectile points (Lake Mojave, Silver Lake, and other, less diagnostic forms), bifaces, crescents, scraper planes, scrapers, hammers, and choppers. The San Dieguito technology involved well-controlled percussion flaking and some pressure flaking.

Malcolm Rogers (1966) suggested that three successive phases of the San Dieguito pattern (San Dieguito I, II, and III) could be distinguished in southern California, based on evolving aspects of lithic technology. However, subsequent investigators have generally not been able to confirm such changes, and the phases are not now generally accepted.

A key issue has concerned ground stone, which was originally suggested as having been absent from San Dieguito components but has subsequently been recognized as occurring infrequently within them. It was initially suggested that San Dieguito components, like other Paleo-Indian manifestations, represented the products of highly mobile groups that were organized as small bands and focused on the hunting of large game. However, in the absence of supporting faunal evidence, this interpretation has increasingly been

called into question, and it has been suggested that the San Dieguito pattern represented a more generalized, Archaic-stage lifeway, rather than a true Paleo-Indian adaptation.

A vigorous debate has continued for several decades concerning the relationship between the San Dieguito pattern and the La Jolla pattern that succeeded it and that may have also been contemporaneous with or even antecedent to it (e.g., Gallegos 1987; Warren et al. 2008). The initial view was that San Dieguito and La Jolla represented the products of distinct ethnic groups and/or cultural traditions (e.g., Rogers 1945; Warren 1967, 1968). However, as early Holocene radiocarbon dates have been obtained for site components with apparent La Jolla characteristics (shell middens, milling tools, and simple cobble-based flaked lithic technology), an alternative interpretation has gained some favor: that the San Dieguito pattern represented a functional pose related in particular to the production of bifaces, and that it represents activities by same people who were responsible for the La Jolla pattern (e.g., Bull 1987; Hanna 1983).

### Middle/Late Holocene Period (ca. 6000 B.C.-A.D. 800)

Archaeological evidence from this period in the San Diego region has been characterized as belonging to the Archaic stage, Millingstone horizon, Encinitas tradition, or La Jolla and Pauma patterns (Moratto 1984; Rogers 1945; Sutton and Gardner 2010; True 1958, 1980; True and Beemer 1982; True and Pankey 1985; Wallace 1955; Warren 1968; Warren et al. 1961). Adaptations during this period apparently emphasized gathering, in particular the harvesting of hard plant seeds, as well as small-game hunting. Distinctive characteristics of the La Jolla pattern include extensive shell middens, portable ground stone metates and manos, crudely flaked cobble tools, occasional large expanding-stemmed projectile points (Pinto and Elko forms), and flexed human burials. The inland Pauma pattern has variously been interpreted as a separate culture that was broadly similar to the contemporaneous La Jolla pattern on the coast or as a different functional pose of the same culture.

Investigators have called attention to the apparent stability and conservatism of the La Jolla pattern throughout this long period, as contrasted with less conservative patterns observed elsewhere in coastal southern California (Hale 2009; Sutton 2010; Sutton and Gardner 2010; Warren 1968). However, distinct chronological phases within the pattern have also been suggested, based on changes in the flaked lithic and ground stone technologies, the shellfish species targeted, and burial practices (Harding 1951; Moriarty 1966; Rogers 1945; Shumway et al. 1961; Sutton and Gardner 2010; Warren 1964; Warren et al. 2008).

### Late Prehistoric Period (ca. A.D. 800-1769)

A Late Prehistoric period in San Diego County has been distinguished, primarily on the basis of three major innovations: the use of small projectile points (Desert Side-notched, Cottonwood triangular, and Dos Cabezas forms), associated with the adoption of the bow and arrow in place of the atlatl as a primary hunting tool and weapon; brownware pottery, presumably supplementing the continued use of basketry and other containers; and the practice of human cremation in place of inhumation. Uncertainty remains concerning the exact timing of these innovations, and whether they appeared simultaneously or sequentially (e.g., Griset 1996; Yohe 1992).

Labels applied to the archaeological manifestations of this period include San Luis Rey, Palomar, and Peninsular (Meighan 1954; Sutton 2011; True 1970; True et al. 1974, 1991; Waugh 1986). These remains have generally been associated with the ethnohistorically known Luiseño, Cupeño, and Cahuilla and have been seen as perhaps marking the initial local appearance of those groups in a migration from the north. Traits characterizing the Late Prehistoric period include greater reliance on acorns as an abundant but labor-expensive food resource, a greater emphasis on hunting of both large and small game (particularly deer and rabbits), a greater amount of interregional exchange (seen notably in more use of obsidian), more elaboration of nonutilitarian culture (manifested in more frequent use of shell beads, decorated pottery and rock art), and possibly denser regional populations. Settlement may have become more sedentary during this period, as compared with the preceding period.

## Ethnographic Evidence

In ethnohistoric times, northern San Diego County was occupied by speakers of the closely related Luiseño, Cupeño, and Cahuilla languages. Luiseño territory extended from Agua Hedionda Lagoon, Escondido, and Lake Henshaw northward into southern Orange and Riverside counties. The Cupeño occupied a relatively small territory in the vicinity of Warner's Ranch. The extensive Cahuilla lands extended east from Luiseño territory into the Colorado Desert and north as far as San Gorgonio Pass. To the south lay the territory of the unrelated Kumeyaay (Diegueño, Ipai) (Heizer 1978; Kroeber 1925).

Linguistic evidence links Luiseño, Cupeño, and Cahuilla with the Uto-Aztecan family of languages (e.g., Golla 2007; Laylander 2010). A hierarchy of relationships within that family likely mirror a sequence of separations reflecting territorial expansions or migrations, leading the linguistic ancestors of the Luiseño, Cupeño, and Cahuilla from a still-debated Uto-Aztecan homeland to a northern Uto-Aztecan base somewhere in western North America and ultimately south to their ethnohistoric homes. Splits within the ancestral family included the differentiation of Takic (also termed Southern California Shoshonean) (ca. 1000 B.C.?), the separation of Luiseño from Cahuilla-Cupeño (ca. A.D. 1?), and the separation of Cahuilla and Cupeño (ca. A.D. 1000?).

While Luiseño, Cupeño, and Cahuilla cultural patterns, as recorded subsequent to European contact, cannot necessarily be equated with Late Prehistoric patterns, at a minimum they provide indispensable clues to cultural elements that would be difficult or impossible to extract unaided from the archaeological record alone. A few important ethnohistoric accounts are available from Franciscan missionaries and others (Geiger and Meighan 1976; Harrington 1933, 1934; Henshaw 1972; Laylander 2000). Many accounts by ethnographers, primarily recorded during the early and middle twentieth century, are available (Bean 1972, 1978; Bean and Shipek 1978; Bean and Smith 1978; Drucker 1937; Gifford 1918; Hicks 1963; Hooper 1920; Kroeber 1908, 1925; Laylander 2004; Sparkman 1908; Strong 1929; White 1953, 1957, 1963).

The Luiseño, Cupeño, and Cahuilla inhabited a diverse environment that included littoral, valley, foothill, mountain, and desert resource zones. Because of the early incorporation of coastal Luiseño into the mission system, most of the available twentieth-century ethnographic information relates to inland groups that lived in the Peninsular Range and the Colorado Desert. Acorns were a key resource for inland groups, but a wide range of other mineral, plant, and animal resources were exploited (Bean and Saubel 1972; Sparkman 1908). Some degree of residential mobility seems to have been practiced; one classic fission/fusion pattern involved annual seasonal shifts between consolidated winter and spring settlements in the upper San Luis Rey River valley and smaller, dispersed groups living on Palomar Mountain in the summer and fall (Oxendine 1983). The fundamental Luiseño social units above the family were patrilineal, patrilocal clans, the latter ideally coinciding with the winter-spring village communities. The Cahuilla and Cupeño also had patrilineal Coyote and Wildcat moieties, serving primarily to impose exogamous marriage and to conduct ceremonies. Hereditary leaders performed ceremonial, advisory, and diplomatic functions, rather than judicial, redistributive, or military ones. There seems to have been no national level of political unity among the Luiseño or Cahuilla, and perhaps little sense of commonality within the language group.

Luiseño, Cahuilla, and Cupeño material culture was effective, but it was not highly elaborated. Structures included houses with excavated floors, ramadas, sweathouses, ceremonial enclosures, and acorn granaries. Hunting equipment included bows and arrows, curved throwing sticks, nets, and snares. Processing and storage equipment included a variety of flaked stone tools, milling implements, ceramic vessels, and baskets.

Nonutilitarian culture was not neglected. A range of community ceremonies were performed, with particular emphases placed on making individuals' coming of age and on death and mourning. Oral

literature included, in particular, an elaborate creation myth that was shared with the Takic-speaking Serrano as well as with Yuman speakers (Kroeber 1925; Laylander 2001; Waterman 1909).

## History

European exploration of the San Diego area began in 1542 with the arrival of a maritime expedition under Juan Rodriguez Cabrillo, followed by a similar reconnaissance in 1602 by Sebastián Vizcaíno (Pourade 1960). It is possible that additional brief, unrecorded contacts with the crews of the Manila galleons may have occurred during the following century and a half, and that other influences, such as an awareness of alien technologies or the introduction of diseases, may have reached the region overland from earlier outposts of the Spanish empire in Baja California or Sonora.

The historic period proper did not begin until 1769, when multiple seaborne and overland expeditions under the leadership of the soldier Gaspar de Portolá and the Franciscan missionary Junípero Serra reached the region from Baja California and passed northward along the coastal plain to seek Monterey. To the south, a royal presidio and a mission were established that year in San Diego. Additional missions were founded among the Luiseño/Juaneño at San Juan Capistrano in 1776 and San Luis Rey de Francia in 1798. An *asistencia* or satellite mission for San Luis Rey was established at Pala in 1816.

As Spanish attention was consumed by the Napoleonic wars in Europe, California and its government and missions were increasingly left to their own devices. In 1821, Mexico consummated its independence from Spain, and the region became more open to outside visitors and influences (Pourade 1961). The loyalty to Mexico of the European Franciscans was considered to be in doubt, and private secular interests clamored for a greater share of the region's resources. The missions were secularized by act of the Mexican Congress in 1833. Native Americans released from the missions at San Diego, San Luis Rey, and San Juan Capistrano returned to their native villages, moved east to areas lying beyond Mexican control, or sought work on ranchos or in the towns of San Diego and Los Angeles. Numerous large land grants were issued to private owners during the Mexican period, including El Rincon del Diablo, Monserrate, Guejito y Cañada de Palomia, Cuca, Pauma, Valle de San José, and San José del Valle in inland northern San Diego County (Pourade 1963).

The conquest and annexation of California by the United States in the Mexican-American War between 1846 and 1848 ushered in many more changes (Pourade 1963, 1964, 1965, 1967, 1977; Pryde 2004). Faced with debts and difficulties in confirming land grants, many Californio families lost their lands to outsiders. Cultural patterns that were brought by immigrants from the eastern U.S. gradually supplanted old Californio customs. Native American reservations were established at Pala, Mission Reserve, Pauma-Yuima, Los Coyotes, La Jolla Rincon, and San Pasqual (Shipek 1978).

The region experienced cycles of economic and demographic booms and busts, with notable periods of growth in the mid-1880s, during World Wars I and II, and on more sustained basis throughout the postwar decades. Aspects of development included the creation of transportation networks based on port facilities, railroads, highways, and airports; more elaborate systems of water supply and flood control; grazing livestock and growing a changing array of crops; supporting military facilities, including the extensive Camp Pendleton facility established in 1942; limited amounts of manufacturing; and accommodating visitors and retirees. After false starts, San Diego converted itself to a substantial city, and then into a metropolis. Escondido was incorporated as a city in 1888), and unincorporated north county communities include Fallbrook, Bonsall, Valley Center, Pala, and Pauma Valley (Pryde 2004).

### Escondido: Settlement and Growth

Confirmation of rancho boundaries in the late 1860s and early 1870s across the county drew additional settlers as land became officially conveyable. Thereafter, small farming communities were established.

Around 1886, El Rincon del Diablo Rancho, now generally occupied by the city of Escondido, was opened to settlement. By that time, horticulture had already begun around the county, with many of the earliest plantings in fruit trees and grapes. Escondido developed during that boom time as a new citrus-growing community that also developed grapes, hay, and grain, and is credited with planting the first avocado tree in the county (Heilbron 1936:207). By 1890, the city had grown to 541 (U.S. Census Bureau, 1900:439).

While ranching and farming had been important livelihoods in San Diego County, agriculture increasingly became an important economy. Water projects developed across the county in the late nineteenth and early twentieth centuries that made this possible. In Escondido, completion of the Escondido Reservoir (now Lake Wohlford) by the Escondido Mutual Water Company supplied water to the valley and opened up more opportunities for citrus (oranges and lemons) plantings (Fox 2016; Heilbron 1936). Each individual grower processed their own fruit by washing and drying them before taking them to the Escondido depot to ship to consumers in the east. In the early 1900s, growing cooperatives developed in Escondido that were known as the Escondido Citrus Union and the Escondido Fruit Growers Association. By 1916, the number of acres planted with citrus had risen to 600. Just 12 years later, nearly 2,800 acres were devoted to growing citrus. The industry had grown so large that the two cooperatives dissolved and new organizations were formed: Escondido Lemon Association and the Escondido Orange Association. They were local divisions of the San Diego County Exchange and the California Exchange. Lemon production grew from 64,470 in 1911 to over one million boxes in 1941. Orange production had grown from 12,225 boxes in 1918 to 1.4 million boxes in 1943. In the 1920s and 1930s, the citrus industry was the local economic engine, and many people were employed by it or benefitted from it as merchants (Fox 2016; San Diego Directory Company 1938). Escondido transitioned from a rural town of 755 in 1900 to a growing agriculture-based city of 3,421 in 1930, a significant increase of 283 percent (U.S. Census Bureau, 1900:439, 1930: 137).

The avocado industry developed behind the citrus industry with the first cooperative established as the California Avocado Association (later Society) in 1915 (Shepherd and Bender 2001). In San Diego County, the oldest seedling was planted in 1892, just 2 mi. north of Escondido. However, the earliest orchards were planted in Vista in 1915 and 1916 (Popenoe 1927). In the 1920, "Haas" avocadoes were developed as an alternative to the "Fuerte" avocado that had short seasons and erratic production. The California Avocado Exchange (later Calavo Growers of California) was established in 1924 in an effort to standardize the industry and market the products. In 1926, the first carload of avocadoes were shipped to Chicago (Shepherd and Bender 2001). In San Diego County, Vista had planted some of the earliest and largest plantings in the county, but the Escondido the plantings were still young in 1927 (Popenoe 1927). The industry struggled during the 1930s due to root rot, fungus, long-standing low temperatures, and overproduction for a smaller market. Demand for avocadoes increased in the 1940s and thereafter due to larger marketing efforts. Growing avocadoes increasingly became a lucrative business (Shepherd and Bender 2001).

In the 1935, the primary county exports were citrus, poultry, and dairy, with Escondido supplying almost half of the county's exports. By 1936, Escondido led the county in citrus production and was the foremost producer of avocados and citrus for the state. An assured water supply for irrigation and domestic use was pivotal to the area's success (Heilbron 1936). In the post-World War II housing shortage, citrus acreage was increasing replaced with housing. Other industries offered new employment opportunities in Escondido and around San Diego County. By 1958, avocadoes still held strong. San Diego comprised more than half of the avocado acreage in California. Avocado acreage had grown from approximately 7,900 acres in 1936 to 15,000 in 1958. Avocadoes were second to tomatoes in plant crops and fourth, following eggs, tomatoes, and milk (Gustafson 1959). By 1960, over one million people lived in the county, and between 1950 and 1970, bedroom communities such as El Cajon, Escondido, Chula Vista, and Oceanside experienced a tremendous growth rate (between 214 and 833 percent) (Engstrand 2005:166; U.S. Census Bureau 1960). By then, market condition prompted the dissolution of the two citrus organizations (Fox 2016). Yet, avocado production remains an important crop for San Diego County.

## Land Use History of APE

The Escondido Land and Town Company acquired a portion of the Rancho Del Diablo that is the present-day property. In November 1890, the Escondido Land and Town Company granted a portion of that property to John D. Cornell. In February 1891, Cornell deeded that portion to the Escondido Gold Mining Company. The mining company in turn deeded that property to John Becker in December 1898. In March 1904, Escondido Land and Town Company granted another portion of the property to the Cleveland Pacific Mining Company (Kiely 2016).

The Cleveland-Pacific Mining Company's Escondido Mine was located immediately west and north of the APE. It is now underneath a subdivision off Bear Valley Parkway between Encino Drive and El Dorado Drive. According to California Bureau of Mines, the Escondido mine area had been worked by early Spaniards and Mexicans, and sometime around 1868 Americans began working it with *arrastres*. In 1884, the Escondido Town and Land Company purchased the land grant property, and after a number of land ownership changes, the Cleveland Pacific Mining Company acquired it in 1897 and William F. Spieth was named superintendent. Spieth was the company's attorney and operated out of Cleveland, Ohio. By 1908, the Cleveland-Pacific Mining Company had discovered two deposits where rich ore was packaged for shipment. The small stamp mill was erected in June 1908. It operated until 1911 when the company encountered an abundance of pyrite ("fool's gold") and a rising water table that limited the depth of the shaft. At that time, the company used two steam hoists and a five-stamp mill with plates, a Wilfley table, and two 10-ft. tall cyanide tanks (Engineering and Mining Journal 1908a:977, 1908b:1166, 1908c:1311; Hamilton 1915:650-651; Kiely 2016). In 1924, the Escondido mine was sold to B. F. Brough and Associates of Toledo, Ohio, who opened new workings 1,000 ft. to the west with a new shaft. Old mining dumps in the area were reworked (Lorey 2010). In 1926, operations ceased permanently (Lorey 2010). While San Diego County was never one of the most productive counties, Escondido ranked third in the county's production (Lorey 2010). The Escondido Mine and the Oro Mine were the two highest producing mines in Escondido. The Escondido Mine produced 4,000 oz. of gold and 3,500 oz. of silver or approximately more than $2,000,000. Shafts were dynamited in the 1930s for safety (Warth 2006).

According to Burnet F. Wohlford (son of Burnet C. and Mildred Wohlford), the early uses of the APE included some prospecting and exploratory mining south and west of the remaining residence (Wohlford 2016). From February 1920 until 1922, it appears that the ownership of the entire parcel may have been in question. In July 1922, John Becker granted the deed to William F. Spieth. In August 1923, William F. Spieth deeded the property to Lawrence C. Spieth. However, he was also an absentee owner and lived in Ohio (Kiely 2016; United States Census Bureau 1940). A 1928 aerial shows that much of the property was unused at this time (Tax Factor 1928). In 1938, orange and avocado groves were planted in the APE and both permanent and temporary irrigation was installed. A shed had been constructed years earlier (1925). Oranges were produced for the Escondido Orange Association, and avocados were produced for Calavo. It was a private operation and was not one of most productive groves in the area (San Diego County Assessor 1979; Wohlford 2016). Some lemons and grapefruit was also grown on the property (San Diego County Assessor 1979).

In February 1940, Spieth deeded half of the property to Burnet C. Wohlford (Kiely 2016). The extant house and 8- by-12-ft. detached garage was constructed in 1946. The wood-frame house was constructed with stucco and board-and-batten, with double hung windows, a hip roof and gable porch, and composite shingles. A 12-by-55-ft. shed (now demolished) was also constructed. Several pumps were installed on the property (San Diego County Assessor 1979). Burnet C. Wolhford was the son of Alvin Wohlford, who ran the Escondido Mutual Water Company and owned Escondido National Bank. Sometime after Alvin Wohlford died in 1924, Burnet sold his father's bank and put in 125 acres of oranges, lemons, grapefruit, and avocadoes in Escondido (McGrew 1988:207-208). Thereafter, he was well known for his leadership at the water company and for cultivating citrus and avocadoes. Although Burnet C. Wohlford owned half of

the property, he did not live there. Burnet and Mildred lived off Fourth Street in 1937 and moved into his parents' adobe ranch house sometime after his mother passed away in 1944. The two lived there until Burnet passed away in 1979 (Fox 2016; McGrew 1988:208; San Diego Directory Company 1937). The grove manager, Braxton Davis, occupied the house (Wohlford 2016).

In 1953, the entire property (APNs 237-131-01 and 237-131-02) was cultivated with citrus and avocado groves that amounted to approximately 42 acres (San Diego County Assessor 1979; United States Department of Agriculture 1953). The property was continuously used for production until at least 1979 (San Diego County Assessor 1979). Sometime between 1989 and 1995 the trees were removed from the property (United States Department of Agriculture 1947, 1953, 1964, 1967, 1968, 1980, 1989, 1995).

The last title transfer occurred in December 1967, when Spieth and Wolford acquired half of the property from the estate of Lawrence C. Spieth and the other half from Burnet C. and Mildred D. Wohlford (Kiely 2016).

## RECORDS SEARCH RESULTS

A records search for the project area was requested from the South Coastal Information Center (SCIC) of the California Historical Resources Information System (CHRIS) at San Diego State University, on March 21, 2016. The records search area included the entire project area as well as a 1-mi. search radius around the project area. The records search included a search of all relevant site records and prior reports on file with the SCIC, as well as a search of the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), and other local registers, to determine if significant archaeological or historical sites have previously been recorded within or near the project area. The full results of the records search with SCIC is provided in Confidential Appendix A.

### Previous Studies

The records search identified a total of 53 previous cultural resource studies that address areas within the 1-mi. radius of the project area. Four of those reports address areas within the current project area (Table 1).

Table 1. Cultural Resource Reports Addressing Areas Intersecting Project Area

| NADB No. | SHPO ID | Title | Author(s) | Year |
|---|---|---|---|---|
| 1121659 | WADE 87-19 | *Results of an Archaeological Archival and Field Survey of the Bear Valley Parkway/SR-78 General Plan Amendment EIR Project Area San Diego County, California* | Wade, Sue A. | 1987 |
| 1122777 | AFFINIS 93-03 | *Cultural Resources Survey for the Bear Valley Parkway (South) Reconstruction. Activity No. Uj1194, Escondido, San Diego County, California* | Affinis and M. Robbins-Wade, R. Alter | 1993 |
| 1128588 | CITYESC 80-03 | *Draft Environmental Impact Report for Expansion of Wastewater Treatment Facility* | City of Escondido | 1980 |
| 1132109 | DALOPM01 | *The Westfield North County Expansion Offsite Improvements Project, City of Escondido, San Diego County, California* | Dalope, Michelle and Susan Hector | 2008 |

## Previously Record Sites

The records search identified 27 previously recorded sites and isolates within the 1-mi. search radius (Table 2). Just one of those previously recorded sites, SDI-12920, intersects the project area. This site was recorded as a historic-period can scatter with one glass bottle on the east side of Bear Valley Parkway just above the creek that runs along the western boundary of the project area.

Table 2. Previously Recorded Cultural Resources Within a 1-mi. Radius of the Project Area

| Designation | | Site Type | Recorder, Date |
|---|---|---|---|
| Primary Number (P-37-) | Trinomial (CA-SDI-) | | |
| 000563 | 563 | AP2. Lithic scatter | True 1948 |
| 000571 | 571 | AP15. Habitation debris | True 1948 |
| 004659 | 4659 | AP4. Bedrock milling | Hatley and Price 1976 |
| 005340 | 5340 | AP2. Lithic scatter, AP3. Ceramic scatter, AP4. Bedrock milling, AP15. Habitation debris | Chace 1977; James, Collins, and Koolman 1991; Zepeda-Herman 2010 |
| 005426 | 5426 | Isolate core tool | Norwood 1977 |
| 007245 | 7245 | AP4. Bedrock milling | Laylander 1979; Van Horn 1990 |
| 009939 | 9939 | AP4. Bedrock milling | Chace 1984 |
| 010308 | 10308 | AP4. Bedrock milling | Collins 1985 |
| 010309 | 10309 | AP3. Ceramic scatter, AP4. Bedrock milling | Collins 1985 |
| 010310 | 10310 | AP4. Bedrock milling | Collins and Chace 1985 |
| 010311 | 10311 | AP4. Bedrock milling and one proximal biface end | Collins and Chace 1985 |
| 012530 | 12530 | AH15. Standing structures | James, Briggs, and Campbell 1991 |
| 012531 | 12531 | AH4. Trash scatter, AH15. Standing structures | James, Briggs, and Campbell 1991 |
| 012537 | 12537 | AP2. Lithic scatter, AP15. Habitation debris, AH2. Foundation/structure pad | James, Briggs, and Campbell 1991 |
| 012538 | 12538 | AP2. Lithic scatter, AP4. Bedrock milling | James, Briggs, and Mealey 1991 |
| 012539 | 12539 | AH4. Trash scatter | James, Briggs, and Campbell 1991 |
| 012540 | 12540 | AP4. Bedrock milling | James, Briggs, and Mealey 1991 |
| 012541 | 12541 | AP3. Ceramic scatter, AP15. Habitation debris | James, Collins, and Koolman 1991 |
| 012919 | 12919 | AP2. Trash scatter | Robbins-Wade, Pearl, Hyland, and Alter 1992 |
| 012920 | 12920 | AP2. Trash scatter | Robbins-Wade, Pearl, Hyland, and Alter 1992 |
| 024169 | -- | AH16. Water Collection Point | McLean and Michalsky 2001 |
| 025682 | 17081 | AH9. Mine and tailings | Lorey 2004 |
| 025929 | -- | Isolate hammerstone | Robbins-Wade and Sivba 2004 |
| 026765 | -- | HP3. Single family property, HP5. Hotel/motel | Davidson 2005 |
| 026766 | -- | HP5. Hotel/motel | Davidson 2005 |

| Designation | | | |
|---|---|---|---|
| Primary Number (P-37-) | Trinomial (CA-SDI-) | Site Type | Recorder, Date |
| 026767 | -- | HP3. Single family property, HP5. Hotel/motel | Davidson 2005 |
| 026768 | -- | HP5. Hotel/motel | Davidson 2005 |
| 033534 | 21079 | AP4. Bedrock milling | Wilson and Bietz 2013 |

## NATIVE AMERICAN CORRESPONDENCE

ASM submitted a request to the NAHC for a search of the Sacred Lands File and a list of tribal contacts that may have concerns or additional knowledge of tribal cultural resources in the area. ASM received a response from the NAHC on March 22, 2016 that indicated negative results in the search of the Sacred Lands File for the project area. The NAHC provided a list of 17 Native American contacts that may have knowledge of traditional cultural properties or areas of heritage or religious significance (Table 3). ASM sent letters to the tribal contacts on March 24, 2016 to inform them of the propose project and request additional information regarding known traditional cultural properties within the vicinity of the proposed project area. To date, ASM has received responses from three of the tribal contacts. Mr. Chris Devers, Vice Chairman of the Pauma Band of Luiseno Indians, requested a copy of the cultural study once it is completed and that if any sites are identified on the property they be preserved. The Viejas Band of Kumeyaay Indians have requested a copy of this report so that they may make an informed decision and recommendation on the project. Joseph Ontiveros, the Cultural Resource Director for the Soboba Band of Luiseño Indians, has indicated that the Sobaba Band does not currently have any specific concerns regarding known cultural resources within the project area, but does request that the appropriate consultation continue to take place between concerned tribes, project proponents, and local agencies. A record of correspondence with the Native American community is provided in Appendix B.

Table 3. Native American Contacts

| Contact | Affiliation |
|---|---|
| Clifford LaChappa, Chairperson | Barona Group of the Capitan Grande |
| Allen E. Lawson, Chairperson | San Pasqual Band of Mission Indians |
| Cody J. Maritinez, Chairperson | Sycuan Band of the Kumeyaay Nation |
| Robert J. Welch, Sr. Chairperson | Viejas Band of Kumeyaay Indians |
| Erica Pinto, Chairperson | Jamul Indian Village |
| Virgil Oyos, Chairperson | Mesa Grande Band of Mission Indians |
| Shasta Gaughen, PhD, THPO | Pala Band of Mission Indians |
| Randall Majel, Chairperson | Pauma Band of Luiseno Indians |
| Rosemary Morillo, Chairperson | Soboba Band of Luiseno Indians |
| Carmen Lucas | Kwaaymii Laguna Band of Mission Indians |
| Rebecca Osuna, Chairman | Inaja Band of Mission Indians |
| Bo Mazzetti, Chairperson | Rincon Band of Mission Indians |
| Carmen Mojado | San Luis Rey Band of Mission Indians |
| Mark Macarro, Chairperson | Pechanga Band of Mission Indians |

| Contact | Affiliation |
|---|---|
| Thomas Rodriguez, Chairperson | La Jolla Band of Luiseno Indians |
| Virgil Perez, Chairperson | Iipay Nation of Santa Ysabel |

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# 3. RESEARCH DESIGN AND METHODS

This section discusses the basic research design for the archaeological survey and the archival research and field survey methods, utilized for the current investigation for the proposed residential development at 661 Bear Valley Parkway.

## RESEARCH DESIGN FOR PEDESTRIAN SURVEY

For a systematic, intensive, non-sampling, non-collecting survey, such as this one, the primary objectives with respect to prehistoric and historic archaeological resources are straightforward: to identify and document all of the resources that are detectable through surface observations. For the research design, the field requirements are (1) that survey coverage include all portions of the study area that can safely be covered and that offer some realistic prospects for containing identifiable resources (excluding, for instance, areas with very steep slopes, flooded areas, areas with no ground surface visibility, or areas where modern construction has destroyed or buried the natural ground surface), and (2) that the spatial extent and general character of any identified resources be documented according to the prevailing professional standards.

## PEDESTRIAN SURVEY FIELD METHODS

The study area was subject to a full-coverage pedestrian survey done at 15-m transect intervals on March 25, 2016. The project areas was surveyed by ASM archaeologists James Daniels and Arthur Ramcharan. Shelly Nelson, a Luiseño tribal monitor from Saving Sacred Sites, accompanied ASM archaeologists during the survey. Full-coverage survey, as it relates to this survey, is best defined as a 100 percent coverage involving systematic examination of blocks of terrain at a uniform level of intensity. This project did not include any type of ground disturbance, such as shovel scrapes. A standard global positioning system (GPS) aided in navigation, and a differential, post-processed, decimeter-level GPS unit recorded the location of the site datum at the newly discovered site.

This survey design was a non-collection pedestrian survey, with the potential collection of only diagnostic artifacts that would be subject to future illicit collecting if left in place. These exceptions would include diagnostic artifacts such as projectile points. Archaeologists were to record non-collected artifacts in the field to facilitate interpretations of site character. ASM was to record all new prehistoric and historic sites, and reexamine any previously recorded sites for spatial extent and general character. Sites were defined as any concentration of three or more artifacts in a 25-$m^2$ area. Site boundaries were to be defined when over 50 m of open space separated artifact scatters. Isolated artifacts are defined as fewer than three artifacts in a 25-$m^2$ area. ASM would assign any cultural resources that met the definition of an archaeological site with temporary site numbers.

Site recording would include definition of site boundaries, features, and formed artifacts. Detailed sketch maps would demonstrate the relationship of the sites' locations to topographic features and other landmarks. Site forms would contain detailed information on environmental context, artifact content and density, cultural affiliation, and function. ASM would complete California State Department of Parks and Recreation (DPR 523) site forms for submittal to the SCIC for assignment of primary numbers and site trinomials to newly discovered sites. Recordation efforts would include the plotting of each site on USGS 7.5-minute topographic quadrangle maps, and recording site boundaries, features, diagnostic artifacts, and artifact concentrations using a Trimble GeoXH GPS unit with decimeter accuracy. Completed DPR site records and update forms are included in this technical report as Confidential Appendix C. Digital photographs document the environmental associations and the specific features of all sites, as well as the general character of the survey area. A detailed photo log with the location of photo stations is provided in Confidential Appendix D.

## ARCHITECTURAL HISTORY SURVEY FIELD METHODS

In order to document the current condition and materials of the residence and detached garage, extensive digital photographs were taken of the exteriors and interiors on March 25, 2016. Detailed field notes were taken on the condition and materials of the buildings. Irrigation features discovered in the field as part of the archaeological pedestrian survey were considered for their association with the residence and detached garage as previously part of a working citrus and avocado farm. DPR forms were prepared that included the residence, detached garage, and irrigation features (Appendix E).

## HISTORIC ARCHIVAL RESEARCH METHODS

Archival research included gathering resource materials from local libraries for the history of the area; newspaper articles; materials from the Escondido History Center that included informal surveys of potentially historic properties in Bear Valley and the rest of Escondido that were conducted in 1990 and 2000 as well as directories, information on mining, and a discussion of the type of crop produced on the property with life-long resident and Escondido History Center liaison Robin Fox; information on mining from local mining expert Frank Lorey, the California Mining Bureau, and other sources; and trade information on the citrus and avocado industries. A chain of title was prepared by Kirk Kiely for APNs 237-131-01 and 237-131-02. Building records were gathered from the San Diego County Assessor's Kearny Mesa office. Burnet F. Wohlford, son of Burnet C. Wohlford (one of the long-standing property owners), provided information on the uses of the property.

Escondido History Center liaison Robin Fox shared that the information that on many citrus and avocado farms in the area, houses were located away from the street and often hidden within the orchards. The exact number of these types of residential resources is unknown, as the 1990 and 2000 informal windshield survey for resources 50 years and older may not have catalogued all of these types of resources. At one time, many resources of this type would have existed in the area. According to Paul Bingham, City of Escondido Planner II and Certified Local Government (CLG) Coordinator, other buildings associated with citrus and avocado farming still exist and this building type is not unique.

# 4. SURVEY RESULTS

## PEDESTRIAN SURVEY

Surface visibility in the entirety of the project area was approximately 80 percent. There was very little vegetation across much of the site, likely as a result of nutrient-depleted soils associated with the previous agricultural activity (Figure 4). Two drainages run along the western boundary and eastern portions of the site. The west drainage contained water at the time of the survey and was surrounded by lush vegetation, including oak, palm, and various shrubs and grasses. A concrete water retention basin with an open top was identified within the dense vegetation along the western drainage in the southwestern corner of the project area (Figure 5). The water storage feature was surrounded by a chain link fence. It was likely used for irrigating the grove. Another concrete feature likely related to grove irrigation was noted about 10 m east of the first feature (Figure 6). A concrete pad 17.5 by 17.5 ft. was documented northeast of the house. Exposed PVC irrigation pipe was documented southwest of the house and north of the irrigation features. The irrigation features are photodocumented in Appendix E, including a location map.

The east drainage was dry and had cactus growing along the banks. Across the entire project area were remnants of the previous irrigation system that was in use during the period of grove agriculture. No evidence was identified of the early mining activity that was conducted in the area. The two residential structures on the property are located at the highest point near the center of the project area. There is minimal landscaping around the structures.

ASM archaeologists identified one previously unrecorded bedrock milling site, SDI-21808, and two ground stone isolates during the pedestrian survey. Site SDI-12920, the historic trash scatter previously recorded within the project area, was not re-located due to dense vegetation along the drainage on the eastern side of Bear Valley Parkway. Other historic-period isolates and features associated with the previous agricultural grove on the property were noted across the site, including abandoned ceramic pipes, irrigation pipes, isolated bottle glass shards, and broken drainage pipes. Photographs of these associated historic isolates and their locations are available in Confidential Appendix D. The following sections provide descriptions of the archaeological resources identified within the project area.

## CA-SDI-12920

Mary Robbins-Wade of Affinis recorded this site in September 1992 during a survey for improvements to Bear Valley Parkway (Robbins-Wade and Alter 1993). The site was recorded as consisting of metal cans and one glass milk bottle marked “Sunshine Dairy, Escondido”. Robbins-Wade and Alter reported the location of the site as above the creek on the eastern side of Bear Valley Parkway just south of the intersection with Encino Drive and Rancho Verde Drive. The site was reported as small, with no diagnostic material and that it is likely the result of dumping along the road.

It is also noted that the nearest water was the creek approximately 10 m east of the site. The currently defined boundary in the SCIC GIS database shows the site as much larger than suggested by Robbins-Wade and Alter, with the boundary crossing west of the creek into the current project area. The GIS data are most likely not accurate, and during the survey no historic cans were noted west of the creek within the drawn boundaries of the site.

The can scatter on the side of Bear Valley Parkway was also not re-located due to vegetation coverage on the shoulder of the road.

Figure 4. South facing overview from near the center of the project area showing the spare vegetation across the surveyed landscape.

Figure 5. Possible concrete water supply feature for irrigation of former tree grove.

Figure 6. Second concrete feature likely associated with pumping water into the grove.

## CA-SDI-21808

ASM archaeologists identified several granitic bedrock outcrops in the project area (Figure 7). Two of the inspected outcrops each had one milling slick on their surfaces. The two outcrops are separated by approximately 13 m, with two larger granitic boulders between them and a large isolated palm just the west (Figure 8 in Confidential Appendix F). Feature 1 is approximately 2.3 x 1.2 m in size, with a maximum height of about 50 cm and with a slick that measures approximately 20 x 10 cm (Figure 9). Feature 2 is located north of Feature 1 and measures approximately 1.8 x 1.1 m in size, with a maximum height of about 60 cm (Figure 10). Feature 2 contains a slick that is approximately 20 x 20 cm in size. The boundary of the site was drawn to encompass the two features within an ellipsoid that is 222.7 $m^2$ in size and measures about 23 m long by 12.5 m wide. Both of the milling slicks are slightly exfoliated.

No artifacts were noted within the immediate vicinity of the milling features during the survey, and the soils did not appear to contain any midden deposits. Evidence of previous burning in the area was noted, including some charred vegetation and some ash on the surface, but this is attributable to recent burns possibly associated with the agricultural activity in the area. Several baked earth patches were noted across the project area, with a ring in the center of each the size of a palm tree trunk (Figure 11). The trees were likely burned in place causing the ground around their base to harden.

The site was given the temporary designation of Bear Valley-ASM-01. A California DPR form describing the site was submitted to the SCIC so that a permanent trinomial could be assigned to the site. The site was assigned the trinomial of CA-SDI-21808 on April 4, 2016.

Figure 7. Southeast facing overview of newly recorded bedrock milling site, Bear Valley-ASM-01.

Figure 8. Sketch map of Bear Valley-ASM-01 showing the site boundary and the location of the bedrock outcrops and milling features associated with the site.

**Moved to Confidential Appendix F**

Figure 9. Bedrock milling Feature 1 associated with Bear Valley-ASM-01. The milling slick is located just left of the north arrow.

Figure 10. Bedrock milling Feature 2 associated with Bear Valley-ASM-01. The milling slick is located to the right of the north arrow.

Figure 11. Baked earth likely from the burning of a palm. The dark ring in the center is likely where the trunk of the tree was.

## Isolate Artifacts

Two isolate ground stone fragments were identified during the pedestrian survey about 80 m southwest of the newly recorded bedrock milling site, SDI-21808. The two isolates were found just under 3 m apart. Both ground stone fragments are granitic hand stones and show wear on both sides. The first isolated hand stone, BV-ASM-I-1, is a medial fragment approximately 4 x 6 cm in size (Figure 12). The second isolate hand stone, BV-ASM-I-2, is a marginal fragment approximately 3 x 4 cm in size (Figure 13).

Figure 12. Medial handstone fragment isolate found in the southern portion of the project area designated in the field as BV-ASM-I-01.

Figure 13. Handstone fragment isolate designated BV-ASM-I-02 found 3 meters from the handstone isolate.

## RESULTS OF ARCHITECTURAL HISTORY SURVEY

On March 25, 2016, ASM's Senior Historian documented the residence and detached garage located at 661 Bear Valley Parkway (P-37-035581). The residence is one-story, wood-framed building with a wood-framed open front porch that provides entry into the building. The porch is concrete slab. The building is board-and-batten on the front façade and stucco around the other three sides of the building. Windows along the front façade are 6:6 sash windows and the majority of the windows around the other three side are 1:1 sash windows. It has a hipped roof with exposed rafters and composite shingles. At the southeastern side of the building is another entrance with concrete steps and metal rolled awning. The majority of the exterior appears to retain original materials. Most of the exterior doors are not original, but most of the windows are original. The interior walls are original plaster with rounded edging at the door frames. Most of the interior doors have been replaced but some original hardware, such as a bathroom knob have been retained. The original inset ironing board still remains in the kitchen (Figures 14-31).

A detached garage was constructed in the same style as the residence without a finished interior. It is a one-story wood-frame garage with wood-frame rafters that are exposed on the exterior and interior. It also has a hipped roof and composite shingles. The exterior has been covered in stucco and the original garage door has been replaced with a plywood door as it now functions as a shed (Figures 31-35).

After a driving survey of the general Bear Valley area, it was difficult to locate a comparable property given that many citrus and avocado farms have given way to residential developments. However, one property at 735 Bear Valley Parkway had a secluded residence with detached garage that had a wood-frame structure with a hipped roof and exposed rafters. It had been significantly renovated with newer wide-framed horizontal cladding and a Spanish tile roof.

Figure 14. Overview from Bear Valley Parkway showing residence and detached garage, facing southeast.

Figure 15. Front façade of residence, facing east.

Figure 16. Residence, facing northeast.

Figure 17. Front porch, facing north.

Figure 18. Residence, facing north.

Figure 19. Residence rear entry/exit with metal rolled awning, facing northwest.

Figure 20. Residence, facing west.

Figure 21. Residence with property overview, facing southwest.

Figure 22. Residence with property overview, facing southwest.

Figure 23. Residence, facing south.

Figure 24. Example of exposed roof rafters.

Figure 25. Example of original 6:6 sash windows.

Figure 26. Example of original 1:1 sash windows.

Figure 27. Example of vent.

Figure 28. Example of interior plaster work at door frame.

Figure 29. Inset iron board in kitchen.

Figure 30. Example of interior bathroom door.

Figure 31. Example of hardware.

Figure 32. Detached garage, facing southwest.

Figure 33. Detached garage, facing northeast.

Figure 34. Detached garage, facing southwest.

Figure 35. Interior roof wood-framing of detached garage.

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# 5. FINDINGS

The purpose of this investigation was to determine whether archaeological sites are located within the project area for the propose Bear Valley Residential Development and to evaluate the existing historic-period buildings and structures, which will be discussed in the subsequent chapters. The records search with the SCIC identified just one previously recorded historic trash scatter site (SDI-12920) within the project area. The site was not re-located during the current archaeological survey. One prehistoric bedrock milling site was identified during the survey that contained two separate bedrock milling features, each with a small milling slick. The site was given the trinomial SDI-21808. Two isolated ground stone fragments were also identified during the survey.

While much of the site has been disturbed by mining activity and then grove agriculture in the early to mid-twentieth century, ASM archaeologists did find some evidence of prehistoric activity within the project area.

The project area is located just 350 m west of site SDI-5340, also known as the Dead Horse Canyon site. The site is a Late Prehistoric-period village site with several bedrock milling features, midden soils, pottery scatters, debitage, lithic tools including small projectile points, and various ground stone implements. The site has been heavily looted by local pothunters over the years.

It is possible that the bedrock milling site identified during the current archaeological survey was associated with the occupation of the Dead Horse Canyon site. However, it is difficult to confirm this association, given that no diagnostic artifacts were encountered during the current investigation.

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# 6. CRITERIA FOR EVALUATION

This historic evaluation of P-37-035581 was carried out in compliance with Section 106 of the NHPA and CEQA. Section 106 is applicable to federal undertakings, including Projects financed or permitted by federal agencies, regardless of whether the activities occur on land that is managed by federal agencies, other governmental agencies, or private landowners. In practice, the NRHP criteria for eligibility applied under Section 106 are generally (although not precisely) concordant with CRHR criteria. Therefore, the residence, detached garage, and irrigation features located at 661 Bear Valley Parkway (P-37-035581) were evaluated for NRHP eligibility, with equal applicability to CRHR. Compliance with CEQA requires consideration of impacts to cultural resources as historical resources or those resources potentially eligible for listing on the CRHR. The procedures for assessing archaeological and historical resources are addressed in CEQA Guidelines Section 15064.5(a) and 15064.5(c).

## NATIONAL REGISTER OF HISTORIC PLACES CRITERIA

Authorized by the NHPA of 1966, the National Park Service's NRHP is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect America's historic and archeological resources. The NRHP is the official list of the Nation's historic places worthy of preservation. The NRHP criteria for evaluation are designed to guide federal agencies and others in evaluating whether a property is eligible for inclusion in the NRHP. How to Apply the National Register Criteria for Evaluation, National Register Bulletin 15, was followed for the evaluation of the residence, detached garage, and irrigation features located at 661 Bear Valley Parkway (National Park Service, National Register of Historic Places 1991). The criteria for evaluation are as follows:

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity (see Section 5.4 for the NRHP definition of integrity) and:

A. are associated with events that have made a significant contribution to the broad patterns of our history; or

B. are associated with the lives of persons significant in our past; or

C. embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. have yielded or may be likely to yield, information important in prehistory or history [36 CFR 60.4].

Ordinarily cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the NRHP. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:

a) a religious property deriving primary significance from architectural or artistic distinction or historical importance; or

b) a building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or

c) a birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life; or

d) a cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or

e) a reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or

f) a property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or

g) a property achieving significance within the past 50 years if it is of exceptional importance.

## Integrity

In order to be eligible for listing in the NRHP or the CRHR, a property must also retain sufficient integrity to convey its significance. Bulletin 15 also establishes how to evaluate the integrity of a property: "Integrity is the ability of a property to convey its significance." The evaluation of integrity must be grounded in an understanding of a property's physical features, and how they relate to the concept of integrity. Determining which of these aspects are most important to a property requires knowing why, where, and when a property is significant. To retain historic integrity, a property must possess several, and usually most, aspects of integrity:

1. Location is the place where the historic property was constructed or the place where the historic event occurred.
2. Design is the combination of elements that create the form, plan, space, structure, and style of a property.
3. Setting is the physical environment of a historic property, and refers to the character of the site and the relationship to surrounding features and open space. Setting often refers to the basic physical conditions under which a property was built and the functions it was intended to serve. These features can be either natural or manmade, including vegetation, paths, fences, and relationship between other features or open space.
4. Materials are the physical elements that were combined or deposited during a particular period or time, and in particular pattern or configuration to form a historic property.
5. Workmanship is the physical evidence of crafts of a particular culture or people during any given period of history or prehistory, and can be applied to the property as a whole, or to individual components.
6. Feeling is a property's expression of the aesthetic or historic sense of a particular period of time. It results from the presence of physical features that, when taken together, convey the property's historic character.
7. Association is the direct link between the important historic event or person and a historic property.

## CALIFORNIA REGISTER OF HISTORICAL RESOURCES SIGNIFICANCE CRITERIA

The CRHR program encourages public recognition and protection of resources of architectural, historical, archeological, and cultural significance, identifies historical resources for state and local planning purposes, determines eligibility for state historic preservation grant funding and affords certain protections under CEQA. The criteria established for eligibility for the CRHR are directly comparable to the NRHP criteria.

In order to be eligible for listing in the CRHR, a building must satisfy at least one of the following four criteria:

1) It is associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States.
2) It is associated with the lives of persons important to local, California, or national history.
3) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values.
4) It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

Historical resources eligible for listing in the CRHR must meet one of the criteria of significance described above and retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. For the purposes of eligibility for CRHR, integrity is defined as "the authenticity of an historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance" (Office of Historic Preservation 2001).

## CITY OF ESCONDIDO HISTORICAL SITES

The Escondido Historic Preservation Commission develops and implements the City Historic Preservation Program under the direction of the City Council, and advises the Council on the responsibilities of being a Certified Local Government and other matters relating to Historic Preservation. According to the Escondido Municipal Code, Article 40, Historical Resources, Sec. 33-794, the procedure and criteria for local register listing or local landmark designation are as follows:

"Prior to granting a resource local register or historical landmark status, the city council shall consider the definitions for historical resources and historical districts and shall find that the resource conforms to one (1) or more of the criteria listed in this section. A structural resource proposed for the local register shall be evaluated against criteria number one (1) through seven (7) and must meet at least two (2) of the criteria. Signs proposed for the local register shall meet at least one (1) of the criteria numbered eight (8) through ten (10). Landscape features proposed for the local register shall meet criterion number eleven (11). Archaeological resources shall meet criterion number twelve (12). Local register resources proposed for local landmark designation shall be evaluated against criterion number thirteen (13)."

"The criteria are as follows:

(1) Escondido historical resources that are strongly identified with a person or persons who significantly contributed to the culture, history, prehistory, or development of the City of Escondido, region, state or nation;

(2) Escondido building or buildings that embody distinguishing characteristics of an architectural type, specimen, or are representative of a recognized architect's work and are not substantially altered;

(3) Escondido historical resources that are connected with a business or use that was once common but is now rare;

(4) Escondido historical resources that are the sites of significant historic events;

(5) Escondido historical resources that are fifty (50) years old or have achieved historical significance within the past fifty (50) years;

(6) Escondido historical resources that are an important key focal point in the visual quality or character of a neighborhood, street, area or district;

(7) Escondido historical building that is one of the few remaining examples in the city possessing distinguishing characteristics of an architectural type;

(8) Sign that is exemplary of technology, craftsmanship or design of the period when it was constructed, uses historical sign materials and is not significantly altered;

(9) Sign that is integrated into the architecture of the building, such as the sign pylons on buildings constructed in the Modern style and later styles;

(10) Sign that demonstrates extraordinary aesthetic quality, creativity, or innovation;

(11) Escondido landscape feature that is associated with an event or person of historical significance to the community or warrants special recognition due to size, condition, uniqueness or aesthetic qualities;

(12) Escondido archaeological site that has yielded, or may be likely to yield, information important in prehistory;

(13) Escondido significant historical resource that has an outstanding rating of the criteria used to evaluate local register requests. (Ord. No. 2000-23, § 4, 9-13-00; Ord. No. 2008-16, § 4, 7-16-08).

## CALIFORNIA ENVIRONMENTAL QUALITY ACT SIGNIFICANCE CRITERIA

CEQA requires that all private and public activities not specifically exempted be evaluated against the potential for environmental damage, including effects to historical resources. Historical resources are recognized as part of the environment under CEQA. It defines historical resources as "any object, building, structure, site, area, or place which is historically significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California," as cited in Division I, Public Resources Code, Section 5021.1[b].

Lead agencies have a responsibility to evaluate historical resources against the CRHR criteria prior to making a finding as to a proposed Project's impacts to historical resources. Mitigation of adverse impacts is required if the proposed Project will cause substantial adverse change to a historical resource. Substantial adverse change includes demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired. While demolition and destruction are fairly obvious significant impacts, it is more difficult to assess when change, alteration, or relocation crosses the threshold of substantial adverse change. The CEQA Guidelines provide that a Project that demolishes or alters those physical characteristics of an historical resource that convey its historical significance (i.e., its character-defining features) can be considered to materially impair the resource's significance. The CRHR is used in the consideration of historical resources relative to significance for purposes of CEQA. The CRHR includes resources listed in, or formally determined eligible for listing in, the NRHP, as well as some California State Landmarks and Points of Historical Interest. Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts), or that have been identified in a local historical resources inventory, may be eligible for listing in the CRHR and are presumed to be significant resources for purposes of CEQA unless a preponderance of evidence indicates otherwise.

Generally, a resource shall be considered by the lead agency to be a "historical resource" if it:

1) Is listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Pub. Res. Code, § 5024.1, Title 14 CCR, Section 4850 et seq.).

2) Is included in a local register of historical resources, or is identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code.

3) Is a building or structure determined to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.

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# 7. RECOMMENDATIONS OF ELIGIBILITY

The remaining residence, detached garage, and irrigation features associated with 661 Bear Valley Parkway (P-37-035581) are recommended not eligible for the NRHP and CRHR. The resources do not appear to be eligible under Criteria A and 1 despite their historic association with the themes of settlement and agriculture, primarily citrus and avocado production. The property was evaluated within a potential period of significance of 1938-1966 (from when the first citrus and avocado trees were planted to 50 years before the present). ASM considered whether the elements of the property had the potential to be eligible either as individual resources or as portions of a historic district. The property was not the first citrus or avocado grove in the area or the largest producer in the area. While the property had a historic association with citrus and avocado farming in San Diego County and Escondido, the fact that no citrus or avocado trees or farming-related structures remain completely disconnects the property from its historic association as a citrus and avocado farm. Consequently, the property is not a good representation of those themes with which it is associated, in part because it does not retain sufficient integrity of location, setting, design, materials, workmanship, feeling, or association to be eligible as a historic district. Neither the main residence and detached garage nor the irrigation features sufficiently represent the themes of settlement and agriculture as individual structures—separate from the farm complex as a whole—to be good representation of these themes. Therefore, the main residence, detached garage, and irrigation features are recommended not eligible for the NRHP and CRHR either individually or as contributing resources to a historic district under Criteria A or 1.

ASM considered whether the property would be eligible under Criterion B of the NRHP and Criterion 2 of the CRHR for its association with Burnet C. Wohlford. As previously mentioned, Wolhford was the son of Alvin Wohlford who ran the Escondido Mutual Water Company and owned Escondido National Bank. Sometime after Alvin Wohlford died in 1924, Burnet sold his father's bank and put in 125 acres of oranges, lemons, grapefruit, and avocadoes in Escondido (McGrew 1988:207-208). Thereafter, he was well known for his leadership at the water company and cultivating citrus and avocadoes. However, Burnet never lived on the property. In addition, the citrus and avocado groves on the property were not the most productive and they were not the only groves Burnet was associated with. Furthermore, no citrus or avocado trees or associated farming structures remain on the property for potential association, setting, and feeling. Therefore, the main residence, detached garage, and irrigation features are recommended not eligible for the NRHP and CRHR either individually or as contributing resources to a historic district under Criteria B and 2.

The main residence, detached garage, and irrigation features are not recommended eligible to the NRHP or CRHR under Criteria C and 3. The citrus and avocado farm no longer exists, leaving no foundation for the potential eligibility as a historic district representative of an agricultural property type. Individually, the irrigation structures are not a good representation of any style nor property type. According to Burnet F. Wohlford, the house was constructed by a builder, E. A. Wikholm. If this builder was Eser Wikholm of Eser Wikholm Construction Company of Los Angeles, he was not a master builder. He owned a construction company out of the Los Angeles area and constructed homes and other buildings, but he is not known to be associated with any significant works. The house is a typical home of its period. Therefore, the main residence, detached garage, and irrigation features are recommended not eligible for the NRHP and CRHR either individually or as contributing resources to a historic district under Criteria C and 3.

The remaining features documented within the site boundaries do not possess the potential to yield significant further information, and as such are not eligible to the NRHP and CRHR under Criterion D and 4.

The residence, detached garage, and irrigation features were considered under the City of Escondido's Criteria 3, 5, and 7. The irrigation features are not recommended eligible for the local City of Escondido register or historical landmark status. After speaking with Paul Bingham, planner for the City of

Escondido's CLG, it is clear that this resource is not rare or unique. Therefore, the residence and detached garage is not recommended eligible for the local City of Escondido register or historical landmark status.

The residence, detached garage, and irrigation features are not recommended individually eligible and are not recommended eligible as part of a potential district for the NRHP, CRHR, and the Escondido Municipal Code. They are not considered CEQA historical resources.

# 8. CONCLUSION

The results of the records search and pedestrian survey indicate that within the proposed project area there are one previously recorded historic trash scatter (SDI-12920), one newly recorded prehistoric bedrock milling site (SDI-21808), and two isolate prehistoric ground stone artifacts. Since SDI-12920 was not re-located during the survey, the site cannot be formally evaluated for eligibility for listing in the National Register or for listing on the CRHR. Archaeological monitoring within the project area is recommended, and should the constituents of SDI-12920 be uncovered during monitoring, the criteria for listing in the NRHP and on the CRHR may be applied. Based on the original site record for the site, it is highly unlikely that the site meets of the significance criteria for either regulatory processes.

The newly identified bedrock milling site, SDI-21808, should be evaluated. While no surface artifacts were identified around the bedrock milling during the survey, there is a possibility of subsurface archaeological deposits. Thus field testing through excavation is recommended for the areas around the bedrock milling to acquire information on the presence or absence of subsurface cultural deposits within the site. Once the site is evaluated, an assessment of the proposed project's adverse effects may be made.

The two isolated ground stone artifacts do not meet the criteria for listing in the NRHP or on the CRHR and do not require any additional archaeological work.

In addition to an evaluation of SDI-21808, ASM recommends an archaeological and Native American monitor be present during grading for the proposed project because of the project area's proximity to the Dead Horse Canyon site (SDI-5340), the presence of bedrock milling within the project limits, and the associated potential for buried archaeological deposits.

After documentation and evaluation of the history and resources at 661 Bear Valley Parkway (P-37-035581), and careful consideration of the ability of those resources to reflect the historic contexts with which they are associated, the residence, detached garage, and irrigation features are recommended not eligible as contributors to a potential historic district and are recommended not eligible as individual historic resources to the NRHP, CRHR, the City of Escondido Local Register of Historic Places, or as a Local Historic Landmark. The buildings and irrigation features should not be considered a historical resource for the purposes of CEQA compliance.

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# APPENDICES

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# APPENDIX A

## Confidential SCIC Records Search Results

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# APPENDIX B

# NAHC and Tribal Correspondence

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ASM affiliates
archaeology
history
ethnography
architectural history

March 21, 2016

California Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
Via fax: (916) 373-5471

Subject: Cultural Resources Survey for the Bear Valley Residential Development in Escondido, California (ASM Project # 26020)

Good Day,

ASM Affiliates is currently conducting a cultural resource investigation for the Bear Valley Residential Project located on a 40-acre parcel on Bear Valley Parkway in Escondido, San Diego County, California. I am writing to inquire if you have registered any cultural resources, traditional cultural properties, or areas of heritage sensitivity within this proposed project area or in the general vicinity.

The search should include the project area and a one-mile radius surrounding it. The project area is located on the 7.5-Minute USGS Escondido Quadrangle within an unsectioned portion of Township 12 South, Range 2 West. Attached to this request are maps of the project area for your records and to put on file. Our investigation will include direct consultation with local tribal entities in a manner that ensures complete confidentiality. To facilitate this dialogue I would like to make a request for a listing of the appropriate individuals to contact for this project. Feel free to contact me with any questions.

Sincerely,

James T. Daniels, Jr.

James T. Daniels, Jr., M.A., RPA
Senior Archaeologist
ASM Affiliates Inc.,
2034 Corte del Nogal
Carlsbad, CA 92011
Office: (760) 804-5757 Fax: 760-804-5755
jdaniels@asmaffiliates.com

Attachments:
Form 1. NAHC Sacred Lands Request
Figure 2. The 1:24,000 scale location map of the project area.

**Sacred Lands File & Native American Contacts List Request**

**NATIVE AMERICAN HERITAGE COMMISSION**
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
916-373-3710
916-373-5471 – Fax
nahc@nahc.ca.gov

*Information Below is Required for a Sacred Lands File Search*

Project: Bear Valley Residential Development (ASM PN 26020)
County: San Diego County
USGS Quadrangle: 7.5 Minute USGS Quadrangle
Quad Name: Escondido
Township: 12S Range: 2W Section(s): unsectioned
Company/Firm/Agency: ASM Affiliates Inc.
Contact Person: James Daniels
Street Address: 2034 Corte del Nogal
City: Carlsbad, CA 92011
Phone: 760-804-5757
Fax: 760-804-5755
Email: jdaniels@asmaffiliates.com

**Preliminary Project Description:**

The current project proposes to construct residential housing on a 40-acre parcel in Escondido, CA.

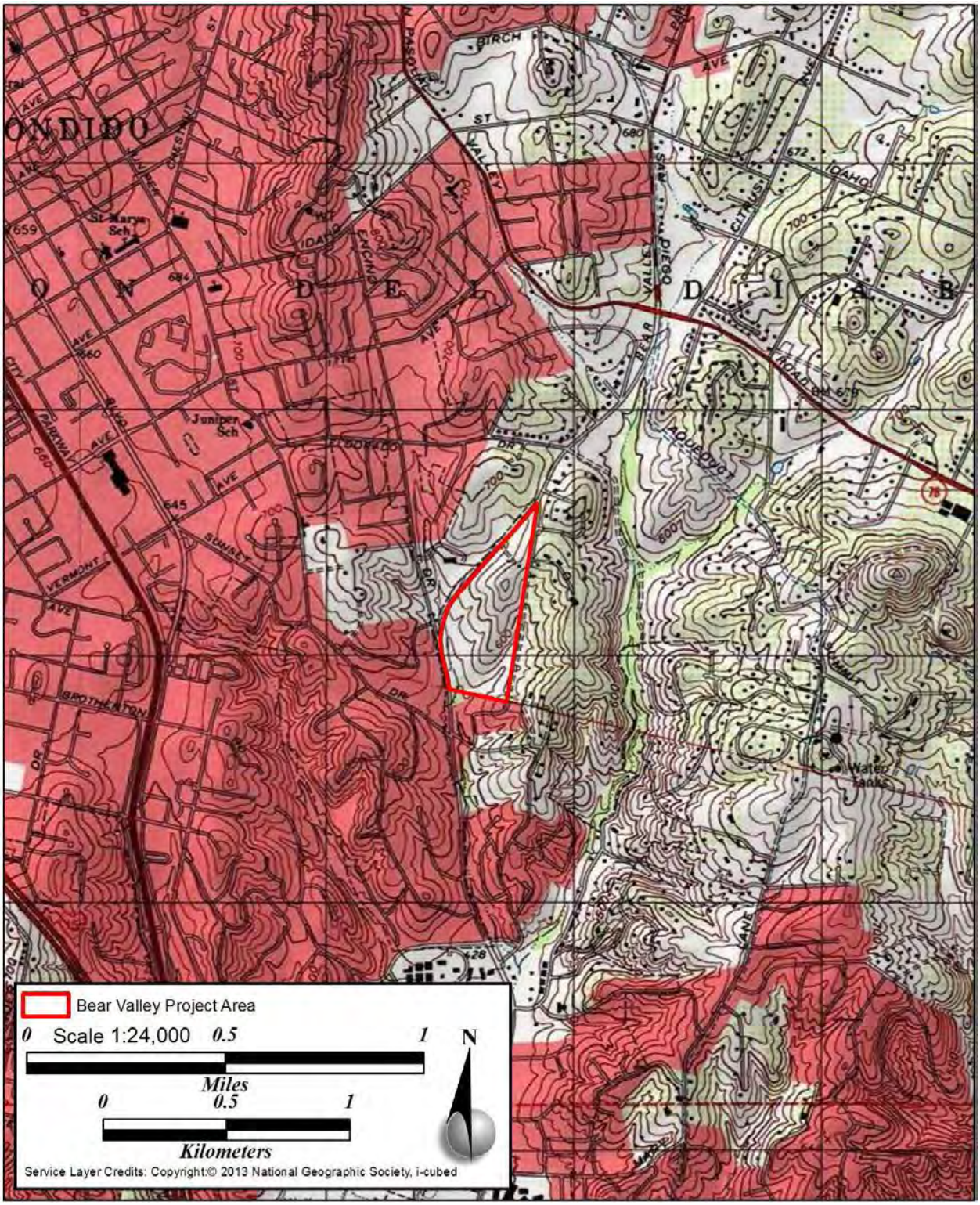


Figure 2. The 1:24,000 scale location map of the project area.

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**NATIVE AMERICAN HERITAGE COMMISSION**
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 FAX

March 22, 2016

James T. Daniels, Jr., M.A., RPA
ASM Affiliates

Sent via e-mail: jdaniels@asmaffiliates.com
Number of Pages: 4

RE: Proposed Bear Valley Residential Development Project, City of Escondido, Escondido USGS Quadrangle, San Diego County, California

Dear Mr. Daniels:

Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced counties. Please note that the intent above reference codes is to mitigate impacts to tribal cultural resources, as defined, for California Environmental Quality Act (CEQA) projects.

As of July 1, 2015, Public Resources Code Sections 21080.3.1 and 21080.3.2 require public agencies to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose mitigating impacts to tribal cultural resources:

> Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section. (Public Resources Code Section 21080.3.1(d))

The law does not preclude agencies from initiating consultation with the tribes that are culturally and traditionally affiliated with their jurisdictions. The NAHC believes that in fact that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law.

In accordance with Public Resources Code Section 21080.3.1(d), formal notification must include a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation. The NAHC believes that agencies should also include with their notification letters information regarding any cultural resources assessment that has been completed on the APE, such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

   - A listing of any and all known cultural resources have already been recorded on or adjacent to the APE;
   - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
   - If the probability is low, moderate, or high that cultural resources are located in the APE.
   - Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the potential APE; and
   - If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measurers.

     All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure in accordance with Government Code Section 6254.10.

3. The results of any Sacred Lands File (SFL) check conducted through Native American Heritage Commission. A search of the SFL was completed for the USGS quadrangle information provided with negative results.

4. Any ethnographic studies conducted for any area including all or part of the potential APE; and

5. Any geotechnical reports regarding all or part of the potential APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS is not exhaustive, and a negative response to these searches does not preclude the existence of a cultural place. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the case that they do, having the information beforehand well help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance we are able to assure that our consultation list contains current information.

If you have any questions, please contact me at my email address: gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst

**Native American Heritage Commission**
**Tribal Consultation List**
**San Diego County**
**March 22, 2016**

Barona Group of the Capitan Grande
Clifford LaChappa, Chairperson
1095 Barona Road — Diegueno
Lakeside , CA 92040
cloyd@barona-nsn.gov
(619) 443-6612

Mesa Grande Band of Mission Indians
Virgil Oyos, Chairperson
P.O Box 270 — Diegueno
Santa Ysabel , CA 92070
mesagrandeband@msn.com
(760) 782-3818

San Pasqual Band of Mission Indians
Allen E. Lawson, Chairperson
P.O. Box 365 — Diegueno
Valley Center , CA 92082
allenl@sanpasqualtribe.org
(760) 749-3200

Pala Band of Mission Indians
Shasta Gaughen, PhD, THPO
PMB 50, 35008 Pala Temecula Rd. — Luiseno
Pala , CA 92059 — Cupeno
sgaughen@palatribe.com
(760) 891-3515

Sycuan Band of the Kumeyaay Nation
Cody J. Martinez, Chairperson
1 Kwaaypaay Court — Diegueno/Kumeyaay
El Cajon , CA 92019
ssilva@sycuan-nsn.gov
(619) 445-2613

Pauma Band of Luiseno Indians - Pauma & Yuima
Randall Majel, Chairperson
P.O. Box 369, Ext. 303 — Luiseno
Pauma Valley , CA 92061
(760) 742-1289

Viejas Band of Kumeyaay Indians
Robert J. Welch, Sr., Chairperson
1 Viejas Grade Road — Diegueno/Kumeyaay
Alpine , CA 91901
jhagen@viejas-nsn.gov
(619) 445-3810

Soboba Band of Luiseno Indians
Rosemary Morillo, Chairperson; Attn: Carrie Garcia
P.O. Box 487 — Luiseno
San Jacinto , CA 92581 — Cahuilla
carrieg@soboba-nsn.gov
(951) 654-2765

Jamul Indian Village
Erica Pinto, Chairperson
P.O. Box 612 — Diegueno/Kumeyaay
Jamul , CA 91935
(619) 669-4785

Kwaaymii Laguna Band of Mission Indians
Carmen Lucas
P.O. Box 775 — Diegueno-Kwaaymii
Pine Valley , CA 91962 — Kumeyaay
(619) 709-4207

**This list is current only as of the date of this document.**
**Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.**

**This list applicable only for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Bear Valley Residnetial Development Project, City of Escondido, Escondido USGS Quadrangle, San Diego County, California.**

**Native American Heritage Commission**
**Tribal Consultation List**
**San Diego County**
**March 22, 2016**

Inaja Band of Mission Indians
Rebecca Osuna, Chairman
2005 S. Escondido Blvd. Diegueno
Escondido , CA 92025
(760) 737-7628

Iipay Nation of Santa Ysabel
Clint Linton, Director of Cultural Resources
P.O. Box 507 Diegueno/Kumeyaay
Santa Ysabel , CA 92070
cjlinton73@aol.com
(760) 803-5694

Rincon Band of Mission Indians
Bo Mazzetti, Chairperson
1 West Tribal Road Luiseno
Valley Center , CA 92082
bomazzetti@aol.com
(760) 749-1051

Iipay Nation of Santa Ysabel
Virgil Perez, Chairperson
P.O. Box 130 Diegueno/Kumeyaay
Santa Ysabel , CA 92070
(760) 765-0845

San Luis Rey Band of Mission Indians
Tribal Council
1889 Sunset Drive Luiseno
Vista , CA 92081
cjmojado@slrmissionindians.org
(760) 724-8505

Pechanga Band of Mission Indians
Mark Macarro, Chairperson
P.O. Box 1477 Luiseno
Temecula , CA 92593
mgoodhart@pechanga-nsn.
(951) 770-6000

La Jolla Band of Luiseno Indians
Thomas Rodriguez, Chairperson
22000 Highway 76 Luiseno
Pauma Valley , CA 92061
(760) 742-3771

**This list is current only as of the date of this document.**
**Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.**

**This list applicable only for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Bear Valley Residnetial Development Project, City of Escondido, Escondido USGS Quadrangle, San Diego County, California.**

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March 24, 2016

Pala Band of Mission Indians
Shasta Gaughan, PhD, THPO
PMB 50, 35008 Pala Temecula Rd.
Pala, CA 92059

Re: Bear Valley Residential Development in Escondido, San Diego County, California

Dear Ms. Gaughan,

ASM Affiliates, Inc. (ASM) is conducting a cultural resources study for the Bear Valley Residential Project (Project) located on a 40.9-acre parcel on Bear Valley Parkway in Escondido, San Diego County, California. The Project is located on the Escondido USGS 7.5' Quadrangle, within an un-sectioned portion of Township 12 South, Range 2 West (Figure 1). The Project is being undertaken in compliance with the California Environmental Quality Act (CEQA) for the City of Escondido. The proposed Project consists of a subdivision of 40.9 acres into 55 residential lots, each containing a minimum area of 10,000 square feet. In addition to the residential lots, the project proposes two private street lots, seven open space lots, and one recreation lot.

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Sincerely,

James T. Daniels, Jr., M.A., RPA
jdaniels@asmaffiliates.com
Senior Archaeologist

Attachments: Figure 1

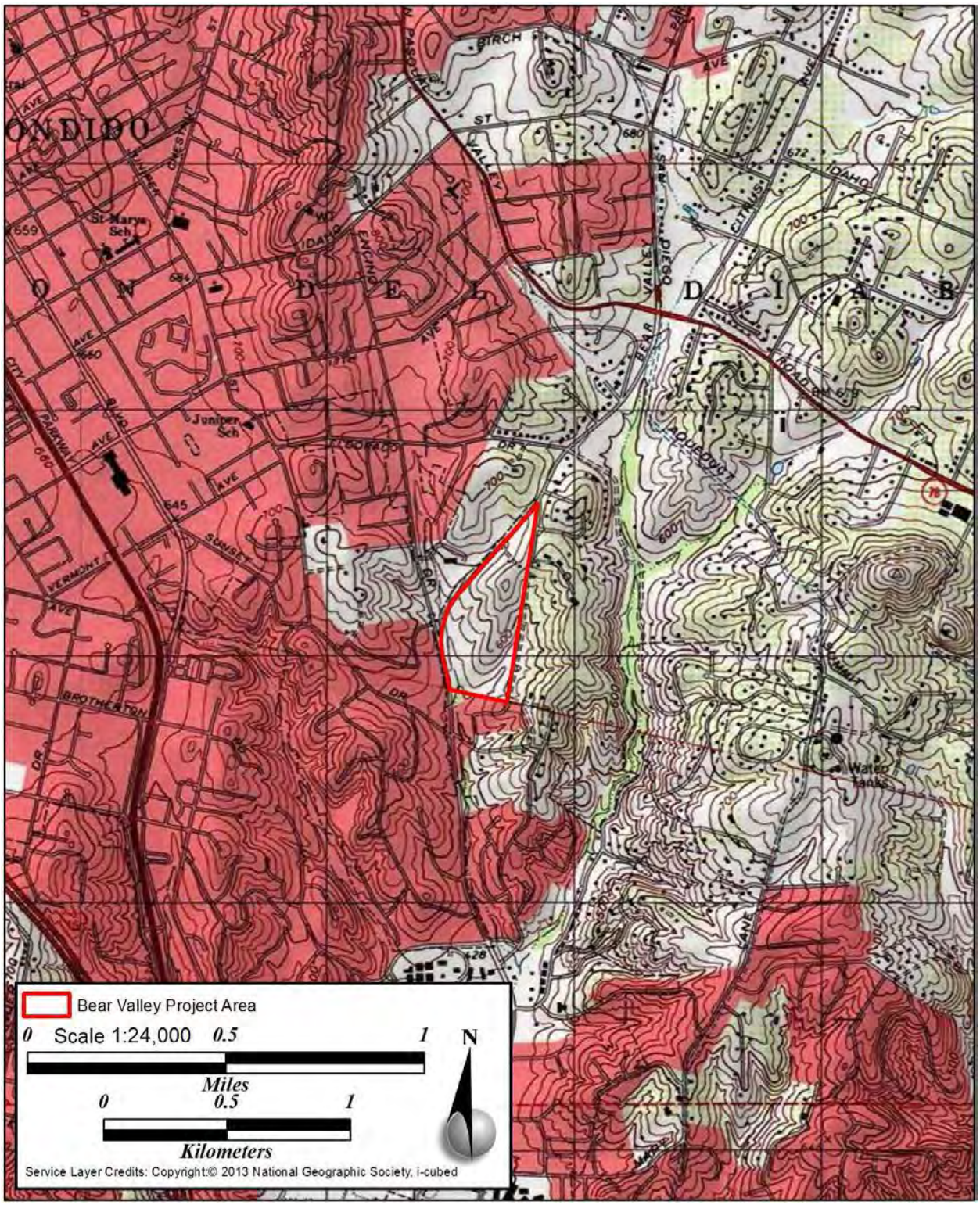


Figure 1. Map of the Project Area.

March 24, 2016

Barona Group of the Capitan Grande
Clifford LaChappa, Chairperson
1095 Barona Road
Lakeside, CA 92040

Re: Bear Valley Residential Development in Escondido, San Diego County, California

Dear Mr. LaChappa,

ASM Affiliates, Inc. (ASM) is conducting a cultural resources study for the Bear Valley Residential Project (Project) located on a 40.9-acre parcel on Bear Valley Parkway in Escondido, San Diego County, California. The Project is located on the Escondido USGS 7.5' Quadrangle, within an un-sectioned portion of Township 12 South, Range 2 West (Figure 1). The Project is being undertaken in compliance with the California Environmental Quality Act (CEQA) for the City of Escondido. The proposed Project consists of a subdivision of 40.9 acres into 55 residential lots, each containing a minimum area of 10,000 square feet. In addition to the residential lots, the project proposes two private street lots, seven open space lots, and one recreation lot.

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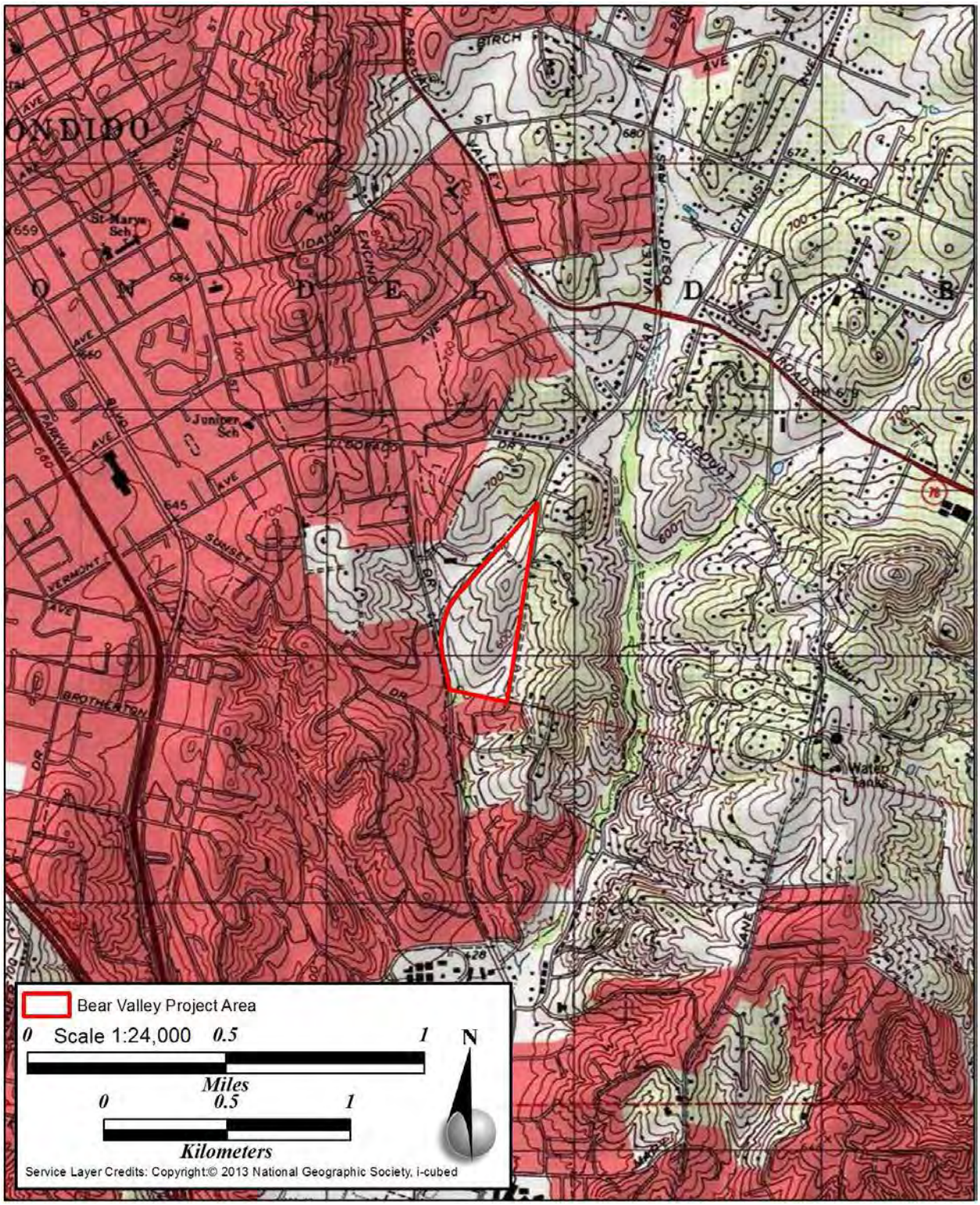


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March 24, 2016

San Pasqual Band of Mission Indians
Allen E. Lawson, Chairperson
P.O. Box 365
Valley Center, CA 92082

Re: Bear Valley Residential Development in Escondido, San Diego County, California

Dear Mr. Lawson,

ASM Affiliates, Inc. (ASM) is conducting a cultural resources study for the Bear Valley Residential Project (Project) located on a 40.9-acre parcel on Bear Valley Parkway in Escondido, San Diego County, California. The Project is located on the Escondido USGS 7.5' Quadrangle, within an un-sectioned portion of Township 12 South, Range 2 West (Figure 1). The Project is being undertaken in compliance with the California Environmental Quality Act (CEQA) for the City of Escondido. The proposed Project consists of a subdivision of 40.9 acres into 55 residential lots, each containing a minimum area of 10,000 square feet. In addition to the residential lots, the project proposes two private street lots, seven open space lots, and one recreation lot.

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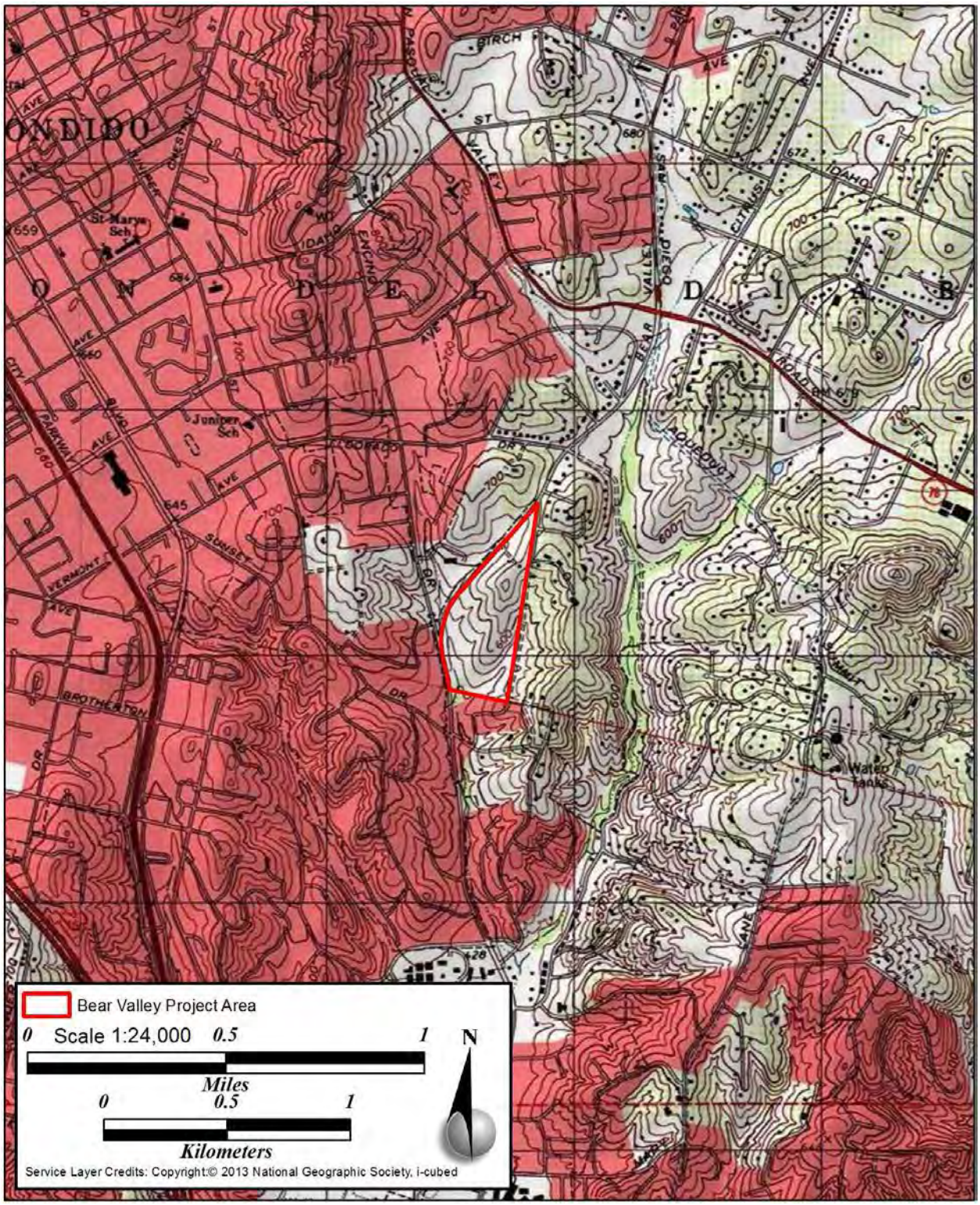


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March 24, 2016

Iipay Nation of Santa Ysabel
Clint Linton, Director of Cultural Resources
P.O. Box 507
Santa Ysabel, CA 92070

Re: Bear Valley Residential Development in Escondido, San Diego County, California

Dear Mr. Linton,

ASM Affiliates, Inc. (ASM) is conducting a cultural resources study for the Bear Valley Residential Project (Project) located on a 40.9-acre parcel on Bear Valley Parkway in Escondido, San Diego County, California. The Project is located on the Escondido USGS 7.5' Quadrangle, within an un-sectioned portion of Township 12 South, Range 2 West (Figure 1). The Project is being undertaken in compliance with the California Environmental Quality Act (CEQA) for the City of Escondido. The proposed Project consists of a subdivision of 40.9 acres into 55 residential lots, each containing a minimum area of 10,000 square feet. In addition to the residential lots, the project proposes two private street lots, seven open space lots, and one recreation lot.

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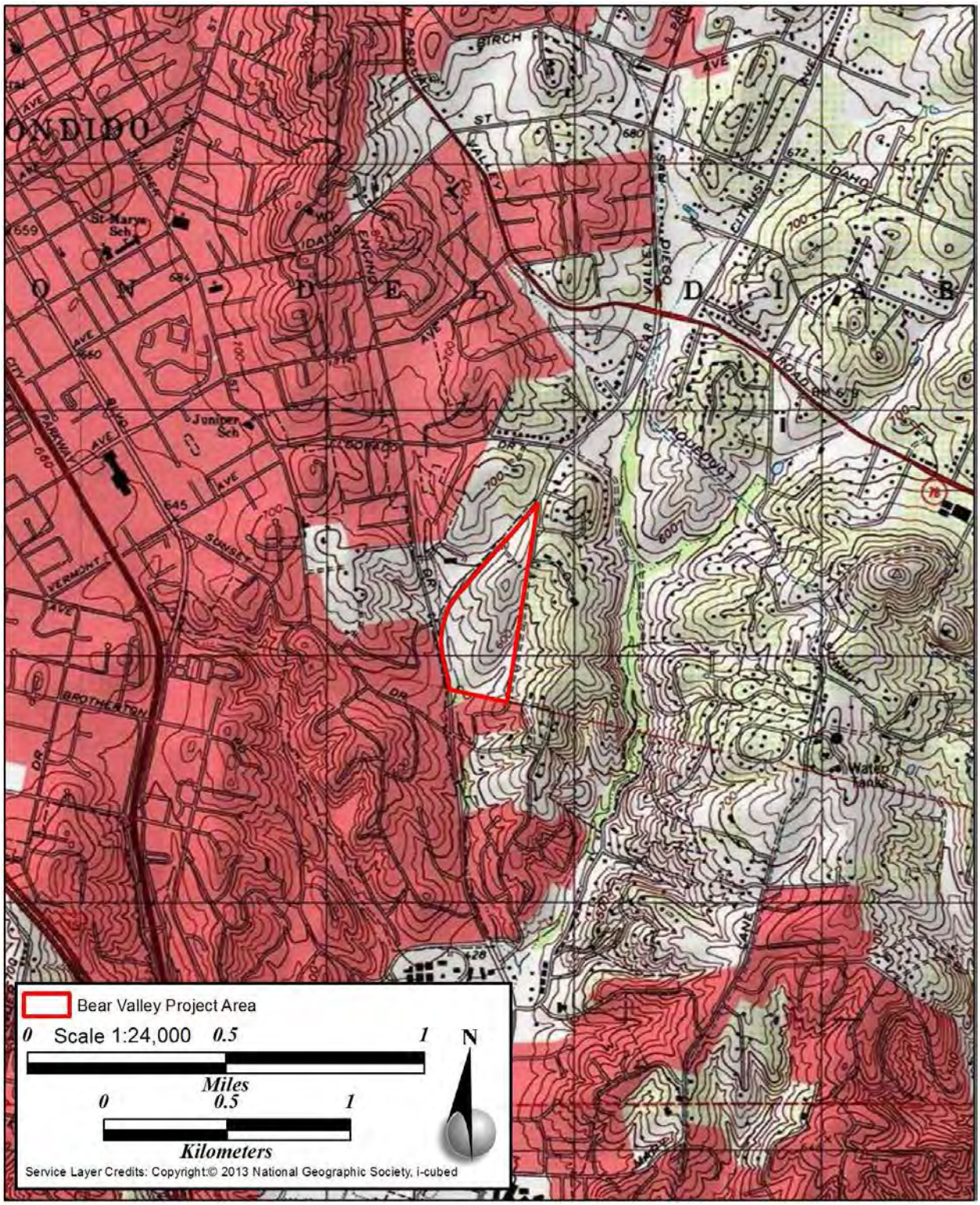


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March 24, 2016

Kwaaymii Laguna Band of Mission Indians
Carmen Lucas
P.O. Box 775
Pine Valley, CA 91962

Re: Bear Valley Residential Development in Escondido, San Diego County, California

Dear Ms. Lucas,

ASM Affiliates, Inc. (ASM) is conducting a cultural resources study for the Bear Valley Residential Project (Project) located on a 40.9-acre parcel on Bear Valley Parkway in Escondido, San Diego County, California. The Project is located on the Escondido USGS 7.5' Quadrangle, within an un-sectioned portion of Township 12 South, Range 2 West (Figure 1). The Project is being undertaken in compliance with the California Environmental Quality Act (CEQA) for the City of Escondido. The proposed Project consists of a subdivision of 40.9 acres into 55 residential lots, each containing a minimum area of 10,000 square feet. In addition to the residential lots, the project proposes two private street lots, seven open space lots, and one recreation lot.

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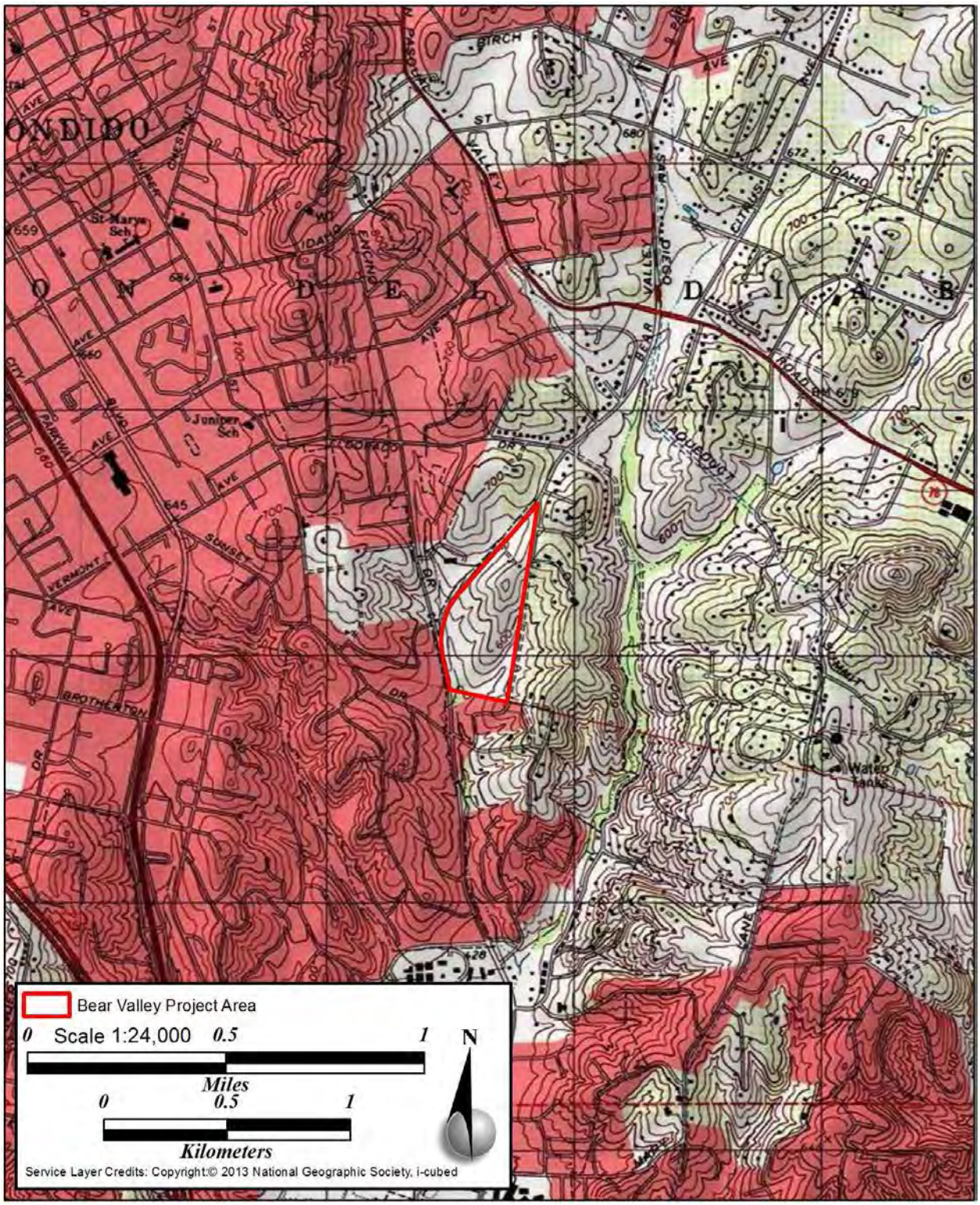


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March 24, 2016

Pechanga Band of Mission Indians
Mark Macarro, Chairperson
P.O. Box 1477
Temecula, CA 92593

Re: Bear Valley Residential Development in Escondido, San Diego County, California

Dear Mr. Macarro,

ASM Affiliates, Inc. (ASM) is conducting a cultural resources study for the Bear Valley Residential Project (Project) located on a 40.9-acre parcel on Bear Valley Parkway in Escondido, San Diego County, California. The Project is located on the Escondido USGS 7.5' Quadrangle, within an un-sectioned portion of Township 12 South, Range 2 West (Figure 1). The Project is being undertaken in compliance with the California Environmental Quality Act (CEQA) for the City of Escondido. The proposed Project consists of a subdivision of 40.9 acres into 55 residential lots, each containing a minimum area of 10,000 square feet. In addition to the residential lots, the project proposes two private street lots, seven open space lots, and one recreation lot.

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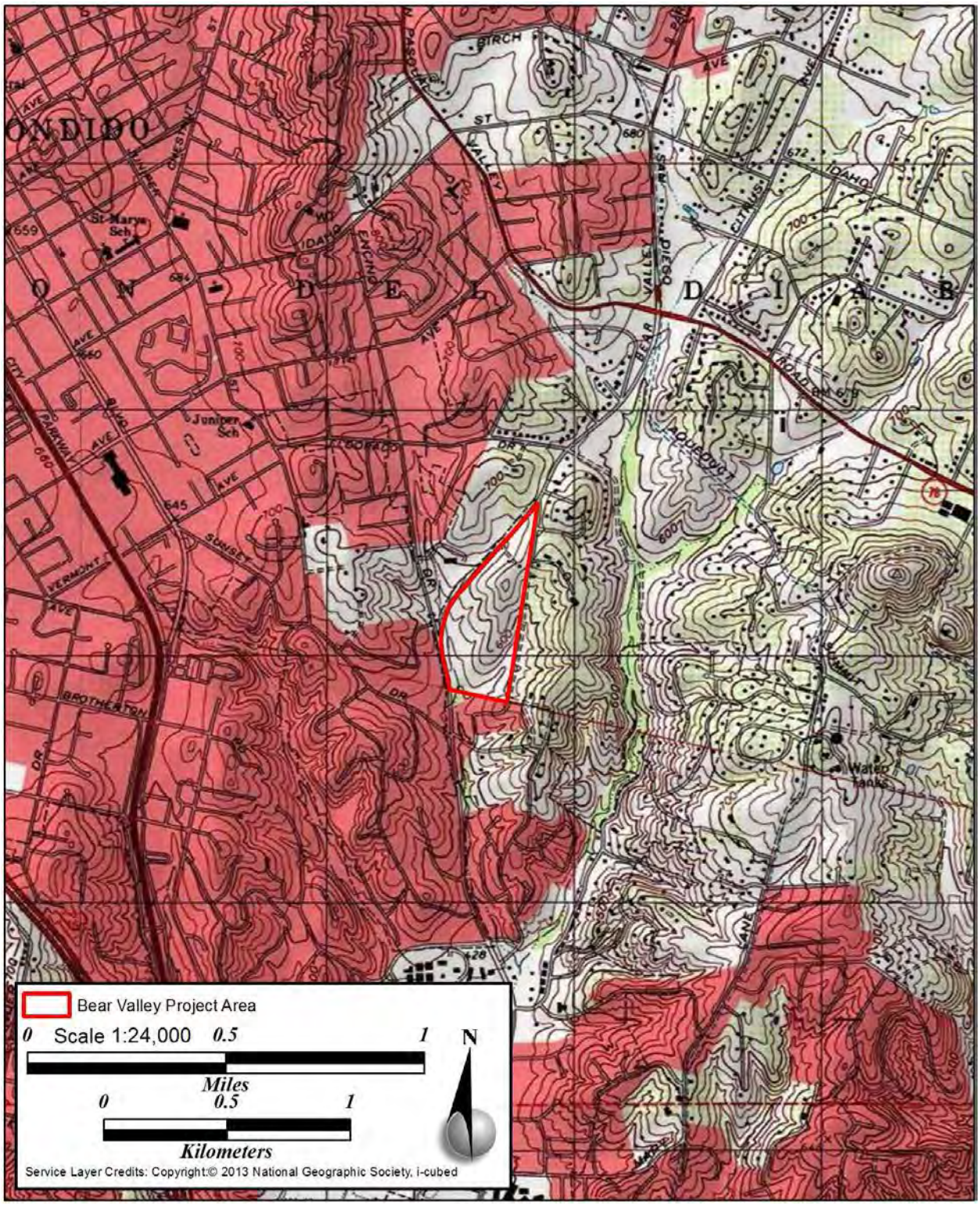


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March 24, 2016

Pauma Band of Luiseno Indians - Pauma & Yuima
Randall Majel Chairperson
P.O. Box 369, Ext. 303
Pauma Valley, CA 92061

Re: Bear Valley Residential Development in Escondido, San Diego County, California

Dear Mr. Majel,

ASM Affiliates, Inc. (ASM) is conducting a cultural resources study for the Bear Valley Residential Project (Project) located on a 40.9-acre parcel on Bear Valley Parkway in Escondido, San Diego County, California. The Project is located on the Escondido USGS 7.5' Quadrangle, within an un-sectioned portion of Township 12 South, Range 2 West (Figure 1). The Project is being undertaken in compliance with the California Environmental Quality Act (CEQA) for the City of Escondido. The proposed Project consists of a subdivision of 40.9 acres into 55 residential lots, each containing a minimum area of 10,000 square feet. In addition to the residential lots, the project proposes two private street lots, seven open space lots, and one recreation lot.

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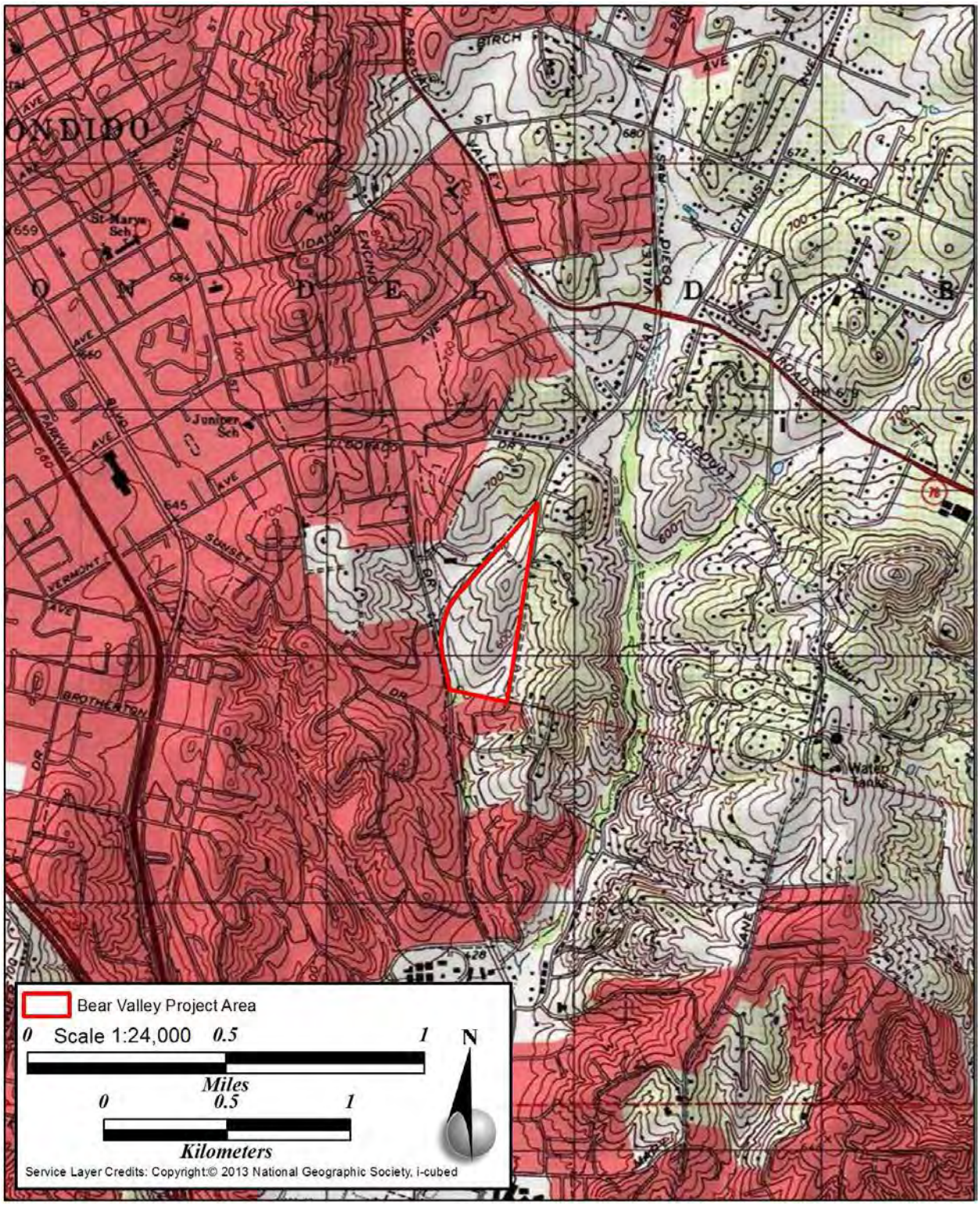


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March 24, 2016

Sycuan Band of the Kumeyaay Nation
Cody J. Martinez, Chairperson
1 Kwaaypaay Court
El Cajon, CA 92019

Re: Bear Valley Residential Development in Escondido, San Diego County, California

Dear Mr. Martinez,

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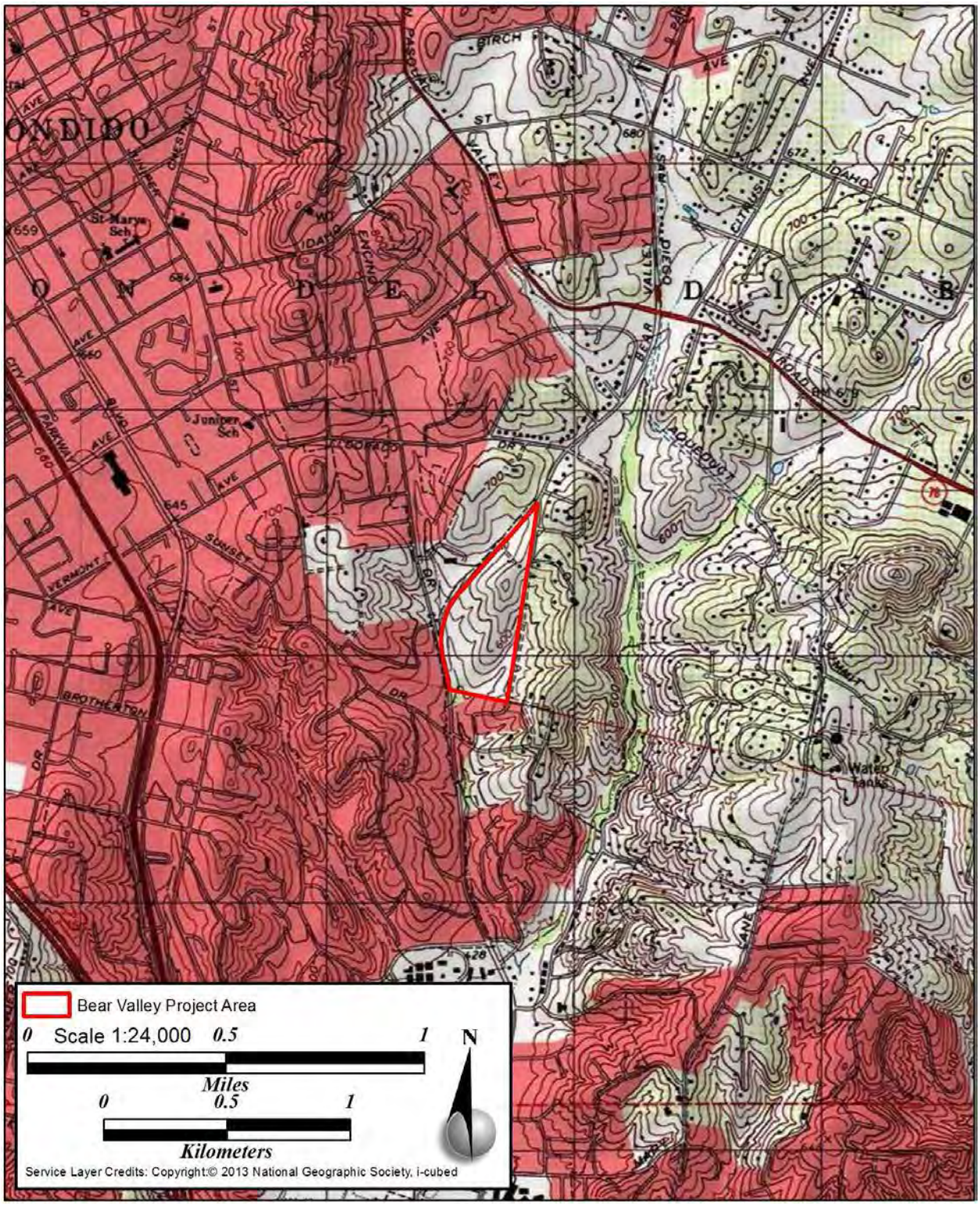


Figure 1. Map of the Project Area.

March 24, 2016

Rincon Band of Mission Indians
Bo Mazzetti, Chairperson
1 West Tribal Road
Valley Center, CA 92082

Re: Bear Valley Residential Development in Escondido, San Diego County, California

Dear Mr. Mazzetti,

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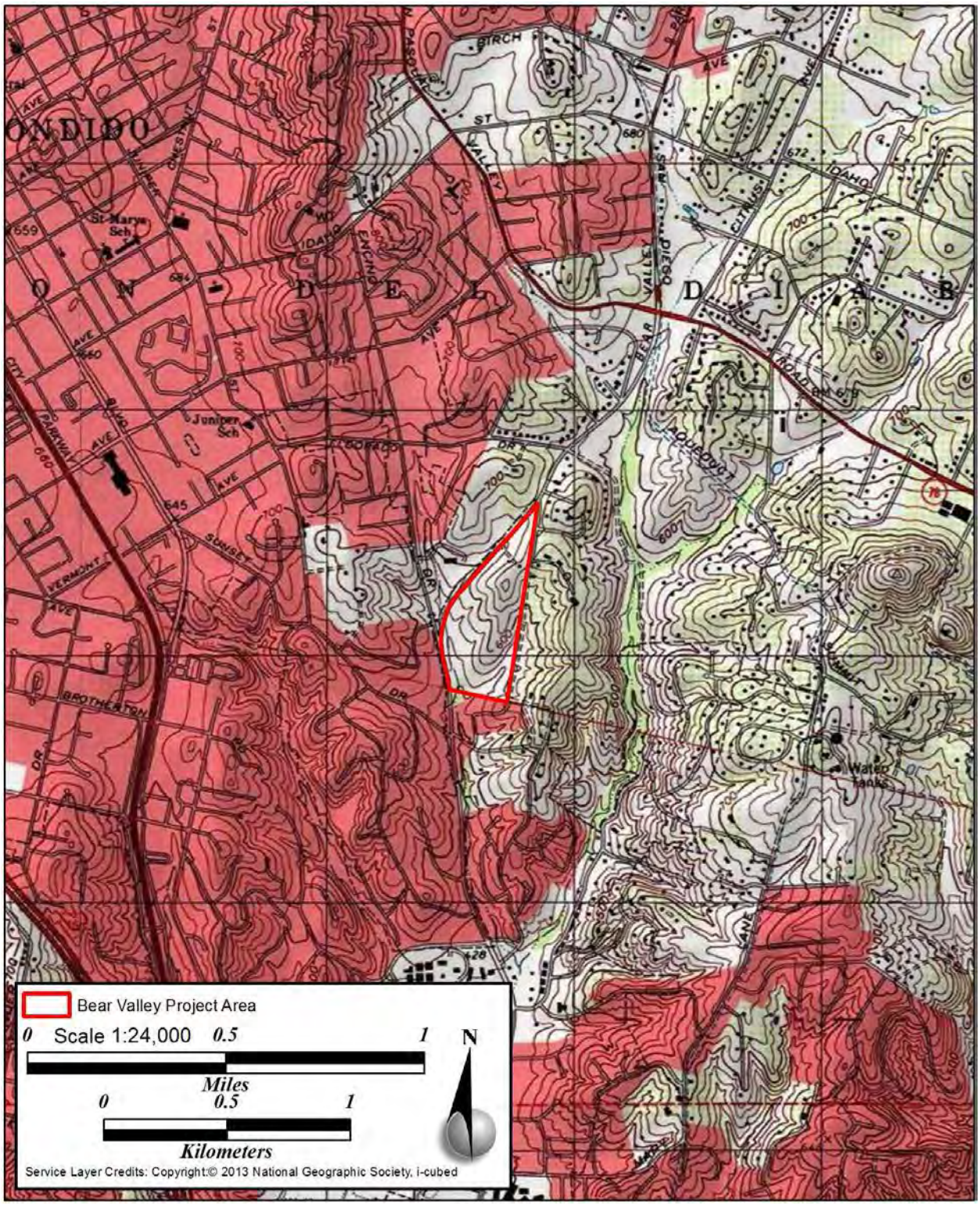


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March 24, 2016

San Luis Rey Band of Mission Indians
Carmen Mojado
1889 Sunset Drive
Vista, CA 92081

Re: Bear Valley Residential Development in Escondido, San Diego County, California

Dear Ms. Mojado,

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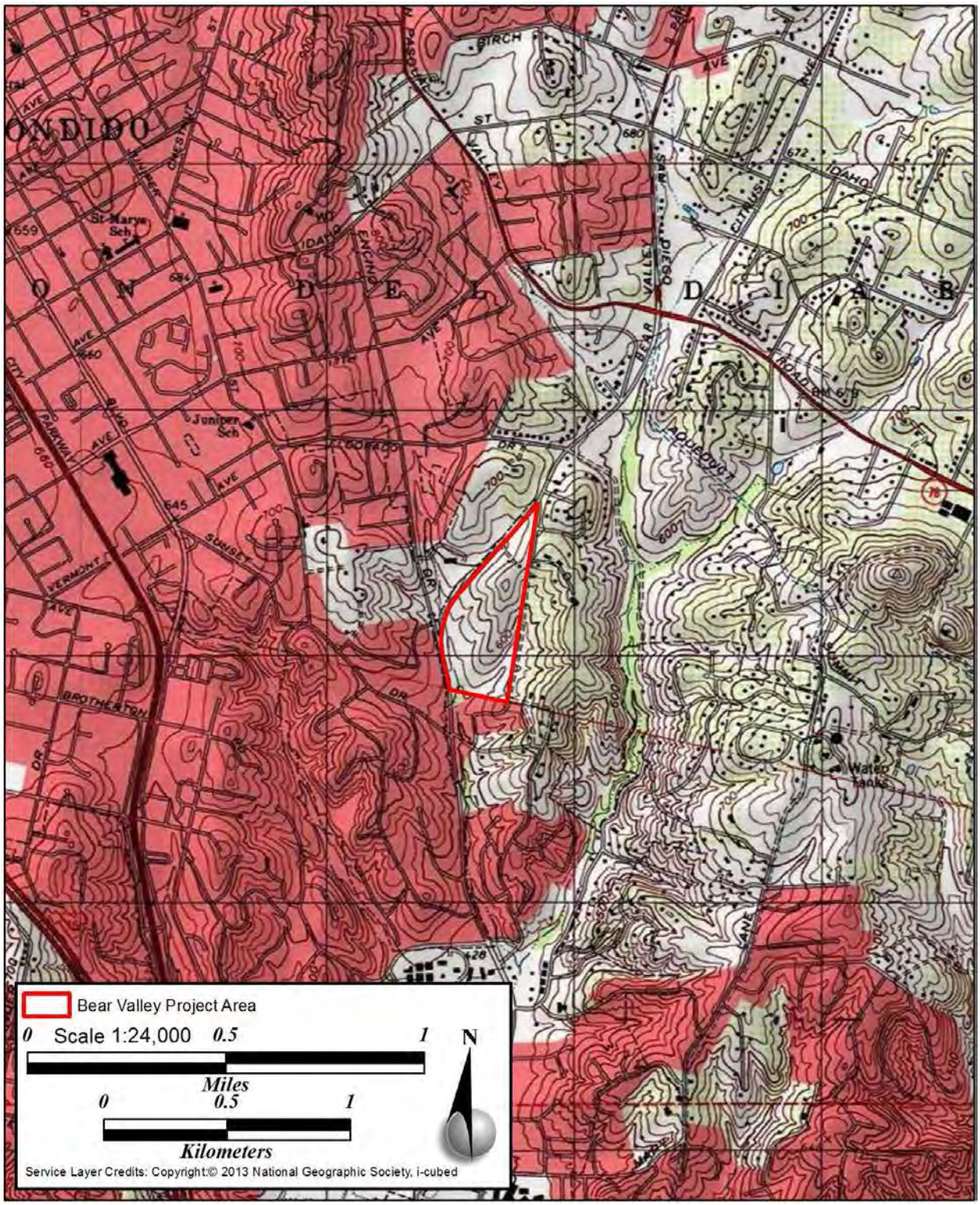


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March 24, 2016

Soboba Band of Luiseno Indians
Rosemary Morillo, Chairperson
P.O. Box 487 Luiseno
San Jacinto, CA 92581

Re: Bear Valley Residential Development in Escondido, San Diego County, California

Dear Ms. Morillo,

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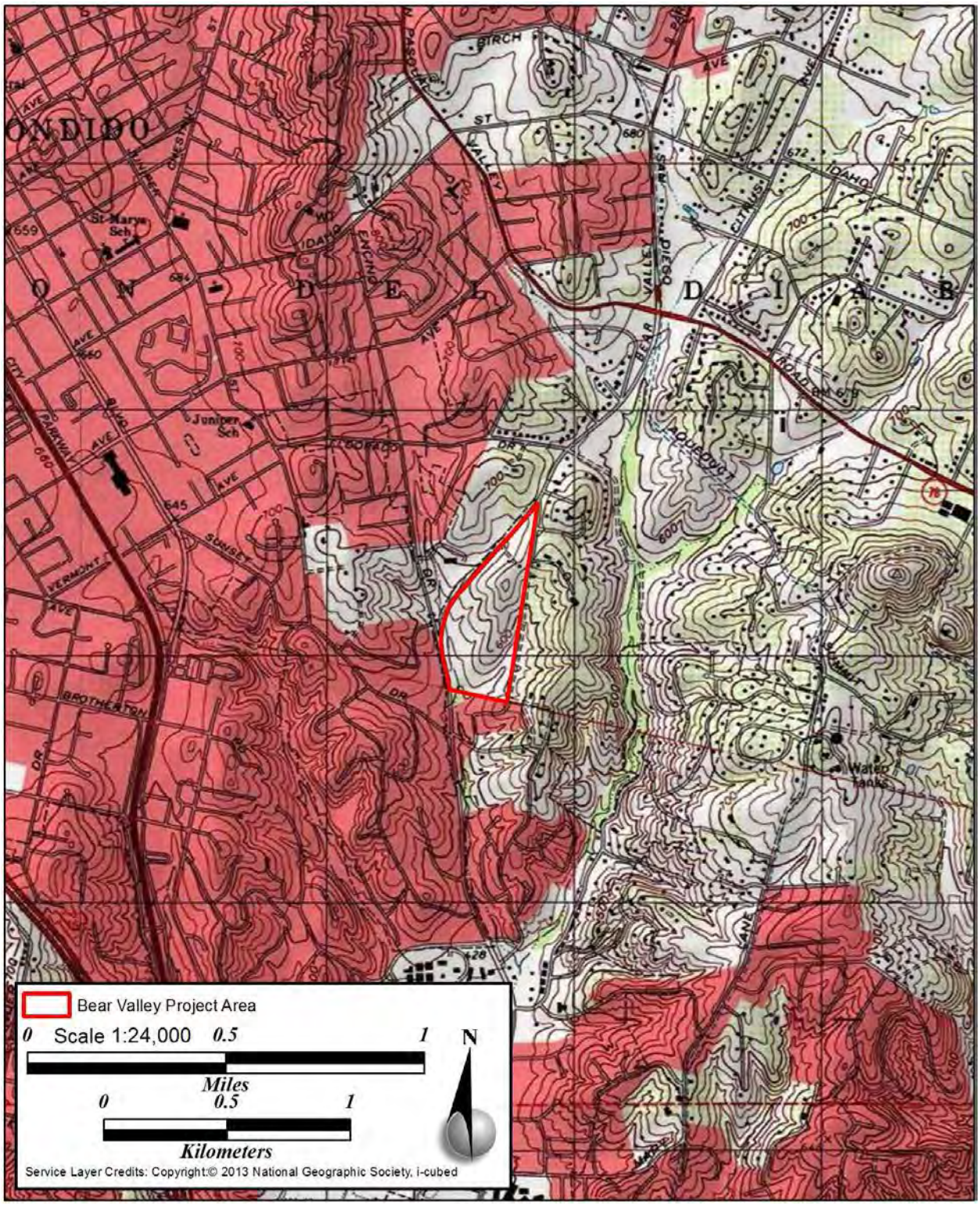


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March 24, 2016

Inaja Band of Mission Indians
Rebecca Osuna, Chairman
2005 S. Escondido Blvd.
Escondido, CA 92025

Re: Bear Valley Residential Development in Escondido, San Diego County, California

Dear Ms. Osuna,

ASM Affiliates, Inc. (ASM) is conducting a cultural resources study for the Bear Valley Residential Project (Project) located on a 40.9-acre parcel on Bear Valley Parkway in Escondido, San Diego County, California. The Project is located on the Escondido USGS 7.5' Quadrangle, within an un-sectioned portion of Township 12 South, Range 2 West (Figure 1). The Project is being undertaken in compliance with the California Environmental Quality Act (CEQA) for the City of Escondido. The proposed Project consists of a subdivision of 40.9 acres into 55 residential lots, each containing a minimum area of 10,000 square feet. In addition to the residential lots, the project proposes two private street lots, seven open space lots, and one recreation lot.

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Senior Archaeologist

Attachments: Figure 1

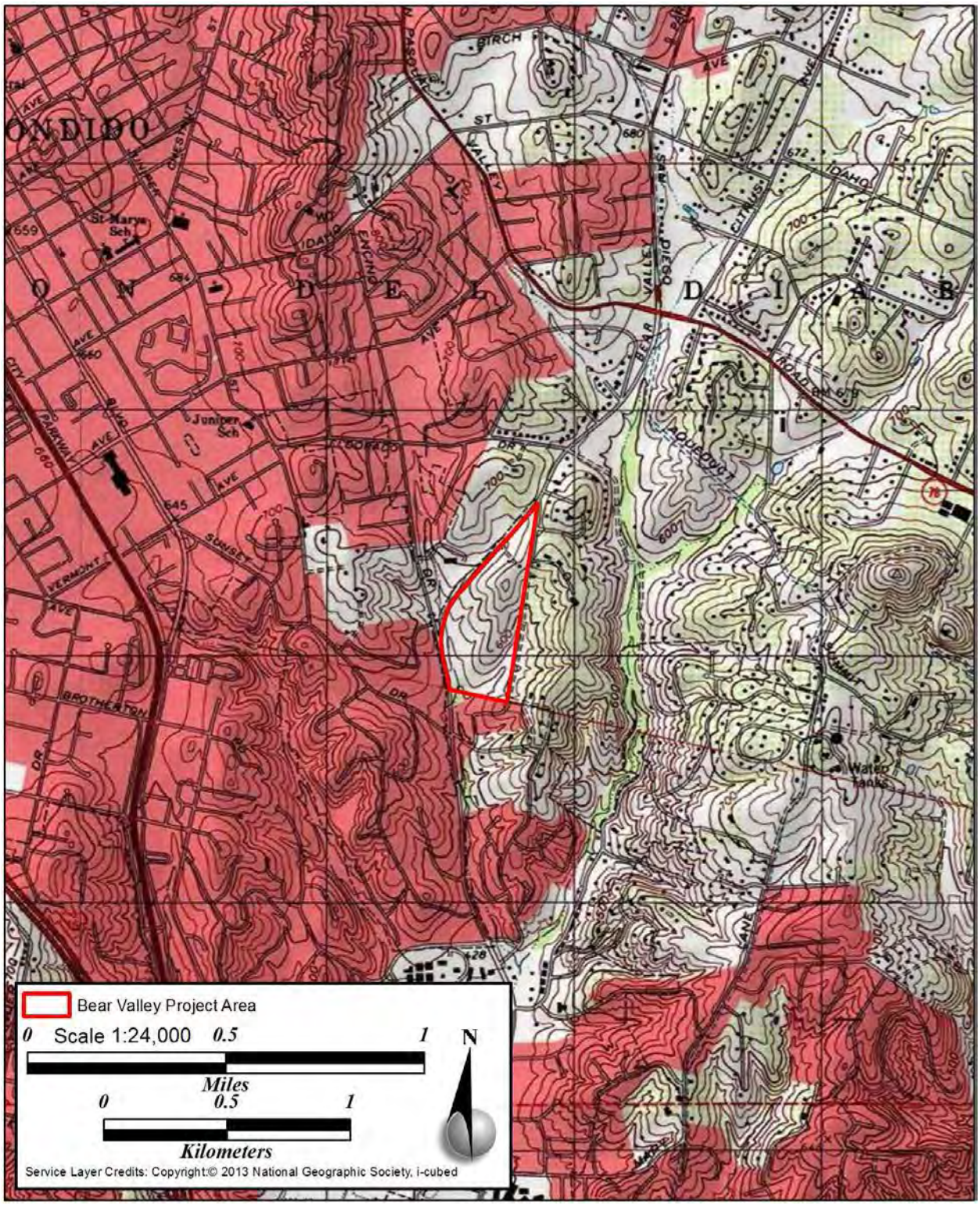


Figure 1. Map of the Project Area.

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March 24, 2016

Mesa Grande Band of Mission Indians
Virgil Oyos, Chairperson
P.O Box 270
Santa Ysabel, CA 92070

Re: Bear Valley Residential Development in Escondido, San Diego County, California

Dear Mr. Oyos,

ASM Affiliates, Inc. (ASM) is conducting a cultural resources study for the Bear Valley Residential Project (Project) located on a 40.9-acre parcel on Bear Valley Parkway in Escondido, San Diego County, California. The Project is located on the Escondido USGS 7.5' Quadrangle, within an un-sectioned portion of Township 12 South, Range 2 West (Figure 1). The Project is being undertaken in compliance with the California Environmental Quality Act (CEQA) for the City of Escondido. The proposed Project consists of a subdivision of 40.9 acres into 55 residential lots, each containing a minimum area of 10,000 square feet. In addition to the residential lots, the project proposes two private street lots, seven open space lots, and one recreation lot.

A records search of the Sacred Lands File with the California Native American Heritage Commission failed to indicate the presence of Native American traditional cultural resources in the immediate project area. ASM has also completed a records search at the South Coastal Information Center.

We are contacting you to find out if you are aware of any issues of cultural concern regarding the area shown on the enclosed map. In particular, we would like to know if you have knowledge of any Traditional Cultural Properties, Sacred Sites, resource collecting areas, or any other areas of concern of which you wish us to be aware. We understand the need for confidentiality in these matters.

If you have any questions or concerns regarding the proposed project, we will contact you about the best way to include consideration of those concerns while maintaining confidentiality. You can contact ASM at the address and telephone number for our Carlsbad office, listed below, or myself at the e-mail address below. We appreciate any input you may have on this project, and understand that consultation is a private and ongoing process. Again, any information you provide us will remain confidential.

Sincerely,

James T. Daniels, Jr., M.A., RPA
jdaniels@asmaffiliates.com
Senior Archaeologist

Attachments: Figure 1

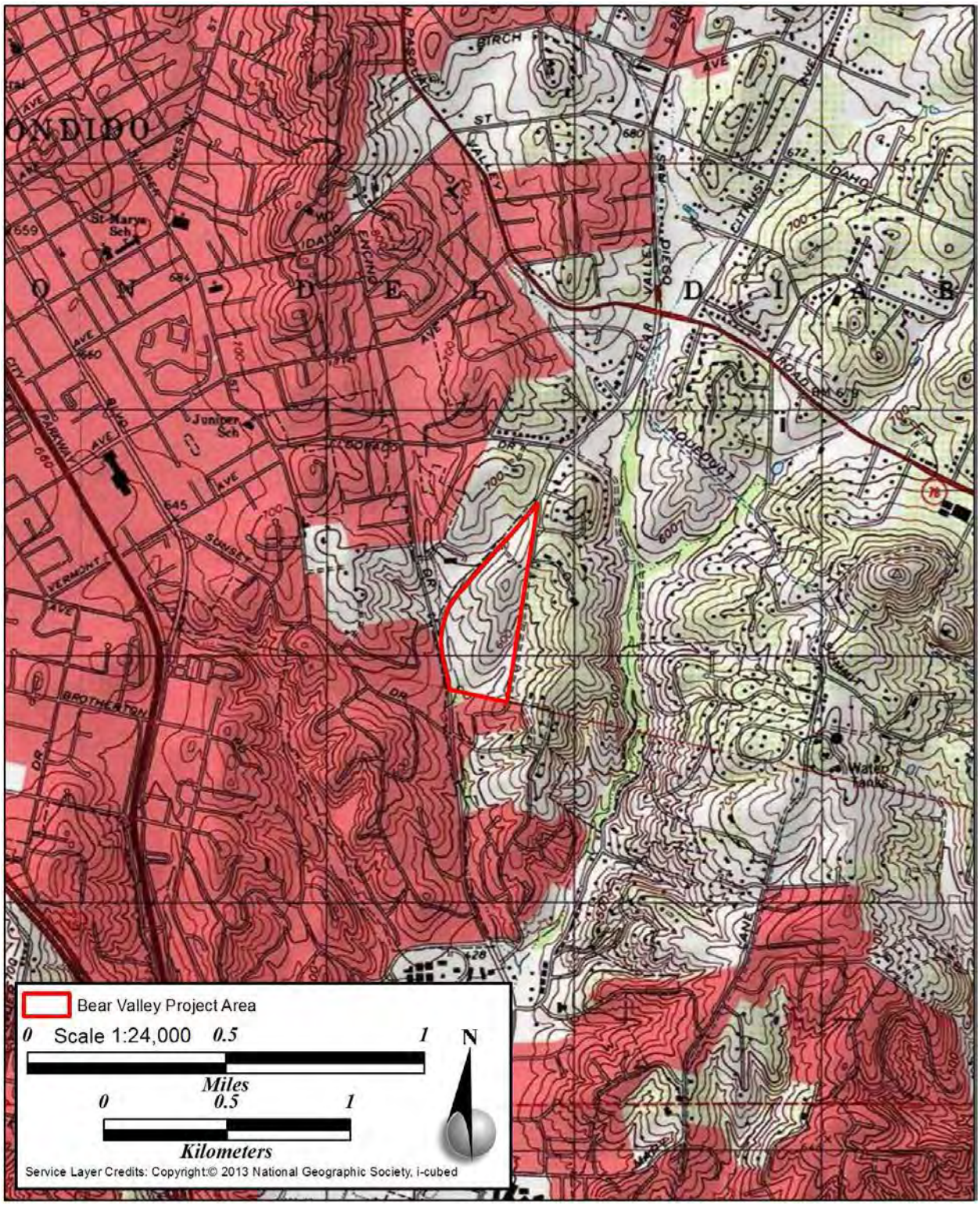


Figure 1. Map of the Project Area.

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March 24, 2016

Iipay Nation of Santa Ysabel
Virgil .Perez, Chairperson
P .0. Box 130
Santa Ysabel, CA 92070

Re: Bear Valley Residential Development in Escondido, San Diego County, California

Dear Mr. Perez,

ASM Affiliates, Inc. (ASM) is conducting a cultural resources study for the Bear Valley Residential Project (Project) located on a 40.9-acre parcel on Bear Valley Parkway in Escondido, San Diego County, California. The Project is located on the Escondido USGS 7.5' Quadrangle, within an un-sectioned portion of Township 12 South, Range 2 West (Figure 1). The Project is being undertaken in compliance with the California Environmental Quality Act (CEQA) for the City of Escondido. The proposed Project consists of a subdivision of 40.9 acres into 55 residential lots, each containing a minimum area of 10,000 square feet. In addition to the residential lots, the project proposes two private street lots, seven open space lots, and one recreation lot.

A records search of the Sacred Lands File with the California Native American Heritage Commission failed to indicate the presence of Native American traditional cultural resources in the immediate project area. ASM has also completed a records search at the South Coastal Information Center.

We are contacting you to find out if you are aware of any issues of cultural concern regarding the area shown on the enclosed map. In particular, we would like to know if you have knowledge of any Traditional Cultural Properties, Sacred Sites, resource collecting areas, or any other areas of concern of which you wish us to be aware. We understand the need for confidentiality in these matters.

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Senior Archaeologist

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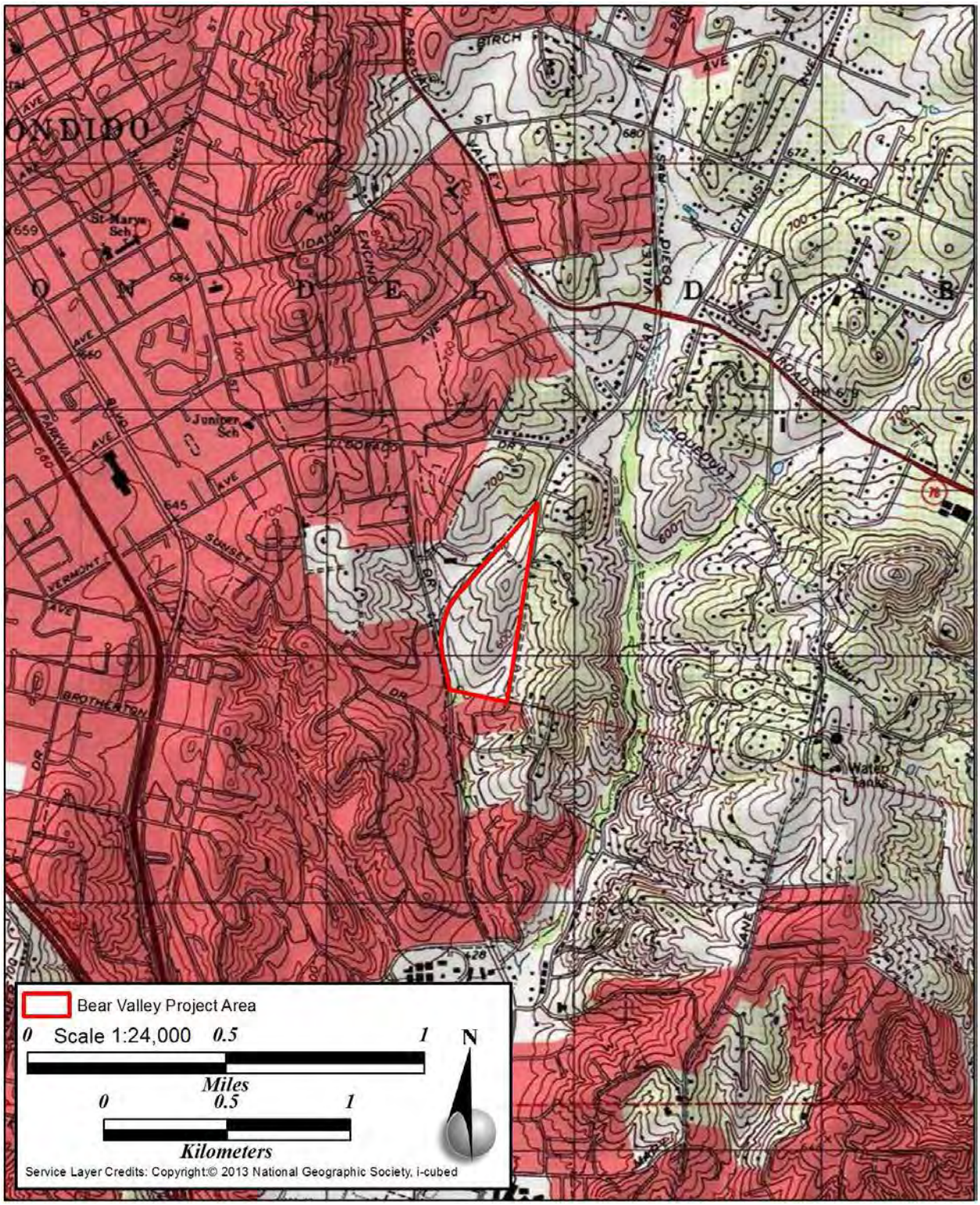


Figure 1. Map of the Project Area.

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March 24, 2016

Jamul Indian Village
Erica Pinto, Chairperson
P.O. Box 612
Jamul, CA 91935

Re: Bear Valley Residential Development in Escondido, San Diego County, California

Dear Ms. Pinto,

ASM Affiliates, Inc. (ASM) is conducting a cultural resources study for the Bear Valley Residential Project (Project) located on a 40.9-acre parcel on Bear Valley Parkway in Escondido, San Diego County, California. The Project is located on the Escondido USGS 7.5' Quadrangle, within an un-sectioned portion of Township 12 South, Range 2 West (Figure 1). The Project is being undertaken in compliance with the California Environmental Quality Act (CEQA) for the City of Escondido. The proposed Project consists of a subdivision of 40.9 acres into 55 residential lots, each containing a minimum area of 10,000 square feet. In addition to the residential lots, the project proposes two private street lots, seven open space lots, and one recreation lot.

A records search of the Sacred Lands File with the California Native American Heritage Commission failed to indicate the presence of Native American traditional cultural resources in the immediate project area. ASM has also completed a records search at the South Coastal Information Center.

We are contacting you to find out if you are aware of any issues of cultural concern regarding the area shown on the enclosed map. In particular, we would like to know if you have knowledge of any Traditional Cultural Properties, Sacred Sites, resource collecting areas, or any other areas of concern of which you wish us to be aware. We understand the need for confidentiality in these matters.

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jdaniels@asmaffiliates.com
Senior Archaeologist

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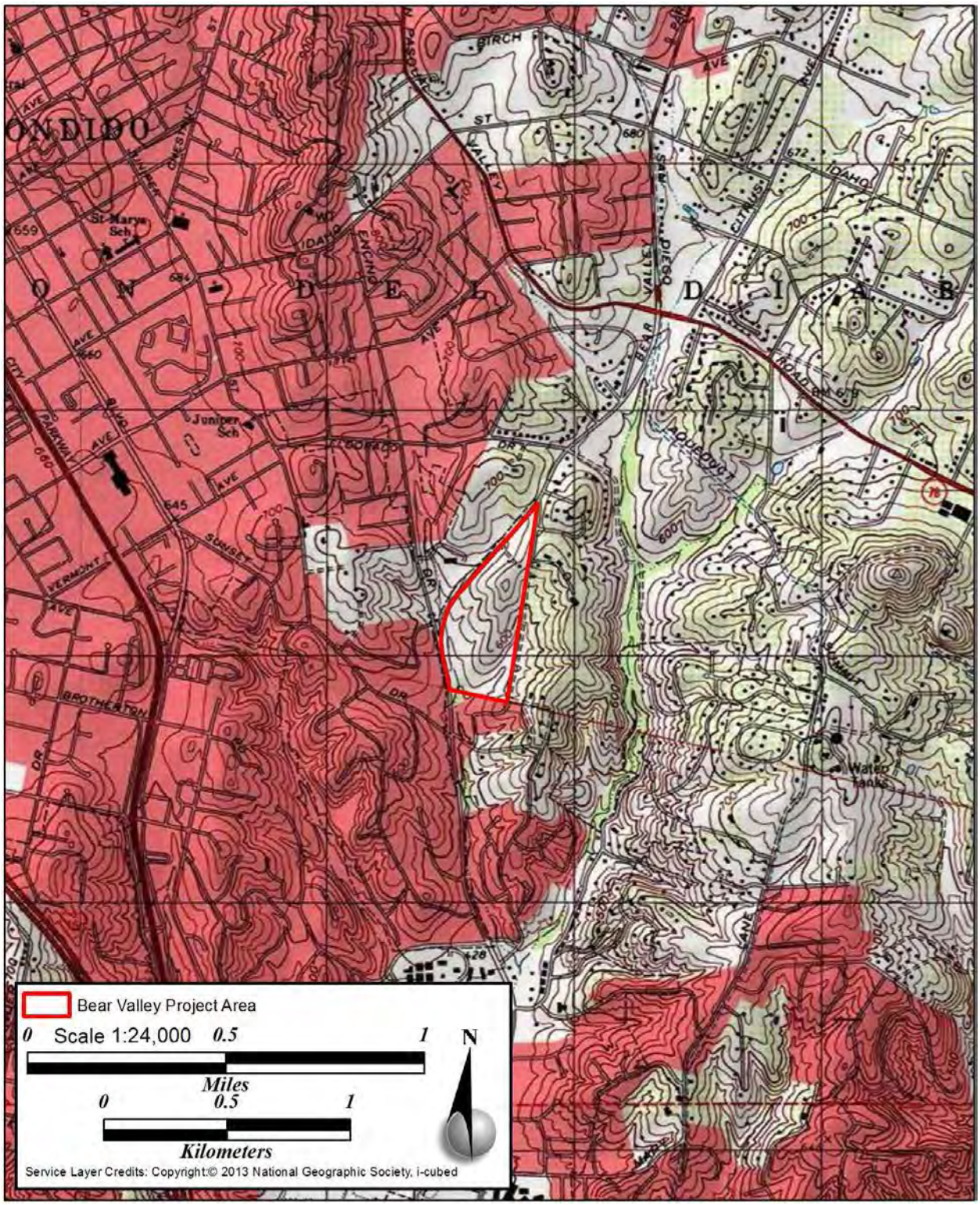


Figure 1. Map of the Project Area.

March 24, 2016

La Jolla Band of Luiseno Indians
Thomas Rodriguez, Chairperson
22000 Highway 76
Pauma Valley, CA 92061

Re: Bear Valley Residential Development in Escondido, San Diego County, California

Dear Mr. Rodriguez,

ASM Affiliates, Inc. (ASM) is conducting a cultural resources study for the Bear Valley Residential Project (Project) located on a 40.9-acre parcel on Bear Valley Parkway in Escondido, San Diego County, California. The Project is located on the Escondido USGS 7.5' Quadrangle, within an un-sectioned portion of Township 12 South, Range 2 West (Figure 1). The Project is being undertaken in compliance with the California Environmental Quality Act (CEQA) for the City of Escondido. The proposed Project consists of a subdivision of 40.9 acres into 55 residential lots, each containing a minimum area of 10,000 square feet. In addition to the residential lots, the project proposes two private street lots, seven open space lots, and one recreation lot.

A records search of the Sacred Lands File with the California Native American Heritage Commission failed to indicate the presence of Native American traditional cultural resources in the immediate project area. ASM has also completed a records search at the South Coastal Information Center.

We are contacting you to find out if you are aware of any issues of cultural concern regarding the area shown on the enclosed map. In particular, we would like to know if you have knowledge of any Traditional Cultural Properties, Sacred Sites, resource collecting areas, or any other areas of concern of which you wish us to be aware. We understand the need for confidentiality in these matters.

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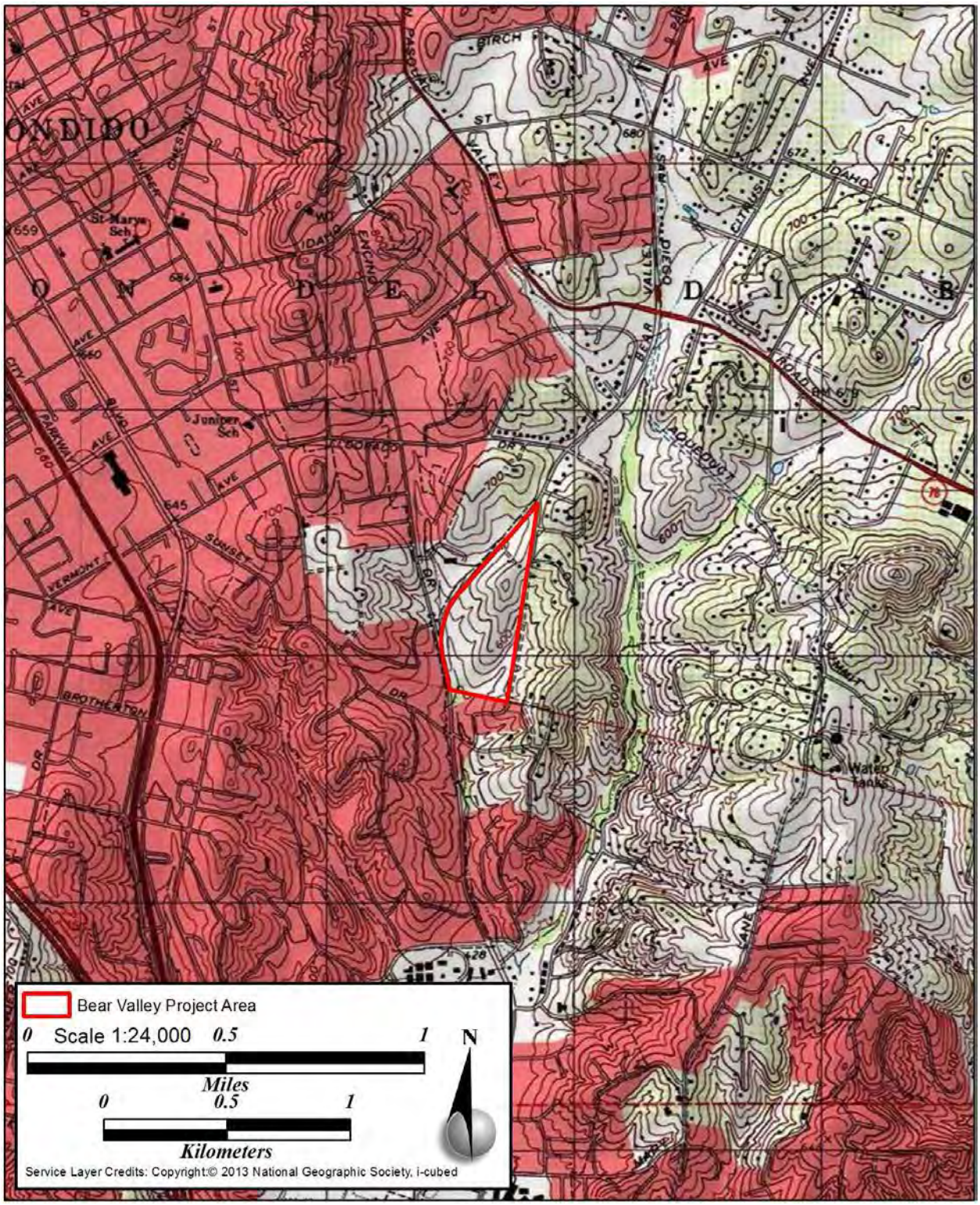


Figure 1. Map of the Project Area.

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March 24, 2016

Viejas Band of Kumeyaay Indians
Robert J. Welch, Sr., Chairperson
1 Viejas Grade Road
Alpine, CA 91901

Re: Bear Valley Residential Development in Escondido, San Diego County, California

Dear Mr. Welch,

ASM Affiliates, Inc. (ASM) is conducting a cultural resources study for the Bear Valley Residential Project (Project) located on a 40.9-acre parcel on Bear Valley Parkway in Escondido, San Diego County, California. The Project is located on the Escondido USGS 7.5' Quadrangle, within an un-sectioned portion of Township 12 South, Range 2 West (Figure 1). The Project is being undertaken in compliance with the California Environmental Quality Act (CEQA) for the City of Escondido. The proposed Project consists of a subdivision of 40.9 acres into 55 residential lots, each containing a minimum area of 10,000 square feet. In addition to the residential lots, the project proposes two private street lots, seven open space lots, and one recreation lot.

A records search of the Sacred Lands File with the California Native American Heritage Commission failed to indicate the presence of Native American traditional cultural resources in the immediate project area. ASM has also completed a records search at the South Coastal Information Center.

We are contacting you to find out if you are aware of any issues of cultural concern regarding the area shown on the enclosed map. In particular, we would like to know if you have knowledge of any Traditional Cultural Properties, Sacred Sites, resource collecting areas, or any other areas of concern of which you wish us to be aware. We understand the need for confidentiality in these matters.

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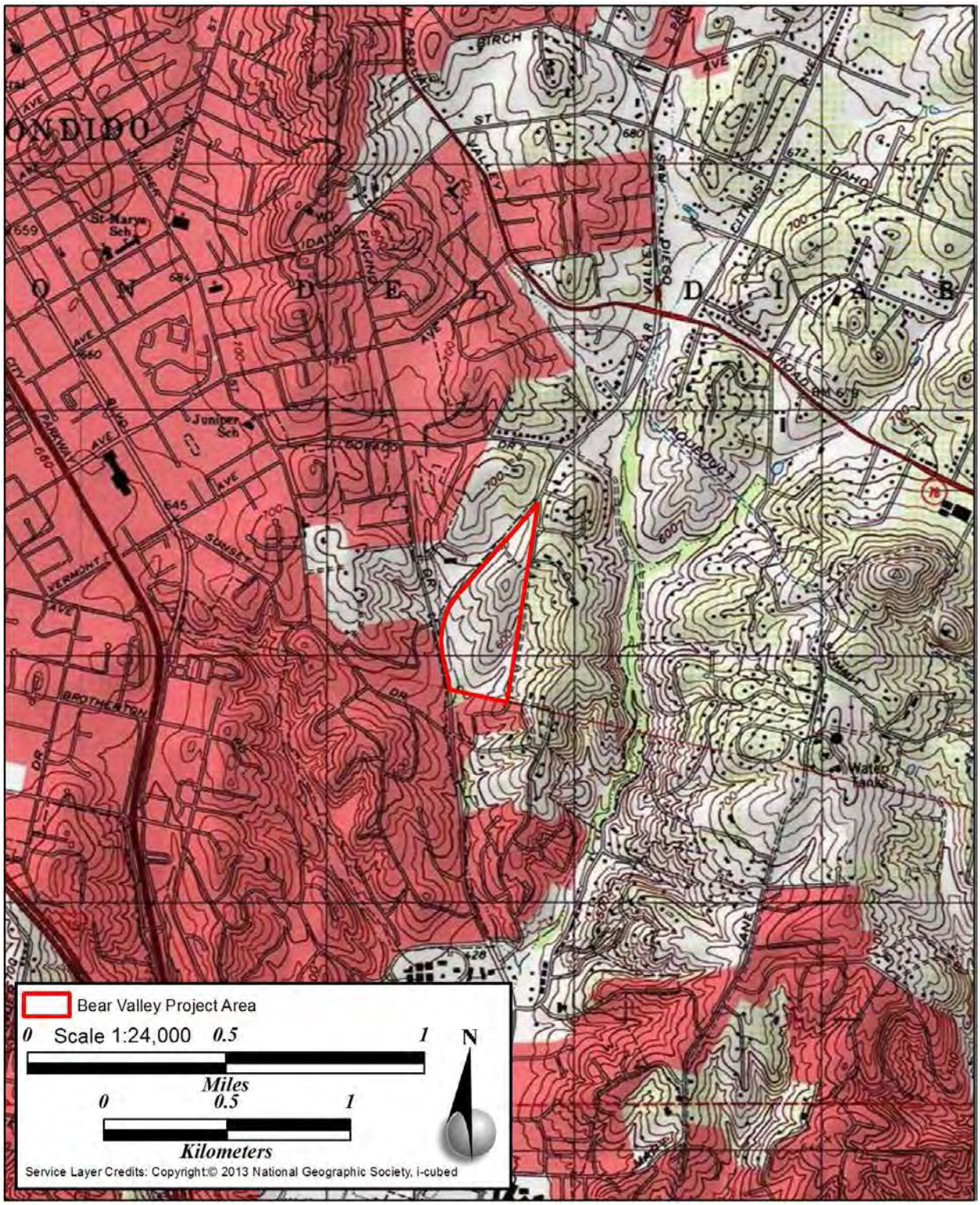



Figure 1. Map of the Project Area.

## Ann F. Dolmage

**From:** Merri Lopez-Keifer <lopezkeifer@gmail.com>
**Sent:** Tuesday, September 15, 2015 5:00 PM
**To:** Ann F. Dolmage
**Cc:** Carmen Mojado
**Subject:** AB 52 Consultation Follow Up - 661 Bear Valley Parkway Residential Project

Dear Ann,

Thank you for participating in the AB 52 Consultation regarding the 661 Bear Valley Parkway Residential Project ("Project") on August 28, 2015 with myself and other tribal representatives from the San Luis Rey Band of Mission Indians.

During our AB 52 Consultation, SLR requested that a tribal cultural resource survey be conducted at the Project Site and that a Luiseno Native American monitor be present during such survey.

In addition, the Tribe requested that AB 52 Consultation remain open and on-going during this time. Once a tribal cultural resource survey has been completed, please contact Cami Mojado so a follow up consultation may be arranged with SLR.

Thank you again. I look forward to hearing back from you.

Best,

Merri

Merri Lopez-Keifer
Chief Legal Counsel
San Luis Rey Band of Mission Indians
(925) 457-3395
lopezkeifer@gmail.com

The information in this e-mail message is intended for the confidential use of the addressees only. The information is subject to attorney-client privilege and/or may be attorney work product. Recipients should not file copies of this e-mail with publicly accessible records. If you are not an addressee or an authorized agent responsible for delivering this e-mail to a designated addressee, you have received this e-mail in error, and any further review, dissemination, distribution, copying or forwarding of this e-mail is strictly prohibited. If you received this e-mail in error, please notify us immediately at (925) 457-3395. Thank you.

661 BVP

Rincon meeting 9/1

- Jim McPherson
- Jack Henthorn
- Bill
- Ann

- Survey, excavation, & monitoring - want a trained Native American monitor on-site
- Reburial of materials prefered to curation
  - human remains buried where found
- Access to cultural study & opportunity to comment

- would prefer monitoring during all ground-disturbing activities

- check w/ Jim before each consultation to see if he's okay with applicant coming

## Ann F. Dolmage

**From:** Merri Lopez-Keifer <lopezkeifer@gmail.com>
**Sent:** Wednesday, August 26, 2015 3:15 PM
**To:** Ann F. Dolmage
**Cc:** Carmen Mojado
**Subject:** SLR Response to AB 52 Notifications Regarding 661 Bear Valley Parkway Residential & Westfield North County Mall Movie Theater Project
**Attachments:** Westfield North County Mall Movie Theatre Request-for-Formal-Tribal-Consultation.pdf; 661 Bear Valley Parkway Residential Project Request-for-Formal-Tribal-Consultation.pdf

Dear Ms. Dolmage:

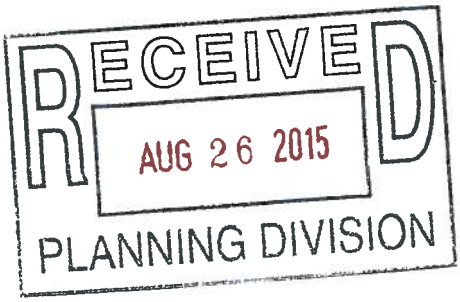
Attached please find a letter from the San Luis Rey Band of Mission Indians regarding your AB 52 Notifications regarding the 661 Bear Valley Parkway Residential and Westfield North County Mall Movie Theater Projects.

The San Luis Rey Band of Mission Indians would like to consult with you regarding these particular projects. Is it possible to arrange an AB 52 consultation meeting regarding these projects this Friday morning? I realize it is incredibly short notice. I have also requested AB 52 Consultation with Jay Paul and John Helmer for this same time period.

Please let me know as soon as possible. I am based in Northern California and will be in town Friday.

Sincerely,
Merri Lopez-Keifer
Chief Legal Counsel
San Luis Rey Band of Mission Indians
(925) 457-3395
lopezkeifer@gmail.com

The information in this e-mail message is intended for the confidential use of the addressees only. The information is subject to attorney-client privilege and/or may be attorney work product. Recipients should not file copies of this e-mail with publicly accessible records. If you are not an addressee or an authorized agent responsible for delivering this e-mail to a designated addressee, you have received this e-mail in error, and any further review, dissemination, distribution, copying or forwarding of this e-mail is strictly prohibited. If you received this e-mail in error, please notify us immediately at (925) 457-3395. Thank you.



# SAN LUIS REY BAND OF MISSION INDIANS

*1889 Sunset Drive • Vista, California 92081*
*760-724-8505 • FAX 760-724-2172*
*www.slrmissionindians.org*



RECEIVED
AUG 26 2015
PLANNING DIVISION


August 26, 2015

Ann Dolmage
Associate Planner
Planning Division
City of Escondido
201 North Broadway
Escondido, CA 92025

**VIA U.S. POST & E-MAIL**
**adolmage@escondido.org**

**RE: Formal Request for Tribal Consultation Pursuant to the California Environmental Quality Act (CEQA), Public Resources Code section 21080.3.1, subds. (b), (d) and (e) for 661 Bear Valley Parkway Residential Project (Case Nos. SUB 15-0002, PHG-15-0004, PHG 15-0005, PHG 15-0006 and ENV 15-0001), City of Escondido**

Dear Ms. Dolmage:

This letter constitutes a formal request for tribal consultation under the provisions of the California Environmental Quality Act (CEQA) (Public Resources Code section 21080.3.1 subdivisions (b), (d) and (e)) for the mitigation of potential project impacts to tribal cultural resource for the above referenced project. The San Luis Rey Band of Mission Indians requested formal notice and information for all projects within your agency's geographical jurisdiction and received notification on August 12, 2015 regarding the above referenced project.

The San Luis Rey Band of Mission Indians requests consultation on the following topics checked below, which shall be included in consultation if requested (Public Resources Code section 21080.3.2, subd. (a)):

__X__ Alternatives to the project

__X__ Recommended mitigation measures

__X__ Significant effects of the project

The San Luis Rey Band of Mission Indians also requests consultation on the following discretionary topics checked below (Public Resources Code section 21080.3.2 (subd. (a):

__X__ Type of environmental review necessary

__X__ Significance of tribal cultural resources, including any regulations, policies or standards used by your agency to determine significance of tribal cultural

resources

__X__ Significance of the project's impacts on tribal cultural resources

__X__ Project alternatives and/or appropriate measures for preservation or mitigation that we may recommend, including, but not limited to:

(1) Avoidance and preservation of the resources in place, pursuant to Public Resources Code section 21084.3, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks or other open space, to incorporate the resources with culturally appropriate protection and management criteria;

(2) Treating the resources with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resources, including but not limited to the following:

a. Protecting the cultural character and integrity of the resource;
b. Protection the traditional use of the resource; and
c. Protecting the confidentiality of the resource.

(3) Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

(4) Protecting the resource.

Additionally, the San Luis Rey Band of Mission Indians requests to receive any cultural resources assessments or other assessments that have been completed on all or part of the project's potential "area of project effect" (APE), including, but not limited to:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:
   - A listing of any and all known cultural resources have already been recorded on or adjacent to the APE;
   - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
   - If the probability is low, moderate, or high that cultural resources are located in the APE.
   - Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the potential APE; and
   - If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:
   - Any report that may contain site forms, site significance, and

suggested mitigation measures.

All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code Section 6254.10.

3. The results of any Sacred Lands File (SFL) check conducted through Native American Heritage Commission. The request form can be found at http://www.nahc.ca.gov/slf_request.html. USGS 7.5-minute quadrangle name, township, range, and section required for the search.

4. Any ethnographic studies conducted for any area including all or part of the potential APE; and

5. Any geotechnical reports regarding all or part of the potential APE.

We would like to remind your agency that CEQA Guidelines section 15126.4, subdivision (b)(3) states that preservation in place is the preferred manner of mitigating impacts to archaeological sites. Section 15126.4, subd. (b)(3) of the CEQA Guidelines has been interpreted by the California Court of Appeal to mean that "feasible preservation in place must be adopted to mitigate impacts to historical resources of an archaeological nature unless the lead agency determines that another form of mitigation is available and provides superior mitigation of impacts." *Madera Oversight Coalition v. County of Madera* (2011) 199 Cal.App.4th 48, disapproved on other grounds, *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439.

The San Luis Rey Band of Mission Indians expects to begin consultation within 30 days of your receipt of this letter. Please contact the San Luis Rey Band of Mission Indians lead contact person identified in our previous request for notification.

Name: Cami Mojado
Title: Cultural Resources Manager
Address: 1889 Sunset Drive, Vista, CA 92081
Office Phone Number: 760-724-8505
Direct Cell Phone Number: 760-917-1736
Office Fax Number 760-724-2172
Email Address: cjmojado@slrmissionindians.org

Sincerely,

Merri Lopez-Keifer
Chief Legal Counsel

San Luis Rey Band of Mission Indians

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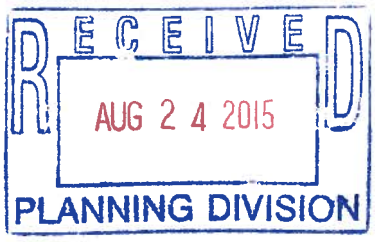
# RINCON BAND OF LUISEÑO INDIANS

**Cultural Resources Department**

1 W. Tribal Road · Valley Center, California 92082 ·
(760) 297-2635 Fax:(760) 749-2639




August 17, 2015

Ann Dolmage
City of Escondido
Community Development
Planning Division
201 North Broadway
Escondido, CA 92025

**Re: Bear Valley Residential Project**

Dear Ms. Dolmage:

This letter is written on behalf of the Rincon Band of Luiseño Indians. We have received your notification regarding the Bear Valley Residential Project and we thank you for the SB18/AB52 consultation on this project. The location you have identified is within the Territory of the Luiseño people, and is also within Rincon's specific area of Historic interest.

Embedded in the Luiseño Territory are Rincon's history, culture and identity. The project is in our Traditional Use Area and we believe there is potential for culture findings including the possibility of human remains and associated artifacts, all culturally associated findings are culturally significant to the Rincon people.

We do request continued consultation on this project at this time.

If there are further questions or concerns please do not hesitate to contact our office at (760) 297-2635.

Thank you for the opportunity to protect and preserve our cultural assets.

Sincerely,

Jim McPherson
Manager
Rincon Cultural Resources Department


Bo Mazzetti, Tribal Chairman · Stephanie Spencer, Vice Chairwoman · Steve Stallings, Council Member · Laurie E. Gonzalez, Council Member · Alfonso Kolb, Council Member

RECEIVED
AUG 20 2015
PLANNING DIVISION

SOBOBA BAND OF LUISEÑO INDIANS
EST. JUNE 19, 1883

August 17, 2015

Attn: Ann Dolmage, Associate Planner
City of Escondido
Planning Division
201 North Broadway
Escondido, CA 92025-4313

**Re: AB 52 Consultation; 661 Bear Valley Parkway Residential Project – Escondido, City Case Numbers: SUB 15-0002, PHG 15-0004, PHG 15-0005, PHG 15-0006, and ENV 15-0001**

The Soboba Band of Luiseño Indians has received your notification pursuant under Assembly Bill 52.

The Soboba Band of Luiseño Indians appreciates your observance of Tribal Cultural Resources and their preservation in your project. The information provided to us on said project(s) has been assessed through our Cultural Resource Department. At this time the Soboba Band does not have any specific concerns regarding known cultural resources in the specified areas that the project encompasses, but does request that the appropriate consultation continue to take place between concerned tribes, project proponents, and local agencies.

Also, working in and around traditional use areas intensifies the possibility of encountering cultural resources during any future construction/excavation phases that may take place. For this reason, the Soboba Band wishes to defer to the Pauma Band of Luiseño Indians and the Rincon Band of Luiseño Indians, who are in closer proximity to the project. Please feel free to contact me with any additional questions or concerns.

Sincerely,

Joseph Ontiveros
Cultural Resource Director
Soboba Band of Luiseño Indians
P.O. Box 487
San Jacinto, CA 92581
Phone (951) 654-5544 ext. 4137
Cell (951) 663-5279
jontiveros@soboba-nsn.gov

Confidentiality: The entirety of the contents of this letter shall remain confidential between Soboba and the City of Escondido. No part of the contents of this letter may be shared, copied, or utilized in any way with any other individual, entity, municipality, or tribe, whatsoever, without the express written permission of the Soboba Band of Luiseño Indians.

VIEJAS
TRIBAL GOVERNMENT

P.O Box 908
Alpine, CA 91903
#1 Viejas Grade Road
Alpine, CA 91901

Phone: 6194453810
Fax: 6194455337
viejas.com

April 5, 2016

James Daniels
2034 Corte Del Nogal
Carlsbad, CA 92011

RE: **Bear Valley**

Dear Mr. Daniels,

The Viejas Band of Kumeyaay Indians would like to request the Cultural Report on the above referenced project in order to make an informed decision/recommendation on the matter.

Sincerely,

VIEJAS BAND OF KUMEYAAY INDIANS

April 19, 2016

Attn: James T. Daniels, Jr., Senior Archaeologist
ASM Affiliates
2034 Corte Del Nogal
Carlsbad, CA 92011

SOBOBA BAND OF LUISEÑO INDIANS
EST. JUNE 19, 1883

**RE: Bear Valley Residential Development in Escondido, San Diego County, CA**

The Soboba Band of Luiseño Indians appreciates your observance of Tribal Cultural Resources and their preservation in your project. The information provided to us on said project(s) has been assessed through our Cultural Resource Department. At this time the Soboba Band does not have any specific concerns regarding known cultural resources in the specified areas that the project encompasses, but does request that the appropriate consultation continue to take place between concerned tribes, project proponents, and local agencies.

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San Jacinto, CA 92581
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Cell (951) 663-5279
jontiveros@soboba-nsn.gov

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## Jimmy Daniels

**From:** Cultural <Cultural@pauma-nsn.gov>
**Sent:** Monday, April 04, 2016 1:18 PM
**To:** Jimmy Daniels
**Cc:** Dixon, Patti; Jeremy Zagarella
**Subject:** Bear Valley Residential Development

Mr. Daniels,

The Pauma Band of Luiseno Indians has received your March 24 notice for the Bear Valley Residential Development. We are unaware of any specific cultural sites or resources on the project property. We would like to receive a copy of the cultural study once it is completed. If sites are identified on the property we would request that the sites be preserved. If there are any questions, please contact us.

Thank you,

Mr. Chris Devers
Vice Chairman
Pauma Band of Luiseno Indians

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# APPENDIX C

## Confidential DPR Site Records

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# APPENDIX D

## Confidential Detailed Photo Log

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# APPENDIX E

## Non-Confidential DPR Forms

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State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
**PRIMARY RECORD**

**Primary #** P-37-035581
**HRI #** _____
**Trinomial** _____
**NRHP Status Code** _____

Other Listings _____
Review Code _____ Reviewer _____ Date _____

 *__Resource Name or #:__ (Assigned by recorder)**Bear Valley-ASM-02**

**P1. Other Identifier:**
***P2. Location:** ☒ **Not for Publication** ☐ **Unrestricted and** (P2b and P2c or P2d. Attach a Location Map as necessary.)
*__a. County:__ San Diego
***b. USGS 7.5' Quad** Escondido **Date** 1996; **T** 12S ; **R** 2W ; **¼ of ¼ of Sec** unsectioned; San Bernardino **B.M.**
**c.** Address: 661 Bear Valley Parkway City: Escondido Zip:92025
**d.** UTM: NAD 83, Zone 11N; 494847mE /3662186mN
**e.** Other Location Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate):

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries). The residence, detached garage, and irrigation features are located in APNs 237-131-01 and 237-131-02 (see Sketch Map).
***P3b. Resource Attributes:** (List attributes and codes) HP2. Single family property. HP33. Farm/ranch. AH2 Foundation/structure pad. AH 16. Other - retention basin and abandoned irrigation PVC pipe.
***P4. Resources Present:** ☒ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

**P5b. Description of Photo: (View, date, accession #)** Overview of the residence and detached garage, facing southeast. March 25, 2016.

***P6. Date Constructed/Age and Sources:**
☐ Historic ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
Spieth & Wohlford Inc.
P.O. Box 5005 #17
Rancho Santa Fe, CA 92067

***P8. Recorded by:** (Name, affiliation, and address)
Sarah Stringer-Bowsher and James T. Daniels, Jr.
ASM Affiliates, Inc.
2034 Corte del Nogal
Carlsbad, CA 92011

***P9. Date Recorded:** March 25, 2016

***P10. Survey Type: (Describe):**
Intensive pedestrian survey .

***P11. Report Citation:** Daniels, James and Sarah Stinger-Bowsher 2016 "Phase I/Class III Inventory and Built Environment Evaluation for the 661 Bear Valley Parkway Residential Development Project in Escondido, California" ASM Affiliates, Inc. Carlsbad, CA.

***Attachments:** ☐ NONE ☒ Location Map ☒ Sketch Map ☒ Continuation Sheet ☒ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other (List):

State of California ♦ The Resources Agency Primary # P-37-035581 DEPARTMENT
OF PARKS AND RECREATION HRI# BUILDING,
# STRUCTURE, AND OBJECT RECORD

***Resource Name or #** (Assigned by recorder) Bear Valley-ASM-02 ***NRHP Status Code**
**Page** 2 **of** 5
B1. Historic Name: Citrus/avocado farm
B2. Common Name:
B3. Original Use: citrus/avocado farm B4. Present Use: Residence
***B5. Architectural Style:** single-family residence and detached garage
***B6. Construction History:** (Construction date, alterations, and date of alterations)
Constructed in 1946. One-story, wood-frame building with board-and-batten on the front façade and stucco around the remaining three sides. Hip roof with gable porch roof. Double hung windows. Interior wall plaster original as is some of the doors, hardware, and inset ironing board in the kitchen.

***B7. Moved?** ■No □Yes □Unknown **Date:** **Original Location:**
***B8. Related Features:**

Retention basins (2), abandoned irrigation PVC pipe, and concrete pad for water storage tank (see sketch map for locations).

B9a. Architect: b. Builder: E.A. Wikholm
***B10. Significance: Theme** settlement and agriculture, primarily citrus and avocado farming **Area**
**Period of Significance** 1938-1966 **Property Type** residence, detached garage, and irrigation features
**Applicable Criteria** A/1
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The residence, detached garage, and irrigation features are recommended not eligible for the NRHP, CRHR, or Escondido register or landmark status. The resources are not eligible under Criterion A/1 despite their historic association with the themes of settlement and agriculture/ranching, primarily citrus and avocado farming The property was evaluated within a potential period of significance of 1938-1966 when the first trees until 50 years ago from this year. The private operation certainly play a role in the local economy but it was not the first such operation or the largest producing. ASM considered whether the elements of the property had the potential to be eligible either as individual resources or as a historic district. While the property had a historic association with citrus and avocado farming in San Diego County and Escondido, the fact that no citrus or avocado-related structures or trees remain completely disconnects the property from its historic association as a citrus and avocado farm.

B11. Additional Resource Attributes: (List attributes and codes) HP2--Single-Family Residence; HP4—ancillary building. HP33. Farm/ranch. AH2 Foundation/structure pad. AH 16. Other - retention basin and abandoned irrigation PVC pipe.

***B12. References:** Daniels, James and Sarah Stinger-Bowsher 2016 "Phase I/Class III Inventory and Built Environment Evaluation for the 661 Bear Valley Parkway Residential Development Project in Escondido, California" ASM Affiliates, Inc. Carlsbad, CA

B13. Remarks:

***B14. Evaluator:** Sarah Stringer-Bowsher
***Date of Evaluation:** February 29, 2016

(Sketch Map with north arrow required.)

(This space reserved for official comments.)

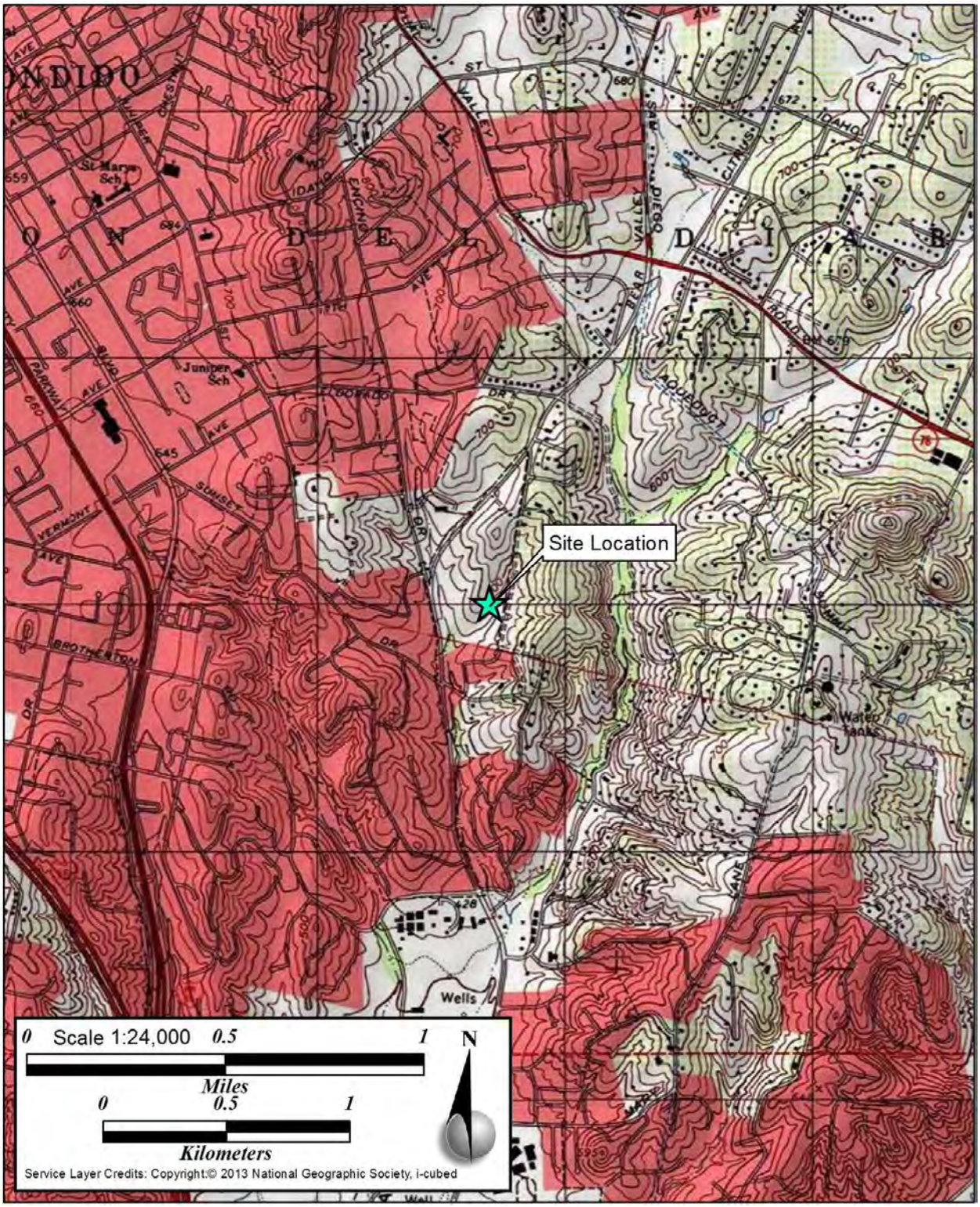
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
**LOCATION MAP**

**Primary #** P-37-035581
**HRI #**
**Trinomial**



***Resource Name or #:** (Assigned by recorder) **Bear Valley-ASM-02**

**Map Name:** USGS Escondido **Scale:** 1:24000 **Date of Map:** March 28, 2016






*Required information

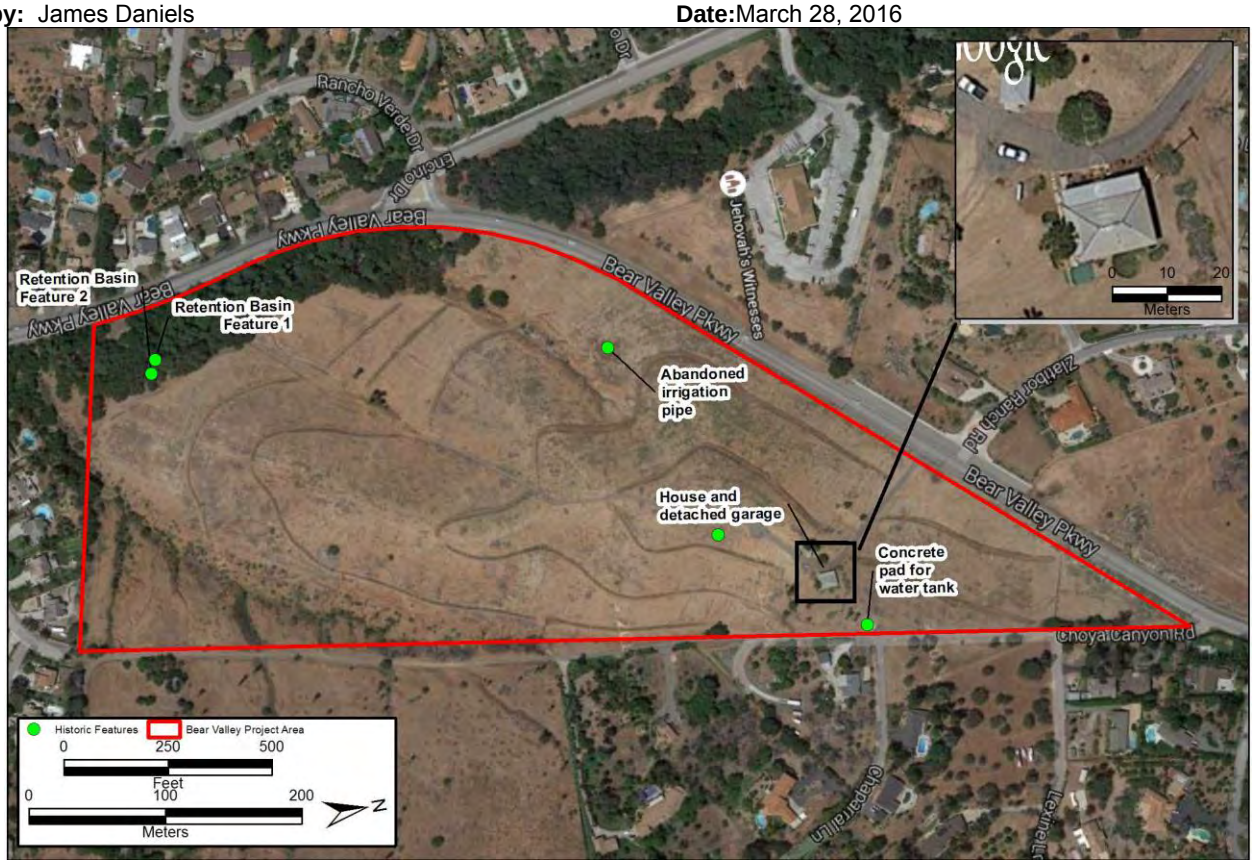
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
**SKETCH MAP**

**Primary #** P-37-035581
**HRI #**
**Trinomial** CA-SDI-21808



***Resource Name or #:** (Assigned by recorder) **Bear Valley-ASM-02**

**Drawn by:** James Daniels **Date:** March 28, 2016






*Required information

Photo 1. Front façade of residence, facing east.

Photo 2. Detached garage, facing southwest.

Photo 3. Irrigation Feature 1.

Photo 4. Irrigation Feature 2.

Photo 5. Concrete pad for storage tank.

Photo 6. Exposed PVC irrigation pipe (abandoned).

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# APPENDIX F

## Confidential Sketch Map of Bear Valley-ASM-01

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# Appendix G Cultural Resources Evaluation of Prehistoric Archaeological Site CA-SDI-21808 for the Bear Valley Parkway Development (June 2016)

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# Cultural Resources Evaluation of Prehistoric Archaeological Site CA-SDI-21808 for the Bear Valley Parkway Development, Escondido, California

***Prepared for:***

Diane Sandman, Director
Environmental Services
Harris & Associates
750 B Street, Suite 1800
San Diego, California 92101
(619) 236-1778

***Prepared by:***

Doug Drake, M.A.
ASM Affiliates, Inc.
2034 Corte del Nogal
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PN 26020.01
June 2016

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# TABLE OF CONTENTS

**Chapter** **Page**

**MANAGEMENT SUMMARY** ..... iii

**1. INTRODUCTION** ..... 1

**2. SETTING AND BACKGROUND** ..... 5

MODERN CONDITIONS ..... 5
Geography ..... 5
Geology and Soils ..... 5
Biology ..... 5
CULTURAL BACKGROUND ..... 5
Prehistoric Archaeology ..... 5
Ethnographic Evidence ..... 8
History ..... 9
RECORDS SEARCH RESULTS ..... 12
Previous Studies ..... 12
Previously Recorded Sites ..... 13
NATIVE AMERICAN CORRESPONDENCE ..... 14

**3. RESEARCH DESIGN AND METHODS** ..... 15

RESEARCH DESIGN FOR EVALUATION ..... 15
EVALUATION FIELD METHODS ..... 15

**4. EVALUATION RESULTS** ..... 16

SDI-21808 EVALUATION RESULTS ..... 16

**5. CONCLUSIONS AND MANAGEMENT RECOMMENDATIONS** ..... 23

NATIONAL REGISTER OF HISTORIC PLACES CRITERIA ..... 23
CALIFORNIA REGISTER OF HISTORICAL RESOURCES CRITERIA ..... 24
CALIFORNIA ENVIRONMENTAL QUALITY ACT SIGNIFICANCE CRITERIA ..... 24
MANAGEMENT RECOMMENDATIONS ..... 25

**REFERENCES** ..... 27

**APPENDICES** ..... 35

CONFIDENTIAL APPENDIX A. DPR Site Record Update for CA-SDI-21808

# LIST OF FIGURES

**Page**

Figure 1. Bear Valley Parkway Residential Development Project vicinity map. ..... 1
Figure 2. Bear Valley Parkway Residential Development Project location map. ..... 2
Figure 3. Proposed grading exemption plan for the Bear Valley Parkway Residential Development Project. ..... 3
Figure 4. Sketch map of SDI-21808 showing the site boundary and the location of the bedrock outcrops and milling features associated with the site. ..... 17
Figure 5. Southeast-facing overview of SDI-21808. ..... 18
Figure 6. Bedrock Milling Feature 1 associated with SDI-21808. The milling slick is located just left of the north arrow. ..... 19
Figure 7. Bedrock Milling Feature 2 associated with SDI-21808. The milling slick is located to the right of the north arrow. ..... 19
Figure 8. Bedrock Milling Feature 1 sketch map. ..... 20
Figure 9. Bedrock Milling Feature 2 sketch map. ..... 21

# LIST OF TABLES

**Page**

Table 1. Cultural Resource Reports Addressing Areas intersecting the Project Area ..... 12
Table 2. Previously Recorded Cultural Resources within a 1-mi. Radius of the Project Area ..... 13
Table 3. Native American Contacts ..... 14
Table 4. Results of STP Excavations at SDI-21808 ..... 16

# MANAGEMENT SUMMARY

ASM Affiliates, Inc. (ASM) was subcontracted by Harris and Associates to conduct a Phase II archaeological evaluation of the site SDI-21808 associated with a proposed residential development project located within the property addressed as 661 Bear Valley Parkway in Escondido, California. This work was conducted to assist in compliance with the California Environmental Quality Act (CEQA), Section 106 of the National Historic Preservation Act (NHPA), and local regulations in the city of Escondido.

The investigation included a records search of the project area and a 1-mi. radius surrounding from the South Coastal Information Center (SCIC) of the California Historical Resources Information System (CHRIS), a search of the Sacred Lands Files at the Native American Heritage Commission (NAHC), and an evaluation of the significance of the SDI-21808 site for the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR). The evaluation of the SDI-21808 site was conducted on June 1, 2016.

During the previously completed pedestrian survey, ASM archaeologists identified one prehistoric site consisting of two separate milling features, each with one milling slick. A California Department of Parks and Recreation (DPR) form recording the site attributes was submitted to the SCIC, and the site has been assigned the trinomial CA-SDI-21808. During the previous examination of the site, no artifacts were located on the surface. Thus, a primary objective of the current evaluation testing was to determine if subsurface archaeological deposits are present at the site.

All field notes pertaining to the data collected during the current investigation are housed at ASM's Carlsbad office. Site records were submitted to the SCIC.

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# 1. INTRODUCTION

ASM Affiliates, Inc. (ASM) was contracted by Harris and Associates to conduct a Phase II archaeological evaluation of the environment associated with a proposed residential development project located within the property addressed as 661 Bear Valley Parkway in Escondido, California. This work was conducted to assist in compliance with the California Environmental Quality Act (CEQA), Section 106 of the National Historic Preservation Act (NHPA), and local regulations in the city of Escondido.

The project area is located in the city of Escondido, San Diego County, California (Figure 1). Figure 2 shows the location of the project area as drawn on the 7.5-minute USGS Escondido quadrangle within an unsectioned portion of Township 12 South, Range 2 West. The proposed project consists of the subdivision of 40.9 acres into 55 residential lots, two private street lots, seven open-space lots, and one recreation lot (Figure 3). Each of the residential lots will contain a minimum area of 10,000 ft.$^2$. Private open space will occupy 19.47 acres of the 40.9 acre project area, and will include any environmental mitigation and buffer areas related to upland or wetland habitat, as well as two drainage basins to improve the quality of storm water crossing and exiting the site. Access to the project area from Bear Valley Parkway is proposed at the intersection of Zlatibor Ranch Road and Bear Valley Parkway. A secondary, gated emergency access road will be provided between the main access point and the intersection of Encino Drive and Bear Valley Parkway. The project includes a proposed Specific Alignment Plan for an alternative standard for Bear Valley Parkway (classified as a Major Road), as well as frontage improvements to include curb, gutter, sidewalk, parkway, and bike lane. The pedestrian walkway system inside the project area will tie into the public Bear Valley Parkway sidewalk system.

For the archaeological and historical investigations presented in this report, Mark Becker served as Project Manager, James Daniels served as the Principal Investigator, Doug Drake served as Field Director, Charles Dickerson served as Field Technician, and Shelly Nelson served as the Native American monitor.

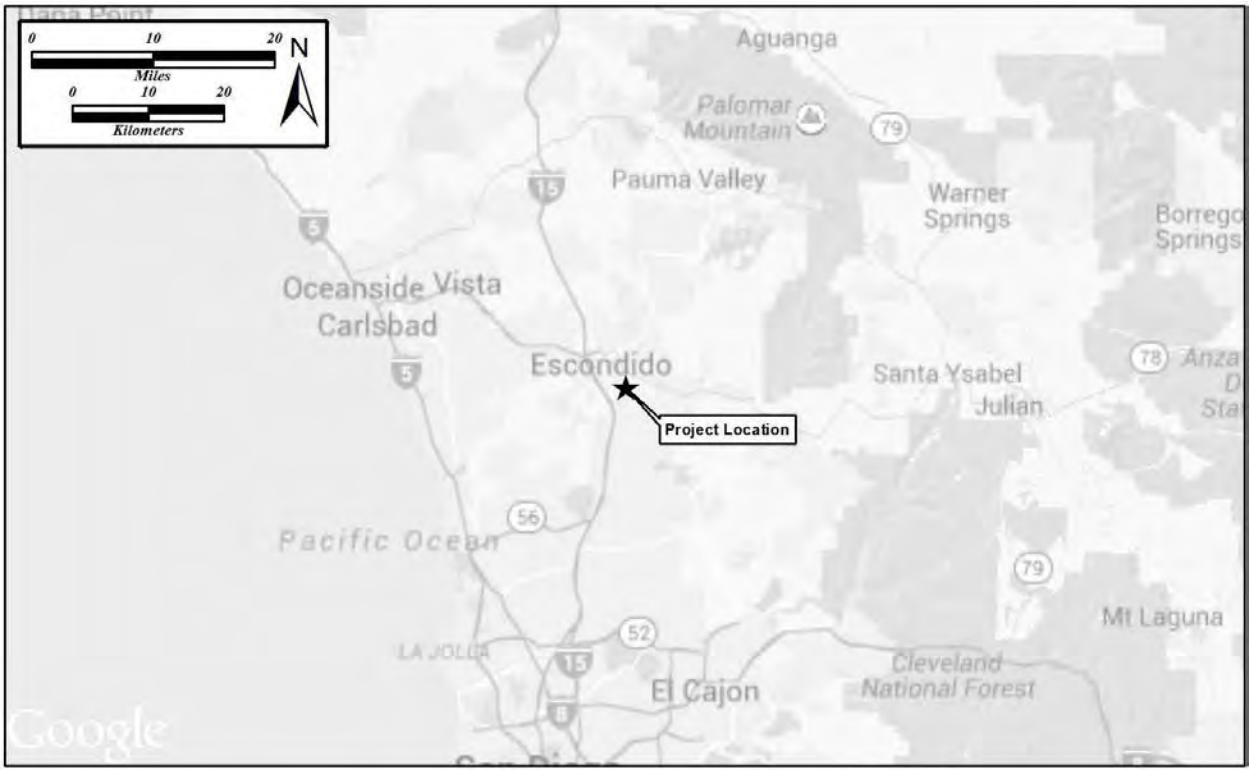


Figure 1. Bear Valley Parkway Residential Development Project vicinity map.

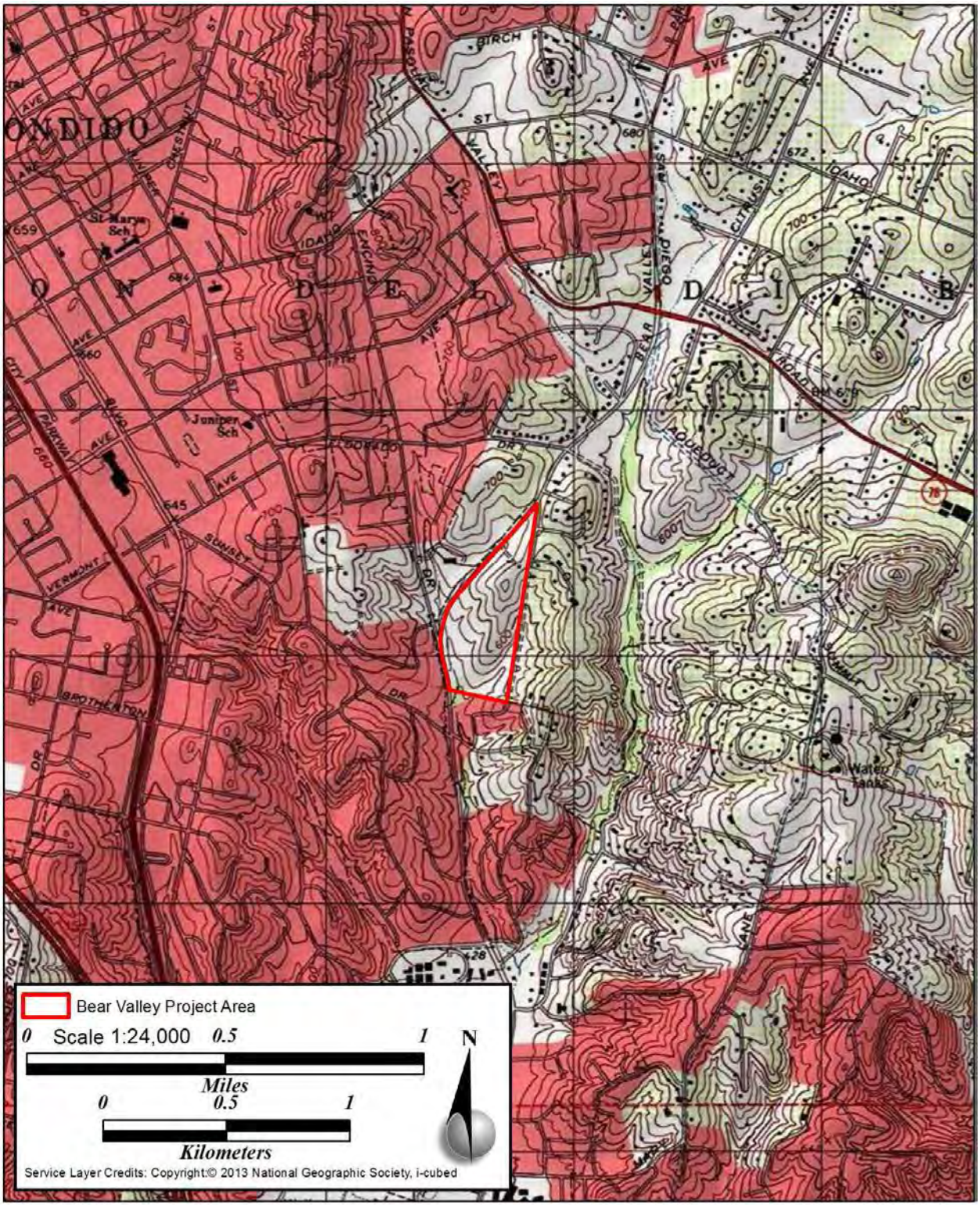


Figure 2. Bear Valley Parkway Residential Development Project location map.

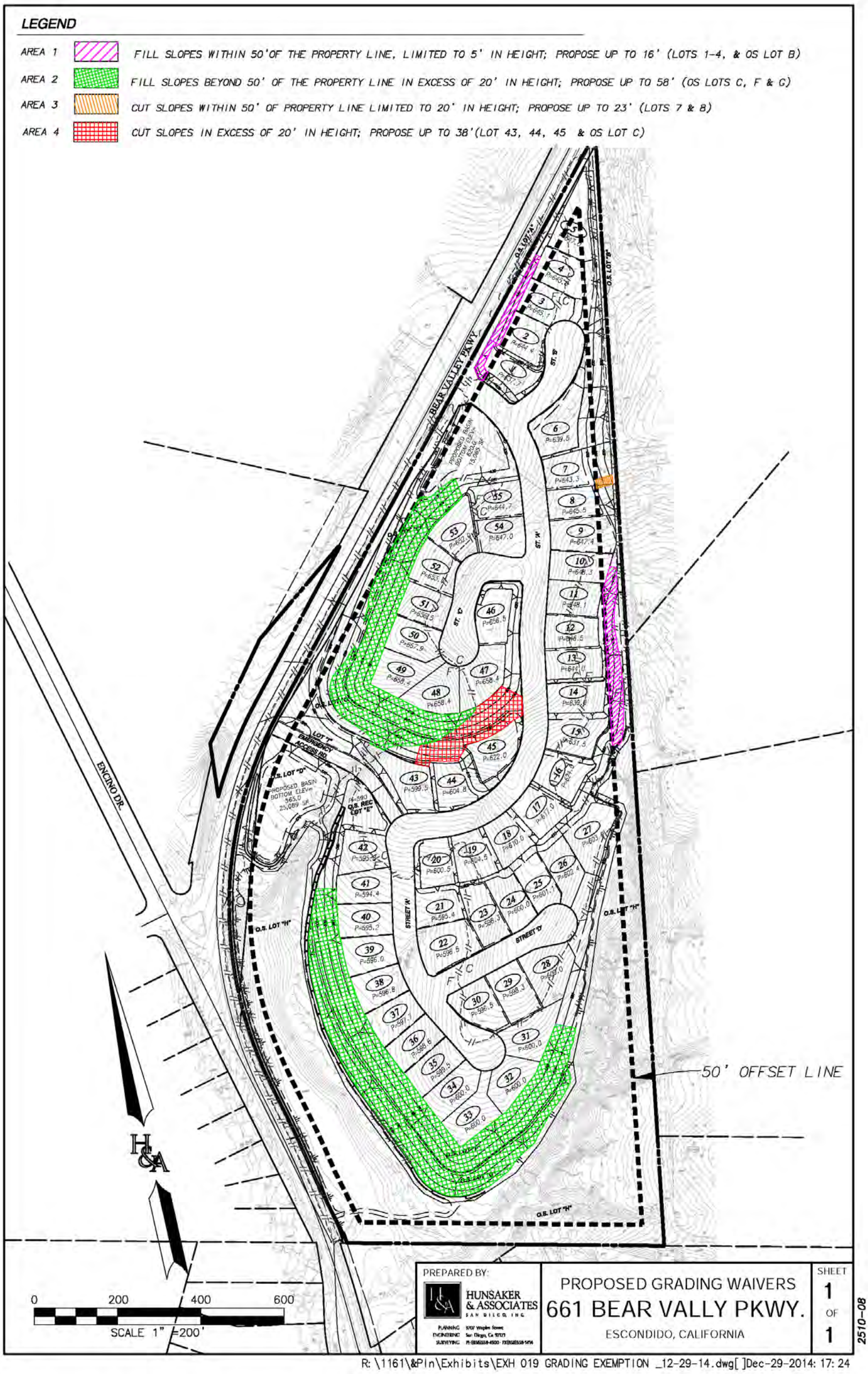


Figure 3. Proposed grading exemption plan for the Bear Valley Parkway Residential Development Project.

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# 2. SETTING AND BACKGROUND

This section provides a brief summary of the current conditions of the project area and a general description of both the natural and cultural environments in which archaeological resources were created and used in the surrounding project vicinity. The results of the records search conducted are also discussed, along with the results of correspondence with the Native American Heritage Commission (NAHC).

## MODERN CONDITIONS

The existing conditions of the project area consist of highly disturbed soils. The project area was mined for gold in the early 1900s and then subsequently used for agricultural grove purposes before the use was abandoned approximately 20 years ago. There is one existing residential structure on the site that would be demolished to accommodate the project.

### Geography

The 40.9-acre project area is located in the lower chaparral biotic zone in the Peninsular Ranges of southern California. Elevations in the project area range from approximately 525 ft. (~160 m) to 675 ft. (~206 m) above sea level, and the area is situated between two drainages that run north-south along Bear Valley Parkway and d Canyon Road. The project vicinity is bounded to the west by developed portions of the city of Escondido, with Lake Hodges to the south and the San Dieguito River to the east.

### Geology and Soils

The project area lies within the southern California Peninsular Ranges. The geology of the area consists of plutonic rocks, consisting of Mesozoic granite, adamellite, granodiorite, tonalite, and diorite (Rogers 1965). The soils in the area consist of Fallbrook sandy loam, 9 to 15 percent slopes, eroded (FaD2); Fallbrook sandy loam, 15 to 30 percent slopes, eroded (FaE2); Ramona sandy loam, 2 to 5 percent slopes (RaB); Ramona sandy loam, 9 to 15 percent slopes, eroded (RaD2); and Steep gullied land (StG) (USDA 2013).

### Biology

The project area is within the ecological section of southern California mountains and valleys, and more specifically within the western granitic foothills subsection (M262Bn). The predominant plant communities in this region consist of mixed chaparral shrub lands, coastal sagebrush series, coast live oak series, and chamise series. The fauna in the mammalian class include or once included mule deer, pronghorns, bighorn sheep, coyotes, bobcats, mountain lions, ground squirrels, and kangaroo rats. Birds in the region include hawks, eagles, owls, quail, mourning dove, mockingbird, jays, gulls, herons, crows, finches, and sparrows (Digital-Desert n.d.).

## CULTURAL BACKGROUND

### Prehistoric Archaeology

Archaeological investigations in southern California have documented a diverse range of human adaptations extending from the late Pleistocene up to the time of European contact (e.g., Erlandson and Colten 1991; Erlandson and Glassow 1997; Erlandson and Jones 2002; Jones and Klar 2007; Moratto 1984). To describe and discuss this diversity, local investigators have proposed a variety of different chronologies and conceptual categories (periods, horizons, stages, phases, traditions, cultures, peoples, industries, complexes, and patterns), often with confusingly overlapping or vague terminology.

The prehistory of San Diego County is most frequently divided chronologically into three or four major periods. An Early Man stage, perhaps dating back tens of thousands of years, has been proposed. More generally accepted divisions include a Terminal Pleistocene/Early Holocene period (ca. 12,000-6000 B.C.) (Paleo-Indian stage; Clovis and San Dieguito patterns), a Middle/Late Holocene period (ca. 6000 B.C.-A.D. 800) (Archaic stage; La Jolla, Millingstone, Encinitas, and Pauma patterns), and a Late Prehistoric period (ca. A.D. 800-1769) (Archaic stage; San Luis Rey, Palomar, and Peninsular patterns).

### Hypothetical Early Man (pre-ca. 12,000 B.C.)

The antiquity of human occupation in the New World has been the subject of considerable interest and debate for more than a century. At present, the most widely accepted model is that humans first entered portions of the western hemisphere lying to the south of Alaska between about 15,000 and 12,000 B.C., either along the Pacific coastline or through an ice-free corridor between the retreating Cordilleran and Laurentide segments of the continental glacier in Canada, or along both routes. While there is no generally accepted evidence of human occupation in coastal southern California prior to about 11,000 B.C., ages estimated at 48,000 years and even earlier sometimes have been reported (e.g., Bada et al. 1974; Carter 1980). However, despite intense interest and the long history of research, no widely accepted evidence of human occupation of North America dating prior to about 12,000 B.C. has emerged.

Local claims for Early Man discoveries have generally been based either on the apparent crudeness of the lithic assemblages that were encountered or on the finds' apparent Pleistocene geological contexts (Carter 1957, 1980; Minshall 1976, 1989; Reeves et al. 1986). The amino acid racemization technique was used in the 1970s and early 1980s to assign Pleistocene ages to coastal southern California sites (Bada et al. 1974), but the technique's findings have been discredited by more recent accelerator mass spectrometry (AMS) radiocarbon dating (Taylor et al. 1985).

### Terminal Pleistocene/Early Holocene Period (ca. 12,000-6000 B.C.)

The earliest chronologically distinctive archaeological pattern recognized in most of North America is the Clovis pattern. Dated to around 11,500 B.C., Clovis assemblages are distinguished by fluted projectile points and other large bifaces, as well as extinct large mammal remains. At least three isolated fluted points have been reported within San Diego County, but their occurrence is very sparse and their dating and contexts are uncertain (Davis and Shutler 1969; Kline and Kline 2007; Rondeau et al. 2007).

The most widely recognized archaeological pattern within this period is termed San Dieguito and has been dated from at least as early as 8500 B.C. to perhaps around 6000 B.C. (Rogers 1966; True and Bouey 1990; Warren 1966; Warren et al. 2008). The San Dieguito pattern was originally defined near the central coast of San Diego County, and its presence has been reported through extensive areas to the east, but few traces are recognized on or near the northern coast of San Diego County. Proposed characteristics to distinguish San Dieguito flaked lithic assemblages include large projectile points (Lake Mojave, Silver Lake, and other, less diagnostic forms), bifaces, crescents, scraper planes, scrapers, hammers, and choppers. The San Dieguito technology involved well-controlled percussion flaking and some pressure flaking.

Malcolm Rogers (1966) suggested that three successive phases of the San Dieguito pattern (San Dieguito I, II, and III) could be distinguished in southern California, based on evolving aspects of lithic technology. However, subsequent investigators have generally not been able to confirm such changes, and the phases are not now generally accepted.

A key issue has concerned ground stone, which was originally suggested as having been absent from San Dieguito components but has subsequently been recognized as occurring infrequently within them. It was initially suggested that San Dieguito components, like other Paleo-Indian manifestations, represented the products of highly mobile groups that were organized as small bands and focused on the hunting of large game. However, in the absence of supporting faunal evidence, this interpretation has increasingly been

called into question, and it has been suggested that the San Dieguito pattern represented a more generalized, Archaic-stage lifeway, rather than a true Paleo-Indian adaptation.

A vigorous debate has continued for several decades concerning the relationship between the San Dieguito pattern and the La Jolla pattern that succeeded it and that may have also been contemporaneous with or even antecedent to it (e.g., Gallegos 1987; Warren et al. 2008). The initial view was that San Dieguito and La Jolla represented the products of distinct ethnic groups and/or cultural traditions (e.g., Rogers 1945; Warren 1967, 1968). However, as early Holocene radiocarbon dates have been obtained for site components with apparent La Jolla characteristics (shell middens, milling tools, and simple cobble-based flaked lithic technology), an alternative interpretation has gained some favor: that the San Dieguito pattern represented a functional pose related in particular to the production of bifaces, and that it represents activities by same people who were responsible for the La Jolla pattern (e.g., Bull 1987; Hanna 1983).

### Middle/Late Holocene Period (ca. 6000 B.C.-A.D. 800)

Archaeological evidence from this period in the San Diego region has been characterized as belonging to the Archaic stage, Millingstone horizon, Encinitas tradition, or La Jolla and Pauma patterns (Moratto 1984; Rogers 1945; Sutton and Gardner 2010; True 1958, 1980; True and Beemer 1982; True and Pankey 1985; Wallace 1955; Warren 1968; Warren et al. 1961). Adaptations during this period apparently emphasized gathering, in particular the harvesting of hard plant seeds, as well as small-game hunting. Distinctive characteristics of the La Jolla pattern include extensive shell middens, portable ground stone metates and manos, crudely flaked cobble tools, occasional large expanding-stemmed projectile points (Pinto and Elko forms), and flexed human burials. The inland Pauma pattern has variously been interpreted as a separate culture that was broadly similar to the contemporaneous La Jolla pattern on the coast or as a different functional pose of the same culture.

Investigators have called attention to the apparent stability and conservatism of the La Jolla pattern throughout this long period, as contrasted with less conservative patterns observed elsewhere in coastal southern California (Hale 2009; Sutton 2010; Sutton and Gardner 2010; Warren 1968). However, distinct chronological phases within the pattern have also been suggested, based on changes in the flaked lithic and ground stone technologies, the shellfish species targeted, and burial practices (Harding 1951; Moriarty 1966; Rogers 1945; Shumway et al. 1961; Sutton and Gardner 2010; Warren 1964; Warren et al. 2008).

### Late Prehistoric Period (ca. A.D. 800-1769)

A Late Prehistoric period in San Diego County has been distinguished, primarily on the basis of three major innovations: the use of small projectile points (Desert Side-notched, Cottonwood triangular, and Dos Cabezas forms), associated with the adoption of the bow and arrow in place of the atlatl as a primary hunting tool and weapon; brownware pottery, presumably supplementing the continued use of basketry and other containers; and the practice of human cremation in place of inhumation. Uncertainty remains concerning the exact timing of these innovations, and whether they appeared simultaneously or sequentially (e.g., Griset 1996; Yohe 1992).

Labels applied to the archaeological manifestations of this period include San Luis Rey, Palomar, and Peninsular (Meighan 1954; Sutton 2011; True 1970; True et al. 1974, 1991; Waugh 1986). These remains have generally been associated with the ethnohistorically known Luiseño, Cupeño, and Cahuilla and have been seen as perhaps marking the initial local appearance of those groups in a migration from the north. Traits characterizing the Late Prehistoric period include greater reliance on acorns as an abundant but labor-expensive food resource, a greater emphasis on hunting of both large and small game (particularly deer and rabbits), a greater amount of interregional exchange (seen notably in more use of obsidian), more elaboration of nonutilitarian culture (manifested in more frequent use of shell beads, decorated pottery and rock art), and possibly denser regional populations. Settlement may have become more sedentary during this period, as compared with the preceding period.

## Ethnographic Evidence

In ethnohistoric times, northern San Diego County was occupied by speakers of the closely related Luiseño, Cupeño, and Cahuilla languages. Luiseño territory extended from Agua Hedionda Lagoon, Escondido, and Lake Henshaw northward into southern Orange and Riverside counties. The Cupeño occupied a relatively small territory in the vicinity of Warner's Ranch. The extensive Cahuilla lands extended east from Luiseño territory into the Colorado Desert and north as far as San Gorgonio Pass. To the south lay the territory of the unrelated Kumeyaay (Diegueño, Ipai) (Heizer 1978; Kroeber 1925).

Linguistic evidence links Luiseño, Cupeño, and Cahuilla with the Uto-Aztecan family of languages (e.g., Golla 2007; Laylander 2010). A hierarchy of relationships within that family likely mirror a sequence of separations reflecting territorial expansions or migrations, leading the linguistic ancestors of the Luiseño, Cupeño, and Cahuilla from a still-debated Uto-Aztecan homeland to a northern Uto-Aztecan base somewhere in western North America and ultimately south to their ethnohistoric homes. Splits within the ancestral family included the differentiation of Takic (also termed Southern California Shoshonean) (ca. 1000 B.C.?), the separation of Luiseño from Cahuilla-Cupeño (ca. A.D. 1?), and the separation of Cahuilla and Cupeño (ca. A.D. 1000?).

While Luiseño, Cupeño, and Cahuilla cultural patterns, as recorded subsequent to European contact, cannot necessarily be equated with Late Prehistoric patterns, at a minimum they provide indispensable clues to cultural elements that would be difficult or impossible to extract unaided from the archaeological record alone. A few important ethnohistoric accounts are available from Franciscan missionaries and others (Geiger and Meighan 1976; Harrington 1933, 1934; Henshaw 1972; Laylander 2000). Many accounts by ethnographers, primarily recorded during the early and middle twentieth century, are available (Bean 1972, 1978; Bean and Shipek 1978; Bean and Smith 1978; Drucker 1937; Gifford 1918; Hicks 1963; Hooper 1920; Kroeber 1908, 1925; Laylander 2004; Sparkman 1908; Strong 1929; White 1953, 1957, 1963).

The Luiseño, Cupeño, and Cahuilla inhabited a diverse environment that included littoral, valley, foothill, mountain, and desert resource zones. Because of the early incorporation of coastal Luiseño into the mission system, most of the available twentieth-century ethnographic information relates to inland groups that lived in the Peninsular Range and the Colorado Desert. Acorns were a key resource for inland groups, but a wide range of other mineral, plant, and animal resources were exploited (Bean and Saubel 1972; Sparkman 1908). Some degree of residential mobility seems to have been practiced; one classic fission/fusion pattern involved annual seasonal shifts between consolidated winter and spring settlements in the upper San Luis Rey River valley and smaller, dispersed groups living on Palomar Mountain in the summer and fall (Oxendine 1983). The fundamental Luiseño social units above the family were patrilineal, patrilocal clans, the latter ideally coinciding with the winter-spring village communities. The Cahuilla and Cupeño also had patrilineal Coyote and Wildcat moieties, serving primarily to impose exogamous marriage and to conduct ceremonies. Hereditary leaders performed ceremonial, advisory, and diplomatic functions, rather than judicial, redistributive, or military ones. There seems to have been no national level of political unity among the Luiseño or Cahuilla, and perhaps little sense of commonality within the language group.

Luiseño, Cahuilla, and Cupeño material culture was effective, but it was not highly elaborated. Structures included houses with excavated floors, ramadas, sweathouses, ceremonial enclosures, and acorn granaries. Hunting equipment included bows and arrows, curved throwing sticks, nets, and snares. Processing and storage equipment included a variety of flaked stone tools, milling implements, ceramic vessels, and baskets.

Nonutilitarian culture was not neglected. A range of community ceremonies were performed, with particular emphases placed on making individuals' coming of age and on death and mourning. Oral

literature included, in particular, an elaborate creation myth that was shared with the Takic-speaking Serrano as well as with Yuman speakers (Kroeber 1925; Laylander 2001; Waterman 1909).

## History

European exploration of the San Diego area began in 1542 with the arrival of a maritime expedition under Juan Rodriguez Cabrillo, followed by a similar reconnaissance in 1602 by Sebastián Vizcaíno (Pourade 1960). It is possible that additional brief, unrecorded contacts with the crews of the Manila galleons may have occurred during the following century and a half, and that other influences, such as an awareness of alien technologies or the introduction of diseases, may have reached the region overland from earlier outposts of the Spanish empire in Baja California or Sonora.

The historic period proper did not begin until 1769, when multiple seaborne and overland expeditions under the leadership of the soldier Gaspar de Portolá and the Franciscan missionary Junípero Serra reached the region from Baja California and passed northward along the coastal plain to seek Monterey. To the south, a royal presidio and a mission were established that year in San Diego. Additional missions were founded among the Luiseño/Juaneño at San Juan Capistrano in 1776 and San Luis Rey de Francia in 1798. An *asistencia* or satellite mission for San Luis Rey was established at Pala in 1816.

As Spanish attention was consumed by the Napoleonic wars in Europe, California and its government and missions were increasingly left to their own devices. In 1821, Mexico consummated its independence from Spain, and the region became more open to outside visitors and influences (Pourade 1961). The loyalty to Mexico of the European Franciscans was considered to be in doubt, and private secular interests clamored for a greater share of the region's resources. The missions were secularized by act of the Mexican Congress in 1833. Native Americans released from the missions at San Diego, San Luis Rey, and San Juan Capistrano returned to their native villages, moved east to areas lying beyond Mexican control, or sought work on ranchos or in the towns of San Diego and Los Angeles. Numerous large land grants were issued to private owners during the Mexican period, including El Rincon del Diablo, Monserrate, Guejito y Cañada de Palomia, Cuca, Pauma, Valle de San José, and San José del Valle in inland northern San Diego County (Pourade 1963).

The conquest and annexation of California by the United States in the Mexican-American War between 1846 and 1848 ushered in many more changes (Pourade 1963, 1964, 1965, 1967, 1977; Pryde 2004). Faced with debts and difficulties in confirming land grants, many Californio families lost their lands to outsiders. Cultural patterns that were brought by immigrants from the eastern U.S. gradually supplanted old Californio customs. Native American reservations were established at Pala, Mission Reserve, Pauma-Yuima, Los Coyotes, La Jolla Rincon, and San Pasqual (Shipek 1978).

The region experienced cycles of economic and demographic booms and busts, with notable periods of growth in the mid-1880s, during World Wars I and II, and on more sustained basis throughout the postwar decades. Aspects of development included the creation of transportation networks based on port facilities, railroads, highways, and airports; more elaborate systems of water supply and flood control; grazing livestock and growing a changing array of crops; supporting military facilities, including the extensive Camp Pendleton facility established in 1942; limited amounts of manufacturing; and accommodating visitors and retirees. After false starts, San Diego converted itself to a substantial city, and then into a metropolis. Escondido was incorporated as a city in 1888), and unincorporated north county communities include Fallbrook, Bonsall, Valley Center, Pala, and Pauma Valley (Pryde 2004).

### Escondido: Settlement and Growth

Confirmation of rancho boundaries in the late 1860s and early 1870s across the county drew additional settlers as land became officially conveyable. Thereafter, small farming communities were established.

Around 1886, El Rincon del Diablo Rancho, now generally occupied by the city of Escondido, was opened to settlement. By that time, horticulture had already begun around the county, with many of the earliest plantings in fruit trees and grapes. Escondido developed during that boom time as a new citrus-growing community that also developed grapes, hay, and grain, and is credited with planting the first avocado tree in the county (Heilbron 1936:207). By 1890, the city population had grown to 541 (U.S. Census Bureau 1900:439).

While ranching and farming had been important livelihoods in San Diego County, agriculture increasingly became an important economy. Water projects developed across the county in the late nineteenth and early twentieth centuries that made this possible. In Escondido, completion of the Escondido Reservoir (now Lake Wohlford) by the Escondido Mutual Water Company supplied water to the valley and opened up more opportunities for citrus (oranges and lemons) plantings (Fox 2016; Heilbron 1936). Individual growers processed their own fruit by washing and drying them before taking them to the Escondido depot to ship to consumers in the east. In the early 1900s, growing cooperatives developed in Escondido that were known as the Escondido Citrus Union and the Escondido Fruit Growers Association. By 1916, the number of acres planted with citrus had risen to 600. Just 12 years later, nearly 2,800 acres were devoted to growing citrus. The industry had grown so large that the two cooperatives dissolved and new organizations were formed: the Escondido Lemon Association and the Escondido Orange Association. They were local divisions of the San Diego County Exchange and the California Exchange. Lemon production grew from 64,470 boxes in 1911 to over one million boxes in 1941. Orange production had grown from 12,225 boxes in 1918 to 1.4 million boxes in 1943. In the 1920s and 1930s, the citrus industry was the local economic engine, and many people were employed by it or benefitted from it as merchants (Fox 2016; San Diego Directory Company 1938). Escondido transitioned from a rural town of 755 in 1900 to a growing agriculture-based city of 3,421 in 1930, a significant increase of 353 percent (U.S. Census Bureau 1900:439, 1930: 137).

The avocado industry developed behind the citrus industry, with the first cooperative established as the California Avocado Association (later Society) in 1915 (Shepherd and Bender 2001). In San Diego County, the oldest seedling was planted in 1892, just 2 mi. north of Escondido. However, the earliest orchards were planted in Vista in 1915 and 1916 (Popenoe 1927). In the 1920, "Haas" avocadoes were developed as an alternative to the "Fuerte" avocado that had short seasons and erratic production. The California Avocado Exchange (later Calavo Growers of California) was established in 1924 in an effort to standardize the industry and market the products. In 1926, the first carload of avocados was shipped to Chicago (Shepherd and Bender 2001). In San Diego County, Vista had planted some of the earliest and largest plantings in the county, but the Escondido plantings were still young in 1927 (Popenoe 1927). The industry struggled during the 1930s due to root rot, fungus, long-standing low temperatures, and overproduction for a smaller market. Demand for avocadoes increased in the 1940s and thereafter due to larger marketing efforts. Growing avocadoes increasingly became a lucrative business (Shepherd and Bender 2001).

In 1935, the primary county exports were citrus, poultry, and dairy, with Escondido supplying almost half of the county's exports. By 1936, Escondido led the county in citrus production and was the foremost producer of avocados and citrus for the state. An assured water supply for irrigation and domestic use was pivotal to the area's success (Heilbron 1936). In the post-World War II housing shortage, citrus acreage was increasing replaced with housing. Other industries offered new employment opportunities in Escondido and around San Diego County. By 1958, avocadoes still held strong. San Diego comprised more than half of the avocado acreage in California. Avocado acreage had grown from approximately 7,900 acres in 1936 to 15,000 in 1958. Avocados were second to tomatoes in plant crops and fourth in overall agricultural products, following eggs, tomatoes, and milk (Gustafson 1959). By 1960, over one million people lived in the county, and between 1950 and 1970, bedroom communities such as El Cajon, Escondido, Chula Vista, and Oceanside experienced a tremendous growth rate (between 214 and 833 percent) (Engstrand 2005:166; U.S. Census Bureau 1960). By then, market condition prompted the dissolution of the two citrus organizations (Fox 2016). Yet, avocado production remains an important crop for San Diego County.

## Land-Use History of APE

The Escondido Land and Town Company acquired a portion of the Rancho Del Diablo that is the present-day property. In November 1890, the Escondido Land and Town Company granted a portion of that property to John D. Cornell. In February 1891, Cornell deeded that portion to the Escondido Gold Mining Company. The mining company in turn deeded that property to John Becker in December 1898. In March 1904, Escondido Land and Town Company granted another portion of the property to the Cleveland Pacific Mining Company (Kiely 2016).

The Cleveland-Pacific Mining Company's Escondido Mine was located immediately west and north of the present project's Area of Potential Effects (APE). It is now underneath a subdivision off Bear Valley Parkway between Encino Drive and El Dorado Drive. According to California Bureau of Mines, the Escondido mine area had been worked by early Spaniards and Mexicans, and sometime around 1868 Americans began working it with *arrastres*. In 1884, the Escondido Town and Land Company purchased the land grant property, and after a number of land ownership changes, the Cleveland Pacific Mining Company acquired it in 1897 and William F. Spieth was named superintendent. Spieth was the company's attorney and operated out of Cleveland, Ohio. By 1908, the Cleveland-Pacific Mining Company had discovered two deposits from which rich ore was packaged for shipment. The small stamp mill was erected in June 1908. It operated until 1911, when the company encountered an abundance of pyrite ("fool's gold") and a rising water table that limited the depth of the shaft. At that time, the company used two steam hoists and a five-stamp mill with plates, a Wilfley table, and two 10-ft.-tall cyanide tanks (Engineering and Mining Journal 1908a:977, 1908b:1166, 1908c:1311; Hamilton 1915:650-651; Kiely 2016). In 1924, the Escondido mine was sold to B. F. Brough and Associates of Toledo, Ohio, who opened new workings 1,000 ft. to the west with a new shaft. Old mining dumps in the area were reworked (Lorey 2010). In 1926, operations ceased permanently (Lorey 2010). While San Diego County was never one of the most productive counties, Escondido ranked third in the county's production (Lorey 2010). The Escondido Mine and the Oro Mine were the two highest-producing mines in Escondido. The Escondido Mine produced 4,000 oz. of gold and 3,500 oz. of silver, or approximately more than $2,000,000. Shafts were dynamited in the 1930s for safety (Warth 2006).

According to Burnet F. Wohlford (son of Burnet C. and Mildred Wohlford), the early uses of the APE included some prospecting and exploratory mining south and west of the remaining residence (Wohlford 2016). From February 1920 until 1922, it appears that the ownership of the entire parcel may have been in question. In July 1922, John Becker granted the deed to William F. Spieth. In August 1923, William F. Spieth deeded the property to Lawrence C. Spieth. However, he was also an absentee owner and lived in Ohio (Kiely 2016; United States Census Bureau 1940). A 1928 aerial photo shows that much of the property was unused at this time (Tax Factor 1928). In 1938, orange and avocado groves were planted in the APE and both permanent and temporary irrigation was installed. A shed had been constructed years earlier (1925). Oranges were produced for the Escondido Orange Association, and avocados were produced for Calavo. It was a private operation and was not one of most productive groves in the area (San Diego County Assessor 1979; Wohlford 2016). Some lemons and grapefruit was also grown on the property (San Diego County Assessor 1979).

In February 1940, Spieth deeded half of the property to Burnet C. Wohlford (Kiely 2016). The extant house and 8-by-12-ft. detached garage was constructed in 1946. The wood-frame house was constructed with stucco and board-and-batten, with double-hung windows, a hip roof and gable porch, and composite shingles. A 12-by-55-ft. shed (now demolished) was also constructed. Several pumps were installed on the property (San Diego County Assessor 1979). Burnet C. Wohlford was the son of Alvin Wohlford, who ran the Escondido Mutual Water Company and owned Escondido National Bank. Sometime after Alvin Wohlford died in 1924, Burnet sold his father's bank and put in 125 acres of oranges, lemons, grapefruit, and avocados in Escondido (McGrew 1988:207-208). Thereafter, he was well known for his leadership at

the water company and for cultivating citrus and avocados. Although Burnet C. Wohlford owned half of the property, he did not live there. Burnet and Mildred lived off Fourth Street in 1937 and moved into his parents' adobe ranch house sometime after his mother died in 1944. The two lived there until Burnet died in 1979 (Fox 2016; McGrew 1988:208; San Diego Directory Company 1937). The grove manager, Braxton Davis, occupied the house (Wohlford 2016).

In 1953, the entire property (APNs 237-131-01 and 237-131-02) was cultivated with citrus and avocado groves that amounted to approximately 42 acres (San Diego County Assessor 1979; United States Department of Agriculture 1953). The property was continuously used for production until at least 1979 (San Diego County Assessor 1979). Sometime between 1989 and 1995, the trees were removed from the property (United States Department of Agriculture 1947, 1953, 1964, 1967, 1968, 1980, 1989, 1995). The last title transfer occurred in December 1967, when Spieth and Wolford acquired half of the property from the estate of Lawrence C. Spieth and the other half from Burnet C. and Mildred D. Wohlford (Kiely 2016).

## RECORDS SEARCH RESULTS

A records search for the project area was requested from the South Coastal Information Center (SCIC) of the California Historical Resources Information System (CHRIS) at San Diego State University, on March 21, 2016. The records search area included the entire project area as well as a 1-mi. search radius around the project area. The records search included a search of all relevant site records and prior reports on file with the SCIC, as well as a search of the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), and other local registers, to determine if significant archaeological or historical sites have previously been recorded within or near the project area. The full results of the records search are provided in Confidential Appendix A of the survey report *Phase I/Class III Inventory and Built Environment Evaluation for the 661 Bear Valley Parkway Residential Development Project in Escondido, California* (Daniels and Stringer-Bowsher 2016).

### Previous Studies

The records search identified a total of 53 previous cultural resource studies that address areas within the 1-mi. radius of the project area. Four of those reports address areas within the current project area (Table 1).

Table 1. Cultural Resource Reports Addressing Areas intersecting the Project Area

| NADB No. | SHPO ID | Title | Author(s) | Year |
|---|---|---|---|---|
| 1121659 | WADE 87-19 | *Results of an Archaeological Archival and Field Survey of the Bear Valley Parkway/SR-78 General Plan Amendment EIR Project Area San Diego County, California* | Wade, Sue A. | 1987 |
| 1122777 | AFFINIS 93-03 | *Cultural Resources Survey for the Bear Valley Parkway (South) Reconstruction. Activity No. Uj1194, Escondido, San Diego County, California* | Affinis and M. Robbins-Wade, R. Alter | 1993 |
| 1128588 | CITYESC 80-03 | *Draft Environmental Impact Report for Expansion of Wastewater Treatment Facility* | City of Escondido | 1980 |
| 1132109 | DALOPM01 | *The Westfield North County Expansion Offsite Improvements Project, City of Escondido, San Diego County, California* | Dalope, Michelle and Susan Hector | 2008 |

## Previously Recorded Sites

The records search identified 27 previously recorded sites and isolates within the 1-mi. search radius (Table 2). Just one of those previously recorded sites, SDI-12920, intersects the project area. This site was recorded as a historic-period can scatter with one glass bottle on the east side of Bear Valley Parkway just above the creek that runs along the western boundary of the project area.

Table 2. Previously Recorded Cultural Resources within a 1-mi. Radius of the Project Area

| Designation | | Site Type | Recorder, Date |
|---|---|---|---|
| Primary Number (P-37-) | Trinomial (CA-SDI-) | | |
| 000563 | 563 | AP2. Lithic scatter | True 1948 |
| 000571 | 571 | AP15. Habitation debris | True 1948 |
| 004659 | 4659 | AP4. Bedrock milling | Hatley and Price 1976 |
| 005340 | 5340 | AP2. Lithic scatter, AP3. Ceramic scatter, AP4. Bedrock milling, AP15. Habitation debris | Chace 1977; James, Collins, and d 1991; Zepeda-Herman 2010 |
| 005426 | 5426 | Isolate core tool | Norwood 1977 |
| 007245 | 7245 | AP4. Bedrock milling | Laylander 1979; Van Horn 1990 |
| 009939 | 9939 | AP4. Bedrock milling | Chace 1984 |
| 010308 | 10308 | AP4. Bedrock milling | Collins 1985 |
| 010309 | 10309 | AP3. Ceramic scatter, AP4. Bedrock milling | Collins 1985 |
| 010310 | 10310 | AP4. Bedrock milling | Collins and Chace 1985 |
| 010311 | 10311 | AP4. Bedrock milling and one proximal biface end | Collins and Chace 1985 |
| 012530 | 12530 | AH15. Standing structures | James, Briggs, and Campbell 1991 |
| 012531 | 12531 | AH4. Trash scatter, AH15. Standing structures | James, Briggs, and Campbell 1991 |
| 012537 | 12537 | AP2. Lithic scatter, AP15. Habitation debris, AH2. Foundation/structure pad | James, Briggs, and Campbell 1991 |
| 012538 | 12538 | AP2. Lithic scatter, AP4. Bedrock milling | James, Briggs, and Mealey 1991 |
| 012539 | 12539 | AH4. Trash scatter | James, Briggs, and Campbell 1991 |
| 012540 | 12540 | AP4. Bedrock milling | James, Briggs, and Mealey 1991 |
| 012541 | 12541 | AP3. Ceramic scatter, AP15. Habitation debris | James, Collins, and Koolman 1991 |
| 012919 | 12919 | AP2. Trash scatter | Robbins-Wade, Pearl, Hyland, and Alter 1992 |
| 012920 | 12920 | AP2. Trash scatter | Robbins-Wade, Pearl, Hyland, and Alter 1992 |
| 024169 | -- | AH16. Water Collection Point | McLean and Michalsky 2001 |
| 025682 | 17081 | AH9. Mine and tailings | Lorey 2004 |
| 025929 | -- | Isolated hammer stone | Robbins-Wade and Sivba 2004 |
| 026765 | -- | HP3. Single family property, HP5. Hotel/motel | Davidson 2005 |
| 026766 | -- | HP5. Hotel/motel | Davidson 2005 |

| Designation | | | |
|---|---|---|---|
| Primary Number (P-37-) | Trinomial (CA-SDI-) | Site Type | Recorder, Date |
| 026767 | -- | HP3. Single family property, HP5. Hotel/motel | Davidson 2005 |
| 026768 | -- | HP5. Hotel/motel | Davidson 2005 |
| 033534 | 21079 | AP4. Bedrock milling | Wilson and Bietz 2013 |

## NATIVE AMERICAN CORRESPONDENCE

ASM submitted a request to the NAHC for a search of the Sacred Lands File and a list of tribal contacts that may have concerns or additional knowledge of tribal cultural resources in the area. ASM received a response from the NAHC on March 22, 2016 that indicated negative results in the search of the Sacred Lands File for the project area. The NAHC provided a list of 17 Native American contacts that may have knowledge of traditional cultural properties or areas of heritage or religious significance (Table 3). ASM sent letters to the tribal contacts on March 24, 2016 to inform them of the proposed project and request additional information regarding known traditional cultural properties within the vicinity of the proposed project area. To date, ASM has received responses from three of the tribal contacts. Mr. Chris Devers, Vice Chairman of the Pauma Band of Luiseno Indians, requested a copy of the cultural study once it is completed and that if any sites are identified on the property that they be preserved. The Viejas Band of Kumeyaay Indians requested a copy of this report so that they may make an informed decision and recommendation on the project. Joseph Ontiveros, the Cultural Resource Director for the Soboba Band of Luiseño Indians, indicated that the Soboba Band does not currently have any specific concerns regarding known cultural resources within the project area, but does request that the appropriate consultation continue to take place between concerned tribes, project proponents, and local agencies. A record of Native American correspondence is contained in Appendix B of the survey report (Daniels and Stringer-Bowsher 2016).

Table 3. Native American Contacts

| Contact | Affiliation |
|---|---|
| Clifford LaChappa, Chairperson | Barona Group of the Capitan Grande |
| Allen E. Lawson, Chairperson | San Pasqual Band of Mission Indians |
| Cody J. Maritinez, Chairperson | Sycuan Band of the Kumeyaay Nation |
| Robert J. Welch, Sr. Chairperson | Viejas Band of Kumeyaay Indians |
| Erica Pinto, Chairperson | Jamul Indian Village |
| Virgil Oyos, Chairperson | Mesa Grande Band of Mission Indians |
| Shasta Gaughen, PhD, THPO | Pala Band of Mission Indians |
| Randall Majel, Chairperson | Pauma Band of Luiseno Indians |
| Rosemary Morillo, Chairperson | Soboba Band of Luiseno Indians |
| Carmen Lucas | Kwaaymii Laguna Band of Mission Indians |
| Rebecca Osuna, Chairman | Inaja Band of Mission Indians |
| Bo Mazzetti, Chairperson | Rincon Band of Mission Indians |
| Carmen Mojado | San Luis Rey Band of Mission Indians |
| Mark Macarro, Chairperson | Pechanga Band of Mission Indians |
| Thomas Rodriguez, Chairperson | La Jolla Band of Luiseno Indians |
| Virgil Perez, Chairperson | Iipay Nation of Santa Ysabel |

# 3. RESEARCH DESIGN AND METHODS

This section discusses the basic research design for the archaeological evaluation research methods that have been utilized for the current investigation for the proposed residential development at 661 Bear Valley Parkway.

## RESEARCH DESIGN FOR EVALUATION

For an archaeological evaluation such as this one, the primary objectives with respect to prehistoric and historic archaeological resources are straightforward: to identify and document all of the resources that are present through subsurface testing. For the research design, the field requirements are (1) that subsurface sampling include a sufficient portion of the area adjacent to the bedrock milling to confirm a lack of nearby subsurface archaeological deposits, and (2) that the spatial extent and general character of any identified resources be documented according to the prevailing professional standards.

## EVALUATION FIELD METHODS

Evaluation methods are essentially sampling methods geared toward recovering a reasonably sized assemblage to estimate the density and diversity of the cultural deposit and to expose enough of the deposit to determine integrity. The methods employed during the current investigation of SDI-21808 are described below, including surface inspection and collection and subsurface investigation.

The first step in the evaluation was to re-locate archaeological features and landforms noted on previous site visits to SDI-21808. The next step was to conduct regular-interval transects of the site surface and pin-flag artifacts to establish a real-time visual perspective of site properties.

No surface artifacts were identified, so an excavation strategy was then determined to ensure that the previously defined boundaries of the site were correct as well as to determine if subsurface archaeological deposits were present at the site.

Three STPs (standard test pits) were excavated to determine if cultural deposits are present at SDI-21808 and if so, to determine the character and distribution of those deposits. STPs are small, 25-x-40-cm, exploratory units excavated in 20-cm vertical increments to depths of no more than 100 cm and are typically spaced at 10-m intervals or subjectively placed. STPs are typically used to explore the edges of cultural deposits, providing a positive-negative indication for the presence of subsurface cultural material, as well as to test whether any subsurface cultural material is present at the site as a whole.

All excavated matrix was screened through 1/8-in. (3-mm) mesh. The three STPs excavated during this evaluation were excavated to depths between 60 and 80 cm below surface. Small soil samples were taken for color and constituent classification.

The locations of STPs were recorded using a Trimble Pathfinder GPS receiver with real-time correction capabilities and accuracy down to 10 cm. A series of overhead photographs were taken to show the completed STPs. All field notes and documentation are housed at the ASM office in Carlsbad, California.

Completed DPR site update forms are included in this technical report as Confidential Appendix A. Digital photographs document the environmental associations and the specific features of the site, as well as the general character of the survey area.

# 4. EVALUATION RESULTS

## SDI-21808 EVALUATION RESULTS

The evaluation fieldwork at SDI-21808 was conducted on June 1, 2015. Doug Drake and Charles Dickerson conducted the evaluation. Shelly Nelson of Saving Sacred Sites served as the Native American monitor. Prior to excavation, the entire site area was resurveyed in an effort to identify and record any surface artifacts in the site. During the initial survey phase in March, no surface artifacts were identified at SDI-21808. During the evaluation phase, no surface artifacts were identified or recorded on the ground surface within SDI-21808.

The three STPs excavated to test the significance of SDI-21808 were subjectively positioned within and across the site. Figure 4 shows the location of the three excavated STPs. No units yielded any cultural materials. Charred plant remains and modern refuse associated with farming were present in the top 20 cm across the site, including ferrous metal wire and fragmented oyster shell, likely present from past fertilizing activities in the site vicinity. Table 4 provides a summary of the depths of excavation and the soils documented during excavation of each of the STPs. A site record update submitted to the SCIC is included in Confidential Appendix A of this report.

The STPs were excavated in the vicinity of the two bedrock milling features that ASM archaeologists identified and recorded as SDI-21808 during the previous survey of the project area. The two outcrops are separated by approximately 13 m, with two larger granitic boulders between them and a large, isolated palm tree just to the west (Figure 5). Feature 1 is approximately 2.3 x 1.2 m in size, with a maximum height of about 50 cm and with a slick that measures approximately 20 x 10 cm (Figures 6 and 8). Feature 2 is located north of Feature 1 and measures approximately 1.8 x 1.1 m in size, with a maximum height of about 60 cm. Feature 2 contains a slick that is approximately 20 x 20 cm in size (Figures 7 and 9). The boundary of the site was drawn to encompass the two features within an ellipsoid that is 222.7 $m^2$ in size and measures about 23 m long by 12.5 m wide (see Figure 4). Both of the milling slicks are rough and slightly exfoliated.

No artifacts were noted within the immediate vicinity of the milling features during the survey or site evaluation. Evidence of previous burning in the area was noted, including some charred vegetation and some ash on the ground surface, but this is attributable to recent burns possibly associated with the agricultural activity in the area. Several baked earth patches were noted across the project area, with a ring in the center of each patch about the size of a palm tree trunk. The palm trees were likely burned in place, causing the ground around their bases to harden.

Table 4. Results of STP Excavations at SDI-21808

| STP | Max Depth | Artifacts | Soil Description |
|---|---|---|---|
| 1 | 80 | None | Lightly compact medium-brown sandy loam |
| 2 | 60 | None | Lightly compact medium-brown sandy loam |
| 3 | 80 | None | Moderately compact medium-brown sandy loam |

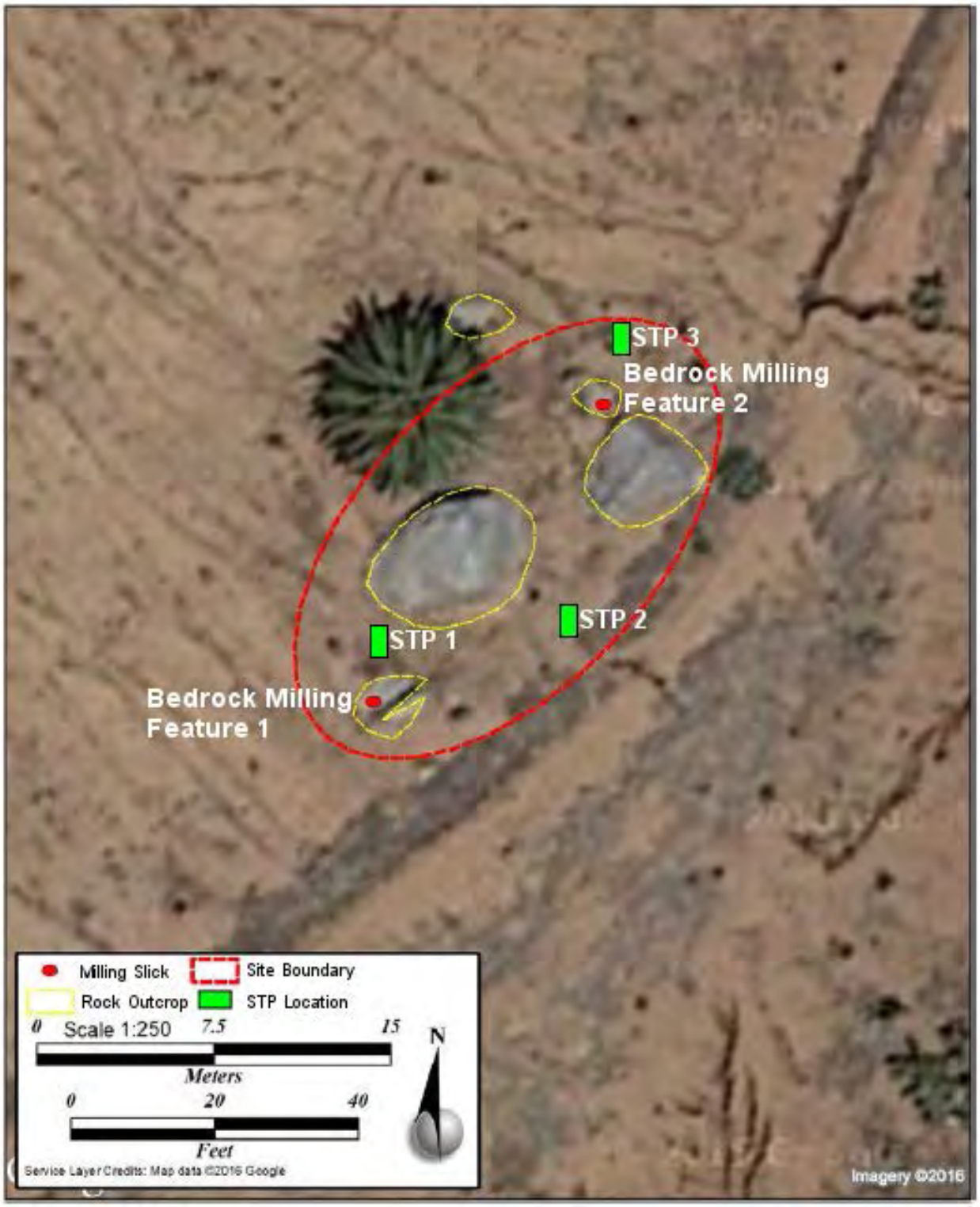


Figure 4. Sketch map of SDI-21808 showing the site boundary and the location of the bedrock outcrops and milling features associated with the site.

Figure 5. Southeast-facing overview of SDI-21808.

Figure 6. Bedrock Milling Feature 1 associated with SDI-21808. The milling slick is located just left of the north arrow.

Figure 7. Bedrock Milling Feature 2 associated with SDI-21808. The milling slick is located to the right of the north arrow.

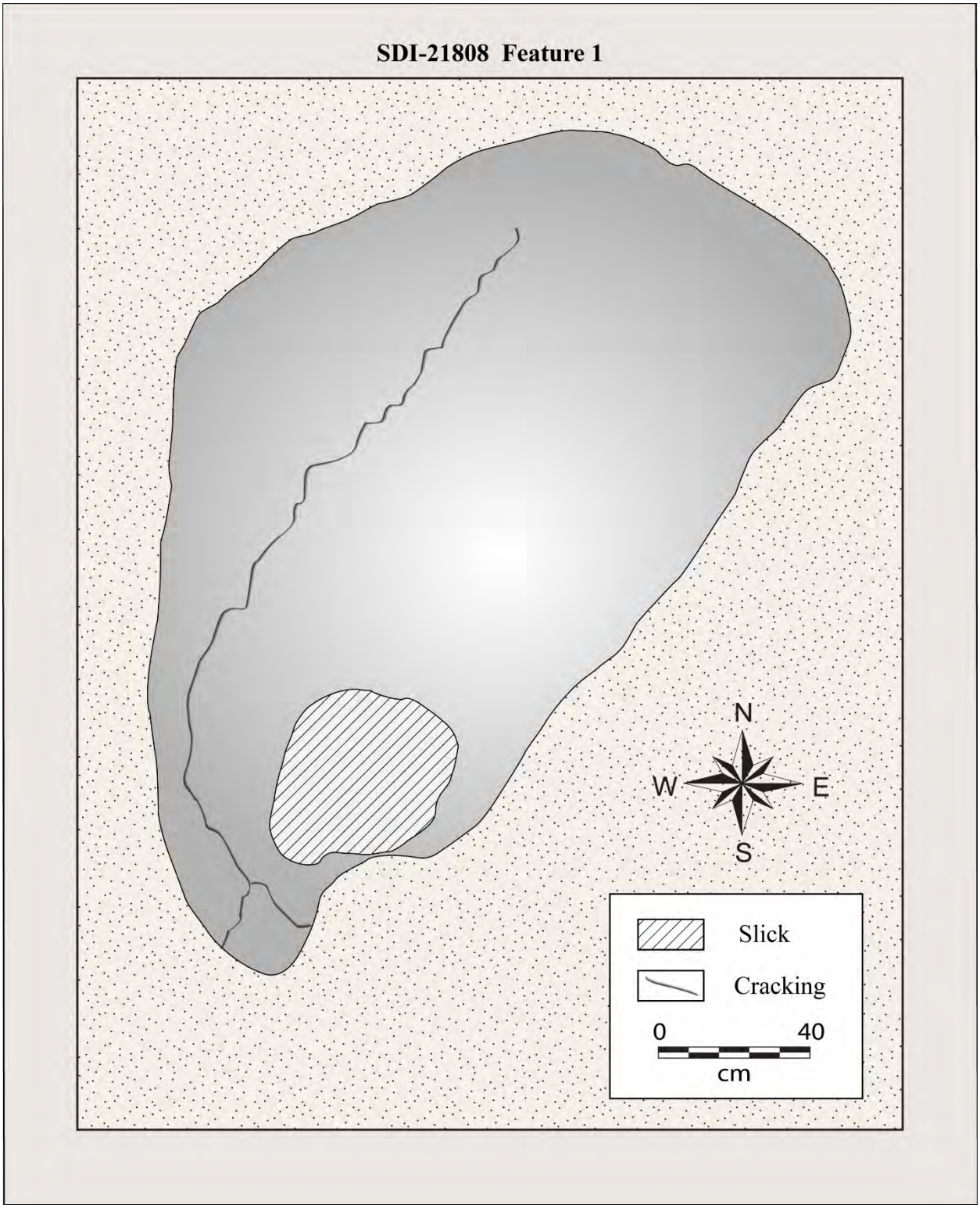


Figure 8. Bedrock Milling Feature 1 sketch map.

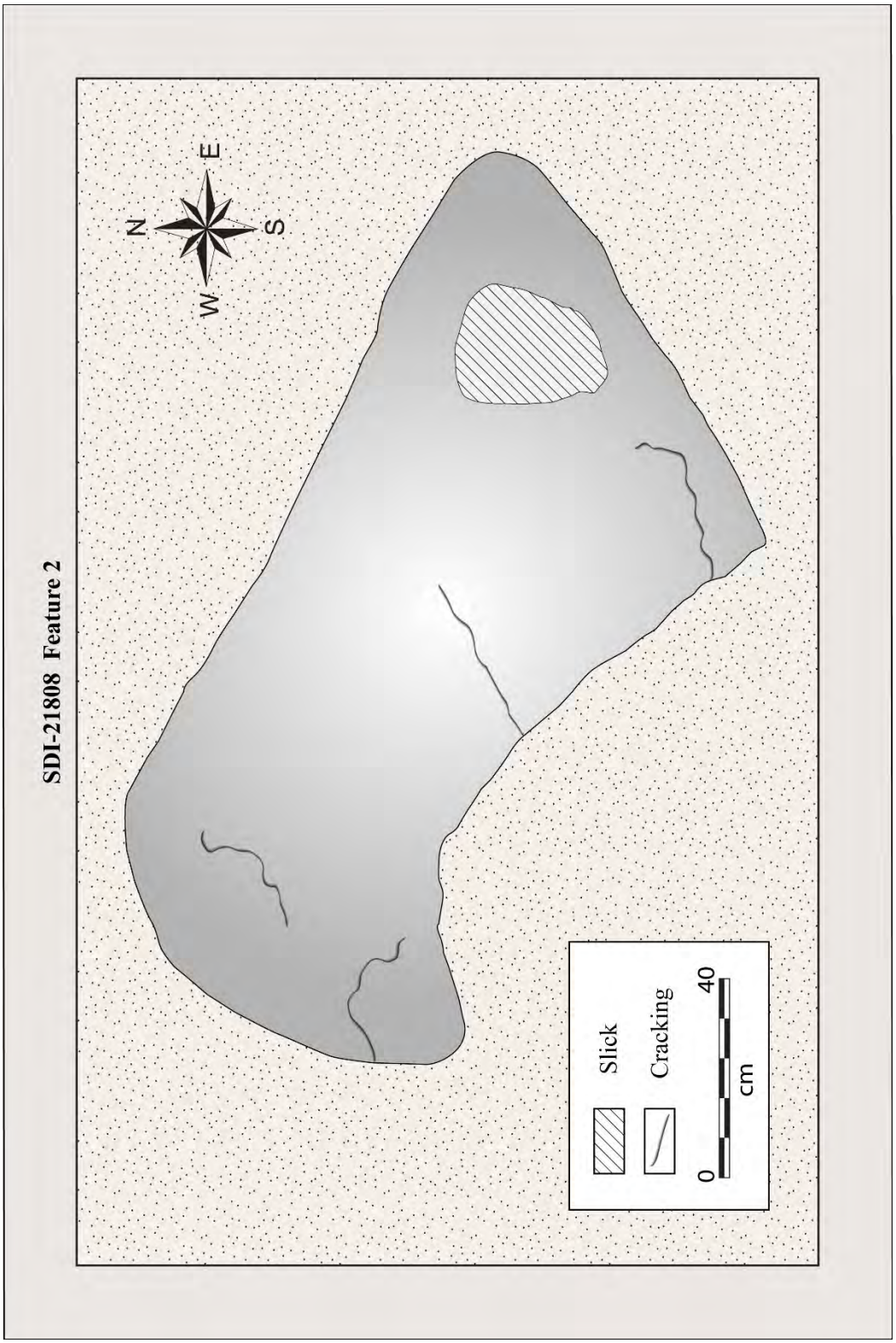


Figure 9. Bedrock Milling Feature 2 sketch map.

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# 5. CONCLUSIONS AND MANAGEMENT RECOMMENDATIONS

This study presents the results of a record and archival search, cultural resources survey, and archaeological evaluation at SDI-21808 conducted in support of the Bear Valley Parkway Residential Development, Escondido, California. The cultural resource investigation was conducted in compliance with the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act (NHPA). Section 106 is applicable to federal undertakings, including Projects financed or permitted by federal agencies, regardless of whether the activities occur on land that is managed by federal agencies, other governmental agencies, or private landowners. In practice, the NRHP criteria for eligibility applied under Section 106 are generally (although not precisely) concordant with CRHR criteria. Therefore, SDI-21808 was evaluated for NRHP eligibility, with equal applicability to CRHR. Compliance with CEQA requires consideration of impacts to cultural resources as historical resources or those resources potentially eligible for listing on the CRHR. The procedures for assessing archaeological and historical resources are addressed in CEQA Guidelines Section 15064.5(a) and 15064.5(c).

During the archaeological evaluation, the recorded cultural resource within SDI-21808 was relocated, and its condition was observed to be identical to what it was at the time of its last recording. No additional cultural materials were identified on either the surface or subsurface of the site.

## NATIONAL REGISTER OF HISTORIC PLACES CRITERIA

Authorized by the NHPA of 1966, the National Park Service's NRHP is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect America's historic and archeological resources. The NRHP is the official list of the nation's historic places worthy of preservation. The NRHP criteria for evaluation are designed to guide federal agencies and others in evaluating whether a property is eligible for inclusion in the NRHP. *How to Apply the National Register Criteria for Evaluation, National Register Bulletin 15*, was followed for the evaluation of SDI-21808 (National Park Service, National Register of Historic Places 1991). The criteria for evaluation are as follows:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity and:

A. are associated with events that have made a significant contribution to the broad patterns of our history; or

B. are associated with the lives of persons significant in our past; or

C. embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. have yielded or may be likely to yield, information important in prehistory or history [36 CFR 60.4].

Bulletin 15 also establishes how to evaluate the integrity of a property: "Integrity is the ability of a property to convey its significance." The evaluation of integrity must be grounded in an understanding of a property's physical features, and how they relate to the concept of integrity. Determining which of these aspects are most important to a property requires knowing why, where, and when a property is significant. To retain

historic integrity, a property must possess several, and usually most, aspects of integrity, which include location, design, setting, materials, workmanship, feeling, and association.

## CALIFORNIA REGISTER OF HISTORICAL RESOURCES CRITERIA

The CRHR program encourages public recognition and protection of resources of architectural, historical, archeological, and cultural significance, identifies historical resources for state and local planning purposes, determines eligibility for state historic preservation grant funding and affords certain protections under CEQA. The criteria established for eligibility for the CRHR are directly comparable to the NRHP criteria.

In order to be eligible for listing in the CRHR, a building must satisfy at least one of the following four criteria under subdivision c:

1) It is associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States.
2) It is associated with the lives of persons important to local, California, or national history.
3) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values.
4) It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

Cultural resources eligible for listing in the CRHR must meet one of the criteria of significance described above and retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. For the purposes of eligibility for CRHR, integrity is defined as "the authenticity of an historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance" (Office of Historic Preservation 2001).

## CALIFORNIA ENVIRONMENTAL QUALITY ACT SIGNIFICANCE CRITERIA

CEQA requires that all private and public activities not specifically exempted be evaluated against the potential for environmental damage, including effects to historical resources. Historical resources are recognized as part of the environment under CEQA. It defines historical resources as "any object, building, structure, site, area, or place which is historically significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California," as cited in Division I, Public Resources Code, Section 5021.1[b].

Lead agencies have a responsibility to evaluate historical resources against the CRHR criteria prior to making a finding as to a proposed Project's impacts to historical resources. Mitigation of adverse impacts is required if the proposed Project will cause substantial adverse change to a historical resource. Substantial adverse change includes demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired. While demolition and destruction are fairly obvious significant impacts, it is more difficult to assess when change, alteration, or relocation crosses the threshold of substantial adverse change. The CEQA Guidelines provide that a Project that demolishes or alters those physical characteristics of an historical resource that convey its historical significance (i.e., its character-defining features) can be considered to materially impair the resource's significance. The CRHR is used in the consideration of historical resources relative to significance for purposes of CEQA. The CRHR includes resources listed in, or formally determined eligible for listing in, the NRHP, as well as some California State Landmarks and Points of Historical Interest. Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts), or that have been identified in

a local historical resources inventory, may be eligible for listing in the CRHR and are presumed to be significant resources for purposes of CEQA unless a preponderance of evidence indicates otherwise.

Generally, a resource shall be considered by the lead agency to be a "historical resource" if it:

1) Is listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Pub. Res. Code, § 5024.1, Title 14 CCR, Section 4850 et seq.).

2) Is included in a local register of historical resources, or is identified as significant in an historical resource survey meeting the requirements section 5024.1(g) of the Public Resources Code.

3) Is a building or structure determined to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.

## MANAGEMENT RECOMMENDATIONS

Archaeological sites are typically evaluated for NRHP and CRHR eligibility under Criterion D or Criterion 4, respectively, but may also be eligible under Criterion A (or Criterion 1) if they are associated with important events such as a migration, cultural adaptations, or trade routes and trails. Due to its lack of association with important events such as a migration, cultural adaptations, or trade routes and trails, site SDI-21808 is not eligible for the NRHP or CRHR under Criterion A or Criterion 1. Due to the lack of a subsurface archaeological component, it is also unlikely to be useful in addressing substantive research questions, and therefore is not eligible under NRHP Criterion D or CRHR Criterion 4. As a result, the test excavations conducted at SDI-21808 indicate that the site does not possess subsurface cultural deposits considered significant under CEQA.

The type of milling features at the site are ubiquitous, nondistinctive, possess no evident research potential, and are not eligible for the NRHP or CRHR under any of the established criteria. Therefore, potential impacts to SDI-21808 associated with the proposed project would be less than significant. No further work is recommended for SDI-21808. ASM does recommend archaeological monitoring for the entire proposed project APE during ground disturbing activities associated with construction due to the potential for the presence of as yet unidentified subsurface cultural resources within the proposed project APE. Additional cultural resources work would be required if future modifications are made to the boundaries of the proposed project.

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# APPENDICES

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## CONFIDENTIAL APPENDIX A

## DPR Site Record Update for CA-SDI-21808

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# Appendix H Additional Cultural Resources Survey for the Bear Valley Parkway Development (September 2016)

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September 16, 2016

Diane Sandman, Director
Environmental Services
Harris & Associates
750 B Street, Suite 1800
San Diego, CA

Re: Additional Cultural Resources Survey for the Bear Valley Parkway Development, Escondido, California

Dear Ms. Sandman,

This report presents the results of an archaeological investigation conducted by ASM Affiliates, Inc. (ASM) for the recently proposed Bear Valley Parkway Residential Development Project (Project). The purpose of the archaeological investigation was to determine the presence or absence of cultural resources within the proposed road improvements along Bear Valley Parkway, connected to the Project's area of potential effects (APE), as described below.

**PROJECT DESCRIPTION AND LOCATION**

ASM was contracted by Harris and Associates to conduct an additional Phase I/Class III archaeological survey associated with proposed road improvements along Bear Valley Parkway that are connected to the proposed residential development project located within the property addressed as 661 Bear Valley Parkway in Escondido, California. This work was conducted to assist in compliance with the California Environmental Quality Act (CEQA), Section 106 of the National Historic Preservation Act (NHPA), and local regulations in the city of Escondido.

The project area is located in the city of Escondido, San Diego County, California (Figure 1). The proposed project consists of the subdivision of 40.9 acres into 55 residential lots, two private street lots, seven open- space lots, and one recreation lot. Each of the residential lots will contain a minimum area of 10,000 ft.$^2$. Private open space will occupy 19.47 acres of the 40.9 acre project area, and will include any environmental mitigation and buffer areas related to upland or wetland habitat, as well as two drainage basins to improve the quality of storm water crossing and exiting the site. Access to the project area from Bear Valley Parkway is proposed at the intersection of Zlatibor Ranch Road and Bear Valley Parkway. A secondary, gated emergency access road will be provided between the main access point and the intersection of Encino Drive and Bear Valley Parkway. The project includes a proposed Specific Alignment Plan for an alternative standard for Bear Valley Parkway (classified as a Major Road), as well as frontage improvements to include curb, gutter, sidewalk, parkway, and bike lane. The pedestrian walkway system inside the project area will tie into the public Bear Valley Parkway sidewalk system. While the subdivision of 40.9 acres was previously surveyed by ASM (Daniels 2016, Drake 2016), the City would like to include the road improvements in this study. The road

improvements will be along Bear Valley Parkway, and required a linear survey of up to 0.7 miles.

For the archaeological and historical investigations presented in this report, Dr. Mark Becker served as Project Manager. Doug Drake, M.A. served as the Field Director and Report Author, and David Streamer of Saving Sacred Sites served as the Native American monitor.

## METHODS

The Project APE was surveyed by on September 15, 2015. All accessible portions of the potential Project APE were inspected for the presence of cultural material. Portions of the APE were within fenced and/or private property, were not accessible, and were not surveyed. Due to developed nature of the Project area, including Bear Valley Parkway, sidewalks, landscaping, fencing, and private property restrictions, the surveyable portions of the APE were limited to being adjacent to the existing roadway in addition to relatively smaller, discontiguous patches of open soils along the slope adjacent to the east of this area, all of which were examined for cultural resources as access permitted.

## ARCHAEOLOGICAL SURVEY RESULTS

The intensive visual inspection of the accessible portions of the roadway improvements APE provided no evidence for the presence of cultural resources in those areas, although a previously unrecorded trash dump was observed immediately east of the proposed road improvements APE (Figures 5-8). The majority of the Project APE is located within the public right-of-way and is paved (Bear Valley Parkway), fenced and/or private land, covered with vegetation, or is a slope into a deep drainage that parallels the east side of Bear Valley Parkway. All accessible areas of exposed soil were visually examined, but the surveyable portions of the APE were limited to being immediately adjacent to the existing roadway in addition to discontiguous patches of open soils along the slope to the east of this area, all of which were examined for cultural resources as access permitted. In addition, the majority of the accessible portions of exposed soil appeared to consist primarily of graded and/or filled soil, and contained varying amounts of modern refuse and other intrusive materials.

A previously unrecorded small historic trash dump was observed immediately east of the proposed roadway improvements along Bear Valley Parkway and approximately 20 meters south of the proposed Green Street Rain Garden Area described in engineering plans (Figure 5). The small trash dump consisted of seven clear glass bottle fragments, six brown glass bottle fragments (Figure 6), a historic Ball mason jar (Figure 7), two cans (Figure 8), and two unidentifiable metal fragments. It also contained intrusive modern components as well, including a fragmented toilet and a fragmented plastic plant pot. The historic component appeared to be eroding from the banks of a seasonal drainage running west-east from the roadway above. As this site was located outside of the APE, it was not formally recorded. Due to the diffuse and scattered nature of the site, it was determined to be a non-significant resource.

While the majority of the APE of the potential alternative alignment for the roadway improvements have been previously disturbed by the construction of Bear Valley Parkway and

the development of private land along the road, it is possible that intact subsurface cultural deposits have been preserved underneath the roadway or ground surface within the APE.

## CONCLUSIONS AND RECOMMENDATIONS

Although no cultural resources were identified within the Project area during the archaeological survey of the potential roadway improvements associates with the Bear Valley Parkway Development Project APE, construction monitoring by a qualified archaeologist and Native American monitor is recommended for this portion of the Project, as it is for the original Project APE. Due to the varying ground surface visibility, restricted access, and highly disturbed nature of the road improvements APE and the identified presence of cultural resources within the vicinity, there is a potential for unidentified, buried cultural material within this portion of the proposed road improvement APE, as there is for the original Project APE. If you have any questions or comments regarding the information provided in this report, please do not hesitate to contact me or Dr. Mark Becker.

Sincerely,

Doug Drake, M.A.
Associate Archaeologist

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2016 Drake, Doug *Cultural Resources Evaluation of Prehistoric Archaeological Site CA-SDI-21808 for the Bear Valley Parkway Development, Escondido, California.* Prepared for Diane Sandman, Harris & Associates. ASM Affiliates, Carlsbad.

**Attachments:**

Figure 1. Regional project location map.
Figure 2. A satellite map showing the location and boundary of the proposed road widening along Bear Valley Parkway.
Figure 3. Map showing the proposed road improvements plan associated with the Bear Valley Parkway Residential Development Project, map created by Hunsaker & Associates San Diego, Inc..
Figure 4. View of a paved and vegetated portion of the Bear Valley Parkway road improvements alignment APE, facing south.
Figure 5. A satellite map showing the location of the previously unrecorded small historic trash dump adjacent to the Project area.
Figure 6. View of a selection of brown glass and clear glass bottle fragments observed in small historic trash dump, scale in centimeters.
Figure 7. View of a Ball mason jar observed in small historic trash dump, scale in centimeters.
Figure 8. View of a can observed in small historic trash dump, scale in centimeters.

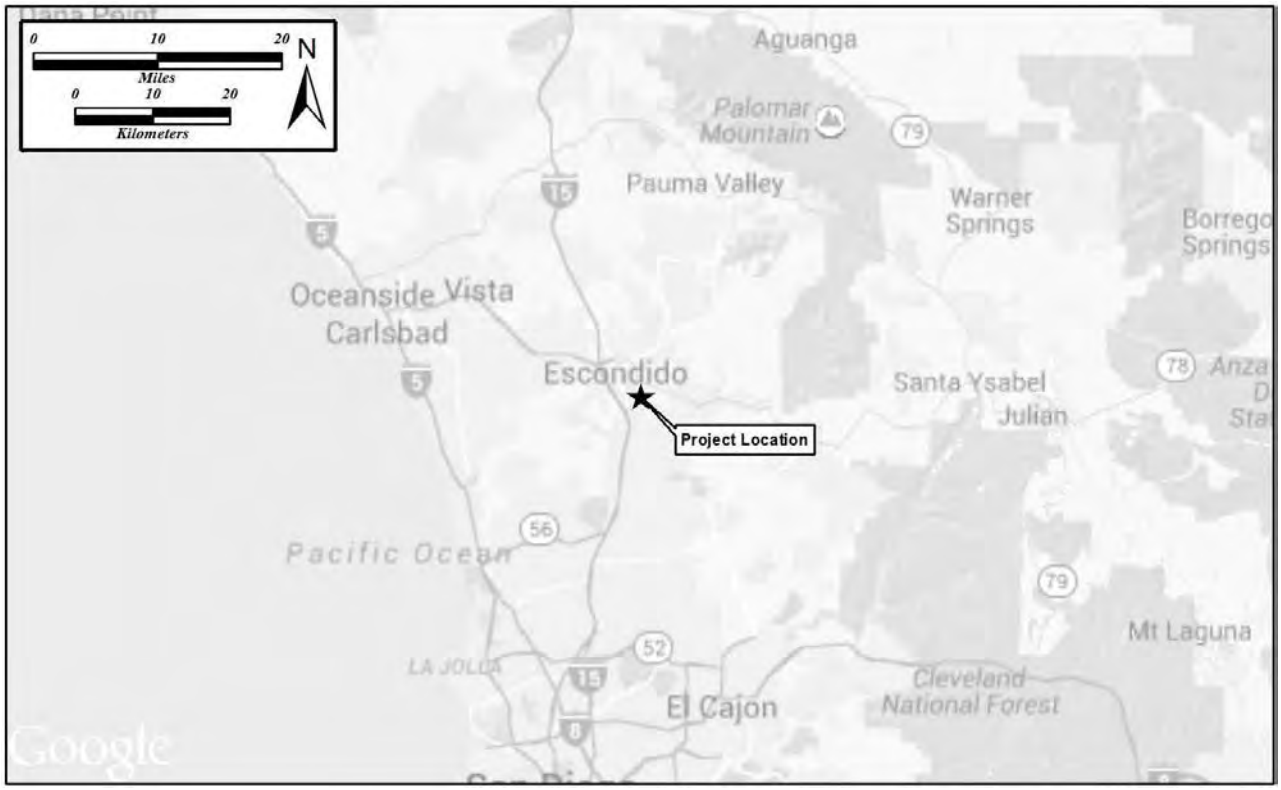

Figure 1. Regional project location map.

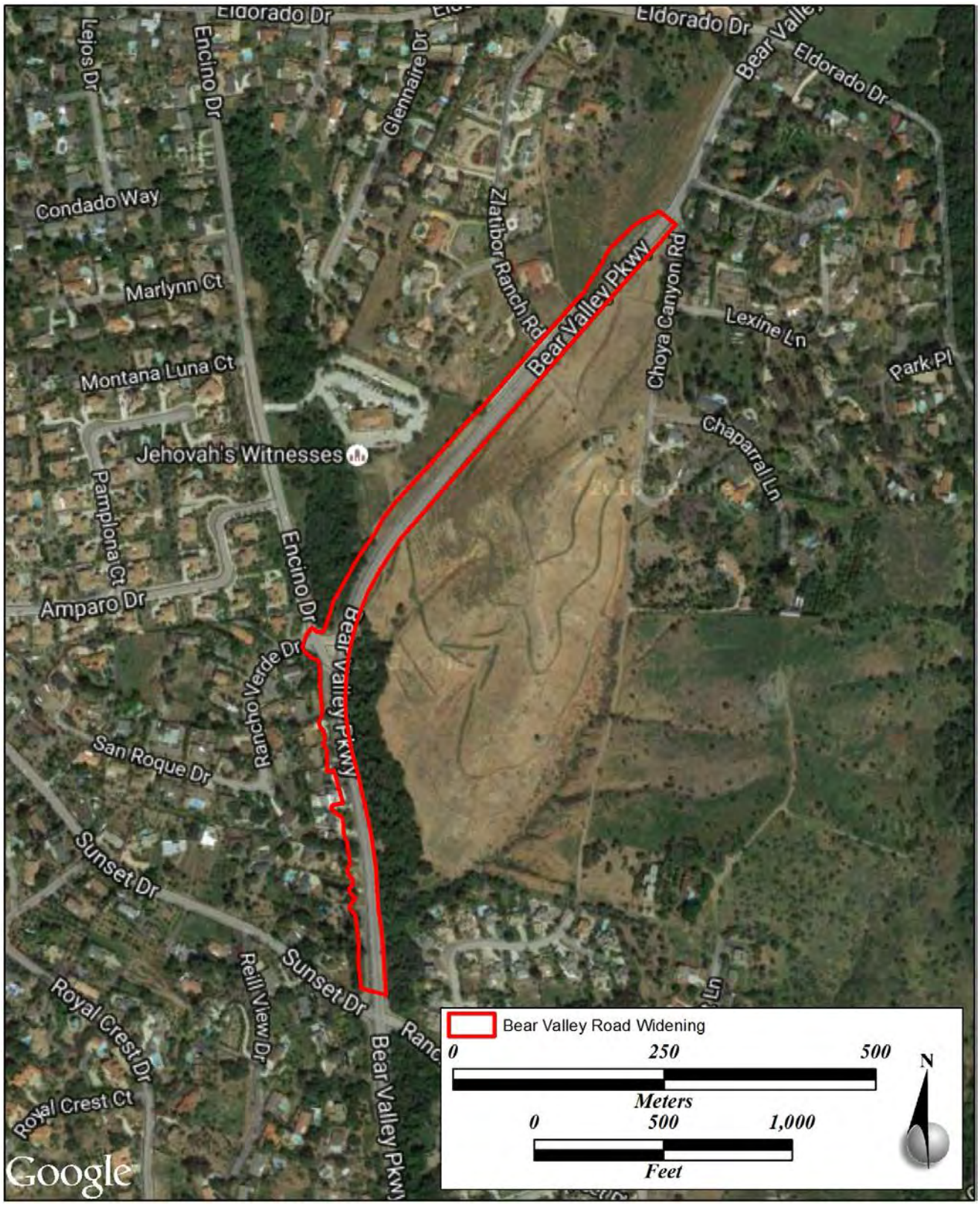


Figure 2. A satellite map showing the location and boundary of the proposed road widening along Bear Valley Parkway.

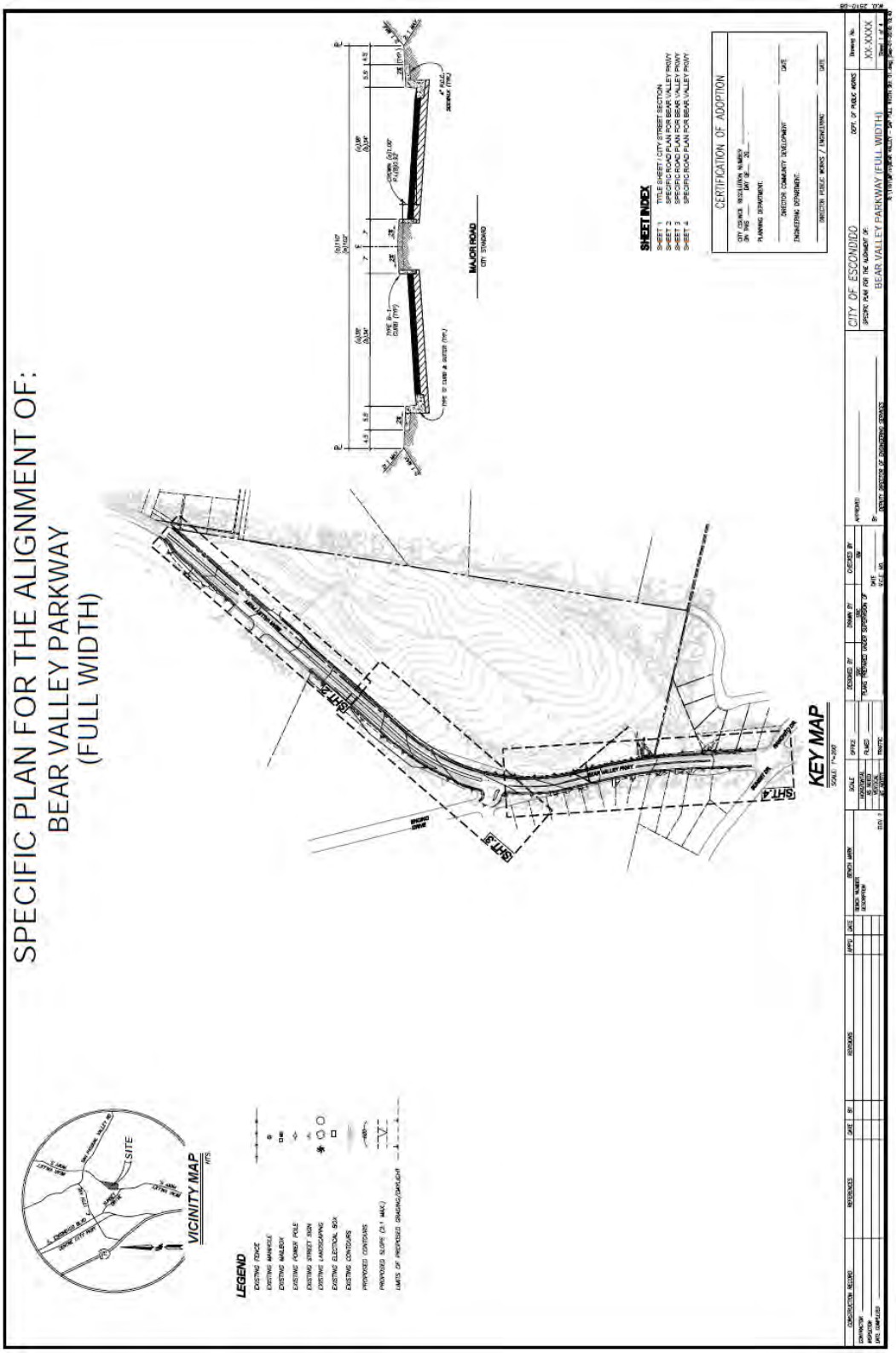


Figure 3. Map showing the proposed road improvements plan associated with the Bear Valley Parkway Residential Development Project, created by Hunsaker & Associates San Diego, Inc.

Figure 4. View of a paved and vegetated portion of the Bear Valley Parkway Residential Development road improvements project APE, facing south.

Figure 5. A satellite map showing the location of the previously unrecorded small historic trash dump adjacent to the Project area.

Figure 6. View of a selection of brown glass and clear glass bottle fragments observed in small historic trash dump, scale in centimeters.

Figure 7. View of a Ball mason jar observed in small historic trash dump, scale in centimeters.

Figure 8. View of a can observed in small historic trash dump, scale in centimeters.

# Appendix I-1 Geotechnical Investigation (April 2013)

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VINJE & MIDDLETON ENGINEERING, INC.

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**Job #13-116-P**

April 3, 2013

Spieth & Wohlford, Inc.
c/o Mr. Jack Henthorn
Jack Henthorn & Associates, Inc.
P.O. Box 237
Carlsbad, California 92018

**Geotechnical Investigation, Proposed Residential Subdivision**
**661 Bear Valley Parkway, Escondido, California (A.P.N. 237-131-01 & -02)**

Pursuant to your request, Vinje & Middleton Engineering, Inc. has completed the attached Geotechnical Investigation Report for the planned residential subdivision at the above-referenced property.

The following report summarizes the results of our field investigation, including sampling, laboratory analyses and engineering analysis, and provides conclusions and recommendations for the proposed development as understood. From a geotechnical engineering standpoint, it is our opinion that the site is suitable for the planned residential subdivision and associated improvements provided the recommendations presented in this report are incorporated into the design and construction of the project.

The conclusions and recommendations provided in this study are consistent with the site geotechnical conditions and are intended to aid in preparation of final development plans and allow more accurate estimates of development costs.

If you have any questions or need clarification, please do not hesitate to contact this office. Reference to our **Job #13-116-P** will help to expedite our response to your inquiries.

We appreciate this opportunity to be of service to you.

**VINJE & MIDDLETON ENGINEERING, INC.**

S. Mehdi S. Shariat
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REGISTERED PROFESSIONAL ENGINEER
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GEOTECHNICAL
STATE OF CALIFORNIA

# Geotechnical Investigation

## Proposed Residential Subdivision
## 661 Bear Valley Parkway
## Escondido, California

## (A.P.N. 237-131-01 & -02)

April 3, 2013

Prepared For:
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Job #13-116-P

TABLE OF CONTENTS


PAGE NO.

I. INTRODUCTION ..... 1

II. SITE DESCRIPTION / HISTORY ..... 1

III. PROPOSED DEVELOPMENT ..... 4

IV. SITE INVESTIGATION ..... 4

V. GEOTECHNICAL CONDITIONS ..... 5

A. Earth Materials ..... 5
B. Slope Stability ..... 6
C. Surface Flow and Subsurface Groundwater ..... 6
D. Rock Hardness ..... 7
E. Faults/Seismicity ..... 7
F. Seismic Ground Motion Values ..... 9
G. Geologic Hazards ..... 10
H. Field and Laboratory Tests and Test Results ..... 11

VI. SITE CORROSION ASSESSMENT ..... 15

VII. HYDRO MODIFICATIONS ..... 16

VIII. CONCLUSIONS ..... 17

IX. RECOMMENDATIONS ..... 20

A. Grading and Earthworks ..... 20
B. Foundations and Slab-on-Grades ..... 31
C. Soil Design Parameters ..... 33
D. Exterior Concrete Slabs / Flatworks ..... 34
E. Asphalt and PCC Pavement Design ..... 35
F. General Recommendations ..... 37

X. GEOTECHNICAL ENGINEER OF RECORD (GER) ..... 39

XI. LIMITATIONS ..... 40

REFERENCES

TABLE OF CONTENTS (continued)

PLATE NO.


Vicinity Map ..... 1
Geotechnical Map ..... 2
Preliminary Development Concept ..... 3
Test Pit Logs ..... 4-30
Geologic Cross-Sections ..... 31-32
Fault-Epicenter Map ..... 33
Grain Size Analysis ..... 34
Consolidation Test ..... 35
Typical Canyon Subdrain Details ..... 36
Undercutting Details ..... 37
Rock Disposal Recommendations ..... 38-39
Key and Benching Details ..... 40-41
Isolation Joints and Re-Entrant Corner Reinforcement ..... 42
Retaining Wall Drain Detail ..... 43

ATTACHMENT

# GEOTECHNICAL INVESTIGATION
# PROPOSED RESIDENTIAL SUBDIVISION
# 661 BEAR VALLEY PARKWAY, ESCONDIDO, CALIFORNIA
# (A.P.N. 237-131-01 & -02)

## I. INTRODUCTION

The property investigated herein consists of approximately 40 acres of largely undeveloped terrain located on the east side of Bear Valley Parkway, south of Highway 78 within the limits of the City of Escondido. The location is shown on a Vicinity Map attached to this report as Plate 1. The approximate site coordinates are 33.10°N latitude and -117.06°W longitudes.

We understand that the project property is planned for the development of residential subdivision with the associated roadways and underground improvements. Consequently, the purpose of this investigation was to determine soil and geotechnical conditions at the property and to ascertain their influence upon the planned development, as currently understood. Test pit digging, seismic survey lines, soil sampling, and laboratory tests were among the activities conducted in conjunction with this effort which has resulted in the planning and geotechnical development recommendations presented herein.

## II. SITE DESCRIPTION / HISTORY

A Geotechnical Map, reproduced from a topographic survey provided to us by Jack Henthorn & Associates, Inc. is included as Plate 2. As shown, the property consists of two parcels with a south trending, teardrop shape configuration and a combined area of approximately 42 acres.

Topographically, the site is characterized by a large hilltop and a north-south trending ridgeline that enters the northeast area of the property and transitions into descending hillside terrain in the southern reaches of the property. South and southwest hillside regions of the property are marked by local, less prominent ridgelines with intervening canyon flowlines or swale-like terrain. Northerly portions of the property ascend at gentle to modest gradients from Bear Valley Parkway eastward to the property line and beyond. Southeasterly hillside regions descend at modest gradients to a local flowline that marks the eastern property limits. Overall, lower site topography along the east and west site margins descend toward the south to prominent local flowlines.

Maximum vertical relief from the highest point at the property (hilltop at 678 feet MSL) to the lowest areas on the site (southerly flowline areas at 540 feet MSL) is on the order of 140 feet. Natural hillside gradients largely approach 3:1 (horizontal to vertical) maximum overall, however, more steeper terrain locally ranging to near vertical occurs in association with local canyon terrain and the prominent flowlines that cross the southeast and south portions of the property.

Surface areas of the property consist generally of natural, barren hillside terrain. Drainage terraces, consisting of shallow fills, were constructed within the last five years to help control site runoff from entering off-site locations. Existing graded surfaces at the property include small level graded pads in the upper northerly areas of the property that support an occupied dwelling and detached garage, and a small vacant cut-fill pad on the more gentle hillside west of the existing dwelling. A lower access roadway was constructed by filling across the southern drainage course flowline (see Plate 2). A water weir and culverts are present to allow for water to continuously flow under the access way, which no longer appears in use. Another flowline crossing, with a subsurface culvert, was constructed over the lower portions of the southwest canyon flowline. Additional fill soils, apparently associated with previous mining activities at the property, were used to fill vertical mine excavations or cover horizontal excavations.

Existing graded embankments at the property are limited to near vertical cut slopes, ranging to approximately 12 feet high, constructed along portions of the western site boundary adjacent to Bear Valley Parkway (see Plate 2). The exposed cuts were likely created in conjunction with the construction of Bear Valley Parkway. Brow ditches are not present and runoff is allowed to sheet flow over the slope faces which are subject to local surface erosion. However, gross instability is not in evidence.

Site drainage sheetflows over site sloping terrain to developed drainage terraces where the runoff is slowed and directed toward intervening canyon areas and lower flowlines. Local erosion of the drainage terraces has occurred. Shallow erosional ruts that include local piping through more consolidated upper soils occur in the southeast and southwest areas of the property near the prominent flowlines and lower canyon areas, as indicated on Plate 2. Some scouring and erosion are present along the flowline that crosses the southeast corner of the property. Portions of this flowline have little to no vegetation to impede largely uncontrolled runoff. This flowline was dry at the time of our field investigation. The other prominent flowline marking the southwest property boundary is heavily overgrown with mature trees. An earthen berm marks the top of the project side of the flowline to help control runoff from the project site. A continuous flow of water was noted within this flowline during our field investigation. Excessive scouring or erosion is not present along this drainage course.

More recently, the property was utilized for agricultural purposes and supported an avocado grove with associated improvements. Tree stumps, older irrigation pipeline, and valves remain as remnants of the grove (including a stockpile of metal irrigation pipe on the project hilltop).

Prior to the avocado grove, the site was subject to mining activities which were conducted approximately 50 to 70 years ago. Detailed documentation of the mining activities is not available. However, from a research of available mining documents for the local area and interviews, we understand there are existing mining shafts and horizontal adits at the

property. Consequently, as part of the seismic investigation, three seismic tomography lines were conducted at the project property along suspected mine locations. The tomography surveys were conducted by SubSurface Surveys under the direction of this office. Seismic tomography uses mathematical modeling of P and S wave travel time to map subsurface structures, such as mine shafts or adits. The speeds of the generated shock waves relate to layers of differing density or rock type. In this case, a Bison 9024 signal enhancement seismograph and a standard spread using 24 geophones at 10-foot spacing was used. The results are presented with this report in an Attachment.

Our field investigation included test pits at suspected mine locations and anomalies shown on the seismic tomography lines. Subsequently, four existing mining excavations were identified at various test pit locations within the property as follows:

1. A nearly horizontal mine tunnel (adit) was exposed at the bottom of Test Pit 4, (TP-4) excavated through the underlying bedrock. The exposed excavation measured approximately 6 feet high by 7 feet wide trending in an N15°E direction. No supports were present, and the extent of the mine tunnel is unknown.

2. A nearly horizontal fille shaft was encountered at the Test Pit 7, (TP- 7) location, on the south side of the existing detached garage. The shaft excavation measured 9 feet square with the bottom of shaft extending beyond the 16-foot limit of our backhoe into crystalline bedrock. A secondary filled excavation appeared to the present on the westerly side of the shaft at 9 feet below the surface. This excavation appeared to trend slightly downward in an N75°W direction.

3. A well-developed horizontal mine tunnel (adit) was exposed 4 feet below the surface at the Test Pit 9, (TP- 9) location, near the upper beginning of the southwest canyon flowline. The hillside opening to this horizontal mine excavation measured 17 feet wide by 7 feet high and extended due west into the hillside for 17 feet. At this point, the mine tunnel narrows to approximately 3 feet wide and continues for an estimated 50-60 feet due west where it appears to trend northward. The entire mine tunnel was excavated into crystalline bedrock with no evidence of artificial support.

4. A filled mine excavation was identified at the Test Pit 15, (TP-15) location. This excavation originates on the south facing hillside with the mine opening measured 7 feet high by 4 feet wide and was exposed at 7 feet below the surface. The excavation appears to be nearly horizontal and trending N25°E into the hillside.

Other locations at the property are suspected of mine excavations due to periodic filling of sinkholes that generally appear after periods of heavy or prolonged rains. Overall extent of the vertical shafts or horizontal adits is unknown. Methods used to destroy or backfill the shafts, other than filling with soil, are also unknown. All known mine excavation

locations, and those identified during site development will require special handling and mitigation as outlined in following sections.

## III. PROPOSED DEVELOPMENT

Project grading and improvement plans are not yet developed and specific development details including final design elevations and height and gradients of planned graded embankments are not currently known. A tentative development map, provided by Hunsaker & Associates, is reproduced herein as Preliminary Development Concept, Plate 3.

The Preliminary Development Concept depicts the general proposed cut and fill areas (blue represents fill areas while red represents cut areas) as well as a subdivision and roadway layout for the planned development at the property. Specific design lines and grades are unknown, however, relatively significant cuts and fills are expected for developing level building pad surfaces and roadway alignments. Based on the Preliminary Development Concept (Plate 3), the higher areas of the property will be cut down and the generated material used to fill the lower perimeter terrain for achieving design elevations. Graded embankments are expected to be on the order of 20 feet high and are recommended at 2:1 gradients maximum. Required setbacks from the existing flowline tributaries will be maintained, as required.

Detailed building construction is not available. Future residential building construction is anticipated to consist of conventional wood-framed with exterior stucco structures supported on shallow foundations with stem-walls and slab-on-grade floors, or slab-on-ground with turned-down footings.

## IV. SITE INVESTIGATION

Geotechnical and subsurface conditions at the property were chiefly determined by the excavation of 27 test pits dug with a tractor-mounted backhoe. Subsurface investigations were supplemented by six seismic refraction lines and three seismic tomography lines conducted along the project ridgelines, corestone outcrop areas, and suspected mining locations. All the test pits were logged by our project geologist who also retained representative soil and rock samples at selected locations and intervals for laboratory testing. Approximate locations of the test excavations and seismic refraction / tomography lines are shown on the Geotechnical Map, Plate 2. Logs of the test pits are attached as Plates 4 through 31. Compiled seismic data is detailed in the enclosed Attachment. Laboratory test results and engineering properties of elected samples are summarized in following sections.

## V. GEOTECHNICAL CONDITIONS

The property consists of ridgeline and hillside terrain underlain by crystalline bedrock mantled by surficial soils. Previous mining activities conducted at the site have resulted in vertical and nearly horizontal mine shafts and tunnels. Evidence of impending slope instability, faults, or significant shear zones are not indicated at the project property. The following geotechnical conditions are apparent and will influence site development:

### A. Earth Materials

**Bedrock** - Bedrock units beneath the property are chiefly dark-colored gabbroic rocks intruded by felsic quartz-rich veins and lighter granitic rock types that are common in local areas. Project exposures are dominated by deeply weathered fine to coarse-grained rocks that grade harder with depth. The bedrock also locally includes spherical corestones. These are much harder rocks that consist of residual boulders in surface exposures and subsurface seismic surveys in the southeast area of the property.

Excavations into the project bedrock are expected to largely produce good quality gravelly sandy granular soils suitable for site new fills and backfills.

**Colluvium** - Lower perimeter terrain and local hillside areas are covered by a modest to thick mantle of colluvial soils. Site colluvium consists largely of fine to medium grained sandy deposits that locally include some clay-bearing soils. Project colluvium thickens toward the south margin of the property where developed exposures appear ancient and consolidated. Overall, shallow deposits of colluvium were found in damp and loose conditions, and thicker colluvium deposits become more uniformly medium dense to dense at depth.

**Alluvium** - Local alluvium deposits were exposed within local canyon flowlines in the south areas of the property. Upslope of the canyon flowline crossing in the southwest area of the site, the alluvium was measured to be 10 feet thick and was found in a very loose condition overall.

**Topsoil** - Shallow topsoil deposits occur along ridgelines and hilltops at the property. Site topsoil consists of silty sand that was found in damp and very loose conditions overall.

**Fill** - Existing fill deposits at the property include minor fills associated with existing pad areas and newer drainage terraces. More significant existing fill deposits are associated with the southwest canyon crossing and with covering or filling old mine excavations. The mine-related fills range from sandy to clayey deposits that were found in very loose conditions overall.

The approximate distribution of earth deposits at the site are shown on the enclosed Geotechnical Map, Plate 2. Details of site earth materials are given on the enclosed test pit logs, Plates 4-31. The subsurface relationship of site earth materials is depicted on Geologic Cross-Sections enclosed with this report as Plates 31 through 32.

## B. Slope Stability

Project hillsides are underlain by competent crystalline bedrock units which typically perform well in natural and graded slope conditions. Slope instability is not indicated along the project natural hillside areas. Oversteepened graded cut slopes along Bear Valley Parkway are impacted by surface erosion and should be laid back to more gentle gradients as part of the project development / street improvements.

Future graded cut embankments exposing crystalline bedrock are expected to be grossly stable to anticipated design heights. All graded slopes should be constructed as recommended herein and provided with well-developed brow ditches. Runoff should not be allowed to occur in a concentrated flow conditions or flow over slope faces.

## C. Surface Flow and Subsurface Groundwater

Subsurface water was not encountered in project test excavations to the depths explored. However, local weathered bedrock units can transmit near-surface water from up-slope terrain through joint and shear surfaces that could impact lower improvements. At the project site, moisture sensitive improvements may require the installation of a slope toe drains. All canyon flowlines within the planned development areas will also require the installation of canyon type subdrain, as specified in the following sections.

An active stream flow condition was noted in the southerly tributary flowline that marks the southwest margin of the site. The flowline that traverses the southeast portion of the property was dry at the time of our investigation. Both tributary flowlines will be subject to seasonal conditions and varying degrees of flow conditions. The southwest flowline is overgrown with trees and vegetation and has no evidence of excessive scouring or erosion. The southeast flowline, however, is largely barren of vegetation and is susceptible to scouring and erosion if not improved. Storm water control is critical to the stability of project lower terrain. Uncontrolled runoff should not be allowed to flow over project sloping terrain to the lower flowlines. Storm water runoff control facilities should be designed and installed as necessary and appropriate. Rock-lines sidewalls or armor protection for the southeasterly flowline may be necessary to limit erosion.

Like all graded hillside developments, the proper control of surface and storm water drainage is an important component in the continued stability of the site. Ponding should not be allowed and over watering of site vegetation should be avoided.

## D. Rock Hardness

Local bedrock units are largely weathered gabbroic rocks that become more dense and hard at depth. Final grades are unknown, however, significant cutting of the hilltop and hillsides are expected to achieve finish pad grades and new street alignments. Consequently, added study of hard rock conditions at the project site were conducted as a part of this work. Six seismic refraction lines were conducted across ridgelines, hilltops, and suspected hard rock areas at the project site. The surveys were conducted by SubSurface Surveys under the direction of this office. Seismic refraction surveys measure the velocity of controlled compressional waves (P-waves) through the underlying rock medium. The speed of the generated shock waves relates to rock density or hardness and can also indicate layers of differing density. In this case a Bison 9024 signal enhancement seismograph and a standard spread using 24 geophones at 10-foot spacing were used. The results are presented with this report in Attachment A.

The data indicates the presence of weathered bedrock units beneath the project site. In general, project bedrock is in the rippable range for a Caterpiller D9 to depths ranging from 20 to 40 feet below the surface. Rocks below are harder, but still considered to be rippable (D9 or equivalent). Very hard rocks that will require blasting are currently not indicated. Isolated residual corestone rocks are present in the southeast area of the property, but are not indicated or expected elsewhere. Cross-sections of the seismic survey lines indicating subsurface velocities are included in Attachment A.

## E. Faults/Seismicity

Faults or significant shear zones are not indicated on or near proximity to the project site.

As with most areas of California, the San Diego region lies within a seismically active zone; however, coastal areas of the county are characterized by low levels of seismic activity relative to inland areas to the east. During a 40-year period (1934-1974), 37 earthquakes were recorded in San Diego coastal areas by the California Institute of Technology. None of the recorded events exceeded a Richter magnitude of 3.7, nor did any of the earthquakes generate more than modest ground shaking or significant damages. Most of the recorded events occurred along various offshore faults which characteristically generate modest earthquakes.

Historically, the most significant earthquake events which affect local areas originate along well known, distant fault zones to the east and the Coronado Bank Fault to the west. Based upon available seismic data, compiled from California Earthquake Catalogs, the most significant historical event in the area of the study site occurred in 1800 at an estimated distance of 15.5 miles from the project area. This event, which is thought to have occurred along a segment of an offshore fault, reached an estimated magnitude of 6.5 with estimated bedrock acceleration values of 0.084g (site class B) and 0.145g (site class D) at the project site. The following list represents the most significant faults which commonly impact the region. Estimated ground acceleration data compiled from Digitized California Faults (Computer Program EQFAULT Version 3.00 updated) typically associated with the fault is also tabulated.

**TABLE 1**

| Fault Zone | Distance from Site | Maximum Probable Acceleration (R.H.) | |
|---|---|---|---|
| Elsinore-Julian | 16.9 miles | 0.109g (B)<br>0.173g (D) | Site Class B<br>Site Class D |
| Rose Canyon | 16.2 miles | 0.101g (B)<br>0.173g (D) | Site Class B<br>Site Class D |
| Newport-Inglewood | 21.7 miles | 0.081g (B)<br>0.139g (D) | Site Class B<br>Site Class D |
| Coronado Bank | 30.8 miles | 0.081g (B)<br>0.138g (D) | Site Class B<br>Site Class D |

The locations of significant faults and earthquake events relative to the study site are depicted on a Fault - Epicenter Map attached to this report as Plate 33.

More recently, the number of seismic events which affect the region appears to have heightened somewhat. Nearly 40 earthquakes of magnitude 3.5 or higher have been recorded in coastal regions between January 1984 and August 1986. Most of the earthquakes are thought to have been generated along offshore faults. For the most part, the recorded events remain moderate shocks which typically resulted in low levels of ground shaking to local areas. A notable exception to this pattern was recorded on July 13, 1986. An earthquake of magnitude 5.3 shook county coastal areas with moderate to locally heavy ground shaking resulting in $700,000 in damages, one death, and injuries to 30 people. The quake occurred along an offshore fault located nearly 30 miles southwest of Oceanside.

A series of notable events shook county areas with a (maximum) magnitude 7.4 shock in the early morning of June 28, 1992. These quakes originated along related segments of the San Andreas Fault approximately 90 miles to the north. Locally high levels of ground shaking over an extended period of time resulted; however, significant damages to local structures were not reported. The increase in earthquake frequency in the region remains a subject of speculation among geologists; however, based upon empirical information and the recorded seismic history of county areas, the 1986 and 1992 events are thought to represent the highest levels of ground shaking which can be expected at the study site as a result of seismic activity.

In recent years, the Rose Canyon Fault has received added attention from geologists. The fault is a significant structural feature in metropolitan San Diego which includes a series of parallel breaks trending southward from La Jolla Cove through San Diego Bay toward the Mexican border. Test trenching along the fault in Rose Canyon indicated that at that location the fault was last active 6,000 to 9,000 years ago. More recent work suggests that segments of the fault are younger having been last active 1000 - 2000 years ago. Consequently, the fault has been classified as active and included within an Alquist-Priolo Special Studies Zone established by the State of California.

Fault zones tabulated in the preceding table are considered most likely to impact the region of the study site during the lifetime of the project. The faults are periodically active and capable of generating moderate to locally high levels of ground shaking at the site. Ground separation as a result of seismic activity is not expected at the property.

## F. Seismic Ground Motion Values

For design purposes, site specific seismic ground motion values were determined as part of this investigation in accordance with the California Building Code (CBC). The following parameters are consistent with the indicated project seismic environment and our experience with similar earth deposits in the vicinity of the project site, and may be utilized for project design work:

**TABLE 2**

**(Bedrock or less than 10 feet of fills under building foundations)**

| Site Class | $S_S$ | $S_1$ | $F_a$ | $F_v$ | $S_{MS}$ | $S_{M1}$ | $S_{DS}$ | $S_{D1}$ |
|---|---|---|---|---|---|---|---|---|
| B | 1.079 | 0.395 | 1.0 | 1.0 | 1.079 | 0.395 | 0.719 | 0.263 |
| According to Chapter 16, Section 1613 of the 2007 California Building Code. | | | | | | | | |

TABLE 3

(10 feet or more of fills under building foundations)

| Site Class | $S_S$ | $S_1$ | $F_a$ | $F_v$ | $S_{MS}$ | $S_{M1}$ | $S_{DS}$ | $S_{D1}$ |
|---|---|---|---|---|---|---|---|---|
| D | 1.079 | 0.395 | 1.068 | 1.61 | 1.152 | 0.636 | 0.768 | 0.424 |
| According to Chapter 16, Section 1613 of the 2007 California Building Code. | | | | | | | | |

**Explanation:**

Ss: Mapped MCE, 5% damped, spectral response acceleration parameter at short periods.
S1: Mapped MCE, 5% damped, spectral response acceleration parameter at a period of 1-second.
Fa: Site coefficient for mapped spectral response acceleration at short periods.
Fv: Site coefficient for mapped spectral response acceleration at 1-second periods.
SMS: The MCE, 5% damped, spectral response acceleration at short periods adjusted for site class effects (SMS=FaSs).
SM1: The MCE, 5% damped, spectral response acceleration at a period of 1-second adjusted for site class effects (SM1=FvS1).
SDS: Design, 5% damped, spectral response acceleration parameter at short periods (SDS=⅔SMS).
SD1: Design, 5% damped, spectral response acceleration parameter at a period of 1-second (SD1=⅔SM1).

Site peak ground accelerations (PGA) based on 2 percent probabilities of exceedance in 50 years defined as Maximum Considered Earthquake (MCE) with a statistical return period of 2,475 years is also evaluated herein in accordance with the requirements of CBC Section 1613 and ASCE Standard 7-05. Based on our analysis, the site $PGA_{MCE}$ was estimated to be 0.45g using the web-based United States Geological Survey (USGS) ground motion calculator. The design PGA determined as two-thirds of the Maximum Considered Earthquake (MCE) was estimated to be 0.30g.

## G. Geologic Hazards

Natural geologic hazards are not presently indicated at the project site. Hillside areas are underlain by competent crystalline bedrock and do not indicate gross geologic instability. The major geotechnical concerns at the property are those associated with existing known and unknown mining excavations which may result in future ground failures or sinkholes. Mitigation of the existing mine excavations and those identified during site development is given in following sections. Other less significant geologic hazards at the site are those associated with ground shaking in the event of a major seismic event. Liquefaction or related surface ruptures associated with faulting are not anticipated.

## H. Field and Laboratory Tests and Test Results

Earth deposits encountered in our exploratory test excavations were closely examined and sampled for laboratory testing. Based upon our test pit and field exposures site soils have been grouped into the following soil types:

**TABLE 4**

| Soil Type | Description |
|---|---|
| 1 | Brown-red brown silty fine to medium sand (Topsoil / Colluvium / Fill) |
| 2 | Red brown clayey sand (Topsoil / Colluvium) |
| 3 | Red brown-grey fine to coarse sand (Fill / Bedrock) |
| 4 | Red brown clayey sand - sandy clay (Fill / Topsoil) |
| 5 | Reddish tan fine grained granitic rock (Bedrock) |

The following tests were conducted in support of this investigation:

1. **Grain Size Analysis:** Grain size analyses were performed on representative samples of Soil Types 1, 2, 3, and 4. The test results are presented in Table 5 and graphically presented on the enclosed Plate 34.

**TABLE 5**

| Sieve Size | | ½" | #4 | #10 | #20 | #40 | #200 |
|---|---|---|---|---|---|---|---|
| Location | Soil Type | Percent Passing | | | | | |
| TP-2 @ ½' | 1 | 100 | 99 | 93 | 81 | 71 | 31 |
| TP-1 @ 2' | 2 | 100 | 100 | 98 | 93 | 86 | 53 |
| TP-8 @ 4½' | 3 | 100 | 89 | 60 | 38 | 25 | 7 |
| TP-4 @ 3½' | 4 | 100 | 100 | 96 | 85 | 73 | 47 |

2. **Maximum Dry Density and Optimum Moisture Content:** The maximum dry density and optimum moisture content of Soil Types 1, 2, 3, and 4 were determined in accordance with ASTM D-1557. The results are presented in Table 6.

TABLE 6

| Location | Soil Type | Maximum Dry Density (Ym-pcf) | Optimum Moisture Content (ωopt-%) |
|---|---|---|---|
| TP-2 @ ½' | 1 | 138.3 | 9 |
| TP-1 @ 2' | 2 | 131.8 | 12 |
| TP-8 @ 4½' | 3 | 131.0 | 10 |
| TP-4 @ 3½' | 4 | 125.8 | 13 |

3. **Moisture-Density Tests (Undisturbed Chunk Samples):** In-place dry density and moisture content of representative soil deposits beneath the site were determined from relatively undisturbed chunk samples using the water displacement test method. Results are presented in Table 7 and tabulated on the attached Test Pit Logs.

TABLE 7

| Sample Location | Soil Type | Field Moisture Content (ω-%) | Field Dry Density (Yd-pcf) | Max. Dry Density (Ym-pcf) | In-Place Relative Compaction | Degree of Saturation S (%) |
|---|---|---|---|---|---|---|
| TP- 1 @ 2' | 2 | 14 | 104.0 | 131.8 | 79 | 56 |
| TP- 1 @ 7' | 3 | 12 | - | 131.0 | Sample Disturbed | 52 |
| TP- 2 @ 3½' | 1 | 7 | 105.8 | 138.3 | 77 | 29 |
| TP- 2 @ 6½' | 3 | 4 | 136.7 | 131.0 | 100+ | 38 |
| TP- 3 @ 5½' | 3 | 8 | 128.1 | 131.0 | 98 | 58 |
| TP- 4 @ 6' | 3 | 6 | 138.7 | 131.0 | 100+ | 61 |
| TP- 5 @ 3' | 2 | 13 | 112.7 | 131.8 | 86 | 64 |
| TP- 5 @ 7' | 1 | 15 | 116.7 | 138.3 | 84 | 82 |
| TP- 5 @ 9½' | 3 | 14 | 119.6 | 131.0 | 91 | 81 |
| TP- 6 @ 7' | 3 | 5 | 132.0 | 131.0 | 100+ | 41 |
| TP- 10 @ 4' | 1 | 11 | 120.4 | 138.3 | 87 | 65 |
| TP- 10 @ 6' | 1 | 10 | 118.0 | 138.3 | 85 | 56 |
| TP- 10 @ 10' | 1 | 11 | 120.3 | 138.3 | 87 | 65 |

| Sample Location | Soil Type | Field Moisture Content (ω-%) | Field Dry Density (Yd-pcf) | Max. Dry Density (Ym-pcf) | In-Place Relative Compaction | Degree of Saturation S (%) |
|---|---|---|---|---|---|---|
| TP- 12 @ 2' | 1 | 9 | 123.5 | 138.3 | 89 | 58 |
| TP- 12 @ 4' | 1 | 13 | 117.2 | 138.3 | 85 | 71 |
| TP- 12 @ 6' | 1 | 12 | - | 138.3 | Sample Disturbed | 55 |
| TP- 12 @ 10' | 1 | 10 | 123.6 | 138.3 | 89 | 65 |
| TP- 12 @ 14' | 1 | 11 | 119.0 | 138.3 | 86 | 64 |
| TP- 13 @ 5' | 3 | 13 | 117.1 | 131.0 | 89 | 71 |
| TP- 14 @ 4' | 1 | 12 | 108.8 | 138.3 | 78 | 54 |
| TP- 14 @ 8' | 1 | 12 | 120.7 | 138.3 | 87 | 73 |
| TP- 14 @ 10' | 1 | 13 | 117.9 | 138.3 | 85 | 73 |
| TP- 14 @ 12' | 1 | 11 | 119.9 | 138.3 | 87 | 65 |
| TP- 16 @ 4' | 1 | 6 | 119.9 | 138.3 | 87 | 36 |
| TP- 16 @ 6' | 1 | 10 | 120.0 | 138.3 | 87 | 59 |
| TP- 16 @ 9' | 3 | 5 | 138.9 | 131.0 | 100+ | 51 |
| TP- 17 @ 5' | 1 | 9 | 120.7 | 138.3 | 87 | 55 |
| TP- 20 @ 2' | 1 | 9 | 123.2 | 138.3 | 89 | 58 |
| TP- 20 @ 6' | 1 | 13 | 123.3 | 138.3 | 89 | 84 |
| TP- 21 @ 8' | 3 | 4 | 129.3 | 131.0 | 99 | 30 |
| TP- 22 @ 5' | 1 | 10 | 117.1 | 138.3 | 85 | 55 |
| TP- 22 @ 9' | 3 | 7 | 121.4 | 131.0 | 93 | 43 |
| TP- 23 @ 6½' | 3 | 14 | 113.4 | 131.0 | 87 | 70 |
| TP- 24 @ 6' | 3 | 10 | 125.4 | 131.0 | 96 | 68 |

Note 1: Sample may be somewhat disturbed.
Assumptions and relationships:
In-place Relative Compaction = (Yd ÷ Ym) X100
Gs = 2.85
$e = (Gs\ Y\omega \div Yd) - 1$
$S = (\omega\ Gs) \div e$

4. **Expansion Index Test:** Two expansion index (EI) tests were performed on representative samples of Soil Types 2 and 4 in accordance with the ASTM D-4829. The results are presented in Table 8.

**TABLE 8**

| Sample Location | Soil Type | Molded ω (%) | Degree of Saturation (%) | Final ω (%) | Initial Dry Density (PCF) | Measured EI | EI 50% Saturation |
|---|---|---|---|---|---|---|---|
| TP-1 @ 2' | 2 | 9.9 | 50.0 | 19.6 | 109.8 | 38 | 38 |
| TP-4 @ 3½' | 4 | 10.9 | 50.6 | 22.9 | 106.5 | 56 | 56 |

(ω) = moisture content in percent.

$EI_{50} = EI_{meas} - (50 - S_{meas}) ((65 + EI_{meas}) \div (220 - S_{meas}))$

| Expansion Index (EI) | Expansion Potential |
|---|---|
| 0 - 20 | Very Low |
| 21 - 50 | Low |
| 51 - 90 | Medium |
| 91 - 130 | High |
| ⟩ 130 | Very High |

5. **Consolidation Test:** A consolidation test was performed on a representative remolded sample of on-site Soil Type 2. The test results are graphically presented in the enclosed Plate 35.

6. **Direct Shear Test:** Two direct shear tests were performed on representative samples of Soil Types 2 and 4. The prepared specimens were soaked overnight, loaded with normal loads of 1, 2, and 4 kips per square foot respectively, and sheared to failure in an undrained condition. The results are presented in Table 9.

**TABLE 9**

| Sample Location | Soil Type | Sample Condition | Unit Weight (Yw-pcf) | Angle of Int. Fric. (Φ-Deg.) | Apparent Cohesion (c-psf) |
|---|---|---|---|---|---|
| TP-1 @ 2' | 2 | remolded to 90% of Ym @ % ωopt | 132 | 26 | 250 |
| TP-4 @ 3½' | 4 | remolded to 90% of Ym @ % ωopt | 129 | 29 | 200 |

7. **pH and Resistivity Test:** pH and resistivity of a representative sample of Soil Type 4 was determined using "Method for Estimating the Service Life of Steel Culverts," in accordance with the California Test Method (CTM) 643. The result is tabulated in Table 10.

TABLE 10

| Sample Location | Soil Type | Minimum Resistivity (OHM-CM) | pH |
|---|---|---|---|
| TP-4 @ 3½' | 4 | 1400 | 7.5 |

8. **Sulfate Test:** A sulfate test was performed on a representative sample of Soil Type 4 in accordance with the California Test Method (CTM) 417. The result is presented in Table 11.

TABLE 11

| Sample Location | Soil Type | Amount of Water Soluble Sulfate In Soil (% by Weight) |
|---|---|---|
| TP-4 @ 3½' | 4 | 0.001 |

9. **Chloride Test:** A chloride test was performed on a representative sample of Soil Type 4 in accordance with the California Test Method (CTM) 422. The result is presented in Table 12.

TABLE 12

| Sample Location | Soil Type | Amount of Water Soluble Chloride In Soil (% by Weight) |
|---|---|---|
| TP-4 @ 3½' | 4 | 0.001 |

10. **R-Value Test:** One R-value test was performed on a representative sample of Soil Type 2 in accordance with the California Test Method 301. The result is presented in Table 13.

TABLE 13

| Location | Soil Type | Description | R-Value |
|---|---|---|---|
| TP-1 @ 2' | 2 | Red brown sandy silt to sandy clay | 14 |

## VI. SITE CORROSION ASSESSMENT

A site is considered to be corrosive to foundation elements, walls and drainage structures if one or more of the following conditions exist:

* Sulfate concentration is greater than or equal to 2000 ppm (0.2% by weight).
* Chloride concentration is greater than or equal to 500 ppm (0.05 % by weight).
* pH is less than 5.5.

For structural elements, the minimum resistivity of soil (or water) indicates the relative quantity of soluble salts present in the soil (or water). In general, a minimum resistivity value for soil (or water) less than 1000 ohm-cm indicates the presence of high quantities of soluble salts and a higher propensity for corrosion. Appropriate corrosion mitigation measures for corrosive conditions should be selected depending on the service environment, amount of aggressive ion salts (chloride or sulfate), pH levels and the desired service life of the structure.

Results of limited laboratory tests performed on selected representative site samples indicate that the minimum resistivity is more than 1000 ohm-cm suggesting presence of low quantities of soluble salts. Test results further indicated pH levels are greater than 5.5, sulfate concentrations are less than 2000 ppm, and chloride concentration levels are less than 500 ppm. Based on the results of limited corrosion analyses, the project site is considered non-corrosive. The project site is not located within 1000 feet of salt or brackish water.

Results of the tested soil sample indicated that the amount of water soluble sulfate ($SO_4$) is 0.001 percent by weight which is considered negligible according to ACI 318, Table 4.3.1. Portland cement Type II may be used. Table 14 is appropriate based on the pH-Resistivity test result:

**TABLE 14**

| Design Soil Type | Gage | 18 | 16 | 14 | 12 | 10 | 8 |
|---|---|---|---|---|---|---|---|
| 4 | Years to Perforation of Steel Culverts | 28 | 36 | 44 | 61 | 78 | 95 |

## VII. HYDRO MODIFICATIONS

Project stormwater management, if appropriate and as applicable, should be designed and constructed considering the site indicated geotechnical conditions. The implemented management practice(s) should also have no short and long term impacts on the building pad surfaces, graded slopes and natural embankments, fills and backfills, structures, and onsite and nearby off improvements.

Specific hydro modification designs, if required for the project development, are currently unavailable. Bio-retention and filtration systems consisting of vegetated buffers or strips and self-contained retention/detention areas with impermeable liners on sides and bottom, special engineered sand filter media and perforated pipe(s) which discharge into approved storm water facilities are typical methods for the stormwater Best Management Practices (BMP), if applicable. Additional and more specific recommendations should be provided by the project geotechnical consultant at the final plans review phase, as necessary.

## VIII. CONCLUSIONS

Based upon the foregoing investigation, development of the project property for a residential subdivision and associated improvements substantially as proposed, is feasible from a geotechnical viewpoint. The site is underlain by crystalline bedrock units that are mantled by a thin to moderate soil cover. The most significant geotechnical factor expected to impact project development is the presence of known and unknown horizontal and vertical mine tunnels and excavations. The following geotechnical conditions are unique to the property and will most influence its development:

1. Natural geologic hazards including landsliding, faults, or significant shear zones are not indicated at the project property. The project is not located in or near Alquist - Priolo earthquake fault zone areas associated with nearby active faults.

2. On-site natural slopes and hillside terrain are geologically stable. Landslides or other forms of geologic instability which could preclude site development as planned are not indicated.

3. Mine related excavations are known to be present at the property which has resulted in vertical (shafts) and horizontal (adits) excavations. Limited site explorations completed as a part of this effort encountered evidence of mine shafts and adits as discussed herein and where indicated in the enclosed test pit logs. Presence of mine excavations is also suspected elsewhere at the property as evidenced by the reported periodic filling of sinkholes that generally develop after periods of heavy rain fall.

4. Overall extent of the vertical shafts or horizontal adits, and methods used to destroy or backfill the shafts are unknown. Some excavations and adit openings were apparently backfilled with loose soils. Additional tunnel conditions are suspected elsewhere. Actual locations and extend of all mine shafts and adits at the project property should be identifiable during site mass grading operations when surface soils have been stripped and underlying bedrock exposed. All mine shafts and adits, where currently backfilled with loose soils, should be re excavated and regraded during the project mass grading operations. Remaining shafts and adits should also be properly backfilled with compacted fills or cement slurry, or capped with concrete as appropriate and approved in accordance with the requirements of this report.

5. Surficial soils and upper highly weathered bedrock at the project site is unsuitable in their present condition for the support of new compact fills, embankments, structures and improvements. All existing fills, topsoil, alluvium, upper soft to loose colluviual deposits, and upper highly weathered bedrock in areas planned for new fills, structures, and improvements should be regraded as specified in following sections.

6. Below the upper soil cover and highly weathered bedrock, dense and competent natural colluvium and crystalline rock units occur, which will adequately support planned new fills, structures, and improvements.

7. Added removals of cut ground and reconstruction to design grades with compacted fill will also be necessary in the case of cut-fill pads so that uniform bearing soil conditions are constructed throughout the buildings and improvement surfaces. Undercutting the cut portions of the building pads will also help trenching for foundations and underground utilities into an otherwise very hard bedrock units.

8. Based upon our site observations, available subsurface exposures, and the results of a seismic refraction survey, weathered to moderately weathered bedrock units at the project property are expected to excavate to the anticipated design grades with moderate to heavy efforts using larger bulldozers (Caterpillar D-9 or equivalent). Very hard bedrock units requiring major specialized excavation techniques such as significant concentrated ripping and blasting efforts are not currently indicated. However, residual corestones or "floaters" are locally present at the property which are expected to create some handling and grading difficulties.

9. Earth deposits generated from the site bedrock excavations will predominantly consist of good quality gravelly sandy mixtures with possible small rock fragments. Harder bedrock units may generate some larger rock sizes. Selective rock sizes (less than 24 inches maximum) may be buried in deeper site fills and disposal of rocks up to 48 inches in diameter using "windrow" techniques may be allowed as specified in the following sections.

10. Potentially expansive clayey soils were also encountered at the property which are generally expected to occur in minor quantities overall. Potentially expansive clayey soils, where they are encountered, should be thoroughly mixed with an abundance of sandy granular soils available from the site bedrock excavations to manufacture a very low expansive mixture. Alternatively, expansive clayey soils may be selectively buried within deeper site fills and away from the finish fill slope faces, with the upper pad grades and embankment surfaces capped with good quality sandy soils as recommended in the following sections.

11. Project new fills and backfills should be clean deposits free of trash, debris, organic matter and deleterious materials consisting of minus 6-inch particles and maintain the specified fines to rock (minus 6 inches) ratio as outlined in the following sections. Added processing, moisture conditioning and mixing efforts should be anticipated in the case of overly wet or saturated soils generated from the flowline excavations as well as gravelly to rocky deposits anticipated from the site bedrock excavations, for manufacturing a uniform mixture suitable for reuse as site compacted fills.

12. Site new fills and backfills should be properly processed, throughly mixed, placed in thin lifts horizontal lifts and compacted as specified in the following sections. Higher levels of compaction, however, will be required for site fills and backfills subject to potential saturation or inundations, such as fill in the drainage course areas as well as foundation bearing and backfill soils for drainage structures in accordance with the requirements of the following sections.

13. Based on select grading recommendations specified herein, final bearing soils are expected to chiefly consist of gravelly silty sand (SW/SM) deposits with very low expansion potential (expansion index less than 20) based on based on ASTM D-4829 classification. Foundation bearing and subgrade soils at each individual lot should be additionally tested at the completion of rough grading to confirm expansion characteristics which will govern final foundations and slab design.

14. All project graded slopes should be programmed for 2:1 gradients maximum. Graded slopes greater than 30 feet in maximum vertical height (if any planned) should be provided with a minimum 6 feet drainage terrace as specified in the following sections.

15. The overall stability of graded fill slopes and building surfaces developed over sloping terrain is most dependent upon adequate keying and benching of fill into the undisturbed bedrock during the grading operations. At the project site, added care should be given to the proper construction of fill slope keyway and benching excavations.

16. An active stream flow condition was noted in the southwesterly flowline while dry conditions were noted in the flowline that traverses the southeast portion of the property. Surface flow within the site tributary flowlines are expected to varying in actual condition depending on the seasonal conditions. We anticipate that planned site development will maintain adequate setbacks from the site flowlines. However, erosional features are noted within the site flowlines which should be alleviated as a part of the project development and drainage improvements. Specific grading and ground stabilization recommendations near the project flowlines should be provided in plan review phase when final development and drainage improvement plans are available. Excavations, grading and earthworks operations during the dry seasons of the year are recommended.

17. Natural groundwater is not expected to be a major factor in the site development. However, hard bedrock surfaces at or near finish grade levels, may transmit irrigation or meteoric water creating excessive moisture conditions. Subsurface toe drains at the base of the project cut slopes may be appropriate in some cases for the protection of the nearby improvements.

18. Adequate site surface drainage and storm water control is considered a significant geotechnical factor in the future stability and performance of the developed hillside property. Storm water and drainage control facilities should be designed and installed for proper control and disposal of surface water as shown on the project approved grading or drainage improvements. Rip-rap or other channel protection armor may be necessary within the site flowlines to help alleviate continued erosion.

19. All trenching, excavations, and temporary slope constructions should be completed as specified in the following sections. Site excavations, trenching, grading and earthwork constructions will not impact the adjacent properties provided our recommendations are incorporated into the final designs and implemented during the construction phase. Added or modified field recommendations however, may also be necessary and should be given by the project geotechnical consultant for the protection of adjacent properties and should be anticipated.

20. Post construction settlements are not expected to be a major geotechnical concern in the development of project property provided our remedial grading and foundation recommendations are followed. Post construction settlements after remedial grading works as specified herein is not expected to exceed approximately 1-inch, and should occur below the heaviest loaded footing(s). The magnitude of post construction differential settlements as expressed in terms of angular distortion is not anticipated to exceed ½-inch between similar adjacent structural elements.

21. Liquefaction, seismically induced settlements, soil collapse and post construction settlements will not be a factor in the development of the project property provided our remedial grading and foundation recommendations are followed.

## IX. RECOMMENDATIONS

The following recommendations are consistent with the indicated geotechnical conditions at the project site and should be reflected on the final plans and implemented during the construction phase. Added or modified recommendations should be given in an update report prepared by the project geotechnical consultant at the time of the plan review phase when site development designs are completed.

### A. Grading and Earthworks

Cut-fill and remedial grading techniques may be used in order to achieve final design grades and construct stable surfaces for the support of the planned buildings, structures and improvements. All excavations, grading, earthworks, constructions and bearing soil preparations should be completed in accordance with Chapter 18 (Soils and Foundations) and Appendix "J" (Grading) of the 2010 California Building Code (CBC), the Standard Specifications for Public Works

Construction, City of Escondido Grading Ordinances, the requirements of the governing agencies and following sections, wherever appropriate and as applicable:

1. **Existing Underground Utilities and Structures:** All existing underground waterlines, sewer lines, utilities, pipes, storm drains, tanks, structures and improvements at or nearby the project construction site should be thoroughly potholed, identified and marked prior to the initiation of the actual grading and earthworks. Specific geotechnical engineering recommendations may be required based on the actual field locations and invert elevations, backfill conditions and proposed grades in the event of a grading conflict.

   Utility lines may need to be temporarily redirected, if necessary, prior to earthwork operations and reinstalled upon completion of earthwork operations. Alternatively, permanent relocations may be appropriate as shown on the approved plans.

   Abandoned irrigation lines, pipes and conduits should be properly removed, capped or sealed off to prevent any potential for future water infiltrations into the foundation bearing and subgrade soils. Voids created by the removals of the abandoned underground pipes, tanks and structures should be properly backfilled with compacted fills in accordance with the requirements of this report.

2. **Clearing and Grubbing:** Remove all existing vegetation, trees, stumps, roots, surface rocks and all other unsuitable materials and deleterious matter from all areas proposed for new fills, improvements, and structures plus a minimum of 10 horizontal feet outside the perimeter, where possible and as approved in the field.

   All unsuitable materials generated from clearing efforts should be properly removed and disposed of from the site. Trash and vegetation should not be allowed to occur or contaminate new site fills and backfills. The prepared grounds should be observed and approved by the project geotechnical consultant or his designated field representative prior to grading and earthworks.

3. **Stripping and Removals:** Site surficial soils in areas of planned new fills, embankments, structures and improvements plus 10 feet outside the perimeter where possible, and as approved in the field, should be removed to the underlying competent bedrock and placed back as properly compacted fills.

   Removal depths will vary throughout the site and should be established by the project geotechnical engineer in the field at the time of earthwork operations based on actual exposures. Approximate removal depths in the vicinity of exploratory test pits completed as part of this effort can be obtained from the

attached Test Pit Logs, Plates 4 through 30, and are shown on the enclosed Geotechnical Map Plate 2. Locally deeper removals may be necessary based on the actual exposures and should be anticipated.

Existing fills, if encountered, should also be excavated and recompacted as a part of the project remedial grading operations. Exploratory test pits excavated in connection with our study at the indicated locations (see Plate 2) were backfilled with loose and uncompacted deposits. The loose/uncompacted exploratory trench backfill soils within the limits of project improvements and grading operations shall also be re excavated and placed back as properly compacted fills in accordance with the requirements of this report.

Bottom of all removals should be additionally prepared and recompacted in place to a minimum depth of 6 inches as directed in the field. Preparation of bottom of removals and over excavations shall construct neat surfaces which are adequately benched, keyed-in and heeled back into the hillside exposing competent bedrock as directed in the field. All ground steeper than 5:1 receiving fills or backfills should also be properly benched and keyed as directed in the field.

4. **Mine Excavation Mitigation:** Mining excavations consisting of vertical shafts or horizontal adits are present at the property. Mine excavations and other related features, where present at the project site, will require special consideration and mitigation. Limited site explorations and seismic surveys completed as a part of this effort encountered evidence of mine shafts and adits as indicated in the enclosed test pit logs and tomography images. However, site mass grading efforts should further locate and expose all mine features within the project development areas, as appropriate.

   Generally, all mine related excavations with less than 10 feet of competent bedrock overburden (measured from future finish grade) should be removed, exposed, and properly backfilled during the project mass grading operations in accordance with the requirements of this report.

   Horizontal excavations developed within competent bedrock with 10 feet or more of bedrock overburdens which are determined not to be susceptible to future collapse, as inspected and approved by the project geotechnical consultant may be sealed and capped. For this purpose, all access points to horizontal mine excavations should be cleaned and closed by filling with a minimum 5 feet thick concrete plug at the mine excavation opening. All access vertical shafts or sloping mine excavations should be excavated-out completely and backfilled with compacted fills during the mass grading operations. In the event vertical shaft and sloping excavation efforts are unable to expose the bottom, they

should be excavated a minimum depth of 10 feet, provided at the base with a "mushroom" type concrete cap extending a minimum of 5 feet beyond the excavation perimeter, and then backfilled with a minimum 3-sack cement slurry mix or compacted fill. The "mushroom" type concrete cap should be a minimum of 9 inches thick and reinforced with minimum #4 mesh reinforcement at 12 inches on centers both ways, top and bottom. There should be a minimum 10 feet clear distance between top of mitigated mine excavation and rough finish design grades, unless otherwise specified or approved.

Elsewhere, horizontal excavations with 10 feet or more of the overburden determined by the project geotechnical consultant to be susceptible to future collapse potential, should be completely backfilled with 3-sack cement slurry mix using conventional and/or "injection grouting" or similar type techniques, as appropriate.

More specific recommendations should be given by the project geotechnical consultant in the forthcoming update report when final development plans are completed. Additional or modified recommendations may also be necessary at the time of actual field exposures and should be anticipated. Precise locations of mining excavations, where encountered, and specific mitigation procedures, should be accurately plotted and identified on the final As-Build plans.

5. **Canyon Subdrains:** Canyon subdrain system consisting of a 2-foot wide by 2-foot deep trench with a perforated pipe surrounded by ¾-crushed rocks wrapped in Mirafi 140N filter fabric, or Class 2 permeable aggregate, will be required at the bottom of the site canyon flowline cleanouts. A minimum 4-inch diameter, Schedule 40 (SDR 35) perforated pipe should be used, unless otherwise specified or directed in the field. Outlet and collector pipes should also be minimum 6-inch Schedule 40 (SDR 35) solid pipe.

   The subdrain system should be installed at suitable elevations to allow for adequate fall and outlet in an approved drainage facility. Filter fabric can be eliminated if Class 2 permeable material is used. Riser pipe cleanouts should also be provided at appropriate locations and intervals not exceeding 100 feet maximum along the alignment. The preliminary and approximate locations for recommended canyon subdrains within the flowlines are shown on the enclosed Geotechnical Map, Plate 2. The actual subdrain alignments should be established in the field and then accurately surveyed for precise depiction on the project final as-build grading plans. Typical canyon subdrain construction details are illustrated on the enclosed, Plate 36.

Fill soils may be needed in local areas at the bottom of the canyon removals in order to achieve design invert elevations for subdrain to gravity flow. In this case, the canyon removals should be backfilled with a minimum of 95% compacted sandy fills to the proposed subdrain inverts. Fills placed above the subdrain to achieve design grades should be placed and compacted as specified herein, depending on fill thickness.

6. **Cut-Fill Transitions and Undercuts:** Ground transition from excavated cut to compacted fills shall not be permitted underneath the proposed foundations, structures, and on-grade improvements. Buildings, wall foundations, floor and on-grade improvements should be supported entirely on compacted fills or founded entirely on competent undisturbed dense natural soils or bedrock units. Transition pads will require special treatment. The cut portions of the cut-fill pads plus 10 feet outside the perimeter, where possible and as directed in the field, should be undercut to a sufficient depth to provide for a minimum 3 feet of compacted fill mat below rough finish grades, or at least 12 inches of compacted fill beneath the deepest footing(s), whichever is more. In the roadways, driveway, parking and on-grade slabs/improvement transition areas there should be a minimum of 12 inches of compacted soils below rough finish subgrade.

   Undercutting the cut portion of the building pads and road improvements will also accommodate excavation of the foundation trenches and underground utilities in an otherwise harder bedrock. In the case of deeper utility trenches, undercutting to a minimum of 6 inches below the proposed inverts should be considered.

   Undercutting of cut-fill transition pads should be completed in substantial accordance with the enclosed Typical Undercutting detail, Plate 37.

7. **Excavation Characteristics:** Very hard rock conditions are not anticipated at the site to the anticipated cut depths. Site bedrock is expected to excavate to the design grades with moderate to heavy efforts using larger bulldozers (Caterpillar D-9 or equivalent). Major specialized excavation techniques such as significant concentrated ripping and blasting efforts are not currently indicated.

   Hard rock exposures which occur during cut excavations at or near design pad grades can cause difficulties for building foundations and common/utility trenching. Residual corestones or "floaters," are also locally present which are expected to create some handling and grading difficulties.

Good quality sandy to gravelly soils is expected from the site weathered bedrock excavations. However, excavations of harder bedrock units and corestone floaters will likely produce some larger rock debris. Disposal of selected rock sizes may be allowed within project deeper fills, as recommended below

8. **Excavation Setbacks, Trenching and Temporary Slopes:** Excavations and removals adjacent to the existing embankments, structures and improvements should be done under inspection of the project geotechnical engineer. Undermining existing embankments, improvements and structures by the removal and excavation operations shall not be allowed. Top of temporary construction slopes should be adequately set back from the existing embankment toes, structures and improvements as directed in the field.

   Trenching and construction slopes less than 5 feet high maximum exposing site topsoil, alluvial and colluvial deposits may be constructed at near vertical gradients, unless otherwise specified or directed in the field. Larger slopes within these deposits will require excavations support or trench shield, or laid back at 1:1 gradients, unless otherwise approved.

   Trenching, excavations and temporary slopes exposing competent undisturbed bedrock units may be constructed at near vertical gradients to a maximum height of 10 feet, unless otherwise directed. Larger temporary slopes developed within site bedrock units may be constructed at near vertical gradients within the lower 5-foot and laid back at ½:1 gradient maximum within the upper portions thereafter unless otherwise approved or directed in the field.

   The remaining wedge exposed at the laid back temporary slopes should then be properly benched out and new fills/backfills tightly keyed-in as the backfilling progresses. All temporary construction slopes require continuous geotechnical inspections during the excavation operations. Additional recommendations including revised slope gradients, set backs and the need for completing excavations in limited alternate sections and temporary shoring/trench shield support should be given at that time as necessary. The project contractor shall also obtain appropriate permits, as needed, and conform to Cal-OSHA and local governing agencies' requirements for trenching/open excavations and safety of the workmen during construction.

9. **Soil Properties and Select Grading:** Earth deposits generated from the site weathered bedrock excavations will largely produce sandy to gravelly materials which typically work well as site new compacted fills and backfills. However, excavations of the site harder bedrock units may generate rocky materials with some larger sizes creating handling and compaction difficulties. Larger rock sizes (plus 6 inches for fills and plus 3 inches for trench and wall backfills)

should be excluded from the new manufactured fill and backfill soil matrix. Excluding larger rocks from the fill matrix will also help trenching and excavations within these deposits and improve stability of the trench and excavation sidewalls.

Overly wet to saturated soils should be expected from the removals within the site flowline areas requiring added spreading, aerating and drying efforts. Potentially expansive silty to clayey surficial deposits are also locally present at the project property which are anticipated to minor in overall quantities. Site expansive plastic silty to clayey soils, where are encountered, should be thoroughly mixed with an abundance of sandy granular soils available from the site weathered bedrock excavations to manufacture a very low expansive mixture. Alternatively, site expansive soils may be selectively buried a minimum of 4 feet below rough pad grades (or 12 inches below the deepest footing, whichever is more) and a minimum of 15 feet away from the face of graded slopes within the fill mass. Good quality sandy granular soils available from the site weathered bedrock excavations should then be used within the upper pad grades and outer fill embankment slope surfaces. Improvement areas should be provided with a minimum 12 inches of good quality sandy soils. On-site plastic clayey soils are not suitable for use as wall or trench backfills. Plastic silty to clayey soils and rocky to gravelly materials typically requires added processing, mixing and moisture conditioning efforts in order to manufacture a uniform matrix suitable for reuse as site new compacted fills.

10. **Fill and Backfill Materials and Compaction:** Project fills shall be clean deposits free of trash, debris, organic matter and deleterious materials consisting of minus 6-inch particles and include at least 40% finer than #4 sieve materials by weight. Wall and trench backfills shall consist of minus 3 inches particles and maintain the minimum specified fines to rock ratios.

    Individual rocks up to 12 inches in maximum diameter may be allowed in compacted fills provided they are sparsely placed, surrounded with compacted fills and buried a minimum of 5 feet below the rough finish pad grades. The upper 5 feet in the building pad grades, and 10 feet in the areas of public right-of-way and easements should consist of minus 6-inch materials. Rocks up to 2 feet in maximum diameter may additionally be buried in deeper fills below 10 feet as directed in the field by the project geotechnical engineer. Rocks larger than 24 inches and less than 48 inches may also be buried in larger fills using the "windrow" techniques, if approved by the project geotechnical engineer. Rocks larger than 4 feet in maximum diameter should be properly disposed of from the site. All rock disposal areas should be shown on the final grading plans. Rock disposal should be completed in substantial accordance with the enclosed Rock Disposal Recommendations, Plates 38 and 39.

Uniform bearing soils conditions should be constructed at the site by grading operations. Site soils should be adequately processed, thoroughly mixed, moisture conditioned to slightly (2% to 3%) above optimum moisture levels as directed in the field, placed in thin (8 inches maximum) uniform horizontal lifts and mechanically compacted to a minimum 90% of the corresponding maximum dry density per ASTM D-1557, unless otherwise specified. Fills and backfills placed within the project flowline areas and where subject to potential saturations or flood inundations, should be mechanically compacted to a minimum 95% of the laboratory maximum dry density (ASTM D-1557). The upper 12 inches of subgrade soils under the asphalt pavement base layers should also be compacted to minimum 90% compaction levels.

11. **Shrinkage, Bulking and Import Soils:** Based upon our analyses and experience with similar earth materials, site existing upper surficial soils and alluvium deposits may be expected to shrink, on average, approximately 5%-15% and weathered bedrock units bulk nearly the same amount on volume basis, when compacted as specified herein.

    Import soils, if required, should be sandy granular non-corrosive deposits (SM/SW) with very low expansion potential (100% passing the 1-inch sieve, more than 50% passing the #4 sieve and less than 18% passing #200 sieve with expansion index less than 20). Import soils should be inspected, tested as necessary, and approved by the project geotechnical engineer prior to delivery to the site. Import soils should also meet or exceed engineering characteristic and soil design parameters as specified in the following sections.

12. **Permanent Graded Slopes:** Project permanent graded cut and fill slopes should be programmed for 2:1 gradients maximum, unless otherwise approved. Graded slopes constructed as recommended herein will be grossly stable with respect to deep seated and surficial failures for the anticipated design maximum vertical heights.

    All fill slopes should be provided with a lower toe keyway at the base. The toe keyway should maintain a minimum depth of 2 feet into the dense natural materials or competent bedrock with a minimum width of 15 feet, and as approved in the field. The keyway should expose firm natural undisturbed soils or bedrock throughout with the bottom heeled back a minimum of 2% into the natural hillside and inspected and approved by the project geotechnical engineer. Additional level benches should be constructed into the natural hillside as the fill slope construction progresses. Added excavation efforts should also be anticipated when developing lower fill slope keyways and subsequent level benches into the site harder bedrock units.

Fill slopes should be compacted to 90% minimum of the laboratory standard out to the slope face, unless otherwise specified. Over building and cutting back to the compacted core, or backrolling at a maximum of 4-foot vertical increments and "track-walking" at the completion of grading is recommended for site fill slope construction. Geotechnical engineering inspections and testing will be necessary to confirm adequate compaction levels within the fill slope face.

Cut slopes should also be inspected and approved by the project geotechnical consultant during the grading to confirm stability. Additional recommendations will be provided at that time in the event adverse geologic conditions such as unfavorable fracturing or jointing features are noted. Over excavations of the project cut slopes may also result in costly repairs and should be avoided.

Graded slopes 30 feet or more in maximum vertical height should be provided with a minimum of 6 feet wide terraces (per Appendix J, Section J109 of the CBC) to control surface drainage and debris. Wider terraces may also be appropriate for slopes larger than 60 feet in maximum. The specified terraces should be provided at 30 feet maximum vertical intervals except where only one terrace is required, it should be placed at mid-height.

All graded slopes should be constructed in substantial accordance with the enclosed Typical Keyway and Benching Details, Plates 40 and 41.

13. **Slope Toe Drainage Systems:** A subsurface toe drainage system may be appropriate and should be considered at the base of the project cut slopes transmitting up-slope water for the protection of the lower nearby improvements. The subsurface/toe drain should consist of a minimum 1½ feet wide by 2 feet deep trench with a 4-inch diameter Schedule 40 (SDR 35) perforated pipe surrounded in ¾-inch crushed rocks and wrapped in Mirafi 140-N filter fabric. Specific recommendations should be given in the field at the time of construction based on actual site conditions and cut slope exposures.

14. **Surface Flow, Subsurface Water and Dewatering:** Special ground stabilization and remedial grading techniques will be required for the grading and constructions improvements within or near the project flowlines. Specific recommendations should be provided by the project geotechnical consultant in the update report prepared at the time of plan review phase, when actual development and drainage improvement designs are completed. The following are appropriate:

    * Surface flow occur in the southwesterly flowline while dry conditions were noted in the southeastern flowline. Actual surface flow conditions within the site canyon flowline are expected to be seasonal. Surface water within the

site canyon flowlines, if occurs, may impact remedial grading and earthwork constructions within the impacted areas.

Temporary flow diversion efforts may be expected during seasonal surface streams. Any temporary diversion structures and methods such as diversion channels, sumps and pumps, sheet piles, earthen dicks and berms which could effectively redirect the flow from the project earthworks construction areas may be considered, provided it is reviewed and approved by the project geotechnical consultant.

Groundwater was not encountered in our exploratory test pit excavations at the time on our field investigations, however, dewatering efforts should also be anticipated for completing remedial grading and earthwork operations near the project flowline areas. Any dewatering technique suitable to the field conditions which can effectively remove the intruding water and allow soil removals and fill placement to proceed such as gravel-filled trench sumps with submersible pumps is acceptable unless otherwise considered inadequate or inefficient. Dewatering should continue until completion stabilization of the bottom of removals and over excavations, and initial backfill operations. Dewatering should only be discontinued upon approval of the project geotechnical engineer. Groundwater should be adequately lowered below the specified bottom of removals, over excavation, toe of temporary slope and trench excavations as approved in the field. A qualified contractor may be consulted in this regard. Performing grading and earthwork construction within the site canyon flowline during the dry months of the year should be considered. Stabilization of bottom of removals and over excavations with a rock mat placement may also be necessary and should be anticipated in the areas impacted by saturated yielding exposures.

15. **Surface Drainage and Erosion Control:** A critical element to the continued stability of the building pads and slopes is an adequate surface drainage system and protection of the slope face. Surface and storm water shall not be allowed to impact the developed construction and improvement sites. This can most effectively be achieved by appropriate vegetation cover and the installation of the following systems:

* Concentrated surface run-off or overflow of water from the top of slope shall not be allowed. Drainage swales should be constructed at the top and toe of the slopes as shown on the approved grading or drainage improvement plans.

* Building pad surface run-off should be collected and directed away from the planned buildings and improvements to a selected location in a controlled manner. Area drains should be installed.

* The finished slope should be planted soon after completion of grading. Unprotected slope faces will be subject to severe erosion and should not be allowed. Over watering of the slope faces should also not be allowed. Only the amount of water to sustain vegetation should be provided. Planting large trees behind the site retaining walls should also be avoided.

* Temporary erosion control facilities and silt fences should be installed during the construction phase periods and until landscaping is fully established as indicated and specified on the approved project grading/erosion plans.

16. **Engineering Observations:** All grading and earthworks operations including excavations, trenching, stripping and removals, suitability of earth deposits used as compacted fills and backfills, and compaction procedures should be continuously observed and tested by the project geotechnical consultant and presented in the final as-graded compaction report. The nature of finished bearing and subgrade soils should be confirmed in the final compaction report at the completion of grading.

    Geotechnical engineering observations should include but are not limited to the following:

    * Initial observation - After the clearing limits have been staked but before grading/brushing starts.

    * Toe keyway, stripping and bottom excavation observation - After dense and competent bedrock is exposed and prepared to receive fill or backfill but before fill or backfill is placed.

    * Cut/excavation observation - After the excavation is started but before the vertical depth of excavation is more than 5 feet. Local and Cal-OSHA safety requirements for open excavations apply.

    * Fill/backfill observation - After the fill/backfill placement is started but before the vertical height of fill/backfill exceeds 2 feet. A minimum of one test shall be required for each 100-lineal foot maximum in every 2 feet vertical gain, with the exception of wall backfills where a minimum of one test shall be required for each 30-lineal foot maximum. Onsite plastic clayey soils are not suitable for wall backfills and good quality sandy granular soils should be used for this purpose. Wall backfills should consist of minus 3-inch sandy

granular materials and also be mechanically compacted to a minimum of 90% compaction levels unless otherwise specified or directed in the field. Finish rough and final pad grade tests shall be required regardless of fill thickness.

* Foundation trench and subgrade soils observation - After the foundation trench excavations and prior to the placement of steel reinforcing for proper moisture and specified compaction levels.

* Geotechnical foundation/slab steel observation - After the steel placement is completed but before the scheduled concrete pour.

* Underground utility, plumbing and storm drain trench observation - After the trench excavations but before placement of pipe bedding or installation of the underground facilities. Local and Cal-OSHA safety requirements for open excavations apply. Observation of pipe bedding may also be required by the project geotechnical engineer.

* Underground utility, plumbing and storm drain trench backfill observation - After the backfill placement is started above the pipe zone but before the vertical height of backfill exceeds 2 feet. Testing of the backfill within the pipe zone may also be required by the governing agencies. Pipe bedding and backfill materials shall conform to the governing agencies' requirements and project soils report if applicable. Onsite plastic clayey soils are not suitable for trench backfills and good quality sandy granular soils should be used for this purpose. All trench backfills shall consist of minus 3-inch sandy granular materials and mechanically compacted to a minimum of 90% compaction levels unless otherwise specified. Plumbing trenches more than 12 inches deep maximum under the floor slabs should also be mechanically compacted and tested for a minimum of 90% compaction levels. Flooding or jetting techniques as a means of compaction method should not be allowed.

* Pavement/improvements base and subgrade observation - Prior to the placement of concrete or asphalt for proper moisture and specified compaction levels.

## B. Foundations and Slab-on-Grades

The following recommendations are consistent with very low expansive (expansion index less than 20) gravelly silty sand (SW/SM) foundation bearing soil and site specific geotechnical conditions. Additional recommendations may also be required and should be given in the update report and at the plan review phase. All design recommendations should be further confirmed and/or revised at the completion of

rough grading based on the expansion characteristics of the foundation bearing soils and as-graded site geotechnical conditions, and presented in the final as-graded compaction report. Individual building sites may require different foundations/slab recommendations and should be anticipated.

1. Proposed buildings may be supported on shallow stiff concrete foundations. The shallow foundations should be uniformly supported on approved very low expansive compacted fills, or founded entirely on undisturbed competent bedrock. Acceptable building foundations may consist of a system of spread pad and strip footings with slab-on-grade floors.

2. Continuous strip stem wall foundations and turned-down footings should be sized at least 15 inches wide and 18 inches deep for single and two-story structures and 18 inches wide by 24 inches deep for three-story structures. Isolated pad footings should be at least 24 inches square and 12 inches deep. Footing depths are measured from the lowest adjacent ground surface, not including the sand / gravel beneath floor slabs. Exterior continuous footings should enclose the entire building perimeter.

   Continuous interior and exterior stem wall foundations should be reinforced with a minimum of four #4 reinforcing bars. Place 2-#4 bars 3 inches above the bottom of the footings and 2-#4 bars 3 inches below the top of the stem wall. Turned-down footings should be reinforced with a minimum of 2-#4 bars at the top and 2-#4 bars at the bottom. Reinforcement details for spread pad footings should be provided by the project architect/structural engineer.

3. All interior slabs should be a minimum of 4 inches in thickness, reinforced with #3 reinforcing bars spaced 18 inches on center each way, placed mid-height in the slab.

   Slabs should be underlain by 4 inches of clean sand (SE 30 or greater) which is provided with a well performing moisture barrier/vapor retardant (minimum 10-mil Stego) placed mid-height in the sand. Alternatively, a 4-inch thick base of compacted ½-inch clean aggregate provided with the vapor barrier (minimum 10-mil Stego) in direct contact with (beneath) the concrete may also be considered provided a concrete mix which can address bleeding, shrinkage and curling are used.

   Provide "softcut" contraction/control joints consisting of sawcuts spaced 10 feet on centers each way for all interior slabs. Cut as soon as the slab will support the weight of the saw and operate without disturbing the final finish which is normally within 2 hours after final finish at each control joint location or 150 psi to 800 psi. The sawcuts should be a minimum of 1-inch in depth but should not

exceed 1¼-inches deep maximum. Anti-ravel skid plates should be used and replaced with each blade to avoid spalling and ravelings. Avoid wheeled equipments across cuts for at least 24 hours.

Provide re-entrant corner reinforcement for all interior slabs. Re-entrant corners will depend on slab geometry and/or interior column locations. The enclosed Plate 42 may be used as a general guideline.

4. Adequate setbacks or deepened foundations shall be required for all foundations constructed on or near the top of descending slopes to maintain minimum horizontal distances to daylight or adjacent slope face. There should be a minimum of 7 feet horizontal setbacks from the bottom outside edge of the footing to daylight for foundations unless otherwise specified or approved. A minimum of 10 feet horizontal distances or setback shall be required for sensitive structures and improvements which cannot tolerate minor movements (including swimming pools and spas or portions thereof).

5. Foundation trenches and slab subgrade soils should be inspected and tested for proper moisture and specified compaction levels and approved by the project geotechnical consultant prior to the placement of steel reinforcement or concrete pour.

## C. Soil Design Parameters

The following preliminary soil design parameters are based upon the tested representative samples of on-site earth deposits. All parameters should be re-evaluated when the characteristics of the final as-graded soils have been specifically determined:

1. Design soil unit weight = 129 pcf.
2. Design angle of internal friction of soil = 29 degrees.
3. Design active soil pressure for retaining structures = 45 pcf (EFP), level backfill, cantilever, unrestrained walls.
4. Design active soil pressure for retaining structures = 73 pcf (EFP), 2:1 sloping backfill, cantilever, unrestrained walls.
5. Design at-rest soil pressure for retaining structures = 67 pcf (EFP), non-yielding, restrained walls.
6. Design passive soil resistance for retaining structures = 369 pcf (EFP), level surface at the toe.
7. Design coefficient of friction for concrete on soils = 0.39.
8. Net allowable foundation pressure (minimum 15 inches wide by 18 inches deep footings) = 2000 psf.

9. Allowable lateral bearing pressure (all structures except retaining walls) = 200 psf/ft.

**Notes:**

* Use a minimum safety factor of 1.5 for wall overturning and sliding stability. However, because large movements must take place before maximum passive resistance can be developed, a minimum safety factor of 2 may be considered for sliding stability particularly where sensitive structures and improvements are planned near or on top of retaining walls.

* When combining passive pressure and frictional resistance, the passive component should be reduced by one-third.

* The indicated net allowable foundation pressure provided herein was determined based on minimum 15-inch wide by 18-inch deep footings and may be increased by 20% for each additional foot of depth and 20% for each additional foot of width to a maximum of 5500 psf. The allowable foundation pressures provided herein also apply to dead plus live loads and may be increased by one-third for wind and seismic loading.

* The lateral bearing earth pressures may be increased by the amount of designated value for each additional foot of depth to a maximum 1500 pounds per square foot.

## D. Exterior Concrete Slabs / Flatworks

1. All exterior slabs (walkways, and patios) should be a minimum of 4 inches in thickness reinforced with 6x6/10x10 welded wire mesh carefully placed at mid-height in the slab.

2. Reinforcements lying on subgrade will be ineffective and shortly corrode due to lack of adequate concrete cover. Reinforcing bars should be correctly placed extending through the construction joints tying the slab panels. In construction practices where the reinforcements are discontinued or cut at the construction joints, slab panels should be tied together with minimum 18-inch long #3 dowels (dowel baskets) at 18 inches on centers placed mid-height in the slab (9 inches on either side of the joint).

3. Provide "tool joint" or "softcut" contraction/control joints spaced 10 feet on center (not to exceed 12 feet maximum) each way. The larger dimension of any panel shall not exceed 125% of the smaller dimension. Tool or cut as soon as slab will support weight, and can be operated without disturbing the final finish which is

normally within 2 hours after final finish at each control joint location or 150 psi to 800 psi. Tool or softcuts should be a minimum of 1-inch but should not exceed 1¼-inches deep maximum. In case of softcut joints, anti-ravel skid plates should be used and replaced with each blade to avoid spalling and ravelings. Avoid wheeled equipments across cuts for at least 24 hours.

4. Joints shall intersect free-edges at a 90° angle and shall extend straight for a minimum of 1½ feet from the edge. The minimum angle between any two intersecting joints shall be 80°. Align joints of adjacent panels. Also, align joints in attached curbs with joints in slab panels. Provide adequate curing using approved methods (curing compound maximum coverage rate = 200 sq. ft./gal.).

5. Subgrade soils should be tested for proper moisture and specified compaction levels and approved by the project geotechnical consultant prior to the placement of concrete. All exterior slab designs should be confirmed in the final as-graded compaction report.

## E. Asphalt and PCC Pavement Design

1. Asphalt Paving: Specific pavement designs can best be provided at the completion of rough grading based on R-value tests of the actual finish subgrade soils; however, the following structural sections are based on tested R-value of 14 and assumed traffic index (TI) of 5.0 and may be considered for initial planning phase cost estimating purposes only (not for construction):

   * A minimum section of 3 inches asphalt on 8 inches Caltrans Class 2 aggregate base or the minimum structural section required by City of Escondido, whichever is more, may be considered for the on-site asphalt paving surfaces outside the private and public right-of-way. In the areas where the longitudinal grades exceed 10%, ½-inch asphalt should be added to the design asphalt thickness for each 2% increase in grade or portions thereof. PCC paving should be considered for longitudinal grades greater than 15% maximum. Actual designs will depend on final subgrade R-value and design TI, and the approval of the City of Escondido.

   * Base materials should be compacted to a minimum 95% of the corresponding maximum dry density (ASTM D-1557). Subgrade soils beneath the asphalt paving surfaces should also be compacted to a minimum 95% of the corresponding maximum dry density within the upper 12 inches.

2. PCC Pavings: Residential PCC driveways and parking supported on very low expansive (expansion index less than 20) granular subgrade soils should be a minimum 5 inches in thickness, reinforced with #3 reinforcing bars at 18 inches on centers each way placed at mid-height in the slab. Subgrade soils beneath the PCC driveways and parking should also be compacted to a minimum 90% of the corresponding maximum dry density.

   In the areas where longitudinal grades exceed 15%, provide minimum 8 inches wide by 8 inches deep pavement anchors dug perpendicular to the pavement longitudinal profile into the approved subgrade at each 25-foot interval maximum. The pavement anchors should be poured monolithically with the concrete pavings.

   Provide "tool joint" or "softcut" contraction/control joints spaced 10 feet on center (not to exceed 15 feet maximum) each way. The larger dimension of any panel shall not exceed 125% of the smaller dimension. Tool or cut as soon as the slab will support the weight and can be operated without disturbing the final finish which is normally within 2 hours after final finish at each control joint location or 150 psi to 800 psi. Tool or softcuts should be a minimum of 1-inch in depth but should not exceed 1¼-inches deep maximum. In case of softcut joints, anti-ravel skid plates should be used and replaced with each blade to avoid spalling and ravelings. Avoid wheeled equipments across cuts for at least 24 hours.

   Joints shall intersect free edges at a 90° angle and shall extend straight for a minimum of 1½ feet from the edge. The minimum angle between any two intersecting joints shall be 80°. Align joints of adjacent panels. Also, align joints in attached curbs with joints in slab panels. Provide adequate curing using approved method (curing compound maximum coverage rate = 200 sq. ft./gal.)

3. General Paving: Base section and subgrade preparations per structural section design, will be required for all surfaces subject to traffic including roadways, travelways, drive lanes, driveway approaches and ribbon (cross) gutters. Driveway approaches within the public right-of-way should have 12 inches subgrade compacted to a minimum of 95% compaction levels and provided with a 95% compacted Class 2 base section per structural section design.

   Base layer under curb and gutters should be compacted to a minimum 95%, while subgrade soils under curb and gutters, and base and subgrade under sidewalks should be compacted to a minimum 90% compaction levels. Base section may not be required under curb and gutters, and sidewalks, in the case of very low expansive subgrade soils (expansion index less than 20). Appropriate recommendations should be given in the final as-graded compaction report.

Base and subgrade soils should be tested for proper moisture and specified compaction levels, and approved by the project geotechnical consultant prior to the placement of the base or asphalt/PCC finish surface.

## F. General Recommendations

1. The minimum foundation design and steel reinforcement provided herein are based on soil characteristics and are not intended to be in lieu of reinforcement necessary for structural considerations.

2. Adequate staking and grading control are a critical factor in properly completing the recommended remedial and site grading operations. Grading control and staking should be provided by the project grading contractor or surveyor/civil engineer, and is beyond the geotechnical engineering services. Staking should apply the required setbacks shown on the approved plans and conform to setback requirements established by the governing agencies and applicable codes for off-site private and public properties and property lines, utility easements, right-of-ways, nearby structures and improvements, leach fields and septic systems, and graded embankments. Inadequate staking and/or lack of grading control may result in illegal encroachments or unnecessary additional grading which will increase construction costs.

3. Open or backfilled trenches parallel with a footing shall not be below a projected plane having a downward slope of 1-unit vertical to 2 units horizontal (50%) from a line 9 inches above the bottom edge of the footing, and not closer than 18 inches from the face of such footing.

4. Where pipes cross under-footings, the footings shall be specially designed. Pipe sleeves shall be provided where pipes cross through footings or footing walls, and sleeve clearances shall provide for possible footing settlement, but not less than 1-inch all around the pipe.

5. Foundations where the surface of the ground slopes more than 1 unit vertical in 10 units horizontal (10% slope) shall be level or shall be stepped so that both top and bottom of such foundations are level. Individual steps in continuous footings shall not exceed 18 inches in height and the slope of a series of such steps shall not exceed 1 unit vertical to 2 units horizontal (50%) unless otherwise specified. The steps shall be detailed on the structural drawings. The local effects due to the discontinuity of the steps shall also be considered in the design of foundations as appropriate and applicable.

6. Expansive clayey soils should not be used for backfilling of any retaining structure. All retaining walls should be provided with a 1:1 wedge of granular, compacted backfill measured from the base of the wall footing to the finished surface, and a well constructed back drainage system as shown on the enclosed Plate 43. Planting large trees behind site retaining walls should be avoided.

7. All underground utility and plumbing trenches should be mechanically compacted to a minimum of 90% of the maximum dry density of the soil unless otherwise specified. Care should be taken not to crush the utilities or pipes during the compaction of the soil. Non-expansive, granular backfill soils should be used. Trench backfill materials and compaction beneath pavements within the public right-of-way shall conform to the requirements of governing agencies.

8. Site drainage over the finished pad surfaces should flow away from structures onto the street in a positive manner. Care should be taken during the construction, improvements, and fine grading phases not to disrupt the designed drainage patterns. Roof lines of the buildings should be provided with roof gutters. Roof water should be collected and directed away from the buildings and structures to a suitable location. Subterranean blanket drain and wall back drains should be provided as specified and their proper functioning periodically confirmed. Planter areas adjacent to basement walls and building foundations may be provided with impermeable liners and added subdrain, if appropriate.

9. Final plans should reflect preliminary recommendations given in this report. Final foundations and grading plans may also be reviewed by the project geotechnical consultant for conformance with the requirements of the geotechnical investigation report outlined herein. More specific recommendations may be necessary and should be given when final grading and architectural/structural drawings are available.

10. All foundation trenches should be inspected to ensure adequate footing embedment and confirm competent bearing soils. Foundation and slab reinforcements should also be inspected and approved by the project geotechnical consultant.

11. The amount of shrinkage and related cracks that occur in the concrete slab-on-grades, flatworks and driveways depend on many factors the most important of which is the amount of water in the concrete mix. The purpose of the slab reinforcement is to keep normal concrete shrinkage cracks closed tightly. The amount of concrete shrinkage can be minimized by reducing the amount of water in the mix. To keep shrinkage to a minimum, the following should be considered:

* Use the stiffest mix that can be handled and consolidated satisfactorily.

* Use the largest maximum size of aggregate that is practical. For example, concrete made with ⅜-inch maximum size aggregates usually require about 40-lbs. more (nearly 5-gal.) water per cubic yard than concrete with 1-inch aggregate.

* Cure the concrete as long as practical.

The amount of slab reinforcement provided for conventional slab-on-grade construction considers that good quality concrete materials, proportioning, craftsmanship, and control tests, where appropriate and applicable, are provided.

12. A preconstruction meeting between representatives of this office, the property owner or planner, city inspector as well as the grading contractor/builder is recommended in order to discuss grading and construction details associated with site development.

## X. GEOTECHNICAL ENGINEER OF RECORD (GER)

Vinje & Middleton Engineering, Inc. is the geotechnical engineer of record (GER) for providing a specific scope of work or professional service under a contractual agreement unless it is terminated or canceled by either the client or our firm. In the event a new geotechnical consultant or soils engineering firm is hired to provide added engineering services, professional consultations, engineering observations and compaction testing, Vinje & Middleton Engineering, Inc. will no longer be the geotechnical engineer of the record. Project transfer should be completed in accordance with the California Geotechnical Engineering Association (CGEA) Recommended Practice for Transfer of Jobs Between Consultants.

The new geotechnical consultant or soils engineering firm should review all previous geotechnical documents, conduct an independent study, and provide appropriate confirmations, revisions or design modifications to his own satisfaction. The new geotechnical consultant or soils engineering firm should also notify in writing Vinje & Middleton Engineering, Inc. and submit proper notification to the City of Escondido for the assumption of responsibility in accordance with the applicable codes and standards (1997 UBC Section 3317.8).

## XI. LIMITATIONS

The conclusions and recommendations provided herein have been based on available data obtained from the review of pertinent reports and plans, subsurface exploratory excavations as well as our experience with the soils and formational materials located in the general area. The materials encountered on the project site and utilized in our laboratory testing are believed representative of the total area; however, earth materials may vary in characteristics between excavations.

Of necessity, we must assume a certain degree of continuity between exploratory excavations and/or natural exposures. It is necessary, therefore, that all observations, conclusions, and recommendations are verified during the grading operation. In the event discrepancies are noted, we should be contacted immediately so that an inspection can be made and additional recommendations issued if required.

The recommendations made in this report are applicable to the site at the time this report was prepared. It is the responsibility of the owner/developer to ensure that these recommendations are carried out in the field.

It is almost impossible to predict with certainty the future performance of a property. The future behavior of the site is also dependent on numerous unpredictable variables, such as earthquakes, rainfall, and on-site drainage patterns.

The firm of VINJE & MIDDLETON ENGINEERING, INC., shall not be held responsible for changes to the physical conditions of the property such as addition of fill soils, added cut slopes, or changing drainage patterns which occur without our inspection or control.

This report should be considered valid for a period of one year and is subject to review by our firm following that time. If significant modifications are made to your tentative reconstruction plan, especially with respect to the height and location of cut and fill slopes, this report must be presented to us for review and possible revision.

This report is issued with the understanding that the owner or his representative is responsible for ensuring that the information and recommendations are provided to the project architect/structural engineer so that they can be incorporated into the plans. Necessary steps shall be taken to ensure that the project general contractor and subcontractors carry out such recommendations during construction.

The project geotechnical engineer should be provided the opportunity for a general review of the project final design plans and specifications in order to ensure that the recommendations provided in this report are properly interpreted and implemented. If the project geotechnical engineer is not provided the opportunity of making these reviews, he can assume no responsibility for misinterpretation of his recommendations.

Vinje & Middleton Engineering, Inc., warrants that this report has been prepared within the limits prescribed by our client with the usual thoroughness and competence of the engineering profession. No other warranty or representation, either expressed or implied, is included or intended.

Once again, should any questions arise concerning this report, please do not hesitate to contact this office. Reference to our **Job #13-116-P** will help to expedite our response to your inquiries.

We appreciate this opportunity to be of service to you.

**VINJE & MIDDLETON ENGINEERING, INC.**

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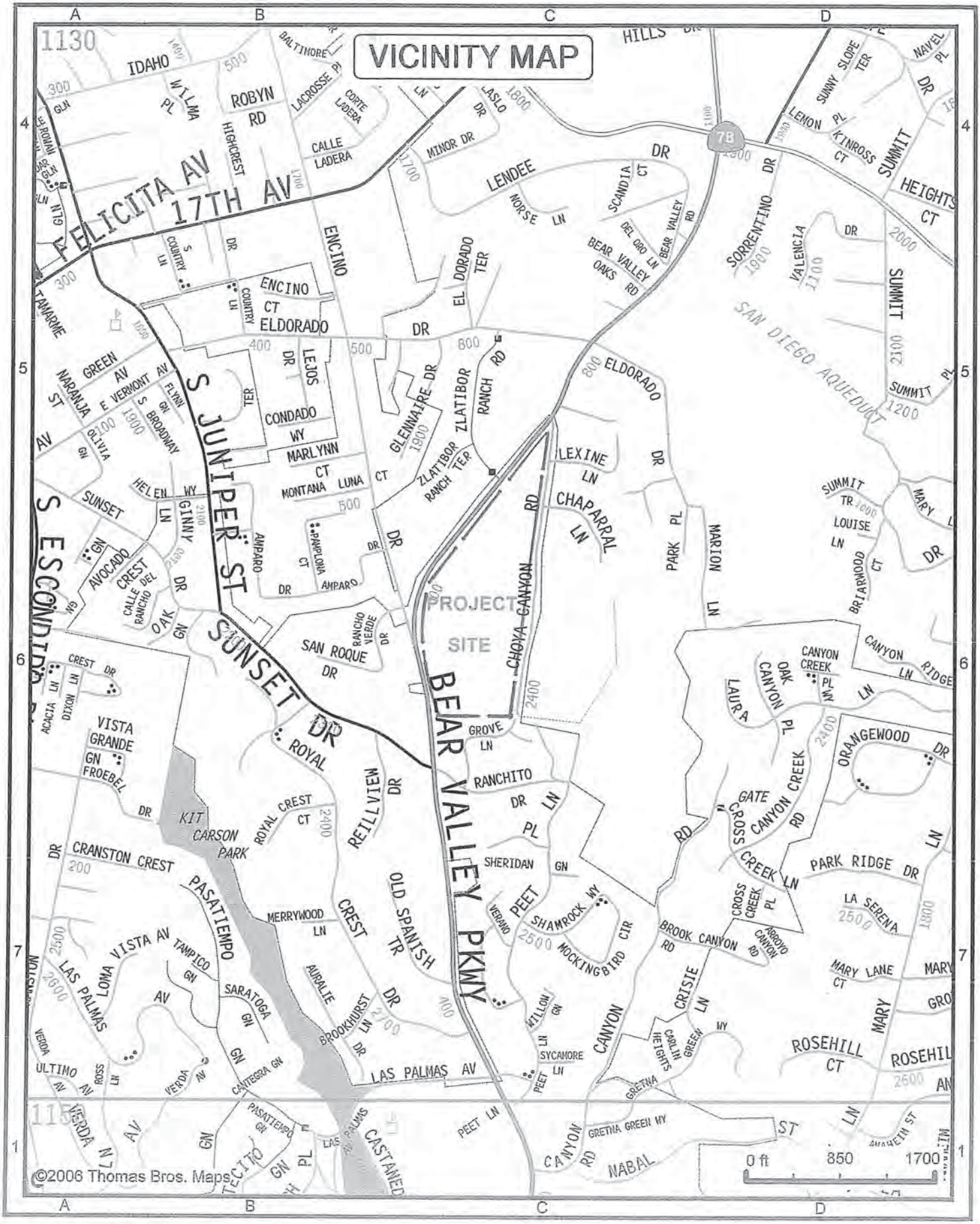



SITE: 1130 - C6

PLATE 1
V&M JOB #13-116-P

**Bear Valley Parkway**
**Date: 2/19/13**
**Temp DLN :\1086\ &Ewk\Tentative Map\Bear Valley Pkwy 2-18-13**

Job: Bear Valley Parkway
Units: Ft-CY
Tue Feb 19, 2013 09:01:23 Page 1

Volume Report
Design vs. Existing

| | Total | Area Cut | Area Fill | OnGrade | Volume Cut | Volume Fill | Comp/Ratio Cut | Comp/Ratio Fill | Compact Cut | Compact Fill | Export /Import | Change Per. 1 Ft |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Job Site | 1,281,506 | 616,314 | 651,147 | 14,045 | 253,393 | 288,645 | 1.00 | 1.00 | 253,393 | 288,645 | -35,252 | 4,746 |





PRELIMINARY DEVELOPMENT



PLATE 3
V&M JOB #13-116-P

County Of Escondido, Texas
BEAR VALLEY PKWY

| PRIMARY DIVISIONS | | | GROUP SYMBOL | SECONDARY DIVISIONS |
|---|---|---|---|---|
| COARSE GRAINED SOILS MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE | GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE | CLEAN GRAVELS (LESS THAN 5% FINES) | GW | Well graded gravels, gravel-sand mixtures, little or no fines. |
| | | | GP | Poorly graded gravels or gravel-sand mixtures, little or no fines. |
| | | GRAVEL WITH FINES | GM | Silty gravels, gravel-sand-silt mixtures, non-plastic fines. |
| | | | GC | Clayey gravels, gravel-sand-clay mixtures, plastic fines. |
| | SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE | CLEAN SANDS (LESS THAN 5% FINES) | SW | Well graded sands, gravelly sands, little or no fines. |
| | | | SP | Poorly graded sands or gravelly sands, little or no fines. |
| | | SANDS WITH FINES | SM | Silty sands, sand-silt mixtures, non-plastic fines. |
| | | | SC | Clayey sands, sand-clay mixtures, plastic fines. |
| FINE GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE | SILTS AND CLAYS LIQUID LIMIT IS LESS THAN 50% | | ML | Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity. |
| | | | CL | Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays. |
| | | | OL | Organic silts and organic silty clays of low plasticity. |
| | SILTS AND CLAYS LIQUID LIMIT IS GREATER THAN 50% | | MH | Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts. |
| | | | CH | Inorganic clays of high plasticity, fat clays. |
| | | | OH | Organic clays of medium to high plasticity, organic silts. |
| HIGHLY ORGANIC SOILS | | | PT | Peat and other highly organic soils. |

**GRAIN SIZES** U.S. STANDARD SERIES SIEVE

| 200 | 40 | 10 | 4 | CLEAR SQUARE SIEVE OPENINGS 3/4" | 3" | 12" |
|---|---|---|---|---|---|---|

| SILTS AND CLAYS | SAND | | | GRAVEL | | COBBLES | BOULDERS |
|---|---|---|---|---|---|---|---|
| | FINE | MEDIUM | COARSE | FINE | COARSE | | |

**RELATIVE DENSITY**

| SANDS, GRAVELS AND NON-PLASTIC SILTS | BLOWS/FOOT |
|---|---|
| VERY LOOSE | 0 - 4 |
| LOOSE | 4 - 10 |
| MEDIUM DENSE | 10 - 30 |
| DENSE | 30 - 50 |
| VERY DENSE | OVER 50 |

**CONSISTENCY**

| CLAYS AND PLASTIC SILTS | STRENGTH | BLOWS/FOOT |
|---|---|---|
| VERY SOFT | 0 - ¼ | 0 - 2 |
| SOFT | ¼ - ½ | 2 - 4 |
| FIRM | ½ - 1 | 4 - 8 |
| STIFF | 1 - 2 | 8 - 16 |
| VERY STIFF | 2 - 4 | 16 - 32 |
| HARD | OVER 4 | OVER 32 |

1. Blow count, 140 pound hammer falling 30 inches on 2 inch O.D. split spoon sampler (ASTM D-1586)
2. Unconfined compressive strength per SOILTEST pocket penetrometer CL-700

▼ Sand Cone Test ■ Bulk Sample ☒ $^{2}4_{6}$ = Standard Penetration Test (SPT) (ASTM D-1586) with blow counts per 6 inches

☐ Chunk Sample ○ Driven Rings ☒ $^{2}4_{6}$ = California Sampler with blow counts per 6 inches

VINJE & MIDDLETON ENGINEERING, INC.
2450 Auto Park Way
Escondido, CA 92029-1229

KEY TO EXPLORATORY BORING LOGS
Unified Soil Classification System (ASTM D-2487)

| PROJECT NO. | | KEY |
|---|---|---|
| 13-116-P | | |

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-1**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 2/28/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| | | SM | **COLLUVIUM (Qcol):** Silty fine to medium sand. Brown color. Damp. Loose. ST-1 | | | | | |
| 2 | | CL-ML | Sandy silt to sandy clay. Red brown color. Moist. Soft to loose. Plastic. ST-2 | ■ □ | 14 | 104 | 79 | 56 |
| 4 | | | | | | | | |
| 6 | | SW-GP | **BEDROCK (Kgb):** Gabbroic rock. Fine to medium grained. Red brown color. Weathered. Friable. Massive. ST-3 | | | | | |
| | | | Becomes blocky at 7 feet. Dense. | □ | 12 | - | Sample Disturbed | - |

Bottom of test pit at 7.5 feet.

■ BULK SAMPLE □ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 4

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-2**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 2/28/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| 2 | | SM-SC | **COLLUVIUM (Qcol):** Silty to clayey fine to medium sand. Brown to red brown color. Damp. Loose. ST-1 | ■ | | | | |
| 4 | | | | □ | 7 | 105.8 | 77 | 29 |
| 6 | | SW-GP | **BEDROCK (Kgb):** Gabbroic rock. Fine to coarse grained. Red brown to grey color. Weathered. Friable. Massive. Dense. Excavates gravelly. ST-3 | ■ | | | | |
| | | | | □ | 4 | 136.7 | 100+ | 38 |

Bottom of test pit at 7.0 feet.

■ BULK SAMPLE □ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 5

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-3**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 2/28/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| 2 | | SM | **COLLUVIUM (Qcol):**<br>Silty fine to medium sand. Brown color. Damp. Loose. ST-1 | | | | | |
| 4 | | SW-GP | **BEDROCK (Kgb):**<br>Gabbroic rock. Fine to coarse grained. Red brown to grey color. Weathered. Friable. Massive. ST-3 | | | | | |
| | | | | ☐ | 8 | 128.1 | 98 | 58 |
| 6 | | | Excavates somewhat blocky to gravelly at 6 feet. Dense. | | | | | |

Bottom of test pit at 7.0 feet.

■ BULK SAMPLE ☐ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 6

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-4**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 2/28/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| 2 | | SM | **COLLUVIUM (Qcol):** Clayey sand. Red brown color. Moist. Soft to loose. Low plastic. ST-2 | | | | | |
| 4 | | SC-CL | Clayey sand / sandy clay (residual soil). Red brown color. Moist. Firm to stiff. Low - medium plastic. ST-4 | ■ | | | | |
| 6 | | SW-GP | **BEDROCK (Kgb):** Gabbroic rock. Fine to coarse grained. Red brown color. Weathered. Blocky. Dense. ST-3 | □ | 6 | 138.7 | 100+ | 61 |
| 8 | | | A mining excavation was encountered at 4-6 feet below the surface. The mining excavation appears to be an adit and measures approximately 7 feet wide and approximately 6 feet high. The excavation is trending N75E, and may be descending slightly in a northeast direction. | | | | | |
| 10 | | | | | | | | |
| 12 | | SW-GP | Gabbroic rock. Dense. | | | | | |

Bottom of test pit at 13.0 feet.

■ BULK SAMPLE □ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 7

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-5**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 2/28/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| 0 | | | **COLLUVIUM (Qcol):** Clayey sand. Red brown color. Moist. Soft to loose. Low plastic. ST-2 | | | | | |
| 2 | | | Becomes somewhat blocky and medium dense at 2.5 feet. | | | | | |
| | | SC | | ■ □ | 13 | 112.7 | 86 | 64 |
| 4 | | | | | | | | |
| 6 | | SM | Silty fine to medium sand. Brown color. Moist. Somewhat blocky. Medium dense. ST-1 | □ | 15 | 116.7 | 84 | 82 |
| 8 | | GP | **BEDROCK (kgr):** Granitic rock. Fine grained. Tan to reddish color. Fractured. Includes quartz veins. Local polished surfaces. Dense. Excavates blocky to gravelly. ST-5 | □ | 14 | 119.6 | 91 | 81 |
| 10 | | | Bottom of test pit at 10.0 feet. | | | | | |

■ BULK SAMPLE □ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 8

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-6**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 2/28/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| 2 | | SM | **COLLUVIUM (Qcol):**<br>Silty fine to medium sand. Red brown color. Moist. Loost to firm. ST-1 | | | | | |
| 4 | | | | | | | | |
| 6 | | SW-GP | **BEDROCK (Kgb):**<br>Gabbroic rock. Fine to medium grained. Red brown color. Weathered. Friable. Massive. ST-3 | | | | | |
| | | | Becomes somewhat blocky to gravelly at 7 feet. Dense. | ☐ | 5 | 132.0 | 100+ | 41 |

Bottom of test pit at 7.5 feet.

■ BULK SAMPLE ☐ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 9

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-7**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 2/28/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** Caving within fill deposits. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| 0 | | | **FILL (af):** | | | | | |
| | | | Sandy clay / clayey sand. Brown color. Moist. Very loose. Significant caving of the sidewalls until bedrock is exposed. Appears to be a mining excavation (shaft). ST-4 | | | | | |
| 2 | | | Gabbroic bedrock is exposed at 3 feet below the surface and on all sides of the excavation. The shaft appears near vertical and measures approximately 9 feet by 9 feet square. | | | | | |
| 4 | | | | | | | | |
| 6 | | | | | | | | |
| 8 | | SC-CL | | | | | | |
| | | | Appears to be a possible filled excavation on the southwest side to the shaft at 9 feet below the surface. The filled excavation appears to continue downward in a N75W direction. | | | | | |
| 10 | | | | | | | | |
| 12 | | | | | | | | |
| 14 | | | | | | | | |
| | | | Platic coke bottle at 15 feet. Continues moist and very loose. | | | | | |
| 16 | | | End at 16 feet - extent of the backhoe. | | | | | |
| | | | Bottom of test pit at 16.0 feet. | | | | | |

BULK SAMPLE | CHUNK SAMPLE | DENSITY TEST | GROUND WATER

PLATE 10

## VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-8**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 2/28/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| | | SM | **TOPSOIL:** Silty fine to medium sand. Brown color. Damp. Loose. ST-1 | | | | | |
| 2 | | | **BEDROCK (Kgb):** Gabbroic rock. Fine to coarse grained. Grey color. Weathered. Friable. Massive. ST-3 | | | | | |
| 4 | | SW-GP | Excavates gravelly at 4 feet. Dense. | | | | | |
| 6 | | | | | | | | |

Bottom of test pit at 6.0 feet.

BULK SAMPLE | CHUNK SAMPLE | DENSITY TEST | GROUND WATER

PLATE 11

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-9**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 2/28/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** Caving within fill deposits. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| 2 | | SC | **FILL (af):**<br>Clayey sand. Red brown color. Moist. Very loose. Sidewall caving. Placed to cover a mining excavation. ST-4<br>Gabbroic bedrock is exposed at 3 feet below the surface. | | | | | |
| 4 | | | At 4 feet a mine excavation was exposed (adit). The mine opening measures 7 feet wide by 6 feet in height. This excavation size extends due east 17 feet into the hillside. At this point the excavation narrows to approximately 3 feet wide and continues horizontally east for approximately 50-60 feet, where the excavation appears to turn northwards. Gabbroic bedrock is exposed throughout the visible portions of the mine excavation. | | | | | |
| 6 | | | | | | | | |
| 8 | | | | | | | | |
| 10 | | | Gabbroic bedrock. Dense. | | | | | |

Bottom of test pit at 11.0 feet.

BULK SAMPLE | CHUNK SAMPLE | DENSITY TEST | GROUND WATER

PLATE 12

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-10**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 2/28/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| | | | **COLLUVIUM (Qcol):** | | | | | |
| | | | Silty fine to medium sand. Brown color. Dry at the surface, damp at 2 feet. Somewhat blocky. Medium dense. ST-1 | | | | | |
| 2 | | | | ■ | | | | |
| 4 | | | Very tight and blocky at 4 feet. Moist. Slow digging. Appears to be an ancient colluvium. Dense. | □ | 11 | 120.4 | 87 | 65 |
| | | SM | | | | | | |
| 6 | | | | □ | 10 | 118.0 | 85 | 56 |
| 8 | | | | | | | | |
| 10 | | | Continues very tight and blocky. Dense. Backhoe refusal at 10.5 feet. | □ | 11 | 120.3 | 87 | 65 |
| | | | Bottom of test pit at 10.5 feet. | | | | | |

■ BULK SAMPLE □ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 13

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-11**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 2/28/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** Caving to 9 feet. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| 2 | | SW | **CANYON ALLUVIUM (Qal):** Fine to medium sand. Brown color. Damp. Very loose. Sidewall caving. ST-3 | | | | | |
| 4 | | SC-CL | Sandy clay / clayey sand. Red brown to brown color. Moist. Soft to very loose. Sidewall caving. ST-4 | | | | | |
| 6 | | | | | | | | |
| 8 | | | | | | | | |
| 10 | | SW-GP | **BEDROCK (Kgb):** Gabbroic rock. Fine to coarse grained. Red brown color. Weathered. Friable. Somewhat blocky. Dense. ST-3 | | | | | |

Bottom of test pit at 10.0 feet.

BULK SAMPLE | CHUNK SAMPLE | DENSITY TEST | GROUND WATER

PLATE 14

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-12**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 2/28/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| | | | **COLLUVIUM (Qcol):** | | | | | |
| | | | Silty fine to medium sand. Brown color. Damp. Loose. ST-1 | | | | | |
| 2 | | | Becomes sowewhat blocky and tight at 2 feet. Appears ancient. Medium dense to dense. | ☐ | 9 | 123.5 | 89 | 58 |
| 4 | | | | ☐ | 13 | 117.2 | 85 | 71 |
| 6 | | | | ☐ | 12 | 109.7 | 79 | 55 |
| 8 | | SC-ML | Tight and blocky at 8 feet. Continues medium dense to dense. | | | | | |
| 10 | | | | ☐ | 10 | 123.6 | 89 | 65 |
| 12 | | | | | | | | |
| 14 | | | | ☐ | 11 | 119.0 | 86 | 64 |
| 16 | | | End at 16.5 feet - extent of backhoe. | | | | | |

Bottom of test pit at 16.5 feet.

■ BULK SAMPLE ☐ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 15

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-13**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 2/28/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| | | | **COLLUVIUM (Qcol):** | | | | | |
| | | | Silty fine to medium sand. Brown color. Damp. Loose. ST-1 | | | | | |
| 2 | | | Becomes blocky and relatively tight at 2 feet. Medium dense. | | | | | |
| | | SM | | | | | | |
| 4 | | | | | | | | |
| | | | | ☐ | 13 | 117.1 | 89 | 71 |
| | | GP | **BEDROCK (Kgb):** | | | | | |
| 6 | | | Gabbroic rock. Fine to coarse grained. Red brown color. Weathered. Friable. Massive. Blocky. Medium dense to dense. ST-3 | | | | | |
| | | | Bottom of test pit at 6.0 feet. | | | | | |

■ BULK SAMPLE ☐ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 16

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-14**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 2/28/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| | | | **COLLUVIUM (Qcol):** | | | | | |
| | | | Silty fine to medium sand. Red brown color. Moist. Loose. ST-1 | | | | | |
| 2 | | | | | | | | |
| | | | Becomes somewhat blocky at 3 feet. Very loose. | | | | | |
| 4 | | | | ☐ | 12 | 108.8 | 78 | 54 |
| | | | | | | | | |
| 6 | | SM | Blocky at 6 feet. Appears ancient. Medium dense to dense. | | | | | |
| 8 | | | | ☐ | 12 | 120.7 | 87 | 73 |
| | | | | | | | | |
| 10 | | | | ☐ | 13 | 117.9 | 85 | 73 |
| | | | Continues blocky at 11 feet. Becomes hard. Very slow digging. | | | | | |
| 12 | | | | ☐ | 11 | 119.9 | 87 | 65 |
| | | | Backhoe refusal at 13 feet. | | | | | |

Bottom of test pit at 13.0 feet.

■ BULK SAMPLE ☐ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 17

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-15**

PROJECT: Proposed Residential Subdivision CLIENT: Speith & Wohlford, Inc.

PROJECT NUMBER: 13-116-P PROJECT LOCATION: 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 3/1/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** Caving within fill deposit. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| 2 | | SM | **FILL (af):**<br>Silty fine to medium sand. Brown color. Dry. Very loose. Sidewall caving. Placed to cover a mining excavation. ST-1<br>Gabbroic bedrock is exposed at 3 feet below the surface, and on the sides of the excavation. | | | | | |
| 4 | | | Metal pipe at 4 feet. | | | | | |
| 6 | | | | | | | | |
| 8 | | | A partially filled mining excavation on the north side of the test pit at 7 feet below the surface. Appears to be a horizontal adit. Exposed opening in the bedrock measures approximately 7 feet high by 4 feet wide. Appears to trend N25E into the hillside. | | | | | |
| 10 | | | | | | | | |
| 12 | | | | | | | | |
| 14 | | | Gabbroic bedrock. Massive. Hard. | | | | | |

Bottom of test pit at 15.0 feet.

BULK SAMPLE | CHUNK SAMPLE | DENSITY TEST | GROUND WATER

PLATE 18

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-16**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 3/1/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| | | | **COLLUVIUM (Qcol):** | | | | | |
| | | | Silty fine to medium sand. Brown color. Dry to damp. Loose. ST-1 | | | | | |
| 2 | | | | | | | | |
| | | | Becomes blocky and relatively tight at 3.5 feet. Appears ancient. Medium dense to dense. | | | | | |
| 4 | | SM | | ☐ | 6 | 119.9 | 87 | 36 |
| | | | Color changes to red brown at 5 feet. Damp. Continues medium dense to dense. | | | | | |
| 6 | | | | ☐ | 10 | 120.0 | 87 | 59 |
| 8 | | | | | | | | |
| | | SW-GP | **BEDROCK (Kgb):** | | | | | |
| | | | Gabbroci rock. Fine to coarse grained. Red brown color. Weathered. Blocky. Very dense. ST-3 | ☐ | 5 | 138.9 | 100+ | 51 |
| | | | Bottom of test pit at 9.5 feet. | | | | | |

■ BULK SAMPLE ☐ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 19

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-17**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 3/1/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| | | | **COLLUVIUM (Qcol):** | | | | | |
| | | | Silty fine to medium sand. Brown color. Damp. Loose. ST-1 | | | | | |
| 2 | | | | | | | | |
| | | SM | | | | | | |
| 4 | | | | | | | | |
| | | | Becomes somewhat blocky at 5 feet. Medium dense to dense. | ☐ | 9 | 120.7 | 87 | 55 |
| 6 | | | | | | | | |
| | | SW-GP | **BEDROCK (Kgb):** | | | | | |
| | | | Gabbroic rock. Fine to coarse grained. Red brown color. Weathered. Gravelly to blocky. Dense. ST-3 | | | | | |
| | | | Bottom of test pit at 7.5 feet. | | | | | |

■ BULK SAMPLE ☐ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 20

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-18**

PROJECT: Proposed Residential Subdivision CLIENT: Speith & Wohlford, Inc.

PROJECT NUMBER: 13-116-P PROJECT LOCATION: 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 3/1/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| | | SM | **TOPSOIL:**<br>Silty fine to medium sand. Brown color. Damp. Loose. ST-1 | | | | | |
| 2 | | SW-GP | **BEDROCK (Kgb):**<br>Gabbroic rock. Fine to coarse grained. Grey color. Weathered. Friable. Massive. ST-3 | | | | | |
| 4 | | | Becomes blocky at 4 feet. Very dense. | | | | | |

Bottom of test pit at 5.0 feet.

BULK SAMPLE | CHUNK SAMPLE | DENSITY TEST | GROUND WATER

PLATE 21

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-19**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 3/1/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| 2 | | SM | **TOPSOIL:** Silty fine to medium sand. Brown color. Damp. Loose. ST-1 | | | | | |
| 4 | | SW-GP | **BEDROCK (Kgb):** Gabbroic rock. Fine to coarse grained. Red brown color. Gravelly. Dense. ST-3 | | | | | |

Bottom of test pit at 5.0 feet.

BULK SAMPLE | CHUNK SAMPLE | DENSITY TEST | GROUND WATER

PLATE 22

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-20**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 3/1/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| | | | **COLLUVIUM (Qcol):** | | | | | |
| | | | Silty fine to medium sand. Red brown color. Damp. Loose. ST-1 | | | | | |
| 2 | | | Becomes blocky at 2 feet. Appears ancient. Medium dense to dense. | ☐ | 9 | 123.2 | 89 | 58 |
| | | SM | | | | | | |
| 4 | | | | ■ | | | | |
| 6 | | | Hard at 6 feet. Slow digging. Dense. | ☐ | 13 | 123.3 | 89 | 84 |
| | | | Backhoe refusal at 6.5 feet. | | | | | |
| | | | Bottom of test pit at 6.5 feet. | | | | | |

■ BULK SAMPLE ☐ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 23

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-21**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 3/1/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| 0 | | | **COLLUVIUM (Qcol):** | | | | | |
| | | | Silty fine to medium sand. Brown color. Moist. Very loose. ST-1 | | | | | |
| 2 | | SM | | | | | | |
| 4 | | | Continues moist. Loose to firm. | | | | | |
| 6 | | | **BEDROCK (Kgb):** | | | | | |
| | | SW-GP | Gabbroic rock. Fine to coarse grained. Red brown color. Weathered. Friable. Massive. ST-3 | | | | | |
| 8 | | | Somewhat blocky at 8 feet. Dense. | ☐ | 4 | 129.3 | 99 | 30 |

Bottom of test pit at 8.5 feet.

■ BULK SAMPLE ☐ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 24

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-22**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 3/1/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| | | SW | **FILL (af):**<br>Fine to coarse sand. Grey color. Loose. ST-3 | | | | | |
| 2 | | | **COLLUVIUM (Qcol):**<br>Silty fine to medium sand. Red brown color. Damp to moist. Loose to firm. ST-1 | | | | | |
| 4 | | SM | Becomes somewhat blocky at 5 feet. Medium dense. | ☐ | 10 | 117.1 | 85 | 55 |
| 6 | | | | | | | | |
| 8 | | | | | | | | |
| | | SW-GP | **BEDROCK (Kgb):**<br>Gabbroic rock. Fine to coarse grained. Red brown color. Weathered. Friable. Gravelly. Dense. ST-3 | ☐ | 7 | 121.4 | 93 | 43 |

Bottom of test pit at 9.5 feet.

■ BULK SAMPLE ☐ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 25

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-23**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 3/1/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| 0 | | SM | **COLLUVIUM (Qcol):** Silty fine to medium sand. Red brown color. Damp to moist. Loose. ST-1 | | | | | |
| 6 | | SW | **BEDROCK (Kgb):** Gabbroic rock. Fine to coarse grained. Grey color. Weathered. Friable. Massive. Medium dense to dense. ST-3 | ☐ | 14 | 113.4 | 87 | 70 |

Bottom of test pit at 7.0 feet.

BULK SAMPLE ☐ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 26

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-24**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 3/1/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** Sidewall caving to 5 feet. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| 2 | | SM | **COLLUVIUM (Qcol):**<br>Silty fine to medium sand. Brown color. Moist. Very loose.<br>Sidewall caving. ST-1 | | | | | |
| 4 | | | | | | | | |
| 6 | | SW-GP | **BEDROCK (Kgb):**<br>Gabbroic rock. Fine to coarse grained. Grey color. Weathered.<br>Friable. Massive. ST-3<br>Somewhat blocky to gravelly at 6 feet. Dense. | ☐ | 10 | 125.4 | 96 | 68 |

Bottom of test pit at 7.0 feet.

■ BULK SAMPLE ☐ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 27

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-25**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 3/1/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| 2 | | SM | **TOPSOIL:**<br>Silty fine to medium sand. Brown color. Damp. Very loose. ST-1 | | | | | |
| 4 | | SW-GP | **BEDROCK (Kgb):**<br>Gabbroic rock. Fine to coarse grained. Grey color. Weathered. Friable. Massive. ST-3<br>Excavates gravelly at 4.5 feet. Dense. | | | | | |

Bottom of test pit at 5.5 feet.

BULK SAMPLE | CHUNK SAMPLE | DENSITY TEST | GROUND WATER

PLATE 28

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-26**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 3/1/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| 2 | | SM | **TOPSOIL:**<br>Silty fine to medium sand. Brown color. Damp. Loose. ST-1 | | | | | |
| 4 | | SW-GP | **BEDROCK (Kgb):**<br>Gabbroic rock. Fine to coarse grained. Grey color. Weathered. Friable. Massive. ST-3<br>Somewhat blocky to gravelly at 4.5 feet. Dense. | | | | | |
| 6 | | | Bottom of test pit at 6.0 feet. | | | | | |

BULK SAMPLE | CHUNK SAMPLE | DENSITY TEST | GROUND WATER

PLATE 29

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-27**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 3/1/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** Caving within fill deposit. No groundwater.

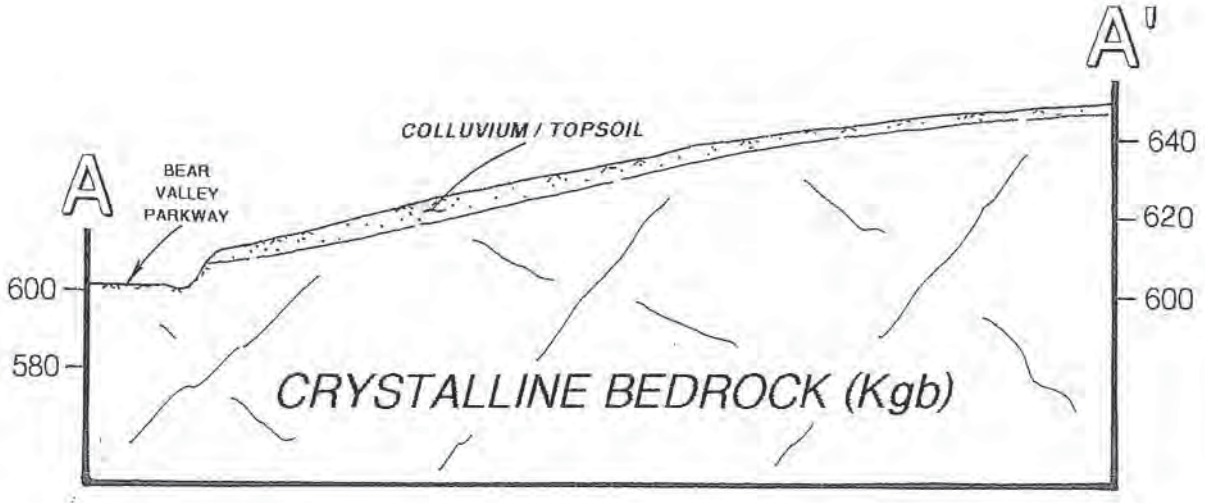
| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| | | | **FILL (af):** | | | | | |
| | | | Silty fine to medium sand. Brown color. Moist. Very loose. Sidewall caving. ST-1 | | | | | |
| | | | Unknown if excavation is associated with mining actvities. | | | | | |
| 2 | | | | | | | | |
| | | SM | Plastic and metal irrigation pipe in the uppper 3 feet. | | | | | |
| 4 | | | | | | | | |
| | | | Organics and stumps at 5 feet. Continues very loose. | | | | | |
| 6 | | | | | | | | |
| | | SW-GP | **BEDROCK (Kgb):** | | | | | |
| | | | Gabbroic rock. Fine to coarse grained. Red brown color. Weathered. Gravelly. Dense. ST-3 | | | | | |
| | | | Bottom of test pit at 7.0 feet. | | | | | |

BULK SAMPLE | CHUNK SAMPLE | DENSITY TEST | GROUND WATER

PLATE 30

# GEOLOGIC CROSS-SECTIONS

SCALE: 1" = 50'



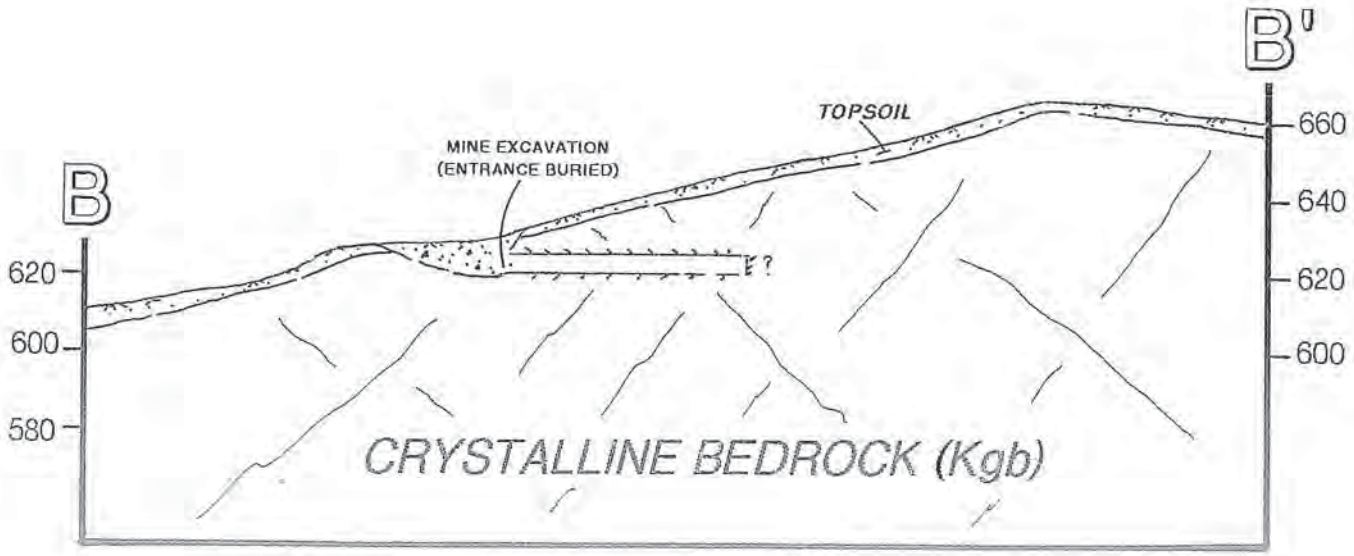
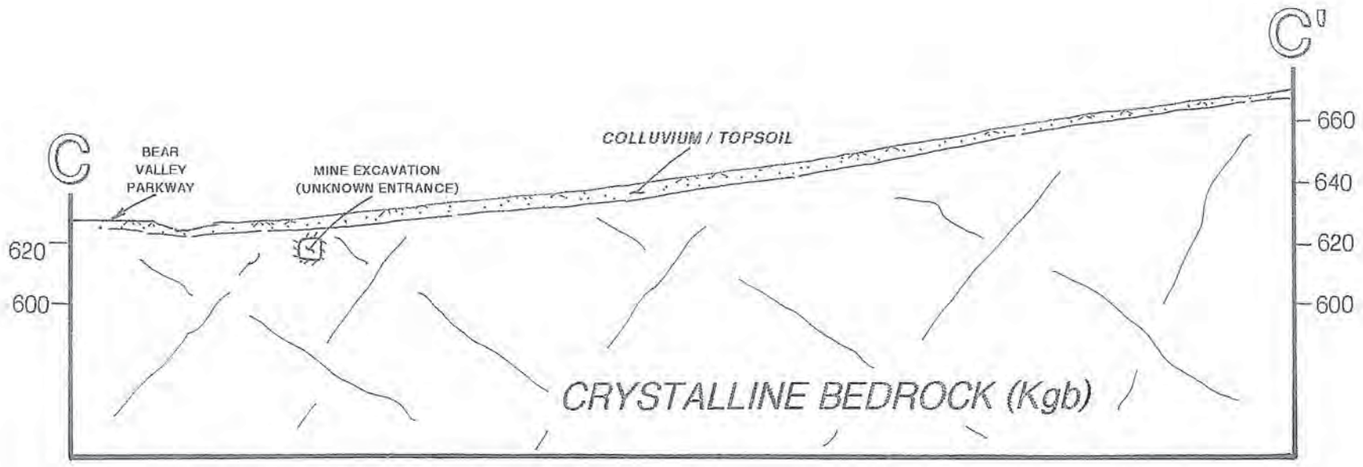
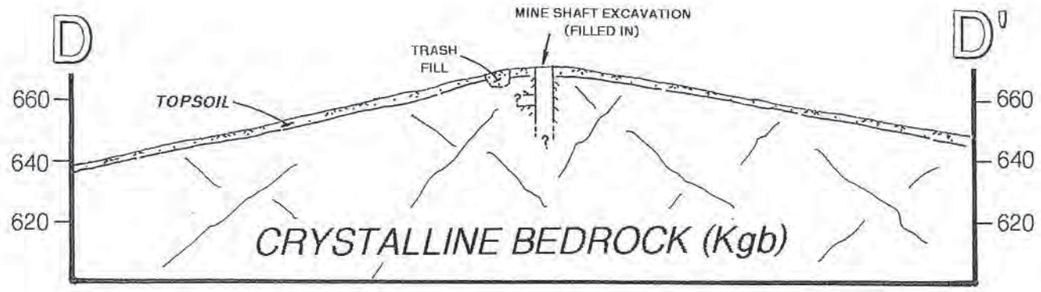



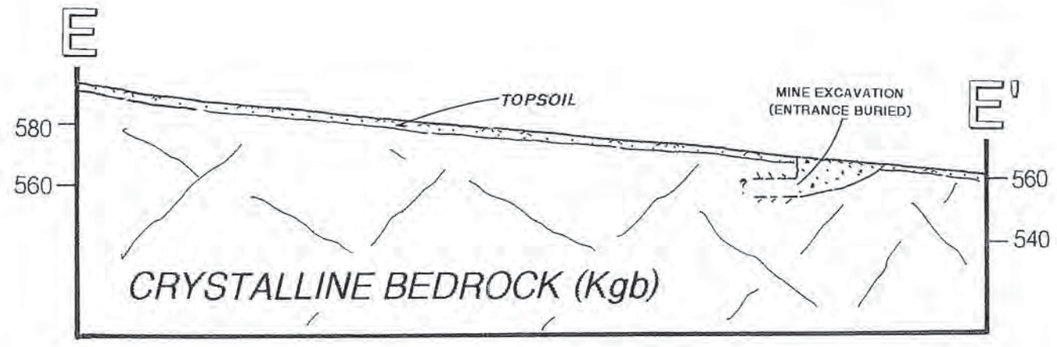

PLATE 31
V&M JOB #13-116-P

# GEOLOGIC CROSS-SECTIONS

SCALE: 1" = 50'



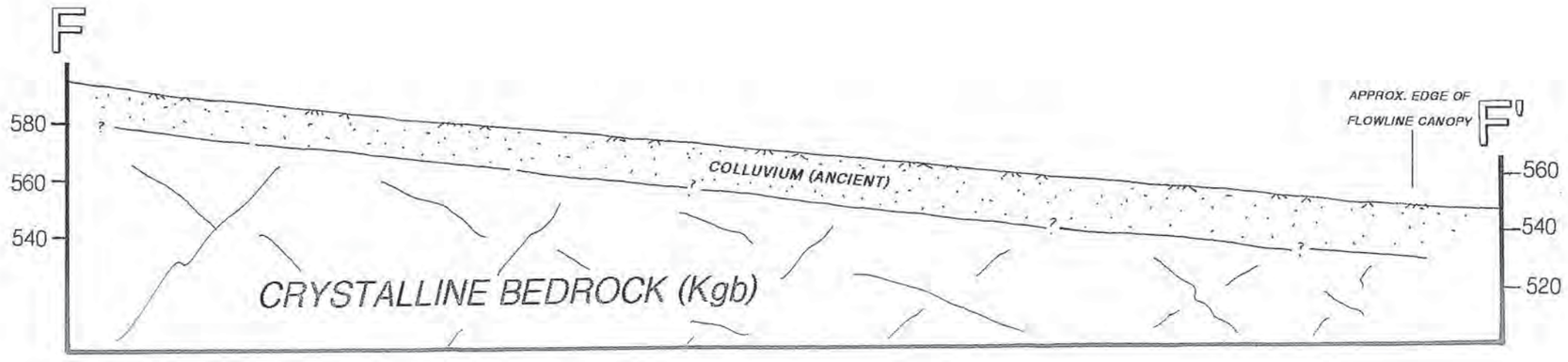
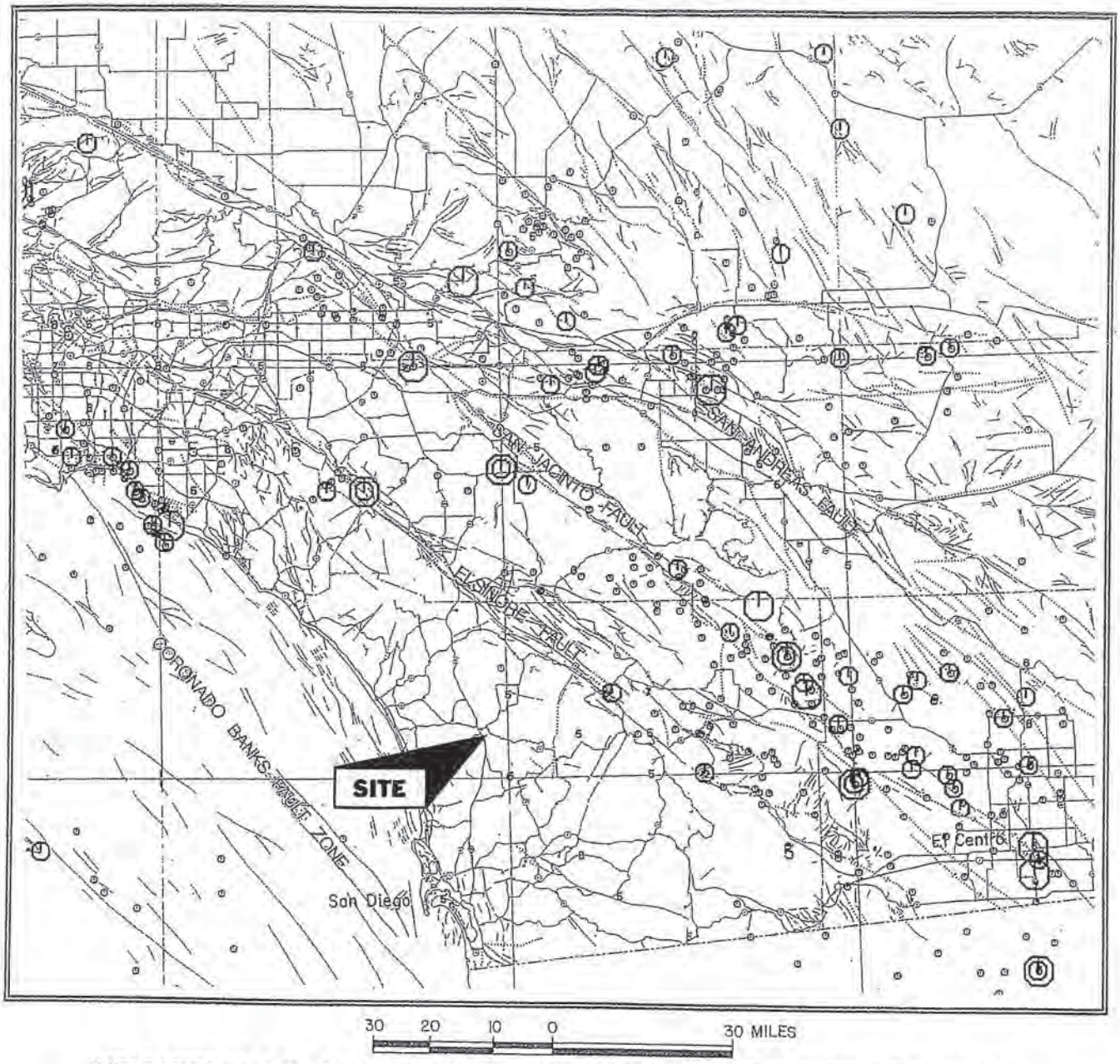




PLATE 32
V&M JOB #13-116-P

# FAULT–EPICENTER MAP
# SAN DIEGO COUNTY REGION




INDICATED EARTHQUAKE EVENTS THROUGH 75 YEAR PERIOD (1900-1974)

Map data is compiled from various sources including California Devision of Mines and Geology, California Institute of Technology and the National Oceanic and Atmospheric Administration. Map is reproduced from California Division of Mines and Geology, "Earthquake Epicenter Map of California; Map Sheet 39." 1978

MAGNITUDE

4.0 TO 4.9
5.0 TO 5.9
6.0 TO 6.9

Fault

*661 BEAR VALLEY PARKWAY*
*ESCONDIDO*

# VINJE & MIDDLETON ENGINEERING

DSA FILE # _____ DSA APPL. # _____

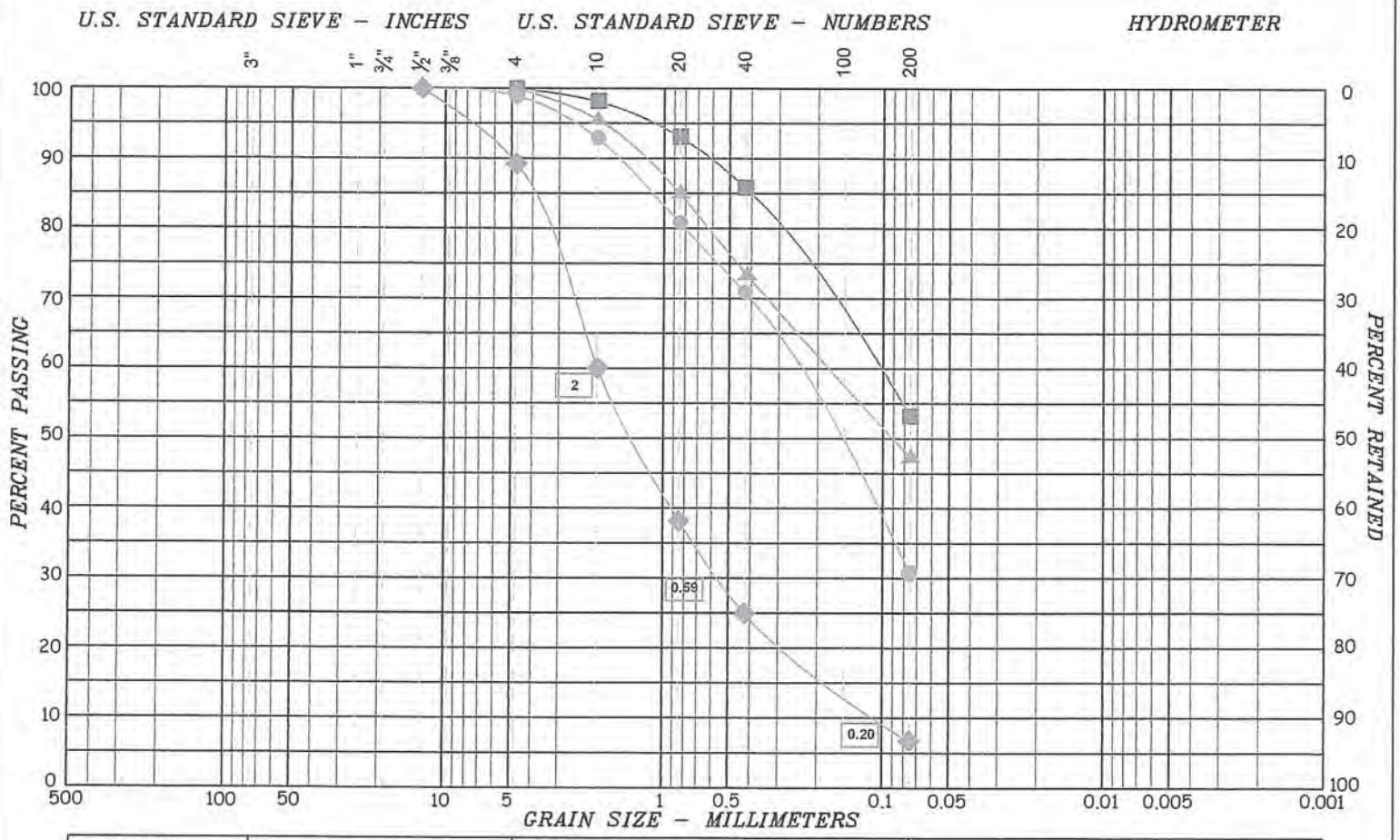
DSA/LEA # _____ Job # 13-116-P Soil Type: 1, 2, 3, & 4

Project: Residential Subdivision Location: 661 Bear Valley Parkway, Escondido

ASTM Test Method: _____ Date: March 2013 Tech: B.B. & R.F.

Supervising Lab Tech: Ray Fox NICET 129713 Exp. Date: 7/1/2013

Supervising Lab Manager: S. Mehdi S. Shariat RCE # 46174 Exp. Date: 12/31/2014




| Cobbles | Gravel | | Sand | | SILT OR CLAY |
|---|---|---|---|---|---|
| | Coarse | Fine | Coarse to medium | Fine | |

| SAMPLE LOCATION | DEPTH (FT) | SYMBOL | USGS | NAT. ω% | LL | PL | PI | Cu ($D_{60}/D_{10}$) | Cc ($D_{30}^2/D_{60}D_{10}$) |
|---|---|---|---|---|---|---|---|---|---|
| TP-1 (ST-2) | 2 | ■ | CL/ML | 14 | | | | | |
| TP-2 (ST-1) | ½ | ● | SM/SC | - | | | | | |
| TP-4 (ST-4) | 3½ | ▲ | CL/SC | - | | | | | |
| TP-8 (ST-3) | 4½ | ◆ | GW/GP | - | - | - | - | >4 | 1.4 |
| | | | | | | | | | |

PLATE 34

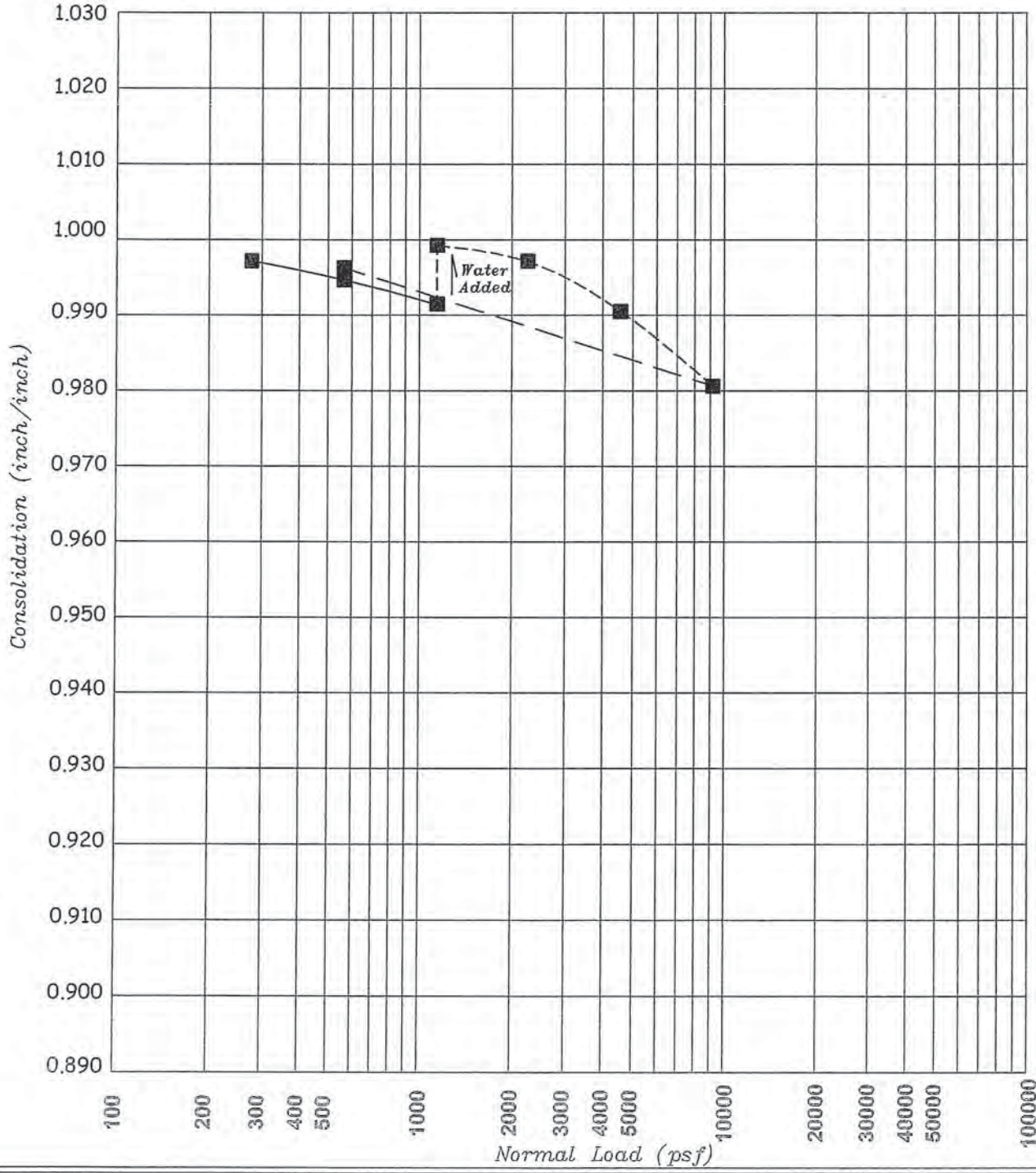
cc: ___Project Architect ___Structural Engineer ___Project Inspector ___DSA Regional Office

March 2013

DSA FILE # _____ DSA APPL. # _____ DSA / LEA # _____ Test Method: ASTM D4186

Job # 13-116-P Date: March 2013 Job Name: 661 Bear Valley Parkway, Escondido (40-ac. site)

| Sample Location | Depth (ft.) | Sample Symbol | Sample Condition | Explanation |
|---|---|---|---|---|
| TP-1 | 2 | ■ | Remolded to 90% of MDD | ——— FIELD MOISTURE |
| | | | | - - - - - - - - - SAMPLE SATURATED |
| | | | | — — — — REBOUND |



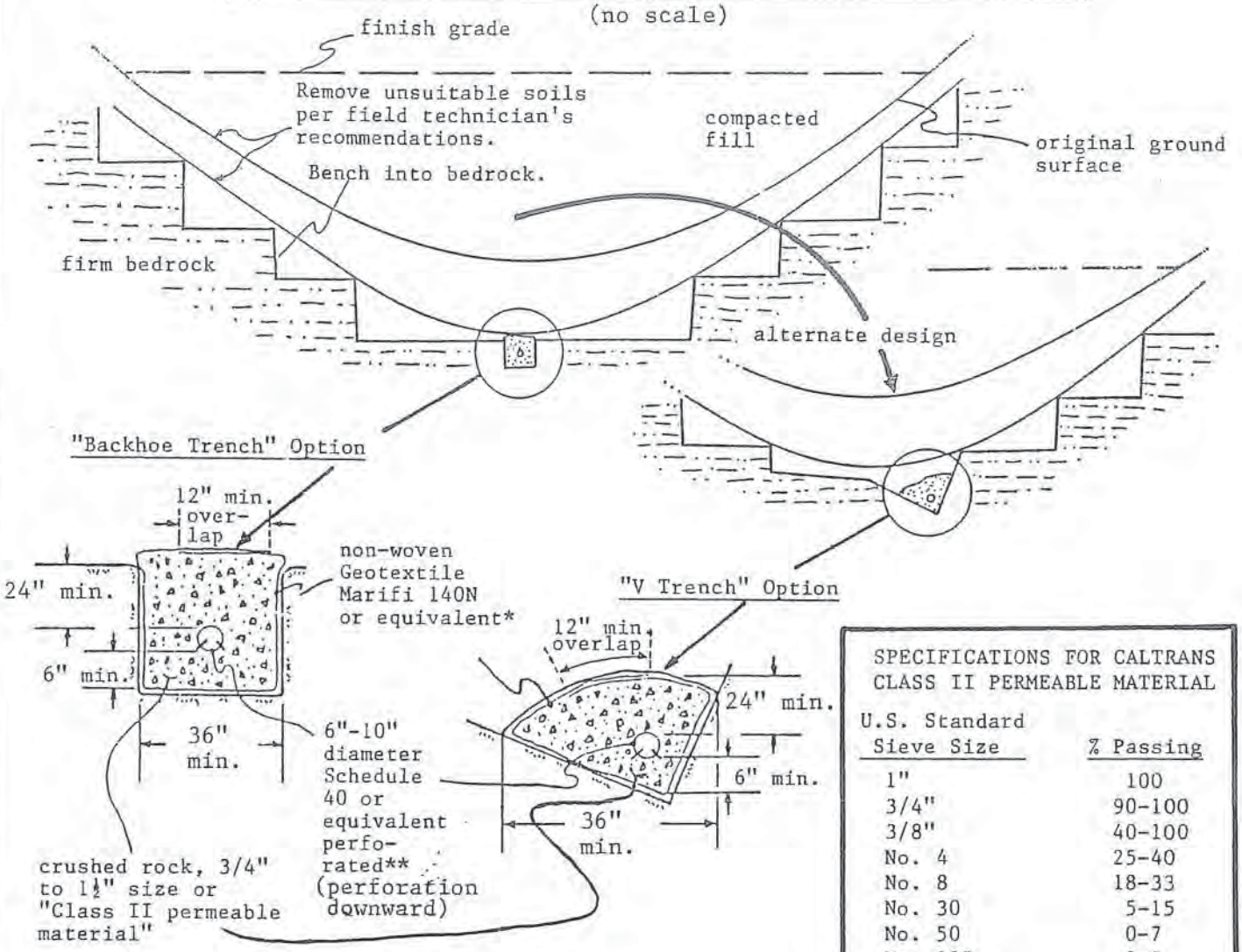

Supervising Lab Tech: Ray Fox Supervising Lab Manager: S. Mehdi S. Shariat

NICET: 129713 Exp. Date: 7/1/2013 RCE # 46174 Exp. Date: 12/31/2014

cc: ___Project Architect ___Structural Engineer ___Project Inspector ___DSA Regional Office

# TYPICAL CANYON SUBDRAIN DETAILS

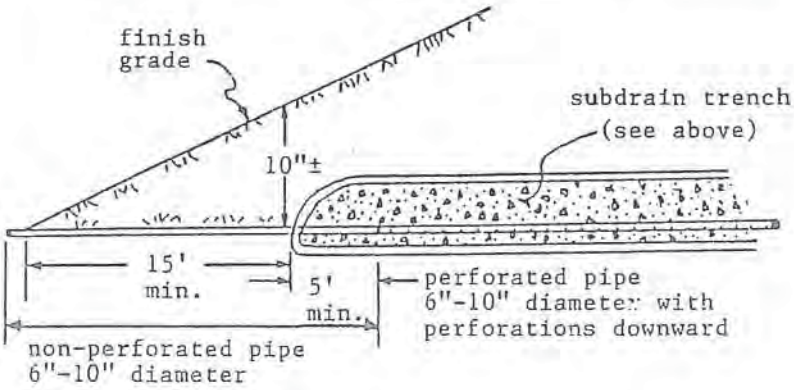
(no scale)




SPECIFICATIONS FOR CALTRANS CLASS II PERMEABLE MATERIAL

| U.S. Standard Sieve Size | % Passing |
|---|---|
| 1" | 100 |
| 3/4" | 90-100 |
| 3/8" | 40-100 |
| No. 4 | 25-40 |
| No. 8 | 18-33 |
| No. 30 | 5-15 |
| No. 50 | 0-7 |
| No. 200 | 0-3 |
| Sand Equivalent | 75 |

## DETAIL OF CANYON SUBDRAIN TERMINUS




NOTE: Subdrain to be installed in competent material as evaluated by the field representative. Non-perforated pipe to be installed in regions recommended by the field representative.

*If Caltrans Class II permeable material is used in place of 3/4"-1½" gravel, fabric filter may be deleted.

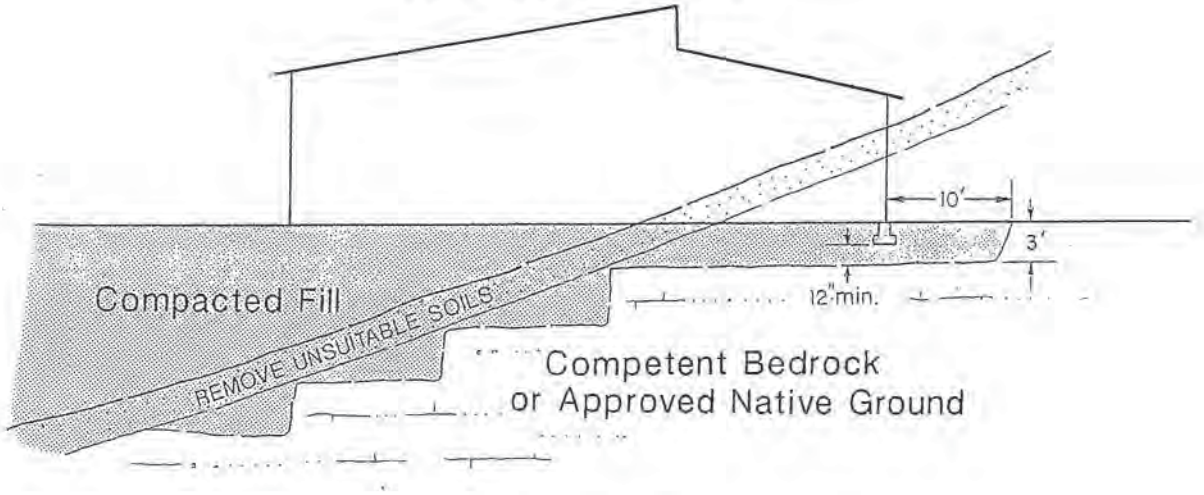
**SUBDRAIN TYPE - Subdrain type should be Acrylonitrile Butadiene Stryene (A.B.S.), Polyvinyl Chloride (PVC) or approved equivalent. Class 125, SDR 32.5 should be used for maximum fill depths of 35 feet. Class 200, SDR 21 should be used for maximum fill depths of 100 feet.

PLATE 36
V&M JOB #13-116-P

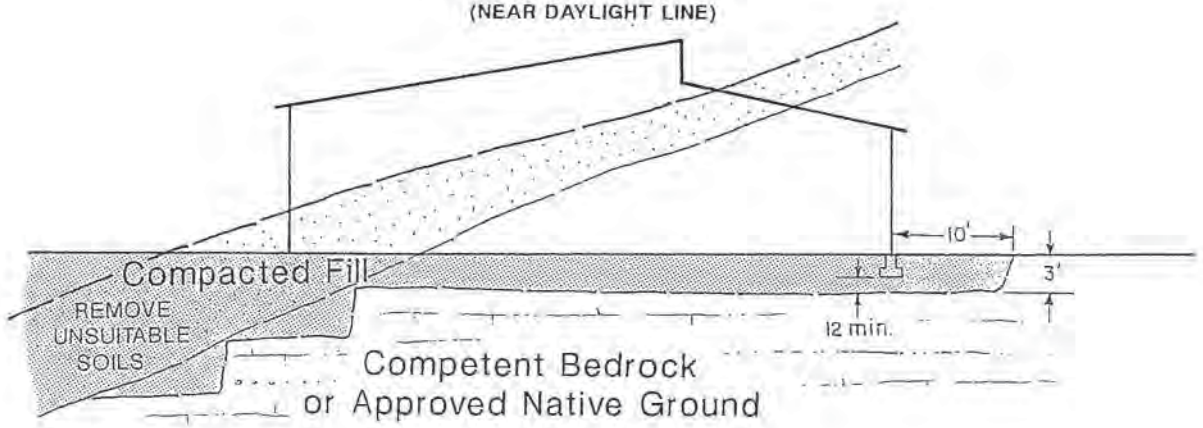
# UNDERCUTTING DETAILS

Typical - no scale

## CUT/FILL TRANSITION




## CUT LOT
(NEAR DAYLIGHT LINE)




**NOTE:** Some agencies require complete removal and recompaction of the entire cut portion of the lot. Also, removal and recompaction of the entire cut portion may be required by the project geotechnical engineer based upon soil and groundwater conditions at the site.

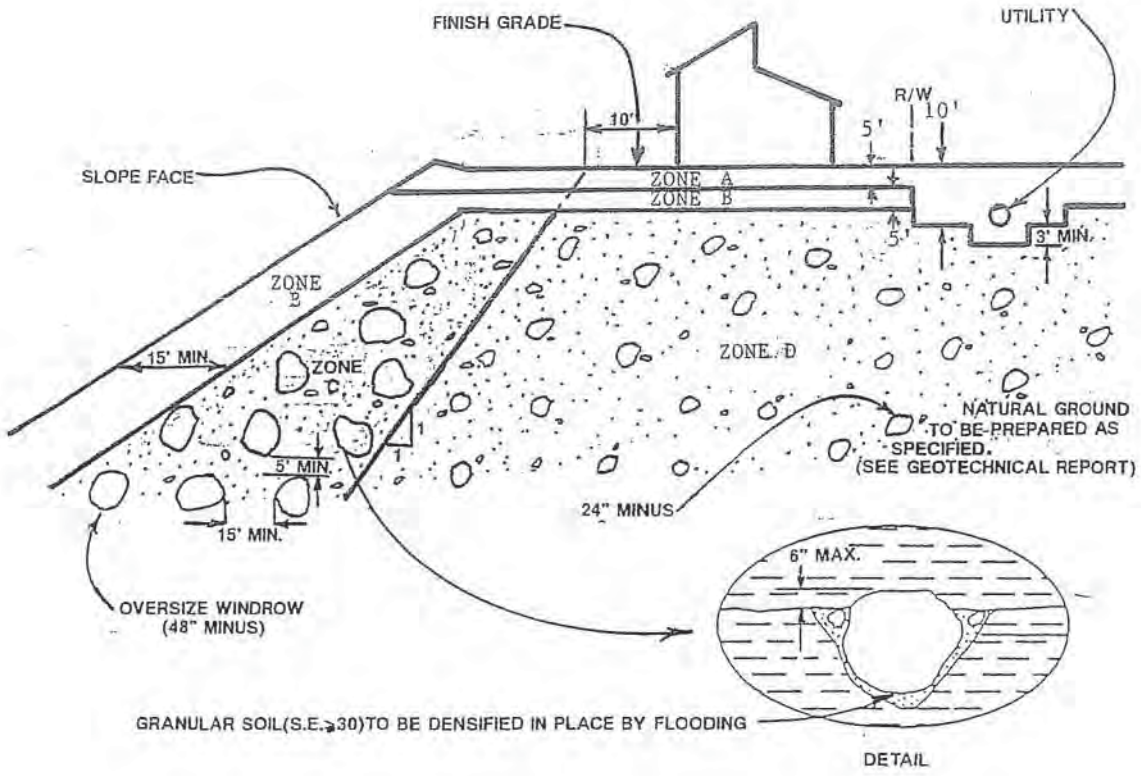
Vertical and horizontal limits of over-excavation are subject to additional revision by the project geotechnical consultant based upon the actual site conditions. Subdrains may also be necessary as determined by the geotechnical consultant.

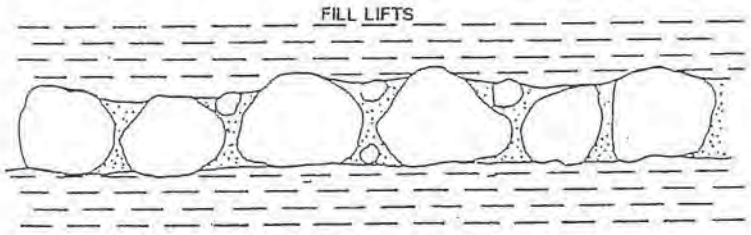
**VINJE & MIDDLETON ENGINEERING, INC.**

PLATE 37
V&M JOB #13-116-P

# ROCK DISPOSAL RECOMMENDATIONS

## WINDROW METHOD
Typical - no scale




WINDROW DETAIL (EDGE VIEW)

MATERIAL AND CONSTRUCTION SPECIFICATIONS ARE PROVIDED ON THE ATTACHED SHEET (ALSO SEE GEOTECHNICAL REPORT).

VINJE & MIDDLETON ENGINEERING, INC.

PLATE 38
V&M JOB #13-116-P

# ROCK DISPOSAL RECOMMENDATIONS

ZONE A:

Shall be measured 5 feet vertically from the finished building pad grade. In public right-of-way and easement, Zone A shall be 10 feet minimum or must extend 3 feet below the deepest utility, whichever is greater. Zone A must consist of compacted soil only (no rock fragments over six inches in maximum dimension) and shall contain at least 40% soil sizes passing the ¼-inch sieve.

ZONE B:

Shall be 15 feet measured horizontally from face of slope and 5 feet measured vertically below Zone A. Zone B shall be similar to Zone A except individual rocks up to 12 inches in maximum dimension shall be allowed.

ZONE C:

Oversize rocks not larger than 48 inches in maximum diameter must either be individually placed or windrowed. For individual placement, rocks must be uniformly distributed and spaced so as to permit placement and compaction of soil conforming to Zone A. For windrows, rocks shall be placed in excavations in well compacted soil conforming to Zone A. Approved granular soil ($SE \geq 30$) must be flooded in the windrows to completely fill the voids around and beneath rocks. All windrows must be parallel and may be placed either parallel or perpendicular to face of slope depending on site geometry.

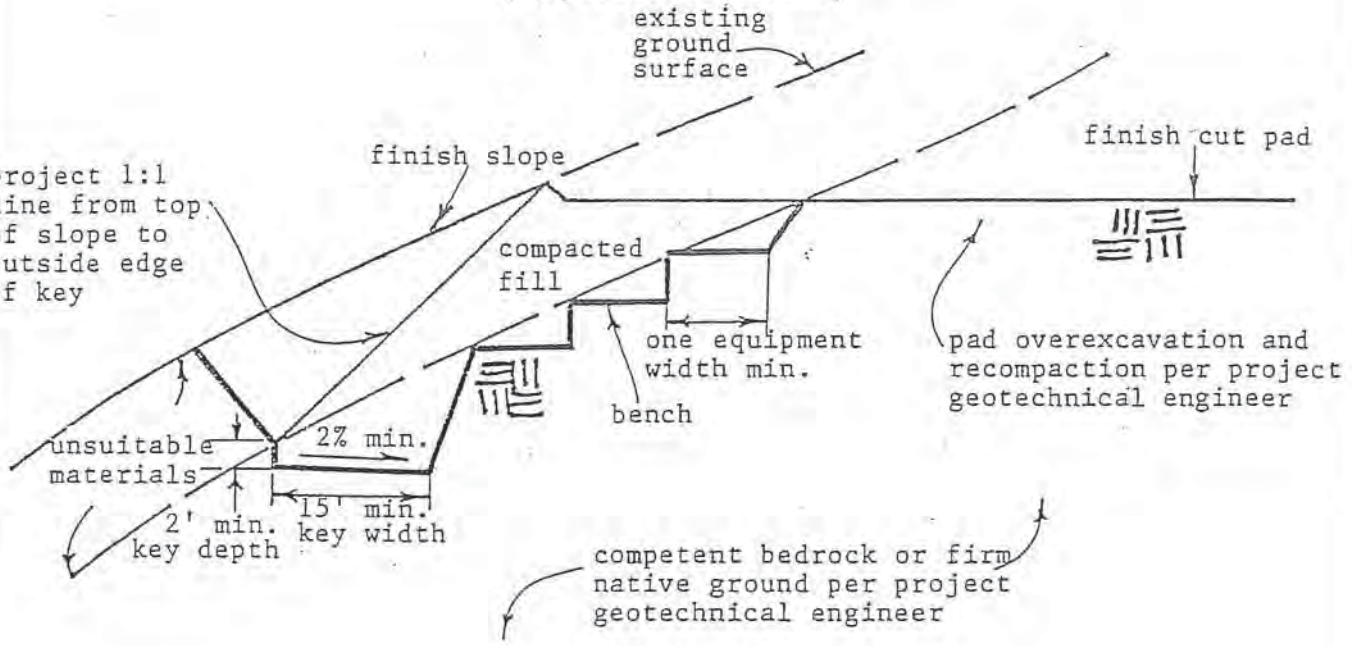
ZONE D:

Shall be similar to Zone A except individual rocks up to 2 feet in maximum dimension shall be allowed providing rocks larger than approximately 12 inches are well spaced so as to permit placement and compaction of soil around the larger rocks.

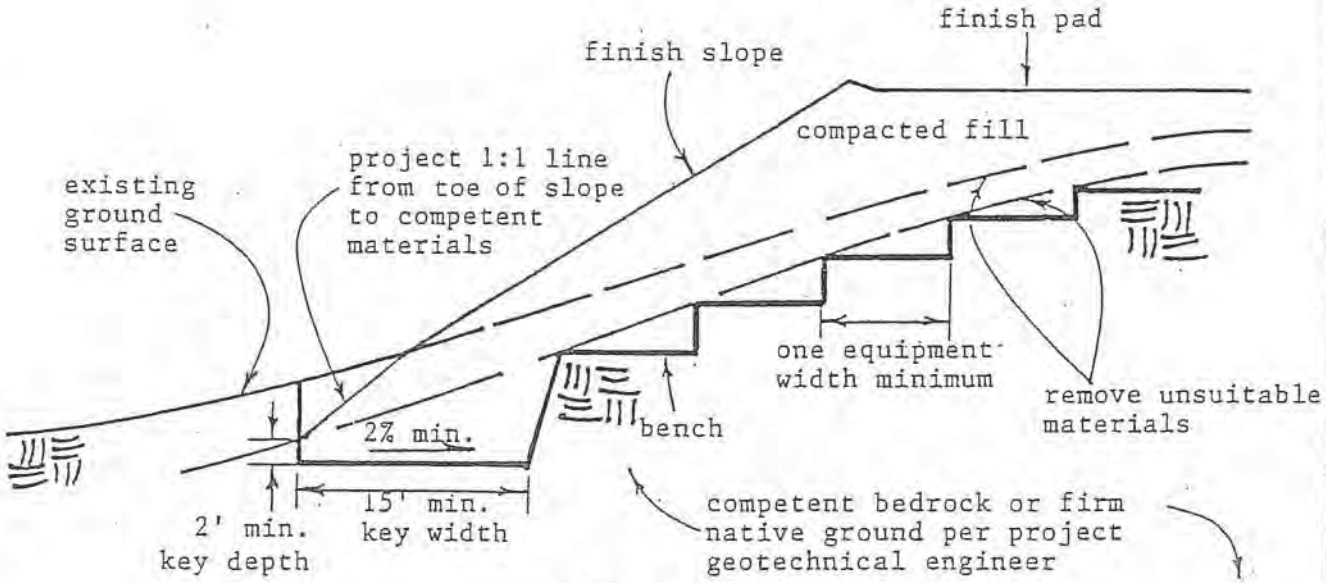
All rock placement, fill placement, and flooding of approved granular fill must be continuously observed by the geotechnical engineer.

PLATE 39
V&M JOB #13-116-P

# KEY AND BENCHING DETAILS
## (Typical - no scale)




**Side Hill Stability Fill Slope**

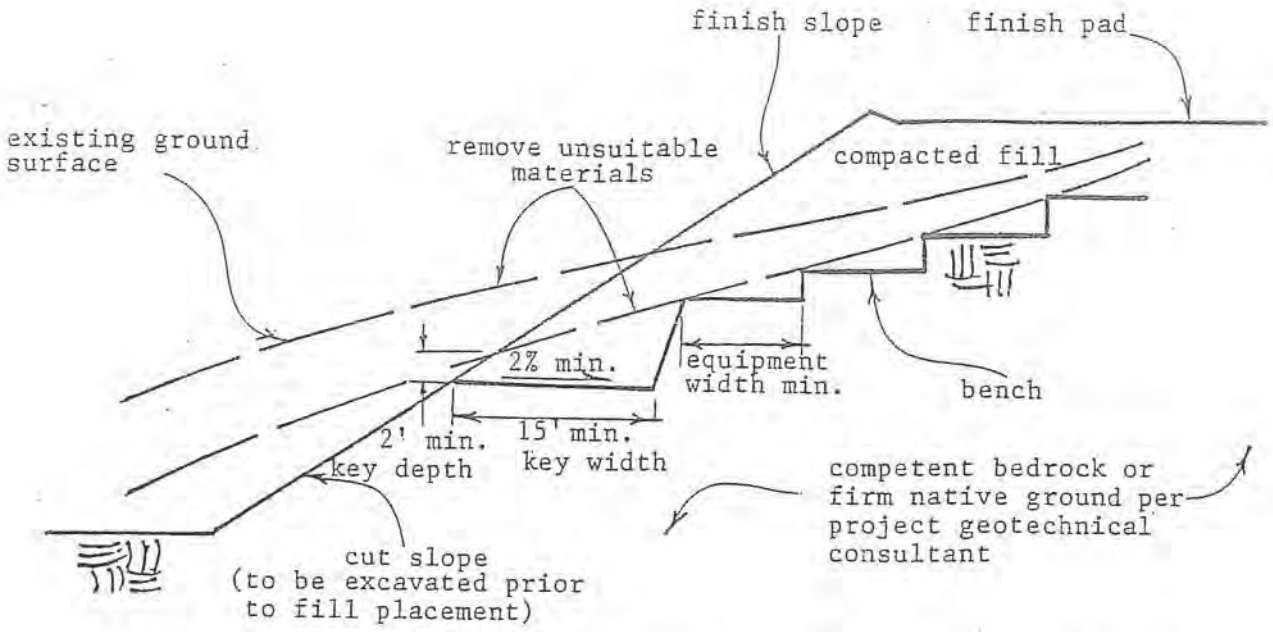



**Fill Slope**

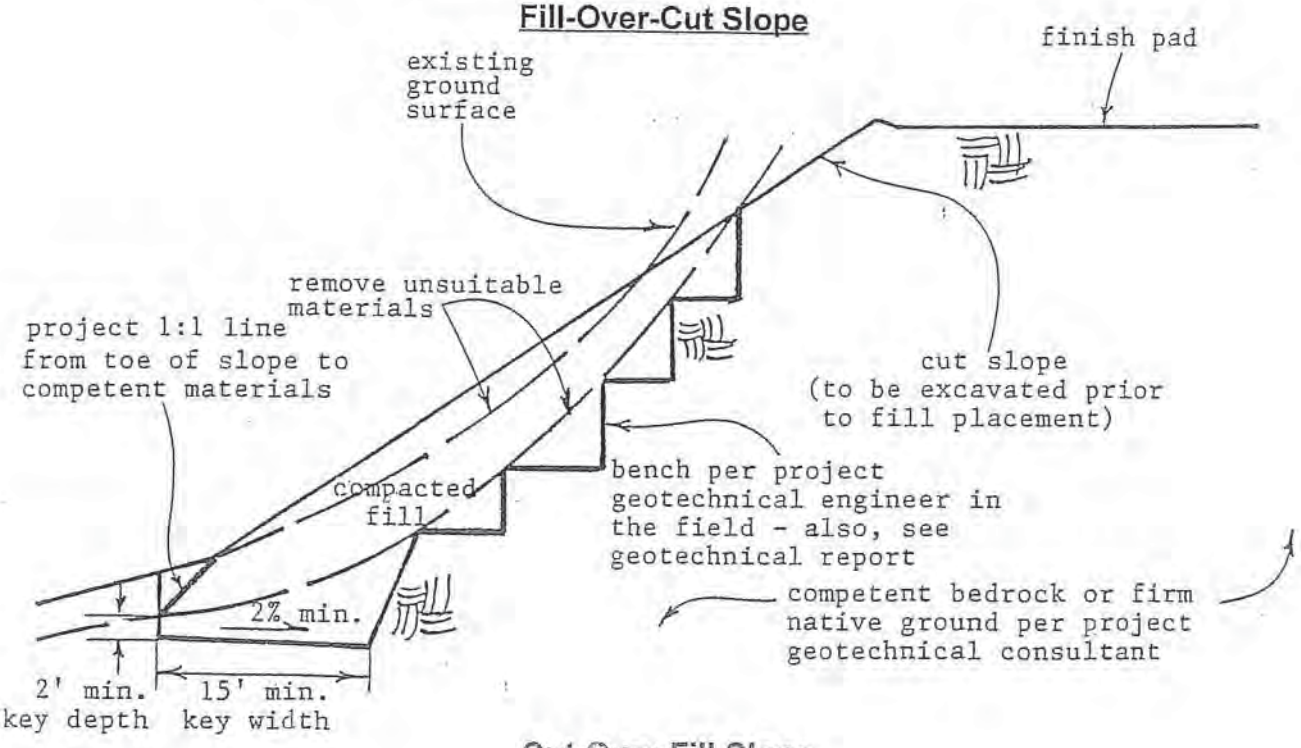
Note: Key and benching details shown herein are subject to revisions by the project geotechnical engineer based upon actual site conditions. Back drains may also be necessary as determined by the project geotechnical consultant.

PLATE 40
V&M JOB #13-116-P

# KEY AND BENCHING DETAILS (Typical - No Scale)




**Fill-Over-Cut Slope**



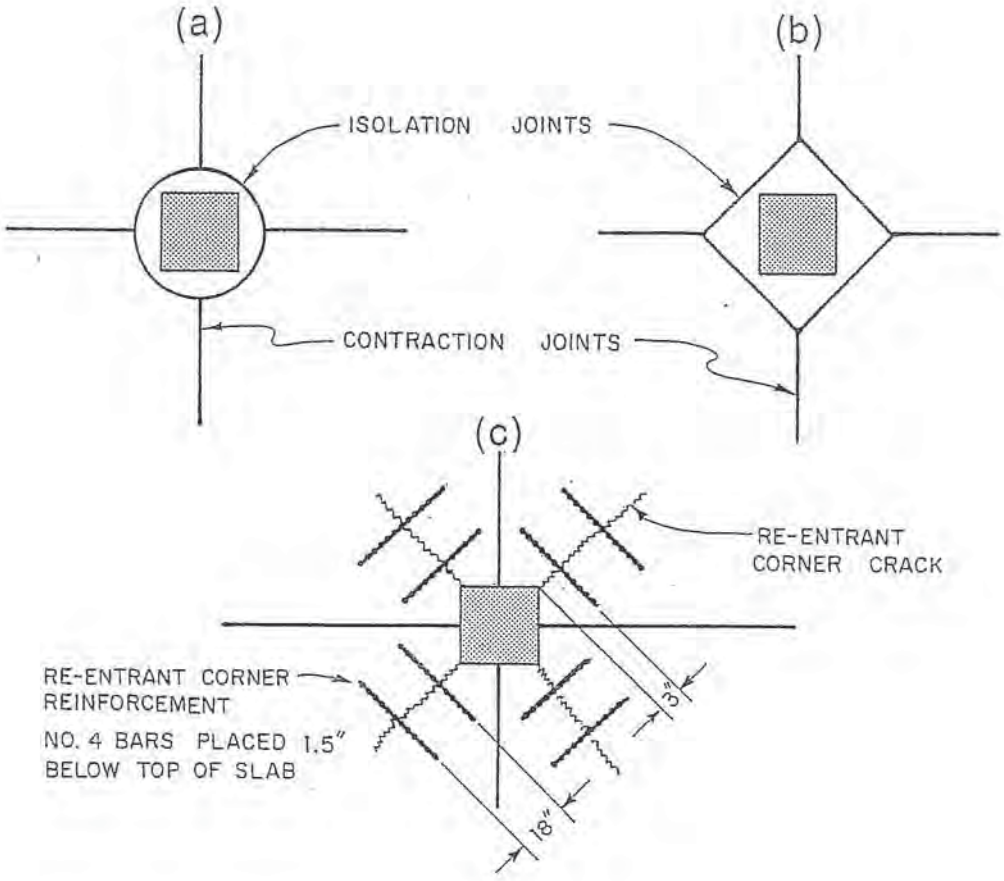

**Cut-Over-Fill Slope**

Note: Key and benching details shown herein are subject to revision by the project geotechnical engineer based upon actual site conditions. Back drains may also be necessary as determined by the project geotechnical consultant.

PLATE 41
V&M JOB #13-116-P

# ISOLATION JOINTS AND RE-ENTRANT CORNER REINFORCEMENT

Typical - no scale




NOTES:

1. Isolation joints around the columns should be either circular as shown in (a) or diamond shaped as shown in (b). If no isolation joints are used around columns, or if the corners of the isolation joints do not meet the contraction joints, radial cracking as shown in (c)may occur (reference ACI).

2. In order to control cracking at the re-entrant corners (±270° corners), provide reinforcement as shown in (c).

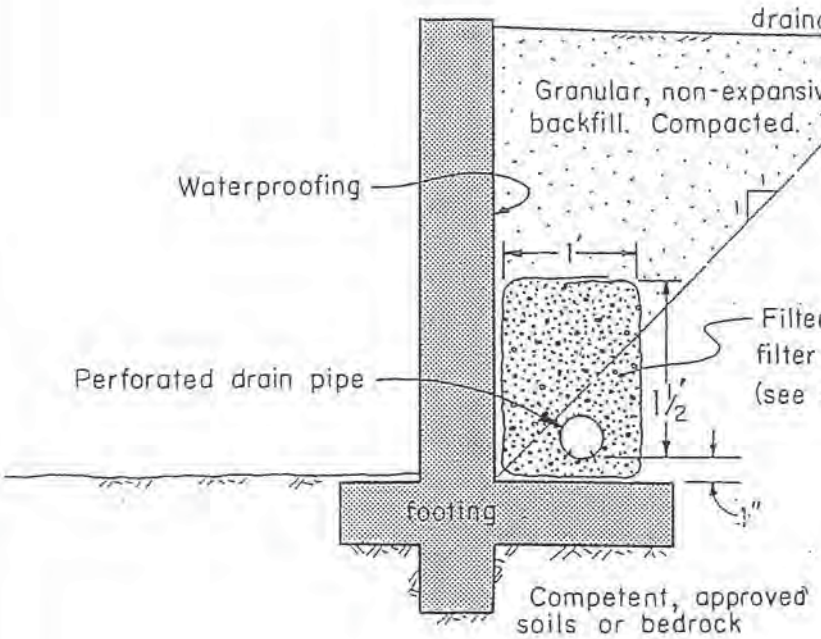
3. Re-entrant corner reinforcement shown herein is provided as a general guideline only and is subject to verification and changes by the project architect and/or structural engineer based upon slab geometry, location, and other engineering and construction factors.

VINJE & MIDDLETON ENGINEERING, INC.

PLATE 42
V&M JOB #13-116-P

# RETAINING WALL DRAIN DETAIL

Typical - no scale




| SPECIFICATIONS FOR CALTRANS CLASS 2 PERMEABLE MATERIAL (68-1.025) U.S. STANDARD SIEVE SIZE | % PASSING |
|---|---|
| 1" | 100 |
| 3/4 | 90-100 |
| 3/8 | 40-100 |
| No. 4 | 25-40 |
| No. 8 | 18-33 |
| No. 30 | 5-15 |
| No. 50 | 0-7 |
| No. 200 | 0-3 |

Sand Equivalent > 75

## CONSTRUCTION SPECIFICATIONS:

1. Provide granular, non-expansive backfill soil in 1:1 gradient wedge behind wall. Compact backfill to minimum 90% of laboratory standard.
2. Provide back drainage for wall to prevent build-up of hydrostatic pressures. Use drainage openings along base of wall or back drain system as outlined below.
3. Backdrain should consist of 4" diameter PVC pipe (Schedule 40 or equivalent) with perforations down. Drain to suitable outlet at minimum 1%. Provide ¾" - 1½" crushed gravel filter wrapped in filter fabric (Mirafi 140N or equivalent). Delete filter fabric wrap if Caltrans Class 2 permeable material is used. Compact Class 2 material to minimum 90% of laboratory standard.
4. Seal back of wall with waterproofing in accordance with architect's specifications.
5. Provide positive drainage to disallow ponding of water above wall. Lined drainage ditch to minimum 2% flow away from wall is recommended.

* Use 1½ cubic foot per foot with granular backfill soil and 4 cubic foot per foot if expansive backfill soil is used.

VINJE & MIDDLETON ENGINEERING, INC.

PLATE 43
V&M JOB #13-116-P

# ATTACHMENT

Subsurface Surveys & Associates, Inc.
2075 Corte Del Nogal, Suite W Carlsbad, CA 92011
Phone: (760) 476-0492 Fax: (760) 476-0493

Vinje & Middleton Engineering, Inc.
2450 Auto Park Way
Escondido, CA 92029-1229

February 7, 2013

Attn: Steve Melzer

Re: Seismic Survey Summary Report
661 Bear Valley Parkway, Escondido

This report covers the results of a seismic refraction survey performed at 661 Bear Valley Parkway in Escondido, California. The two main objectives were: 1) to measure the compressional wave velocity of granitic bedrock for rippability assessment and 2) record profiles across staked target areas where buried mine shafts are thought to be located and analyze the data for evidence of void space or deeply filled ground.

The field work was conducted during January 16-17, 2013. Nine seismic lines, comprised of 14 individual spread layouts, were recorded at locations selected by VME. A survey location map is provided on Figure 1 that shows the position and orientation of the traverses.

## GEOLOGIC SETTING

A review of the "Geologic Map of California, Santa Ana Sheet", (California Division of Mines and Geology, 1966) indicates the local area is underlain Mesozoic granitic rocks that are primarily granodiorite and tonalite. Surface deposits are mainly colluvium on the hillsides and alluvium along the valley floor.

## DATA ACQUISITION AND FIELD METHODS

Seismic refraction data were recorded with a Bison 9024 signal enhancement seismograph and 30 Hz geophones. The standard spread layout used 24 geophones with a 10-foot spacing. Each spread used five shotpoints, one off each end (10-foot offset) and three within the interior of the spread. Seven shotpoints were used for traverses that crossed the suspected mine shaft locations to increase ray path coverage for tomographic modeling. Depth of investigation is approximately 60 feet.

Compressional wave energy was created by sledge hammer impacts on a metal plate. The signal enhancement feature of the seismograph allowed returns from repeated hits to be stacked, thus improving the signal. Each record was stored digitally on an internal hard disk and printed copies of each seismogram were made in the field on thermal paper. Example seismic records from this

survey are shown on Figure 2.

Relative elevations of all shotpoints and geophones were determined by differential leveling with a hand level. Geophone 1 (distance = 0 ft.) at the beginning of each line was assigned a elevation value based on data from Google Earth maps. All other elevation measurements along the line are relative to this point.

The endpoints of each seismic spread were recorded with a hand held Garmin GPS receiver. Latitude and longitude positions were converted to UTM coordinates, Zone 11 using the WGS 1984 North American Datum and used to prepare the Seismic Survey Location Map (Figure 1).

## SEISMIC REFRACTION METHOD

The refraction method involves measuring the total time for compressional waves to travel from a shotpoint through the subsurface to a set of geophones placed linearly along the ground. Based on Snell's Law, when two or more layers are present with increasingly higher acoustic velocity, waves become critically refracted across the layer boundaries and begin traveling at the speed of the underlying layer. The advancing waves then generate new wavefronts back to the ground surface. The first surge of energy hitting the geophone is termed the "first arrival" and is depicted on the seismogram as a high angle deflection along each trace. Example field records from this survey that show the first arriving energy are provided on Figure 2.

Recognition of direct wave arrivals (non-refracted) verses refracted waves is a key element of refraction interpretation. To assist this process, the first arrival times measured from the seismic records are plotted on graphs of time verses distance called Time-Distance graphs. An example T-D graph from Line A is shown on Figure 3. Based on changes in slope on the graphs, a preliminary layer number (i.e. 1, 2, 3) is assigned to each segment of the graph. The layer assignments together with time, distance and elevation data are input to a computer for additional processing.

## SEISMIC PROCESSING AND INVERSION MODELING

Seismic data from this survey was processed using two methods for generating seismic velocity cross sections. One method produces layered earth models and uses the average velocity across the spread to calculate the thickness of the layers. This is the most widely used approach for rippability surveys because depths to refracting (velocity) horizons can be measured directly from the cross sections. Layered models are best applied when there is not a significant lateral variation in velocity along the line and the layer interfaces are relatively flat.

The second modeling approach uses what is referred to as tomographic inversion and produces velocity gradient cross sections in color. Tomography does not perform refraction layer calculations or attempt to measure discrete depths. Instead, the main objective is to create a velocity distribution grid in the subsurface. Each node of the grid has a specific velocity

associated with it. The goal is to adjust or "iterate" the velocity matrix so that the computer derived travel-time curves match what was recorded in the field. The final velocity grid is then loaded into a contouring program that produces color-filled cross sections. This method is typically used for imaging the shape and configuration of complex structures such as faults, landslides and intrusions, and areas where strong lateral velocity gradients are suspected within the weathered profile.

Layered Models

Processing and interpretation of this data set was accomplished with "SIPT2", an interactive inversion modeling program developed by James Scott for the U.S. Bureau of Mines. The inversion algorithm uses the delay time method to construct a first pass depth model. The model is then adjusted by an iterative ray tracing process that attempts to minimize the discrepancies between the total travel times calculated along ray paths and the observed travel times measured in the field.

This program calculates refractor velocity in two ways. First, apparent velocities from each shot are determined by the inverse slope of a best fit (least squares) line through datum-corrected travel times. True velocity is estimated from the apparent velocities by using the following equation:

$$Vt = 2(Vu \times Vd)/(Vu + Vd)$$

where Vt = true velocity
Vu = apparent up dip velocity
Vd = apparent down dip velocity

The second method uses a more sophisticated set of equations (the Hobson-Overton formula) developed by the Canadian Geological Survey. The final velocity assigned to the refractor is a weighted average of the results of the two methods. The weighting is based on the number of arrival times used in the computations.

Velocity Gradient Models

The tomographic modeling program used for this survey is SeisOpt Version 3.5 from Optim LLC. It uses a proprietary inversion algorithm that applies a non-linear optimization technique called generalized simulated annealing to adjust the velocity grid points for the best statistical match. It is referred to as an optimization because it attempts to find the model that has the least minimum travel-time error between the calculated and observed (field) measurements.

## SUMMARY OF RESULTS

### Layer Velocity Cross Sections

Modeling results have been compiled as layered velocity cross sections for rippability assessment (see Appendix A). Velocities posted on the cross sections represent averages as described in the previous section. Therefore, minor localized changes in velocity may occur along any profile. A description of the layers is provided below and a cross section summary is shown in Table 1.

Layer 1 - is mostly unconsolidated colluvium and highly decomposed granitic bedrock. Thickness generally varies from 5 to15 feet.

Layer 2 - is interpreted to be weathered bedrock. The velocity range is 2654-3936 ft/sec and should be easily rippable.

Layer 3 - represents moderately weathered bedrock with velocity in the range of 3620- 5597 ft/sec and is also considered rippable (see Cat D-9 rippability chart on Figure 4). The minimum and maximum depth to the interface between Layer 2 and Layer 3, as measured from the ground surface, is provided on Table 1.

Table 1. Layer Model Summary

| Line | Velocity Layer 1 | Velocity Layer 2 | Velocity Layer 3 | Depth Range Layer 2/3 Interface |
|---|---|---|---|---|
| 1 Spd-1 | 1320 | 2657 | 4779 | 22-48 |
| 1 Spd-2 | 1263 | 2818 | 3909 | 26-56 |
| 1 Spd-3 | 1389 | 2970 | 3620 | 28-44 |
| 1 Spd-4 | 1369 | 2830 | 3992 | 30-49 |
| 1 Spd-5 | 1247 | 3181 | 4074 | 31-46 |
| 2 | 1363 | 2654-3376 | 5019 | 22-52 |
| 3 | 1470 | 3936 | 5597 | 48-55 |
| 4 Spd-1 | 1411 | 3206 | 3950 | 30-45 |
| 4 Spd-2 | 1270 | 3514 | 4347 | 21-42 |
| 5 | 11301 | 2924 | 5373 | 43-64 |
| 6 | VGM | | | |
| 7 | 1327 | 2660 | 5792 | 41-60 |
| 8 | VGM | | | |
| 9 | VGM | | | |

Velocity in (ft/sec), Depth in (feet)
VGM - see velocity gradient model in Appendix B

The thickness of the weathered zone beneath this property is substantial. The average thickness well exceeds 30 feet, as indicated by the Depth Range Layer 2/3 Interface values listed above. Cuts and other earth work at this site should not be difficult.

In granitic rocks, weathering tends to be gradational and usually produces a gradual increase in velocity with depth. Variation of ± 10% from the posted averages may occur between the top and bottom of a layer. The colored velocity gradient models provided in Appendix B, graphically illustrate this gradual increase with depth.

Large boulders, some 5-10 feet in diameter, are exposed in the southeast portion of the property. These are floaters and do not appear to be attached to hard unweathered bedrock. The cross sections prepared for Lines 2 and 3 show evidence of shallow buried boulders at several locations. This may pose problems for construction work in this area.

Figure 4 presents a rippability chart (courtesy of Caterpillar Tractor Co.) for a D9N Ripper. Bar graphs show the relationship between seismic compressional wave velocity and ripper performance for various rock types in three categories: rippable, marginal, and non-rippable. Granitic rocks are listed as marginally rippable at approximately 6700 ft/sec and are considered non-rippable above 8000 ft/sec. This chart is provided only as a guide and should not be considered absolute. Other geologic factors that may influence bedrock rippability at this site are changes in composition of the granite and the presence of fractures and joints.

Velocity Gradient Models

Four seismic traverses were recorded across staked locations where possible buried mine shafts are thought to be located based on historical records. To increase resolution and detection capability of these suspected vertical structures, data from seven shotpoints was acquired and processed with tomography modeling software. Results are provided in Appendix B. The following is a brief summary of the findings.

Line 7 - this traverse was draped over the axis of the N-S trending ridge line with the targeted shaft location between geophones 9 and 10. The ground surface curvature was steep with low endpoints and a central high point neat the center of the line. Attempts to create a useable model for this traverse were unsuccessful due to the topographic modeling affects. As an alternative, Line 1- Spread 1 which was laid out along the ridge line and 10 feet east of the target stake, was processed using tomography. A layer model was produced for Line 7 with no problems.

Line 1 - Spread 1 - a broad low velocity zone extends to depths of 10-18 feet between stations 60-110 feet. The VME stake is 10 feet east of station 102 feet. This area is thought to be filled ground and may be related to previous mining activity or could be fill that was installed as part of road construction along the ridge.

Line 6 - was laid out at the bottom of the slope on the west side of the property and crosses the

paved driveway. The VME target stake is located at station 93 feet. Beneath this area and southward under the driveway, the weathered bedrock interface is irregular and shows evidence of a channel structure beneath station 150 feet. This could be an erosional remnant or a backfilled area where previous mining activity took place. The is no significant anomaly below the staked area that would indicate the presence of a vertical structure or large mine shaft.

Lines 8 and 9 - show no evidence of low velocity anomalies, vertical structures, or disturbed ground, that would indicate large void space or deep backfill beneath the staked target areas.

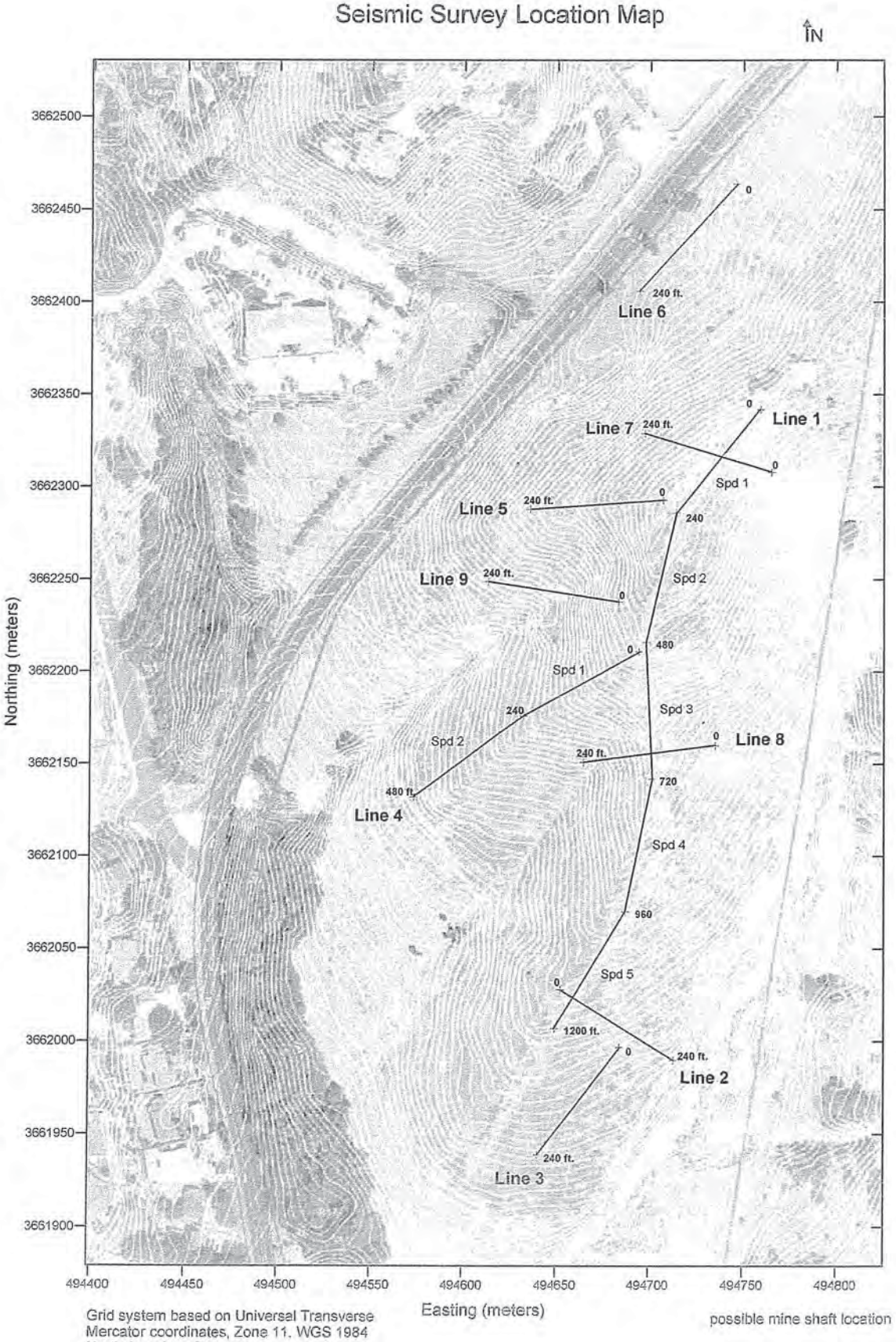
All data acquired during this survey is considered confidential and is available for review by your staff at any time. We appreciate the opportunity to participate in this project.

Please call if there are any questions.

PAWalen

**Phillip A. Walen**
**Senior Geophysicist**
**CA Registration No. GP917**

# Seismic Survey Location Map




Grid system based on Universal Transverse Mercator coordinates, Zone 11. WGS 1984 North American Datum.

possible mine shaft location

Figure 1

Example Seismic Field Records

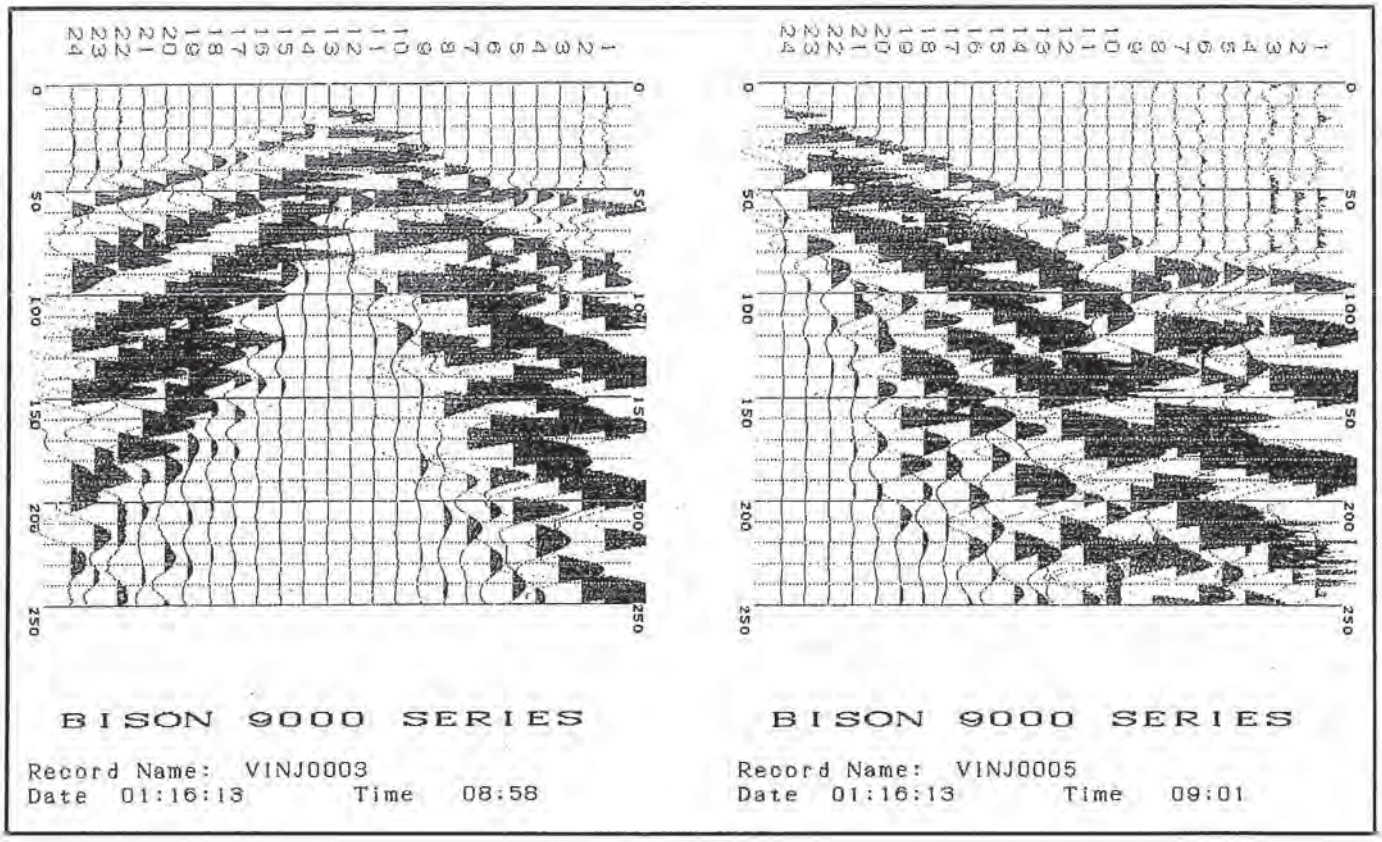
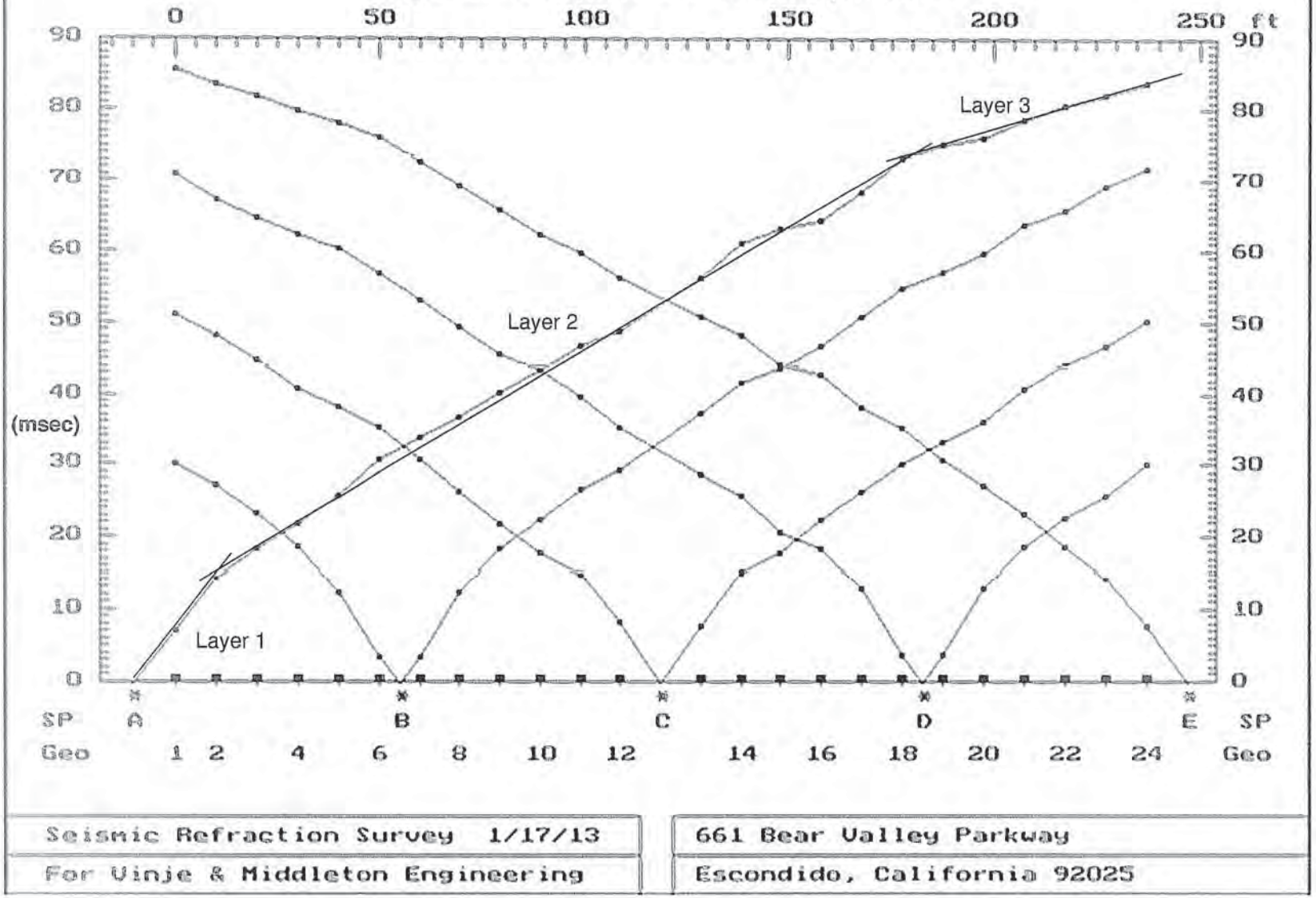



Figure 2

Figure 3. Example Time-Distance Graph -- Line 5



**Rippers** | Ripper Performance
- D9R/D9T

**D9R/D9T**
- **Multi or Single Shank No. 9 Ripper**
- **Estimated by Seismic Wave Velocities**

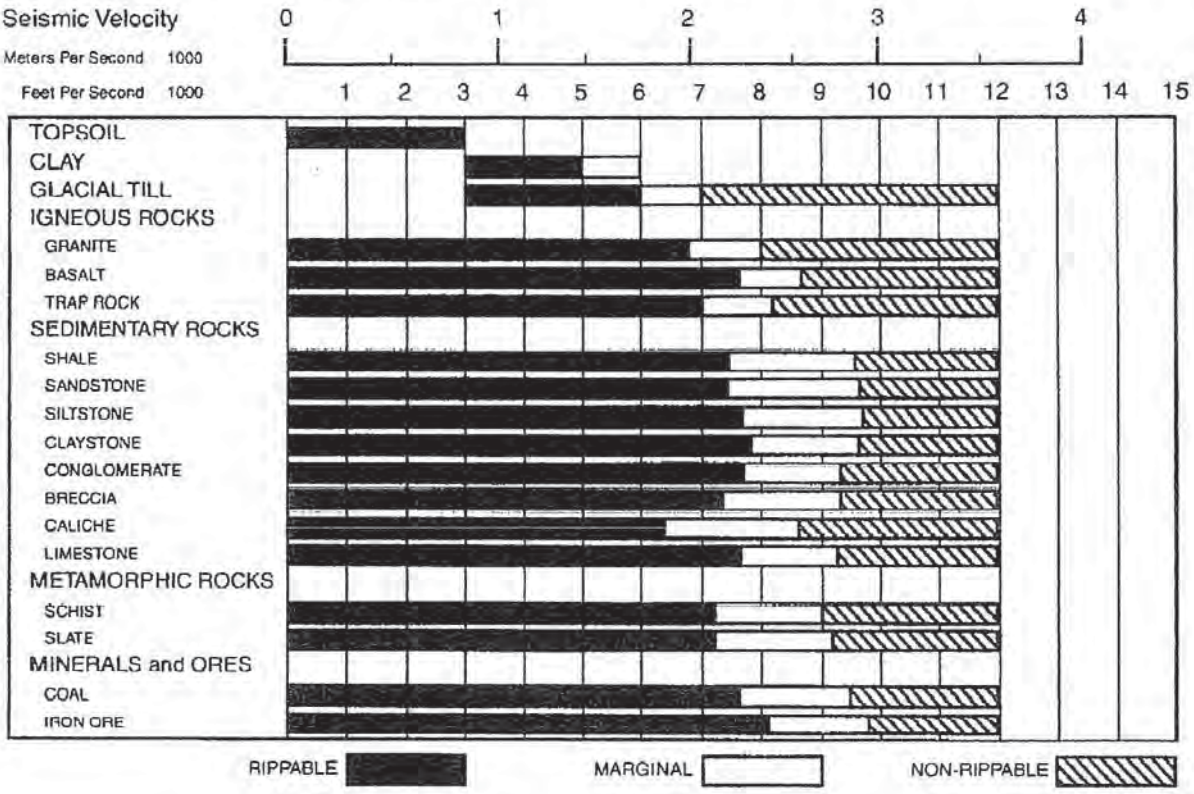
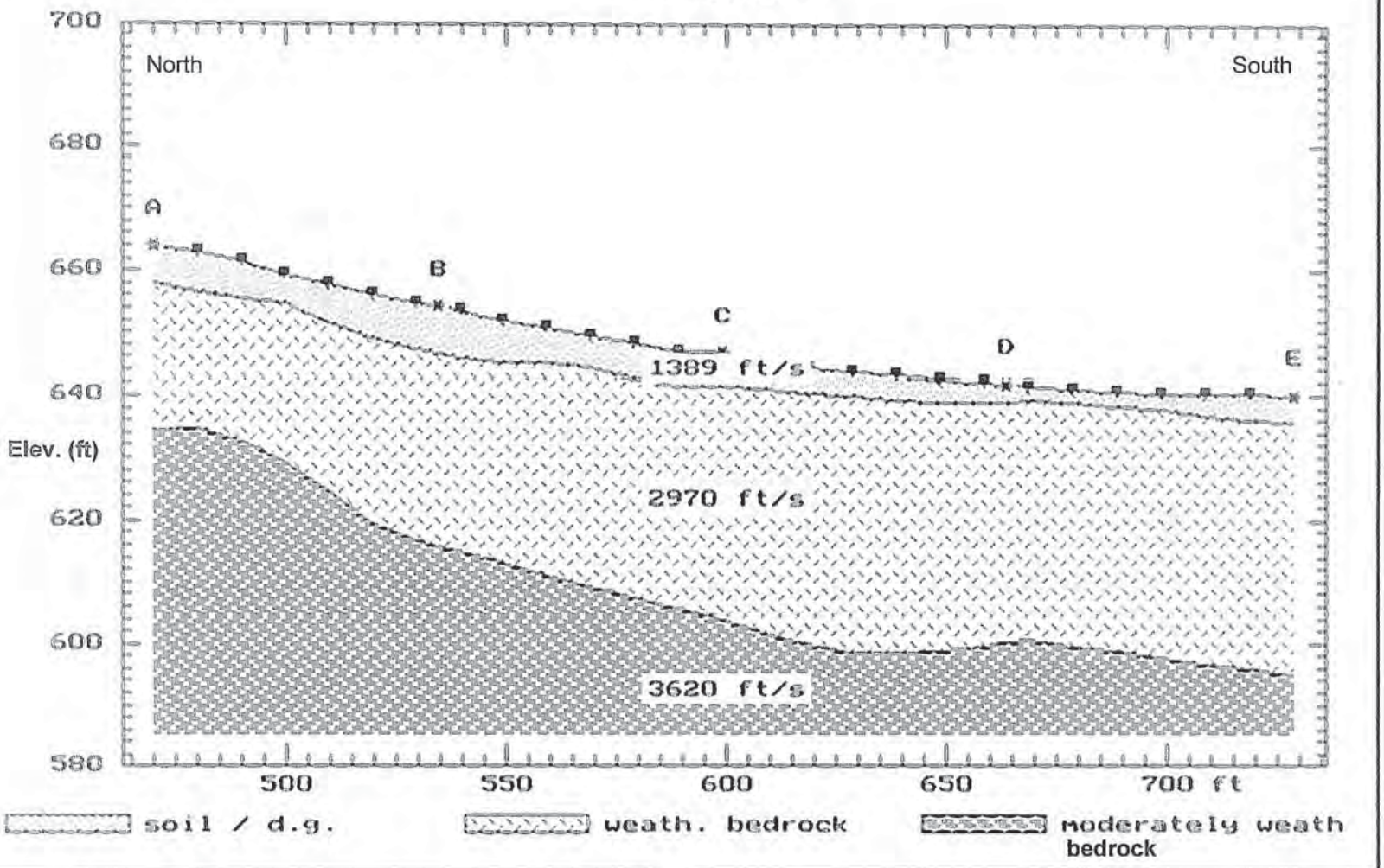



Figure 4

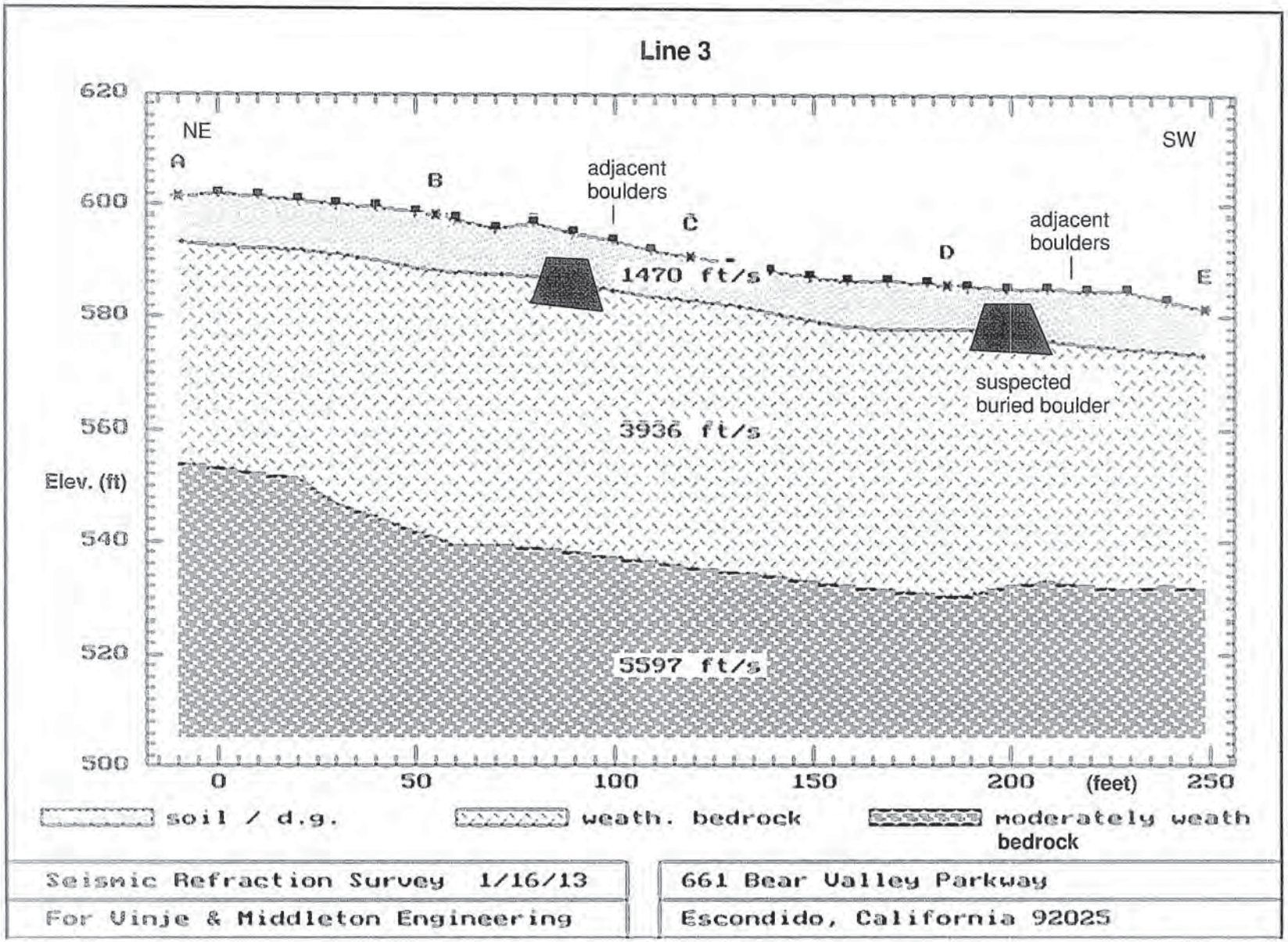
# Appendix A

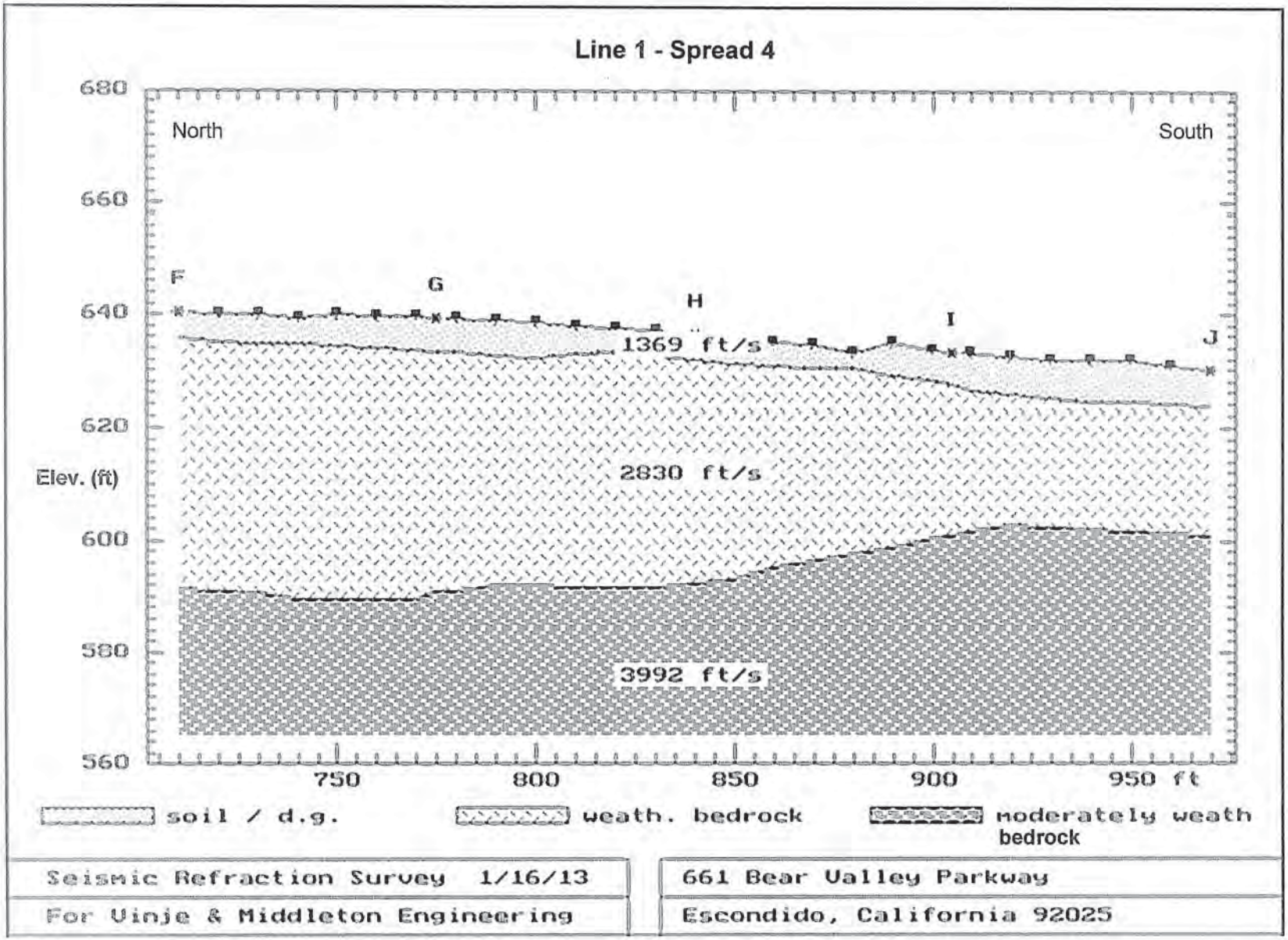
## Layered Velocity Cross Sections

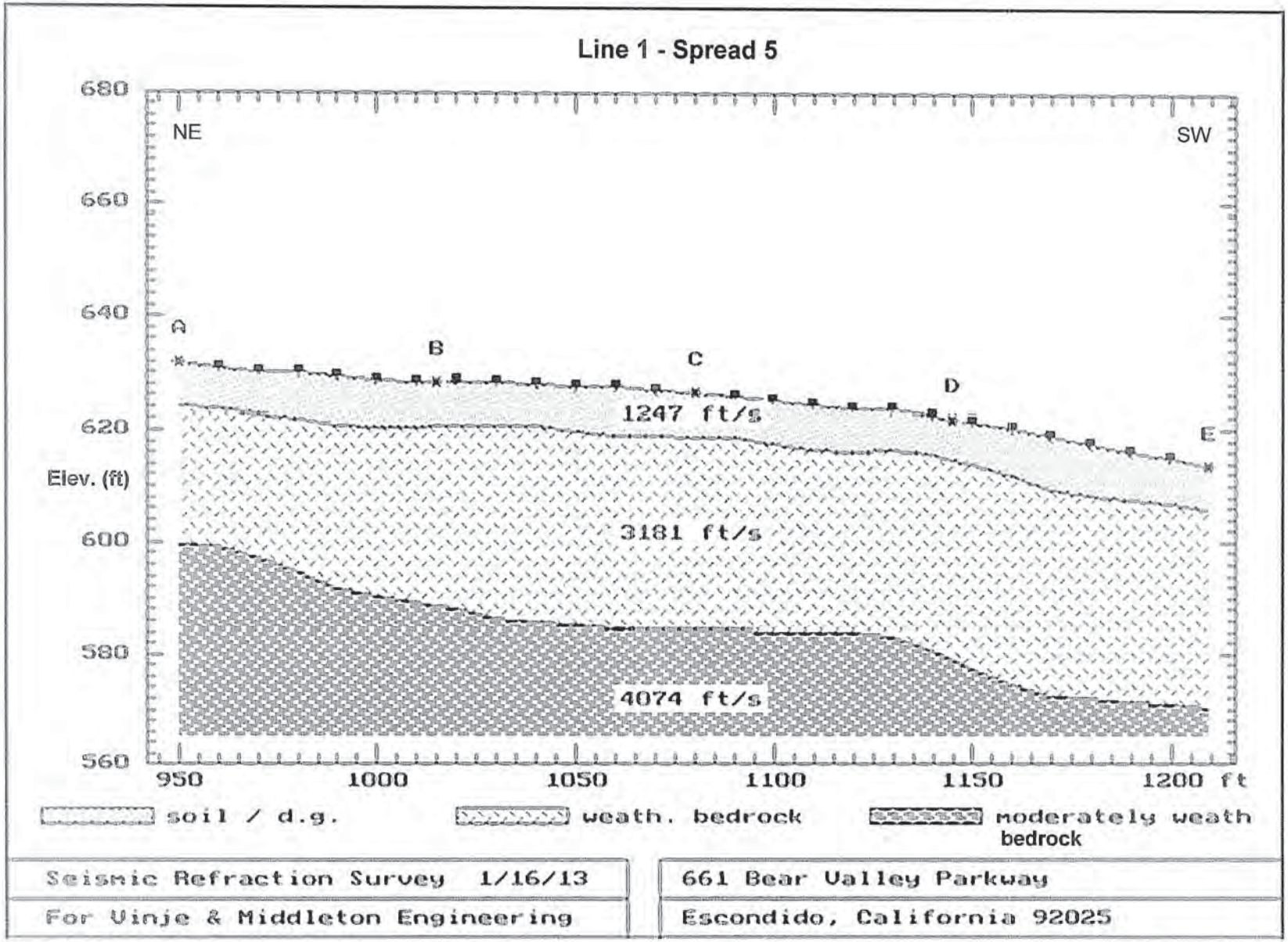
## Line 1 - Spread 3

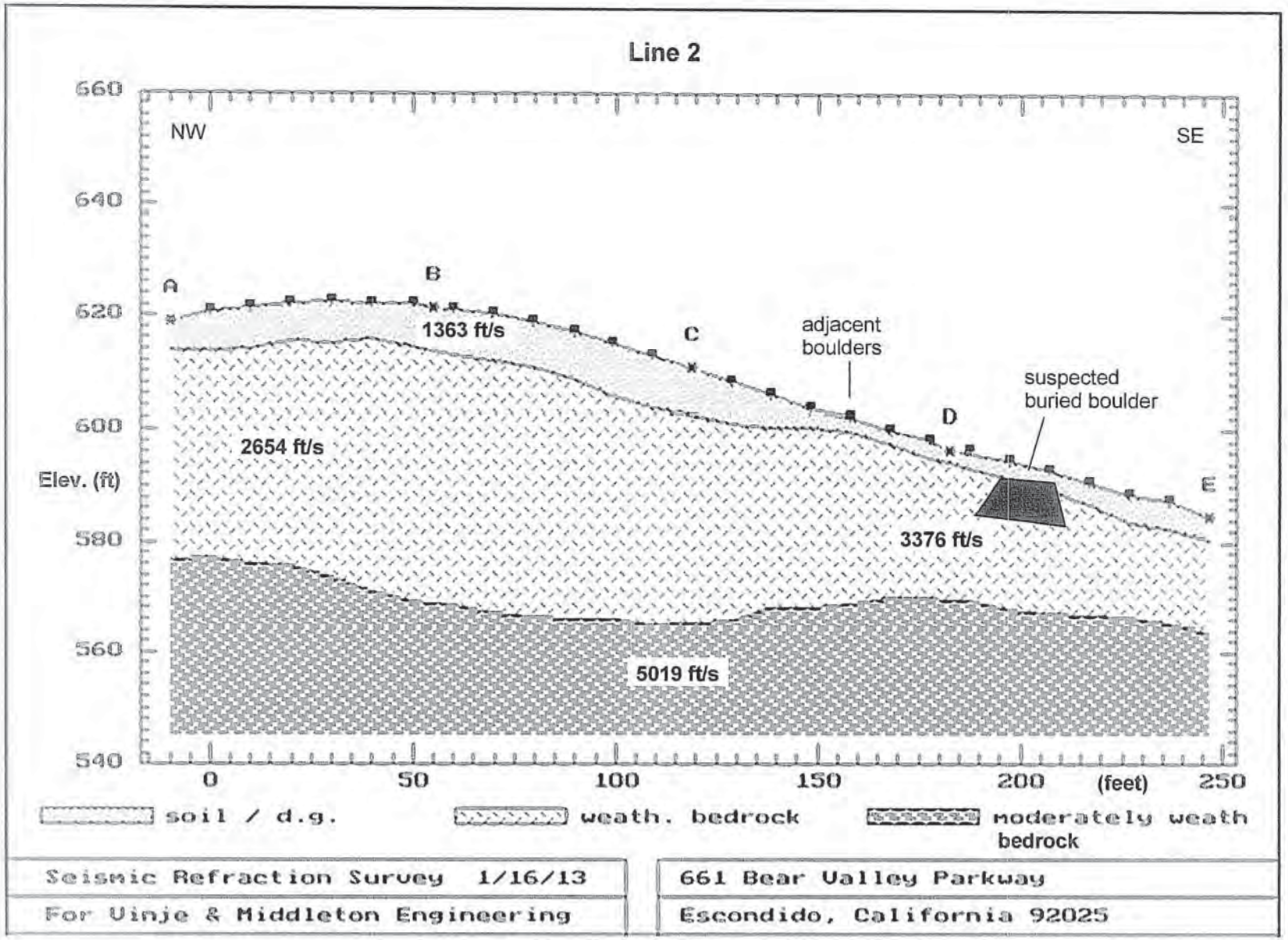


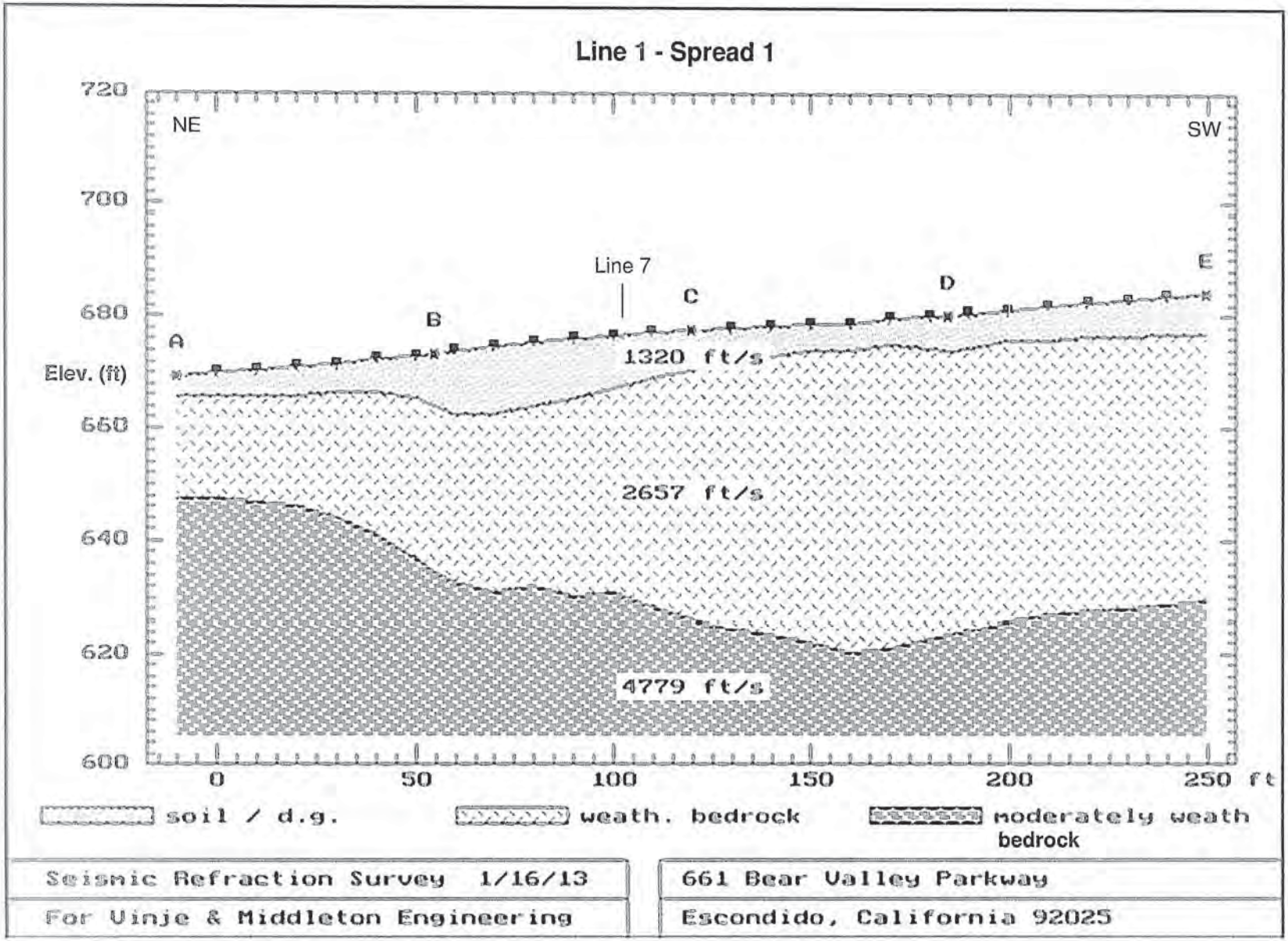

| | |
|---|---|
| Seismic Refraction Survey 1/16/13 | 661 Bear Valley Parkway |
| For Vinje & Middleton Engineering | Escondido, California 92025 |


Line 3
620
600
580
560
540
520
500
Elev. (ft)
NE
SW
A
B
C
D
E
adjacent boulders
adjacent boulders
1470 ft/s
3936 ft/s
5597 ft/s
suspected buried boulder
0
50
100
150
200
(feet)
250
soil / d.g.
weath. bedrock
moderately weath bedrock
Seismic Refraction Survey 1/16/13
For Vinje & Middleton Engineering
661 Bear Valley Parkway
Escondido, California 92025

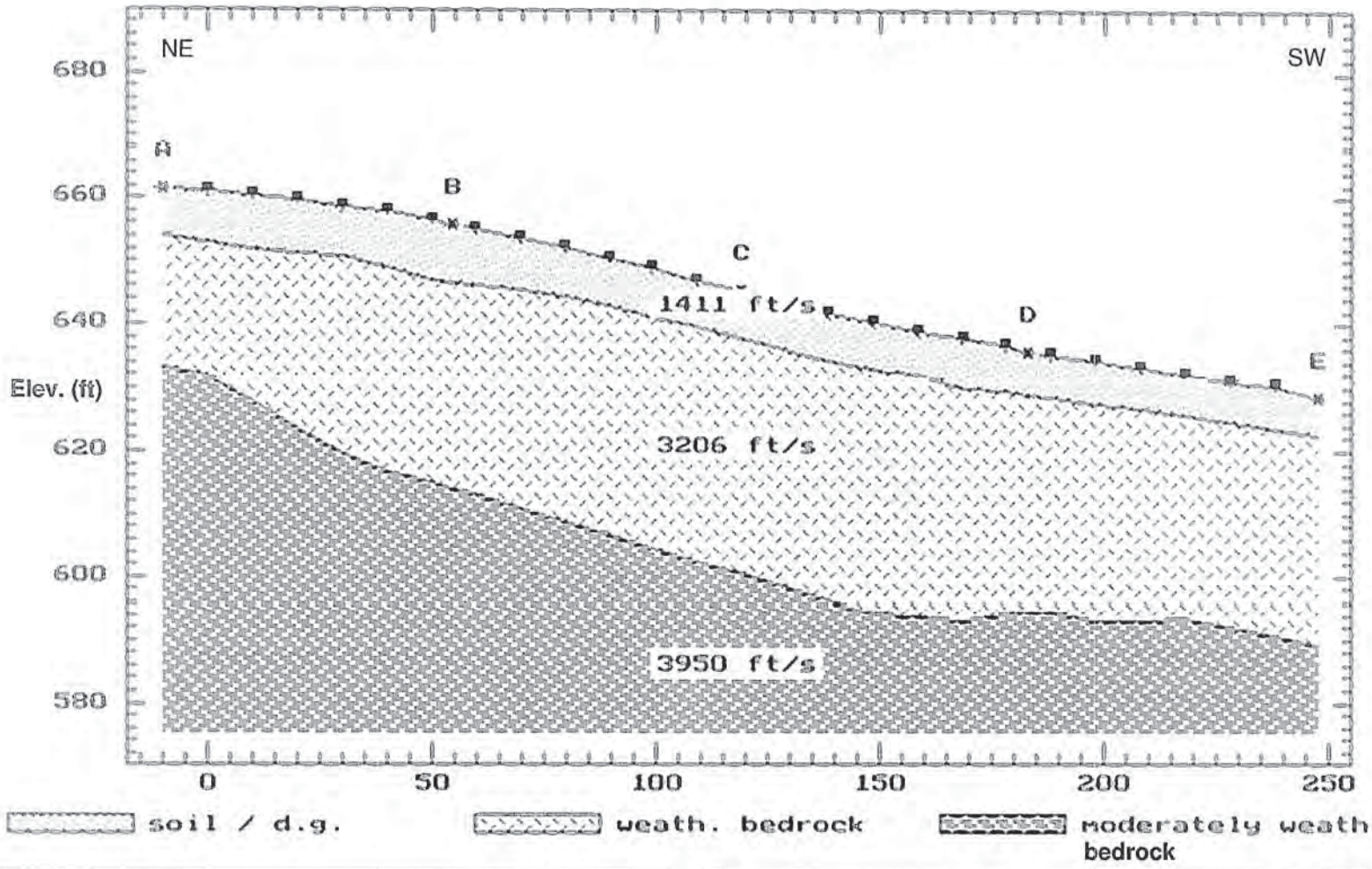

Line 1 - Spread 4
680
660
640
620
600
580
560
Elev. (ft)
North
South
F
G
H
I
J
1369 ft/s
2830 ft/s
3992 ft/s
750
800
850
900
950 ft
soil / d.g.
weath. bedrock
moderately weath bedrock
Seismic Refraction Survey 1/16/13
For Vinje & Middleton Engineering
661 Bear Valley Parkway
Escondido, California 92025


Line 1 - Spread 5
680
660
640
620
600
580
560
Elev. (ft)
NE
SW
A
B
C
D
E
1247 ft/s
3181 ft/s
4074 ft/s
950
1000
1050
1100
1150
1200 ft
soil / d.g.
weath. bedrock
moderately weath bedrock
Seismic Refraction Survey 1/16/13
For Vinje & Middleton Engineering
661 Bear Valley Parkway
Escondido, California 92025


Line 2
660
640
620
600
580
560
540
Elev. (ft)
NW
SE
A
B
C
D
E
1363 ft/s
2654 ft/s
3376 ft/s
5019 ft/s
adjacent
boulders
suspected
buried boulder
0
50
100
150
200
(feet)
250
soil / d.g.
weath. bedrock
moderately weath
bedrock
Seismic Refraction Survey 1/16/13
For Vinje & Middleton Engineering
661 Bear Valley Parkway
Escondido, California 92025

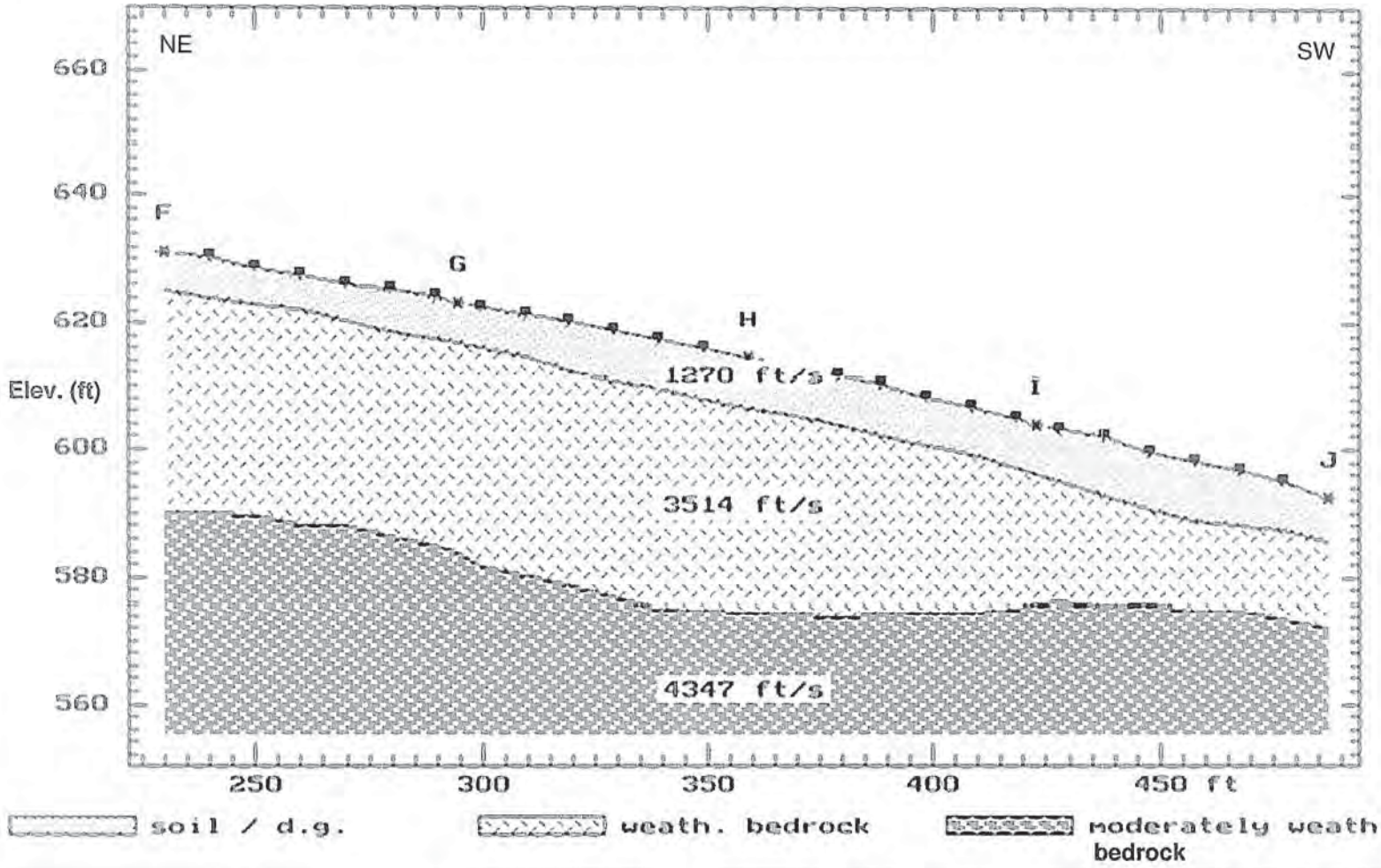

Line 1 - Spread 1
720
700
680
660
640
620
600
Elev. (ft)
NE
SW
Line 7
A
B
C
D
E
1320 ft/s
2657 ft/s
4779 ft/s
0
50
100
150
200
250 ft
soil / d.g.
weath. bedrock
moderately weath bedrock
Seismic Refraction Survey 1/16/13
For Vinje & Middleton Engineering
661 Bear Valley Parkway
Escondido, California 92025

## Line 4 -- Spread 1

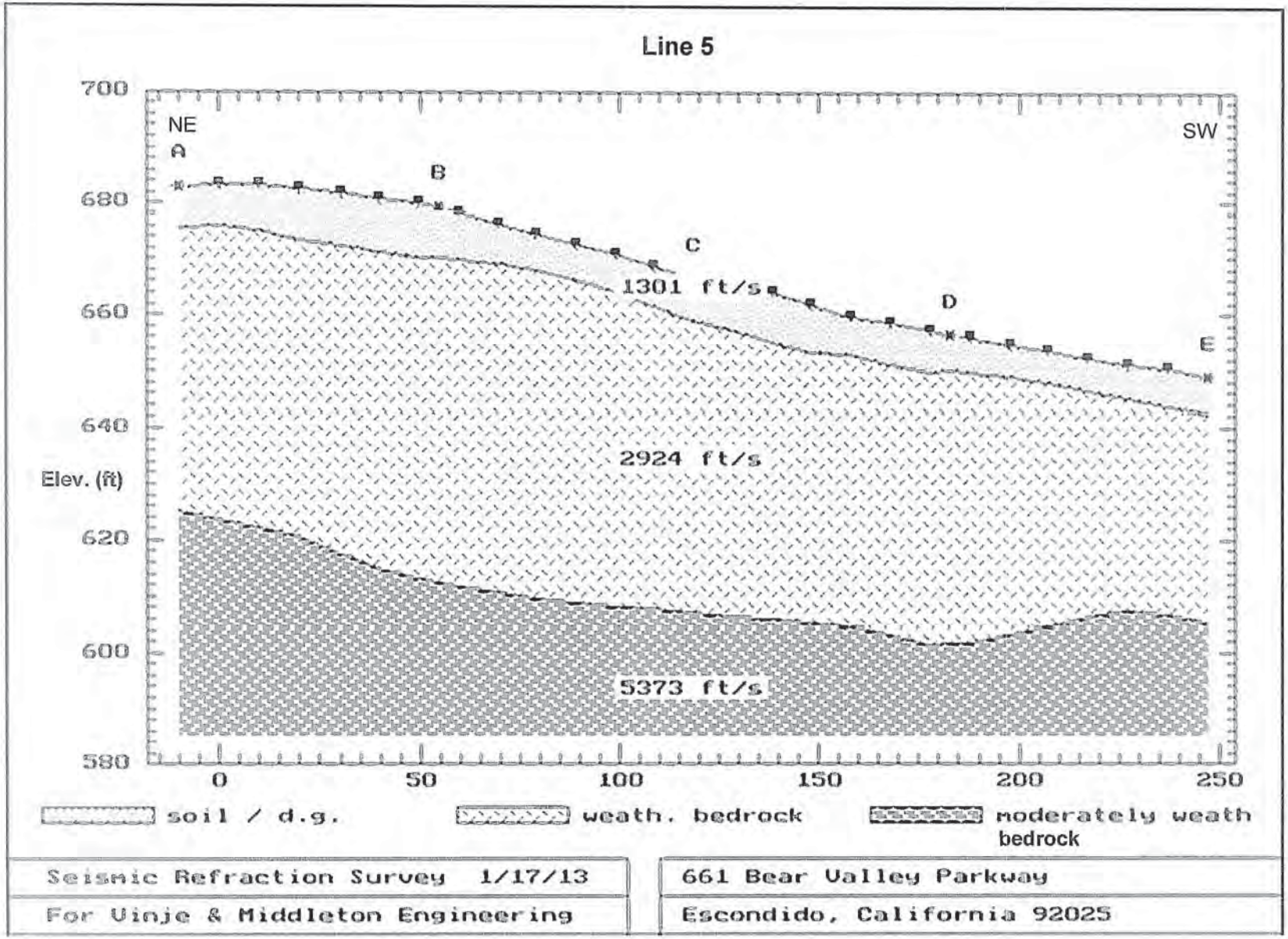


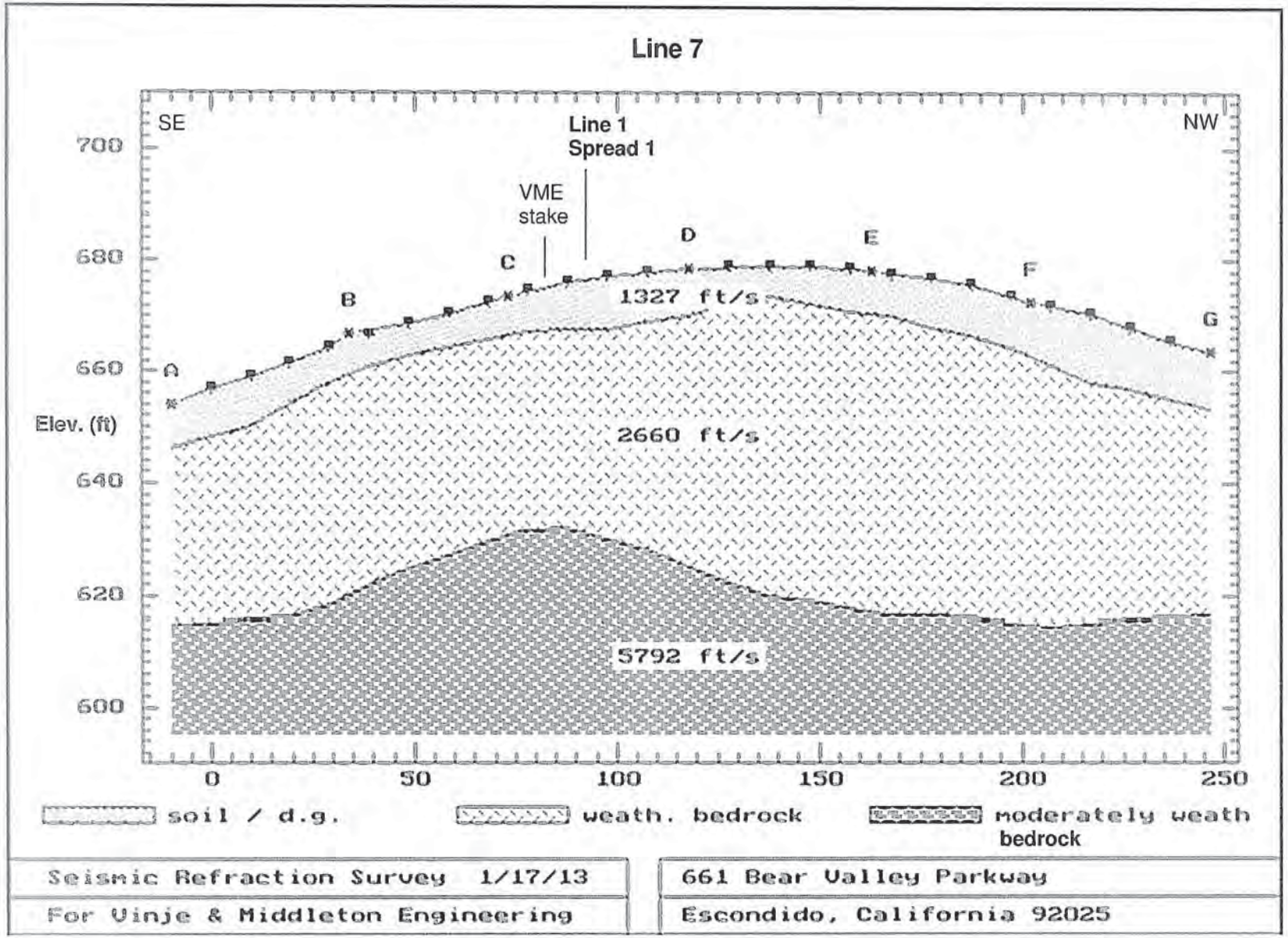

| | |
|---|---|
| Seismic Refraction Survey 1/17/13 | 661 Bear Valley Parkway |
| For Vinje & Middleton Engineering | Escondido, California 92025 |

## Line 4 -- Spread 2



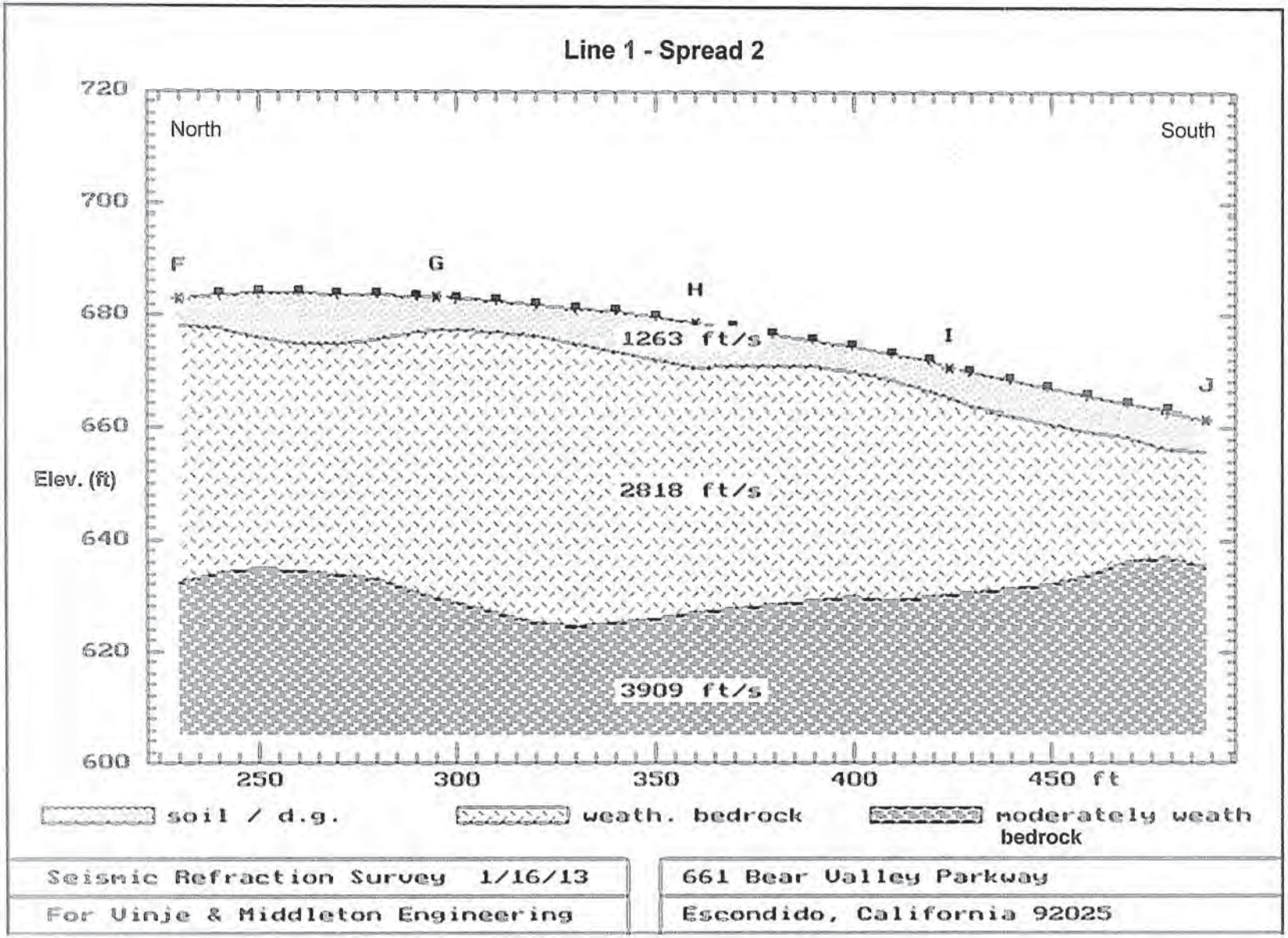

| | |
|---|---|
| Seismic Refraction Survey 1/17/13 | 661 Bear Valley Parkway |
| For Vinje & Middleton Engineering | Escondido, California 92025 |


Line 5
700
680
660
640
620
600
580
Elev. (ft)
NE
SW
A
B
C
D
E
1301 ft/s
2924 ft/s
5373 ft/s
0
50
100
150
200
250
soil / d.g.
weath. bedrock
moderately weath bedrock
Seismic Refraction Survey 1/17/13
For Vinje & Middleton Engineering
661 Bear Valley Parkway
Escondido, California 92025

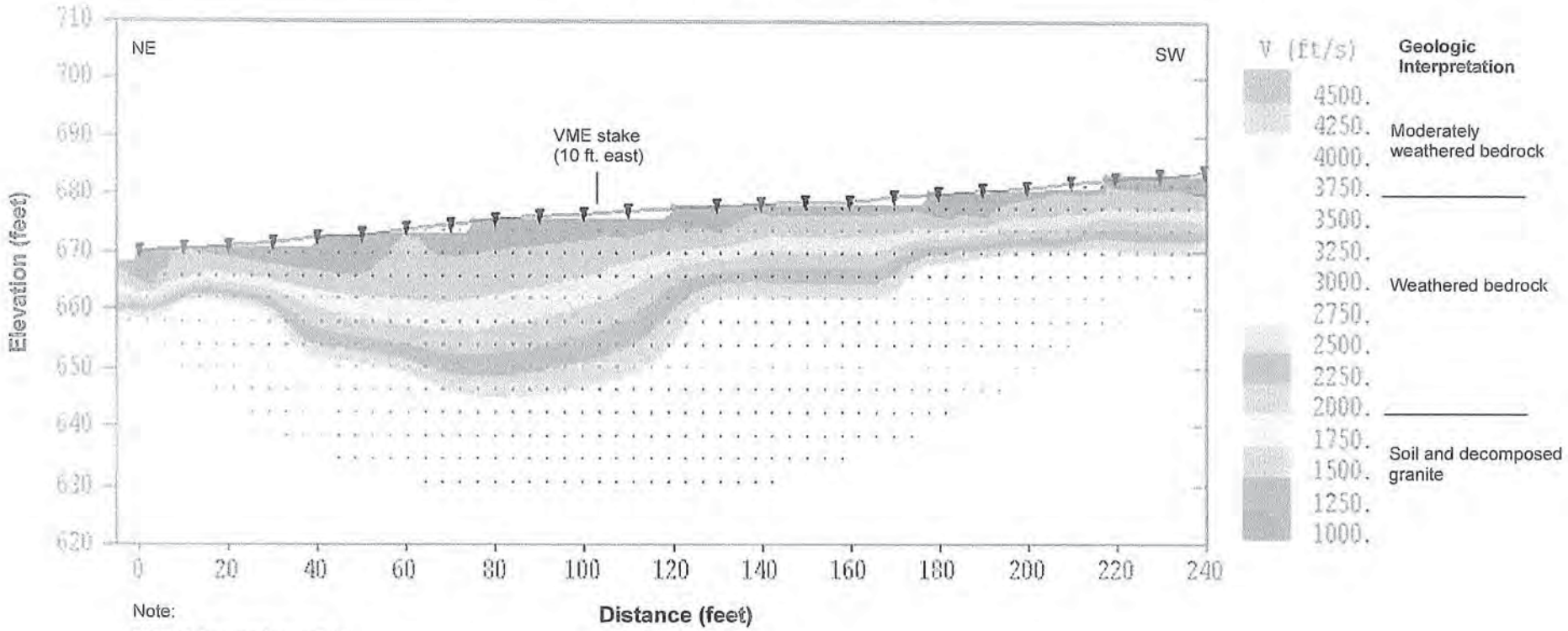

Line 7
SE
NW
Line 1
Spread 1
VME
stake
A
B
C
D
E
F
G
1327 ft/s
2660 ft/s
5792 ft/s
Elev. (ft)
700
680
660
640
620
600
0
50
100
150
200
250
soil / d.g.
weath. bedrock
moderately weath
bedrock
Seismic Refraction Survey 1/17/13
For Vinje & Middleton Engineering
661 Bear Valley Parkway
Escondido, California 92025

# Appendix B

## Velocity Gradient Models


Line 1 - Spread 2
720
700
680
660
640
620
600
Elev. (ft)
North
South
F
G
H
I
J
1263 ft/s
2818 ft/s
3909 ft/s
250
300
350
400
450 ft
soil / d.g.
weath. bedrock
moderately weath bedrock
Seismic Refraction Survey 1/16/13
For Vinje & Middleton Engineering
661 Bear Valley Parkway
Escondido, California 92025

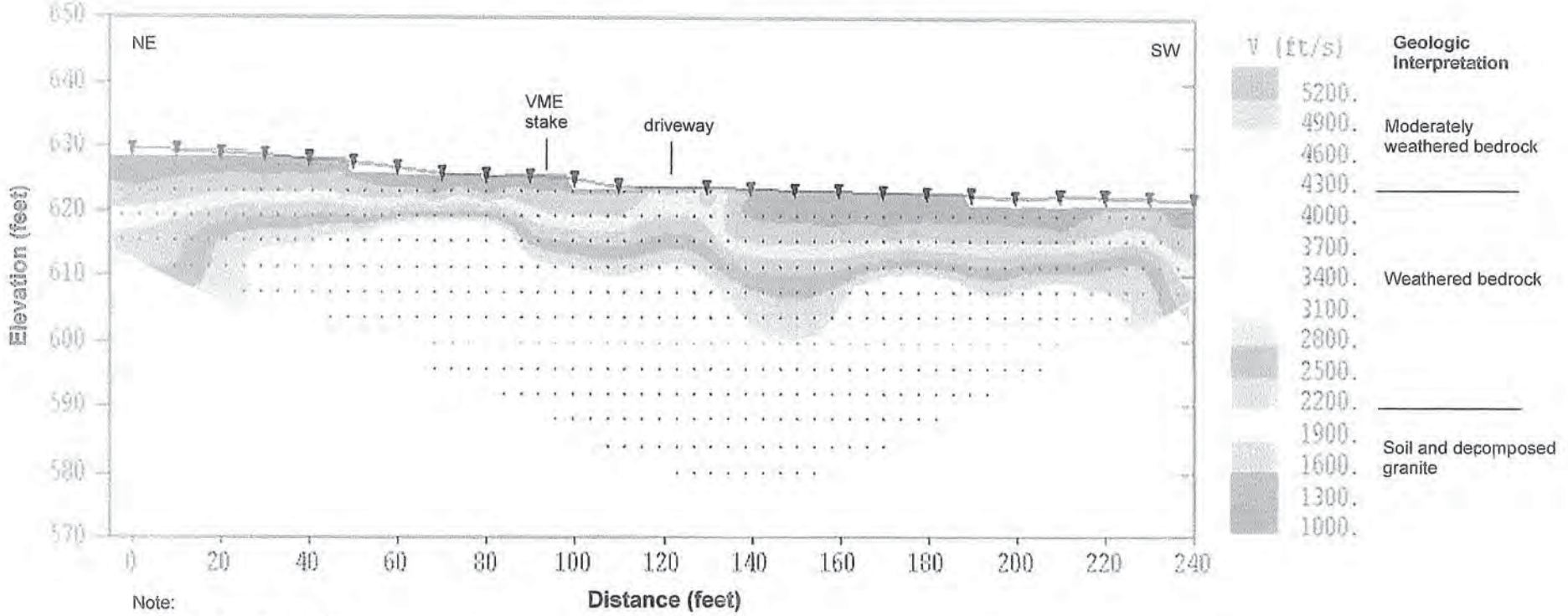
## Velocity Gradient Model -- Line 1 - Spread 1




Note:

VME stakes mark possible mine shaft locations based on historical records.

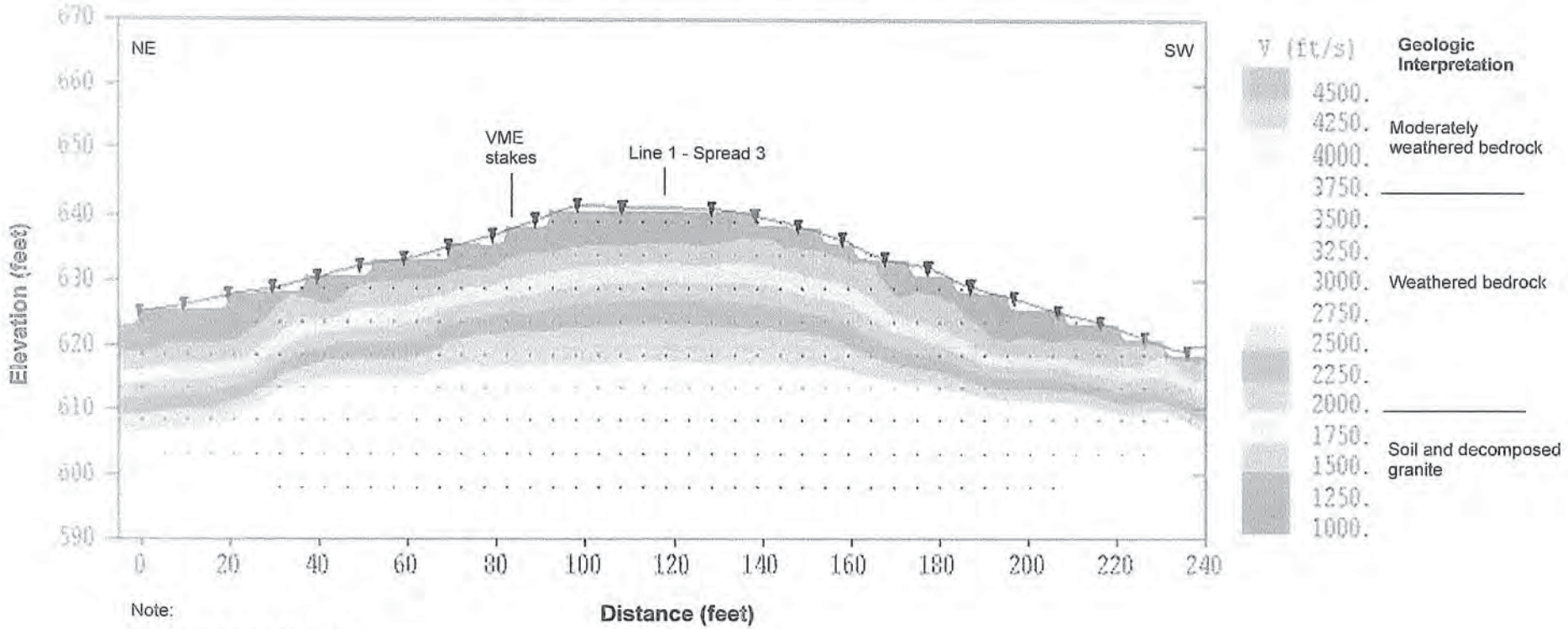
# Velocity Gradient Model -- Line 6




Note:

VME stakes mark possible mine shaft locations based on historical records.

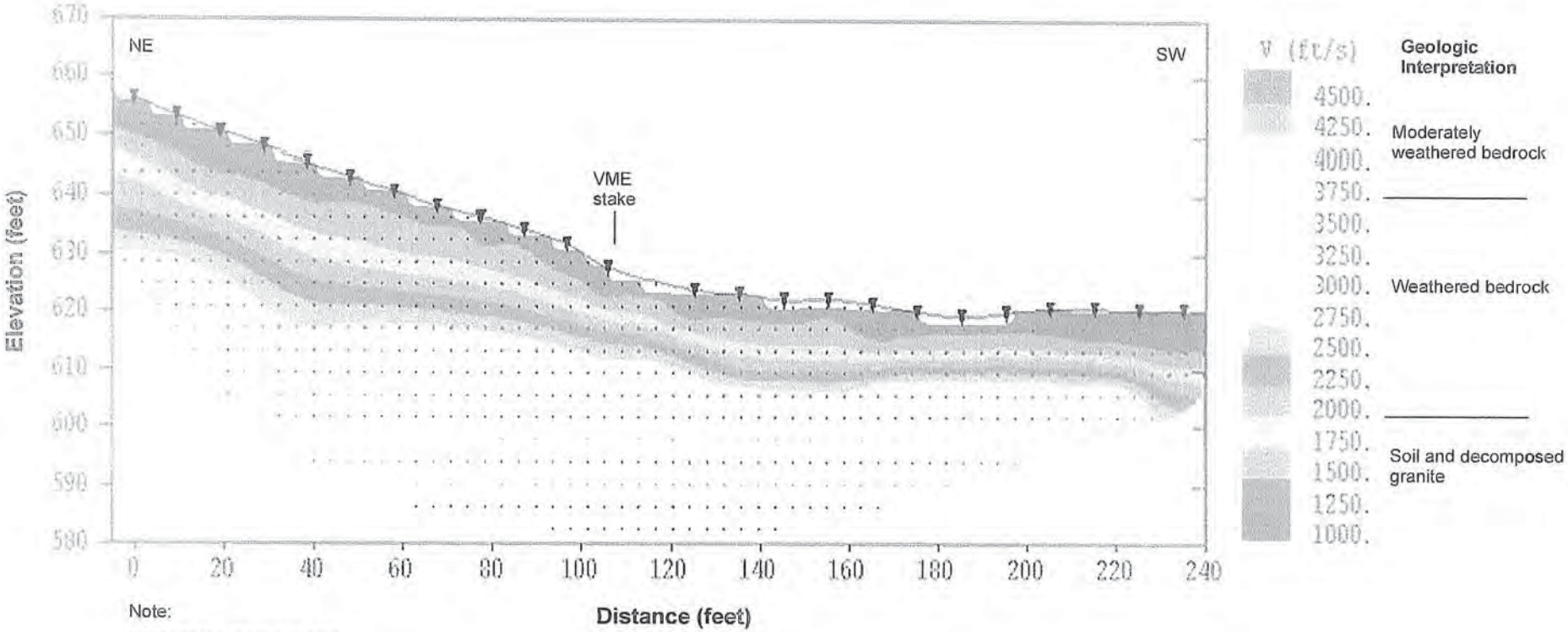
# Velocity Gradient Model -- Line 8




Note:

VME stakes mark possible mine shaft locations based on historical records.

# Velocity Gradient Model -- Line 9




Note:

VME stakes mark possible mine shaft locations based on historical records.

# Appendix I-2 Geotechnical Update Report (December 2014)

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# Geotechnical Update Report

**Proposed 55-Lot Residential Subdivision**
**661 Bear Valley Parkway**
**Escondido, California**
**(A.P.N. 237-131-01 & -02)**

**December 17, 2014**

**Prepared For:**

**Spieth & Wohlford**
**c/o Mr. Jack Henthorn**
**Jack Henthorn & Associates, Inc.**
**P.O. Box 237**
**Carlsbad, California 92018**

**Prepared By:**

**VINJE & MIDDLETON ENGINEERING, INC.**
2450 Auto Park Way
Escondido, California 92029

Job #13-116-P

# GEOTECHNICAL UPDATE REPORT
# PROPOSED 55-LOT RESIDENTIAL SUBDIVISION
# 661 BEAR VALLEY PARKWAY, ESCONDIDO, CALIFORNIA
# (A.P.N. 237-131-01 & -02)

## I. INTRODUCTION

The project property consists largely of a natural ridgeline located on the east side of Bear Valley Parkway, south of Highway 78 in the eastern limits of the city of Escondido. The approximate site coordinates are 33.10°N latitude and -117.06°W longitude.

Development plans, by Hunsaker & Associates, have been provided to us for geotechnical review and comment. A copy of the plans is reproduced and included with this transmittal as a Geotechnical Map (Plate 1). As shown, the property is planned for the support of a 55-lot residential subdivision with interior roadways and associated improvements.

Geotechnical conditions at the property were previously studied by this office with our findings, conclusions and recommendations summarized in the following published technical report:

> "Geotechnical Investigation, Proposed Residential Subdivision, 661 Bear Valley Parkway, Escondido, California (A.P.N. 237-131-01 & -02)," Job #13-116-P, report dated April 13, 2013.

The preceding report was reviewed in connection with this effort and is enclosed with this update report as an Attachment.

The purpose of this work was to review the current development plans (Plate 1) and ensure its compatibility with the referenced report (Attachment) and provide updated conclusions and recommendations that are consistent with the project most current codes and engineering standards. Updated and/or amended recommendations provided in the following sections will supplement or supersede those given in the referenced report, where specifically indicated.

## II. SITE DESCRIPTION / BACKGROUND

A detailed description of the site is given in the Attachment. Generally, the property is characterized by a large hilltop and a north-south trending ridgeline that enters the northeast area of the property and transitions into descending hillside terrain in the southern reaches of the property. Site natural topography largely approaches 3:1 (horizontal to vertical) maximum. Locally, steeper terrain occurs in association with the southern and southeastern flowlines.

More recently, the property was used for agricultural purposes. Prior to that, the property was impacted by gold mining activities that are thought to date back as much as 100 years. Details of the mining activities are not available. However, our field investigation conducted in 2013 revealed four mining excavation locations. The locations are indicated on the Geotechnical Map (Plate 1), and described as follows:

1. A nearly horizontal mine tunnel (adit) was exposed at the bottom of Test Pit 4, (TP-4) excavated through the underlying bedrock. The exposed excavation measured approximately 6 feet high by 7 feet wide trending in an N15°E direction. No supports were present, and the extent of the mine tunnel is unknown.

2. A nearly horizontal fille shaft was encountered at the Test Pit 7, (TP- 7) location, on the south side of the existing detached garage. The shaft excavation measured 9 feet square with the bottom of shaft extending beyond the 16-foot limit of our backhoe into crystalline bedrock. A secondary filled excavation appeared to the present on the westerly side of the shaft at 9 feet below the surface. This excavation appeared to trend slightly downward in an N75°W direction.

3. A well-developed horizontal mine tunnel (adit) was exposed 4 feet below the surface at the Test Pit 9, (TP- 9) location, near the upper beginning of the southwest canyon flowline. The hillside opening to this horizontal mine excavation measured 17 feet wide by 7 feet high and extended due west into the hillside for 17 feet. At this point, the mine tunnel narrows to approximately 3 feet wide and continues for an estimated 50-60 feet due west where it appears to trend northward. The entire mine tunnel was excavated into crystalline bedrock with no evidence of artificial support.

4. A filled mine excavation was identified at the Test Pit 15, (TP-15) location. This excavation originates on the south facing hillside with the mine opening measured 7 feet high by 4 feet wide and was exposed at 7 feet below the surface. The excavation appears to be nearly horizontal and trending N25°E into the hillside.

Additional mine-related excavations may be present at the property. All known mine excavations, and those encountered during site development will require mitigation as outlined in following sections.

## III. PROPOSED DEVELOPMENT

Significant grading efforts will be required to complete the subdivision configuration as shown on the attached Geotechnical Map. Vertical cuts and fills approaching 25 feet and 35 feet respectively will be needed to achieve planned pad and roadway grades. Large perimeter and interior graded fill embankments are programmed for 2:1 gradients and will approach nearly 56 feet in vertical height. All new fill slopes more than 30 in height are

proved with appropriate drainage terraces placed at mid-slope height. New cut slopes will approach nearly 35 feet in vertical height and are also programmed for 2:1 gradients. New graded embankments will locally include fill over cut slopes.

A large bio-retention basin for runoff is planned in the lower west-central are of the property. Specific hydro modification designs are currently unavailable. Bio-retention and filtration systems consisting of vegetated buffers or strips and self-contained retention/detention areas with impermeable liners on sides and bottom, special engineered sand filter media and perforated pipe(s) which discharge into approved storm water facilities are typical methods for the stormwater Best Management Practices (BMP). Additional and more specific recommendations should be provided by the project geotechnical consultant at the final plans review phase, as necessary.

Detailed construction plans are not yet available for review. However, conventional wood-frame buildings with exterior stucco supported on shallow foundations with stem-walls and slab-on-grade floors, or slab-on-ground with turned-down footings are anticipated.

## IV. GEOTECHNICAL CONDITIONS

Geotechnical conditions at the project property remain as reported in detail in the referenced report (see Attachment).

### A. Earth Materials

**Bedrock** - The property and surrounding hillside terrain are underlain by dark-colored gabbroic rocks intruded by felsic quartz-rich veins and lighter granitic rocks. The gabbroic rocks are typically deeply weathered and grade harder with depth. Spherical corestones are also locally expected within the bedrock.

Excavations into the project bedrock are expected to largely produce good quality gravelly sandy granular soils suitable for site new fills and backfills. Project bedrock are competent units which will provide excellent support for planned new fills, structures, and improvements.

**Colluvium** - Colluvial soils are present in the lower terrain and local hillside areas. The colluvium thickens in the southern margin of the property where it appears ancient and occurs in a consolidated and dense condition. Elsewhere, shallow deposits of site colluvium generally occur in a loose condition.

**Alluvium** - Alluvium deposits are present within the canyon flowlines in the southern area of the property. Overall, site alluvium was found in a very loose condition and may be more than 10 feet in depth.

**Topsoil** - Shallow topsoil deposits occur along ridgelines and hilltops at the property. Site topsoil consists of silty sand that occurs in a very loose condition overall.

**Fill** - Minor existing fill deposits are associated with an existing building and hillside drainage terraces. More significant fill deposits occur with a flowline crossing in the southwest area of the property and the covering or filling of old mine excavations. All existing fills, where present, should be entirely removed as part of the site grading operations.

Added details of the site earth materials are included on the exploratory excavation logs attached as Plates 4 through 30 in the Attachment. The approximate distribution of earth deposits at the site are shown on the enclosed Geotechnical Map, Plate 1. Cross-Sections depicting subsurface conditions and planned finish grades are included as Plates 2 and 3.

## B. Groundwater and Surface Drainage

Subsurface water was not encountered in the test pits at the time of our field investigation. However, toe drains may be appropriate for cut slopes exposing weathered or fractured bedrock, which could transmit water from upslope terrain. The final decision for toe drains should be provided by the geotechnical engineer based on the actual cut exposures.

Canyon subdrains are recommended within the two prominent flowlines in the southern area of the property as shown on Plate 1.

The large flowline that traverses the southeast portion of the site has evidence of scouring and erosion. In order to limit the erosion and protect new fill slopes developed above the flowline, sidewall armor protection such as rip-rap or gabions will be necessary.

## C. Slope Stability / Rock Hardness

The property is underlain by competent crystalline bedrock units which typically perform well in natural and graded slope conditions. Slope instability is not in evidence at the property. The oversteepened cut slopes along Bear Valley Parkway will be removed or laid back at 2:1 gradients as part of the widening of Bear Valley Parkway and construction of a new graded embankment. Future graded cut embankments exposing crystalline bedrock are expected to be grossly stable to planned design heights. New fill slopes will also be grossly stable to design heights provided our keyway development and grading recommendations are adhered to. All graded slopes should be provided with well-developed brow ditches. Runoff should not be allowed over slope faces.

In order to determine rock hardness within anticipated cut areas, six seismic refraction lines were run along hilltops and ridgelines by SubSurface Surveys using a Bison 9024 signal enhancement seismograph. The locations of the surveys are shown on the Geotechnical Map, Plate 1. Graphic results of the surveys are included in the attached report.

In general, the seismic lines indicate that the planned cut areas are underlain by weathered rock which may be rippable up to 40 feet below the surface using a Caterpiller D9 or equivalent. The survey also indicates that buried corestones can be expected in the area of Line 2, where large residual boulders are exposed at the surface. Very hard rocks that will require blasting are currently not indicated along the seismic lines.

### D. Seismic Ground Motion Values

Seismic ground motion values were determined as part of this investigation in accordance with Chapter 16, Section 1613 of the 2013 California Building Code (CBC) and ASCE 7-10 Standard using the web-based United States Geological Survey (USGS) ground motion calculator. Generated results including the Mapped ($S_S$, $S_1$), Risk-Targeted Maximum Considered Earthquake ($MCE_R$) adjusted for site Class effects ($S_{MS}$, $S_{M1}$) and Design ($S_{DS}$, $S_{D1}$) Spectral Acceleration Parameters as well as Site Coefficients ($F_a$, $F_v$) for short periods (0.20 second) and 1-second period, Site Class, Design and Risk-Targeted Maximum Considered Earthquake ($MCE_R$) Response Spectrums, Mapped Maximum Considered Geometric Mean ($MCE_G$) Peak Ground Acceleration adjusted for Site Class effects ($PGA_M$) and Seismic Design Category based on Risk Category and the severity of the design earthquake ground motion at the site are summarized in the enclosed Appendixes A and B.

## V. HYDRO MODIFICATION

Project hydro-modification for stormwater management should be designed and constructed considering the site indicated geotechnical conditions. The design and implemented management practice(s) should also have no short and long term impacts on the site building pads, graded surfaces, natural embankments and graded slopes, fills and backfills, structures, and onsite and nearby off improvements. Specific details for stormwater runoff are unknown, however, the current plans indicate that two bio-retention basins are planned adjacent to Bear Valley Parkway. The northerly basin is also where a mine tunnel was exposed which is suspected to extend beneath the planned basin. The mine excavation should be exposed and filled as outlined in a following section.

## VI. CONCLUSIONS AND RECOMMENDATIONS

The project property remains substantially unchanged from conditions presented in the referenced report (included herein as an Attachment).

All conclusions and recommendations provided in the referenced report including, but not limited to, keyway/graded embankment construction, pad transition undercuts, foundation/slab recommendations, PCC/asphalt pavement design, canyon subdrain construction, grading/earthwork recommendations, and mine excavation mitigation, remain valid and should be considered in the project designs and implemented during the construction phase except where specifically superceded or amended in the following section:

1. All grading and earthworks should be completed in accordance with the Chapter 18 and Appendix "J" of the California Building Code (CBC), City of Escondido Grading Ordinances, the Standard Specifications for Public Works Construction, and the requirements of the referenced soil report (Appendix ) and this update transmittal.

2. The most significant geotechnical concern at the property is the existing mine excavations. Four specific locations were identified during our field investigation in 2013. Additional mine-related excavations may be present at the property and should be expected during grading operations. Generally, mine related excavations with 10 feet minimum of competent bedrock overburden are determined not to be susceptible to future collapse (as inspected and approved by the project geotechnical consultant), and may be sealed and capped. Based on the current development plan for the property (Plate 1), the following mitigation procedures are appropriate for the four known mine excavations:

   A. The top of the horizontal mine tunnel (adit) exposed at the Test Pit 4 location is 4 feet to 6 feet below the surface with 1 foot of bedrock cover. The tunnel appeared to be horizontal and trend in a N15°E direction and likely extends beneath Lot 1 and the northerly basin. Due to the shallow nature of the excavation, the mine tunnel should be exposed at the Test Pit 4 location and then exposed in both directions using a large track hoe or suitable excavating equipment. The northern portion of the mine tunnel (north of TP-4) should be exposed to its end and backfilled with 90% compacted soil. Should the north end of the mine excavation extend beyond the property line (and possibly beneath Bear Valley Parkway) additional mitigation recommendations will be provided after consultation with the City of Escondido engineering department. The south portion of the mine tunnel (south of TP-4) should be continuously exposed to its end or until a minimum covering of 10 feet of competent bedrock is exposed. The open excavation should be backfilled with compacted soil (90% minimum). The open mine excavation, if exposed with a minimum of 10 feet of competent bedrock cover, should be capped as outlined in the attached report after approval of the geotechnical engineer.

B. The nearly horizontal mine shaft and associated secondary mine excavations exposed at the Test Pit 7 location are located within a planned deep cut area, and are expected to be completely removed as part of the cut grading operation. If the shaft continues below finish grade, it should be completely excavated and backfilled with 90% compacted soil, as approved by the geotechnical engineer.

C. The well-developed horizontal mine tunnel (adit) at the Test Pit 9 location is in a planned fill slope area below Lots 47 and 48. The entrance to the mine tunnel should be exposed and the overburden removed until there is a minimum of 10 feet of competent bedrock above the top of the tunnel. The opening should then be sealed, as approved by the geotechnical engineer, as outlined in the attached report.

D. The mine excavation exposed at the Test Pit 15 location is located in a deep fill area beneath Lots 33-34. The entrance to this mine excavation should be exposed and the overburden removed until there is a minimum of 10 feet of competent bedrock above the mine excavation. The excavation may then be sealed as outlined in the attached report, as approved by the geotechnical engineer.

All mine-related excavation mitigation procedures should be continuously monitored by the project geotechnical engineer, geologist, or their representative and documented in daily reports. All mine excavations should be accurately surveyed and located on the As-Built plans indicating the portions that were exposed and backfilled, trend of excavations left in-place with more than 10 feet of competent bedrock overburden, and location where sealing materials were used.

3. All site surficial soils in areas of planned new fills, embankments, structures and improvements plus 10 feet outside the perimeter where possible, and as approved in the field, should be removed to the underlying competent bedrock or dense natural ground and placed back as properly compacted fills. Dense natural ground is defined as having in-place densities of 90% or more (as tested in the field), and may be expected in the southerly margin of the property only where ancient colluvial soils were encountered.

4. Added care should be given for the development of keyways for fill slopes constructed on cut slopes to ensure recommended keyway widths and embedment into bedrock are met.

5. All fills in excess of 20 feet vertical thickness and fills/backfills placed with flowline areas or where subject to potential saturation or inundation should be mechanically compacted to a minimum of 95% of the corresponding laboratory maximum dry density per ASTM D-1557, unless otherwise specified. The upper 12 inches of subgrade soil beneath pavement base layers should also be compacted to 95% levels. Elsewhere, fills less than 20 feet in vertical thickness may be compacted a minimum of 90% per ASTM D-1557 (see attached report).

6. Soil design parameters including bearing and lateral earth pressures will also remain the same as specified in the referenced report (see Attachment, April 3, 2013 report).

7. Final grading and foundation plans should reflect preliminary recommendations given in this report and reviewed and approved by the project geotechnical consultant. Additional or more specific recommendations may be necessary and should be provided at that time, as required.

## VII. GEOTECHNICAL ENGINEER OF RECORD (GER)

Vinje & Middleton Engineering, Inc. is the geotechnical engineer of record (GER) for a specific scope of work or professional service under a contractual agreement unless it is terminated or canceled by either the client or our firm. In the event a new geotechnical consultant or soils engineering firm is hired to provide added engineering services, professional consultations, engineering observations and compaction testing, Vinje & Middleton Engineering, Inc. will no longer be the geotechnical engineer of record. Project transfer should be completed in accordance with the California Geotechnical Engineering Association (CGEA) Recommended Practice for Transfer of Jobs Between Consultants.

The new geotechnical consultant or soils engineering firm should review all previous geotechnical documents, conduct an independent study, and provide appropriate confirmations, revisions or design modifications to his own satisfaction. The new geotechnical consultant or soils engineering firm should also notify in writing Vinje & Middleton Engineering, Inc. and submit proper notification to the County of San Diego for the assumption of responsibility in accordance with the applicable codes and standards (1997 UBC Section 3317.8).

If you have any questions or need further clarification, please do not hesitate to contact the undersigned. Reference to our **Job #13-116-P** will help to expedite our response to your inquiries.

We appreciate this opportunity to be of service to you.

**VINJE & MIDDLETON ENGINEERING, INC.**

Ralph M. Vinje
GE #863

Steven J. Melzer
CEG #2362

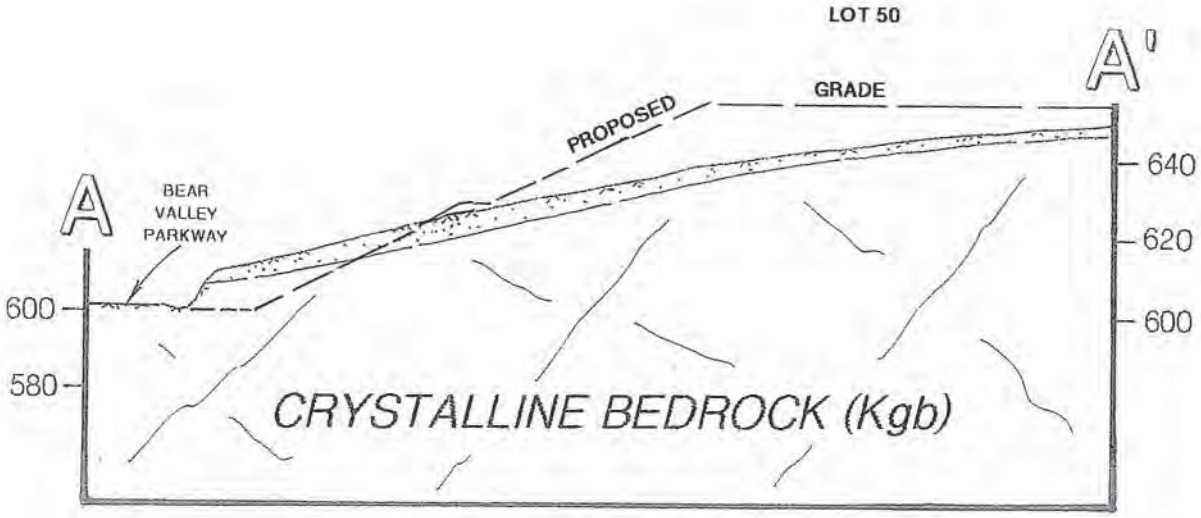
PROFESSIONAL GEOLOGIST
STEVEN JAY MELZER
No. 2362
CERTIFIED ENGINEERING GEOLOGIST
Exp. 5/31/15
STATE OF CALIFORNIA

Attachments

Distribution: Addressee (5, e-mail)

# GEOLOGIC CROSS-SECTIONS

SCALE: 1" = 50'



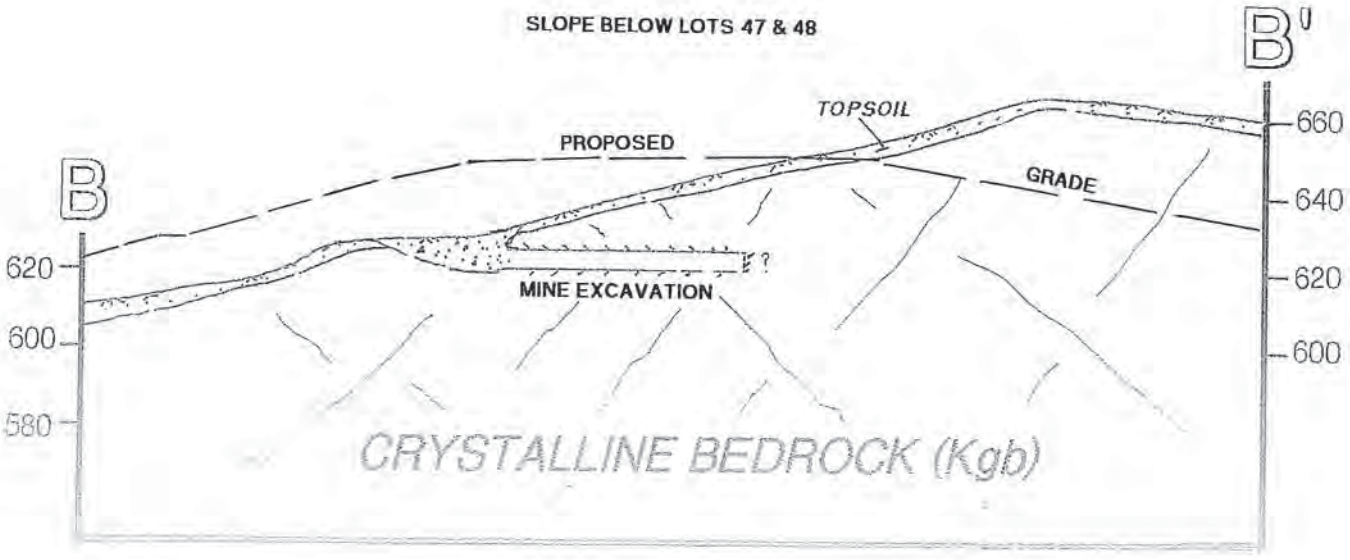
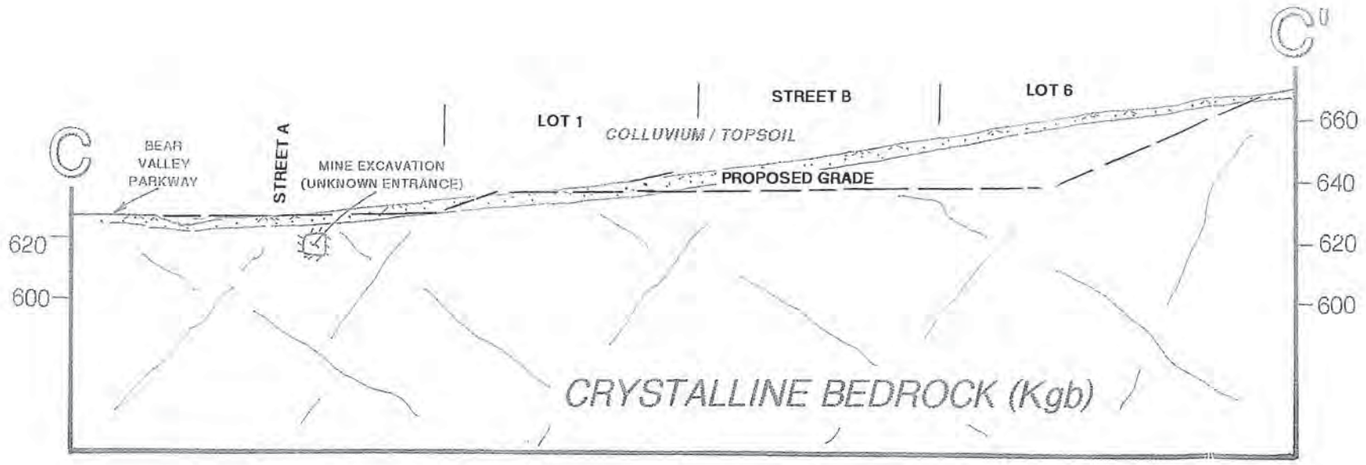
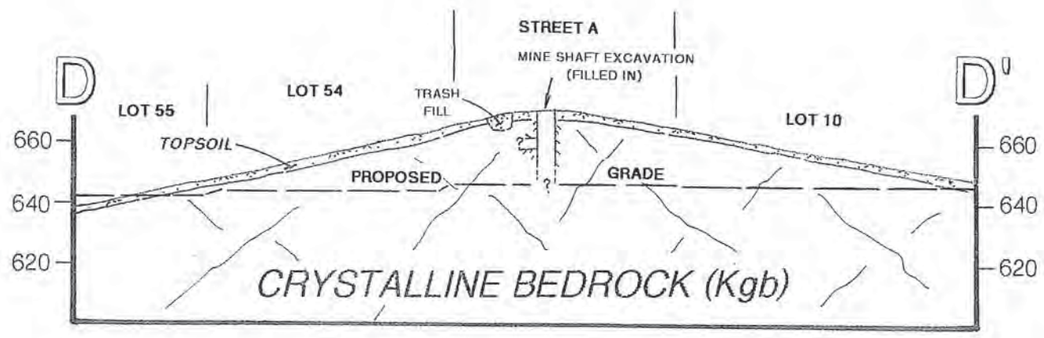



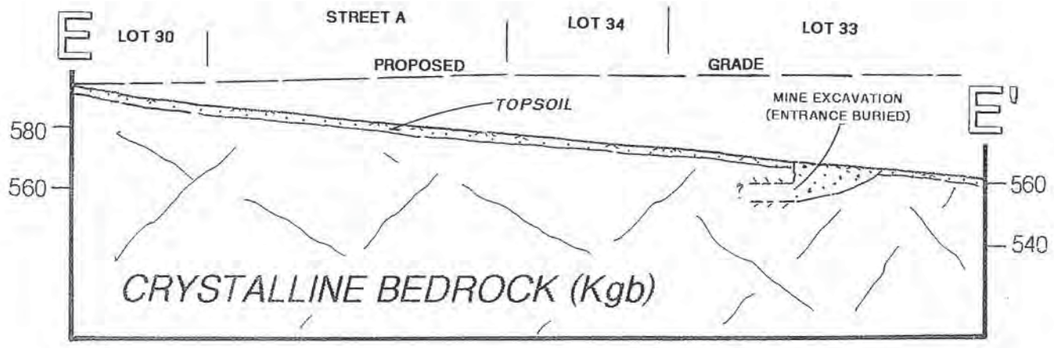

PLATE 2
V&M JOB #13-116-P

# GEOLOGIC CROSS-SECTIONS

SCALE: 1" = 50'



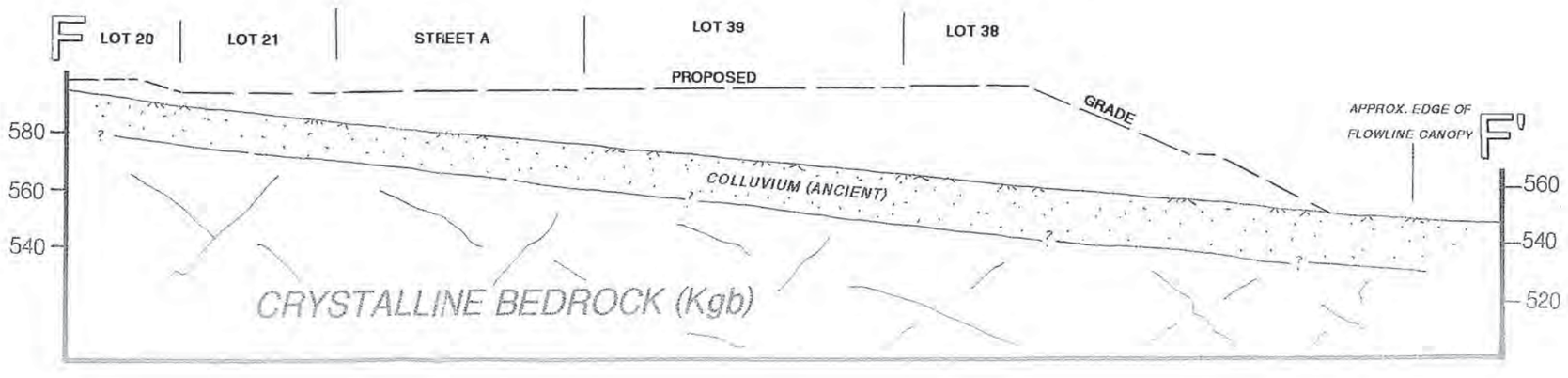




PLATE 3
V&M JOB #13-116-P

# Appendix A

## Site Class B
## Bedrock or less than 10 feet of fill beneath building foundations

# USGS Design Maps Summary Report

## User-Specified Input

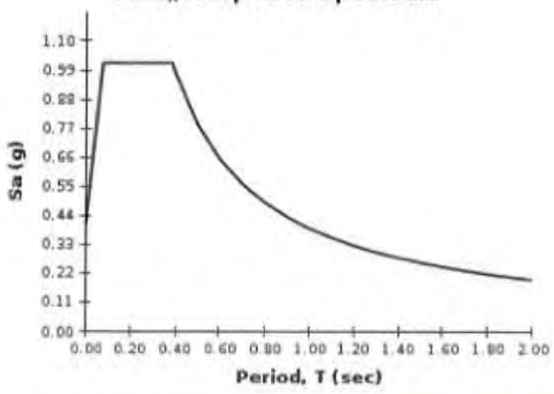
| | |
|---|---|
| **Report Title** | Bear Valley Parkway<br>Fri December 12, 2014 19:26:04 UTC |
| **Building Code Reference Document** | ASCE 7-10 Standard<br>(which utilizes USGS hazard data available in 2008) |
| **Site Coordinates** | 33.1°N, 117.06°W |
| **Site Soil Classification** | Site Class B – "Rock" |
| **Risk Category** | I/II/III |

## USGS-Provided Output

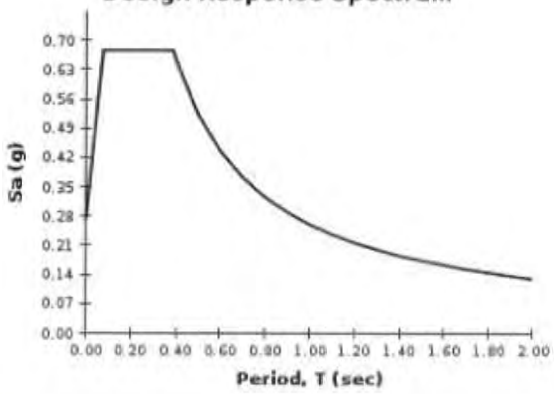
| | | | | | |
|---|---|---|---|---|---|
| $S_S$ = | 1.016 g | $S_{MS}$ = | 1.016 g | $S_{DS}$ = | 0.677 g |
| $S_1$ = | 0.391 g | $S_{M1}$ = | 0.391 g | $S_{D1}$ = | 0.261 g |

For information on how the SS and S1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.

**$MCE_R$ Response Spectrum**




**Design Response Spectrum**




For $PGA_M$, $T_L$, $C_{RS}$, and $C_{R1}$ values, please view the detailed report.

Although this information is a product of the U.S. Geological Survey, we provide no warranty, expressed or implied, as to the accuracy of the data contained therein. This tool is not a substitute for technical subject-matter knowledge.

# USGS Design Maps Detailed Report

ASCE 7-10 Standard (33.1°N, 117.06°W)

Site Class B – "Rock", Risk Category I/II/III

## Section 11.4.1 — Mapped Acceleration Parameters

Note: Ground motion values provided below are for the direction of maximum horizontal spectral response acceleration. They have been converted from corresponding geometric mean ground motions computed by the USGS by applying factors of 1.1 (to obtain $S_s$) and 1.3 (to obtain $S_1$). Maps in the 2010 ASCE-7 Standard are provided for Site Class B. Adjustments for other Site Classes are made, as needed, in Section 11.4.3.

| | |
|---|---|
| **From Figure 22-1** [1] | $S_S$ = 1.016 g |
| **From Figure 22-2** [2] | $S_1$ = 0.391 g |

## Section 11.4.2 — Site Class

The authority having jurisdiction (not the USGS), site-specific geotechnical data, and/or the default has classified the site as Site Class B, based on the site soil properties in accordance with Chapter 20.

Table 20.3-1 Site Classification

| Site Class | $\bar{v}_s$ | $\bar{N}$ or $\bar{N}_{ch}$ | $\bar{s}_u$ |
|---|---|---|---|
| A. Hard Rock | >5,000 ft/s | N/A | N/A |
| B. Rock | 2,500 to 5,000 ft/s | N/A | N/A |
| C. Very dense soil and soft rock | 1,200 to 2,500 ft/s | >50 | >2,000 psf |
| D. Stiff Soil | 600 to 1,200 ft/s | 15 to 50 | 1,000 to 2,000 psf |
| E. Soft clay soil | <600 ft/s | <15 | <1,000 psf |
| | Any profile with more than 10 ft of soil having the characteristics:<br>• Plasticity index $PI$ > 20,<br>• Moisture content $w \geq 40\%$, and<br>• Undrained shear strength $\bar{s}_u$ < 500 psf | | |
| F. Soils requiring site response analysis in accordance with Section 21.1 | See Section 20.3.1 | | |

For SI: 1ft/s = 0.3048 m/s 1lb/ft² = 0.0479 kN/m²

## Section 11.4.3 — Site Coefficients and Risk-Targeted Maximum Considered Earthquake ($MCE_R$) Spectral Response Acceleration Parameters

Table 11.4-1: Site Coefficient $F_a$

| Site Class | Mapped $MCE_R$ Spectral Response Acceleration Parameter at Short Period | | | | |
|---|---|---|---|---|---|
| | $S_S \le 0.25$ | $S_S = 0.50$ | $S_S = 0.75$ | $S_S = 1.00$ | $S_S \ge 1.25$ |
| A | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| B | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| C | 1.2 | 1.2 | 1.1 | 1.0 | 1.0 |
| D | 1.6 | 1.4 | 1.2 | 1.1 | 1.0 |
| E | 2.5 | 1.7 | 1.2 | 0.9 | 0.9 |
| F | See Section 11.4.7 of ASCE 7 | | | | |

Note: Use straight-line interpolation for intermediate values of $S_S$

**For Site Class = B and $S_S$ = 1.016 g, $F_a$ = 1.000**

Table 11.4-2: Site Coefficient $F_v$

| Site Class | Mapped $MCE_R$ Spectral Response Acceleration Parameter at 1-s Period | | | | |
|---|---|---|---|---|---|
| | $S_1 \le 0.10$ | $S_1 = 0.20$ | $S_1 = 0.30$ | $S_1 = 0.40$ | $S_1 \ge 0.50$ |
| A | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| B | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| C | 1.7 | 1.6 | 1.5 | 1.4 | 1.3 |
| D | 2.4 | 2.0 | 1.8 | 1.6 | 1.5 |
| E | 3.5 | 3.2 | 2.8 | 2.4 | 2.4 |
| F | See Section 11.4.7 of ASCE 7 | | | | |

Note: Use straight-line interpolation for intermediate values of $S_1$

**For Site Class = B and $S_1$ = 0.391 g, $F_v$ = 1.000**

**Equation (11.4–1):** $S_{MS} = F_a S_S = 1.000 \times 1.016 = 1.016$ g

**Equation (11.4–2):** $S_{M1} = F_v S_1 = 1.000 \times 0.391 = 0.391$ g

Section 11.4.4 — Design Spectral Acceleration Parameters

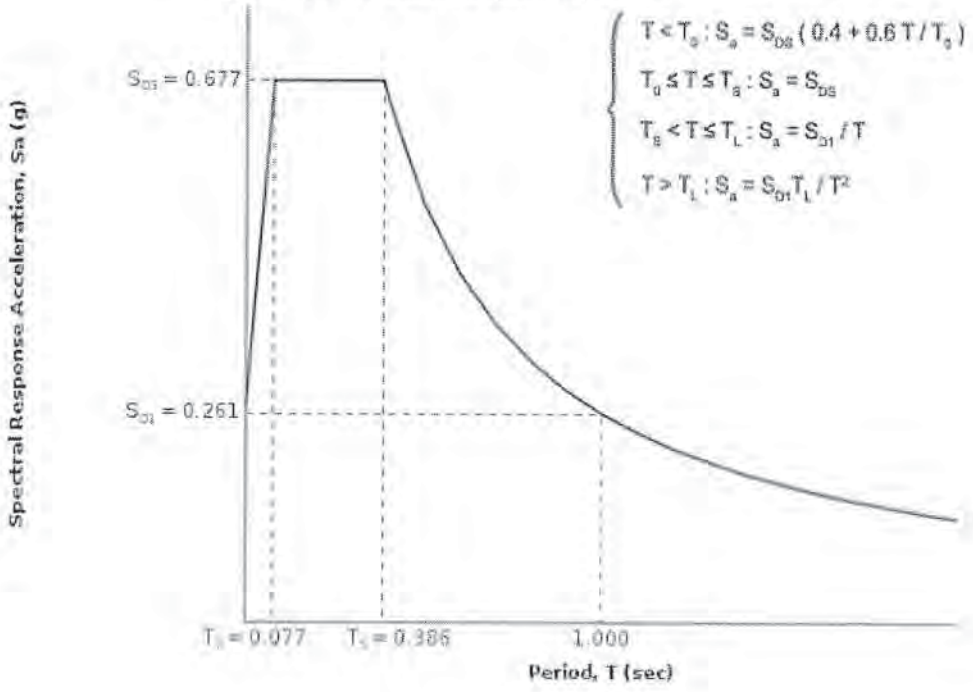
**Equation (11.4–3):** $S_{DS} = \frac{2}{3} S_{MS} = \frac{2}{3} \times 1.016 = 0.677$ g

**Equation (11.4–4):** $S_{D1} = \frac{2}{3} S_{M1} = \frac{2}{3} \times 0.391 = 0.261$ g

Section 11.4.5 — Design Response Spectrum

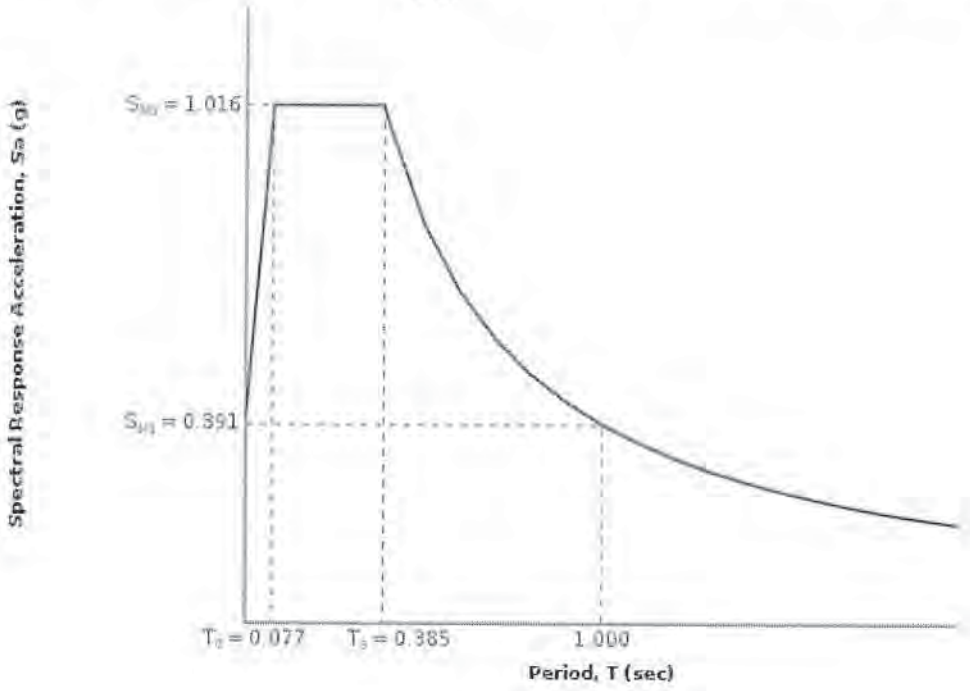
**From Figure 22-12** [3] $T_L = 8$ seconds

Figure 11.4-1: Design Response Spectrum



## Section 11.4.6 — Risk-Targeted Maximum Considered Earthquake ($MCE_R$) Response Spectrum

The $MCE_R$ Response Spectrum is determined by multiplying the design response spectrum above by 1.5.



Section 11.8.3 — Additional Geotechnical Investigation Report Requirements for Seismic Design Categories D through F

**From Figure 22-7** [4] PGA = 0.378

**Equation (11.8-1):** $PGA_M = F_{PGA}PGA = 1.000 \times 0.378 = 0.378$ g

Table 11.8-1: Site Coefficient $F_{PGA}$

| Site Class | Mapped MCE Geometric Mean Peak Ground Acceleration, PGA | | | | |
|---|---|---|---|---|---|
| | PGA ≤ 0.10 | PGA = 0.20 | PGA = 0.30 | PGA = 0.40 | PGA ≥ 0.50 |
| A | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| B | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| C | 1.2 | 1.2 | 1.1 | 1.0 | 1.0 |
| D | 1.6 | 1.4 | 1.2 | 1.1 | 1.0 |
| E | 2.5 | 1.7 | 1.2 | 0.9 | 0.9 |
| F | See Section 11.4.7 of ASCE 7 | | | | |

Note: Use straight-line interpolation for intermediate values of PGA

**For Site Class = B and PGA = 0.378 g, $F_{PGA}$ = 1.000**

Section 21.2.1.1 — Method 1 (from Chapter 21 – Site-Specific Ground Motion Procedures for Seismic Design)

**From Figure 22-17** [5] $C_{RS}$ = 1.038

**From Figure 22-18** [6] $C_{R1}$ = 1.079

## Section 11.6 — Seismic Design Category

Table 11.6-1 Seismic Design Category Based on Short Period Response Acceleration Parameter

| VALUE OF $S_{DS}$ | RISK CATEGORY | | |
|---|---|---|---|
| | I or II | III | IV |
| $S_{DS} < 0.167g$ | A | A | A |
| $0.167g \le S_{DS} < 0.33g$ | B | B | C |
| $0.33g \le S_{DS} < 0.50g$ | C | C | D |
| $0.50g \le S_{DS}$ | D | D | D |

**For Risk Category = I and $S_{DS}$ = 0.677 g, Seismic Design Category = D**

Table 11.6-2 Seismic Design Category Based on 1-S Period Response Acceleration Parameter

| VALUE OF $S_{D1}$ | RISK CATEGORY | | |
|---|---|---|---|
| | I or II | III | IV |
| $S_{D1} < 0.067g$ | A | A | A |
| $0.067g \le S_{D1} < 0.133g$ | B | B | C |
| $0.133g \le S_{D1} < 0.20g$ | C | C | D |
| $0.20g \le S_{D1}$ | D | D | D |

**For Risk Category = I and $S_{D1}$ = 0.261 g, Seismic Design Category = D**

Note: When $S_1$ is greater than or equal to 0.75g, the Seismic Design Category is **E** for buildings in Risk Categories I, II, and III, and **F** for those in Risk Category IV, irrespective of the above.

Seismic Design Category ≡ "the more severe design category in accordance with Table 11.6-1 or 11.6-2" = D

---

Note: See Section 11.6 for alternative approaches to calculating Seismic Design Category.

## References


1. *Figure 22-1*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-1.pdf
2. *Figure 22-2*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-2.pdf
3. *Figure 22-12*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-12.pdf
4. *Figure 22-7*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-7.pdf
5. *Figure 22-17*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-17.pdf
6. *Figure 22-18*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-18.pdf

# Appendix B

## Site Class D
## 10 feet or more of fill
## beneath building foundations

# USGS Design Maps Summary Report

## User-Specified Input

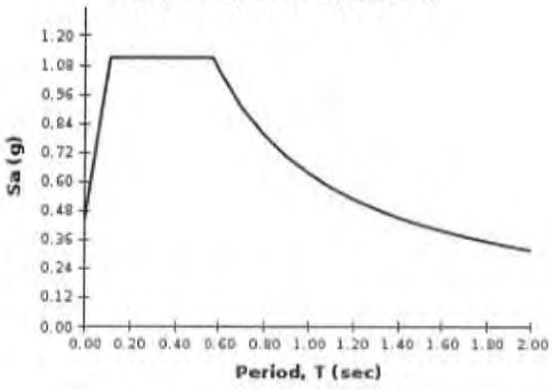
| | |
|---|---|
| **Report Title** | Bear Valley Parkway<br>Fri December 12, 2014 19:27:55 UTC |
| **Building Code Reference Document** | ASCE 7-10 Standard<br>(which utilizes USGS hazard data available in 2008) |
| **Site Coordinates** | 33.1°N, 117.06°W |
| **Site Soil Classification** | Site Class D – "Stiff Soil" |
| **Risk Category** | I/II/III |

## USGS-Provided Output

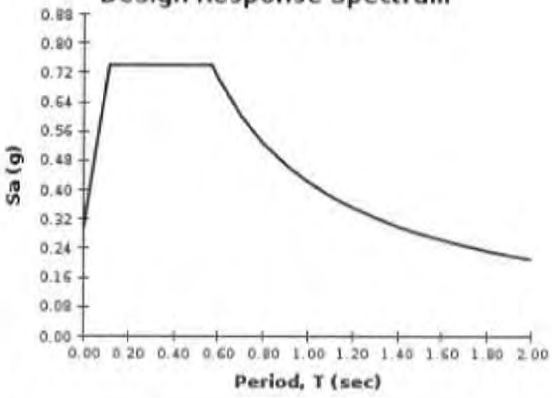
| | | | | | |
|---|---|---|---|---|---|
| $S_S$ = | 1.016 g | $S_{MS}$ = | 1.111 g | $S_{DS}$ = | 0.741 g |
| $S_1$ = | 0.391 g | $S_{M1}$ = | 0.633 g | $S_{D1}$ = | 0.422 g |

For information on how the SS and S1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.

**$MCE_R$ Response Spectrum**




**Design Response Spectrum**




For $PGA_M$, $T_L$, $C_{RS}$, and $C_{R1}$ values, please view the detailed report.

Although this information is a product of the U.S. Geological Survey, we provide no warranty, expressed or implied, as to the accuracy of the data contained therein. This tool is not a substitute for technical subject-matter knowledge.

# USGS Design Maps Detailed Report

ASCE 7-10 Standard (33.1°N, 117.06°W)

Site Class D – "Stiff Soil", Risk Category I/II/III

## Section 11.4.1 — Mapped Acceleration Parameters

Note: Ground motion values provided below are for the direction of maximum horizontal spectral response acceleration. They have been converted from corresponding geometric mean ground motions computed by the USGS by applying factors of 1.1 (to obtain $S_S$) and 1.3 (to obtain $S_1$). Maps in the 2010 ASCE-7 Standard are provided for Site Class B. Adjustments for other Site Classes are made, as needed, in Section 11.4.3.

| | |
|---|---|
| **From Figure 22-1** [1] | $S_S$ = 1.016 g |
| **From Figure 22-2** [2] | $S_1$ = 0.391 g |

## Section 11.4.2 — Site Class

The authority having jurisdiction (not the USGS), site-specific geotechnical data, and/or the default has classified the site as Site Class D, based on the site soil properties in accordance with Chapter 20.

Table 20.3-1 Site Classification

| Site Class | $\bar{v}_s$ | $\bar{N}$ or $\bar{N}_{ch}$ | $\bar{s}_u$ |
|---|---|---|---|
| A. Hard Rock | >5,000 ft/s | N/A | N/A |
| B. Rock | 2,500 to 5,000 ft/s | N/A | N/A |
| C. Very dense soil and soft rock | 1,200 to 2,500 ft/s | >50 | >2,000 psf |
| D. Stiff Soil | 600 to 1,200 ft/s | 15 to 50 | 1,000 to 2,000 psf |
| E. Soft clay soil | <600 ft/s | <15 | <1,000 psf |
| | Any profile with more than 10 ft of soil having the characteristics:<br>• Plasticity index $PI$ > 20,<br>• Moisture content $w \geq 40\%$, and<br>• Undrained shear strength $\bar{s}_u$ < 500 psf | | |
| F. Soils requiring site response analysis in accordance with Section 21.1 | See Section 20.3.1 | | |

For SI: 1ft/s = 0.3048 m/s 1lb/ft² = 0.0479 kN/m²

## Section 11.4.3 — Site Coefficients and Risk-Targeted Maximum Considered Earthquake ($MCE_R$) Spectral Response Acceleration Parameters

Table 11.4-1: Site Coefficient $F_a$

| Site Class | Mapped $MCE_R$ Spectral Response Acceleration Parameter at Short Period | | | | |
|---|---|---|---|---|---|
| | $S_S \le 0.25$ | $S_S = 0.50$ | $S_S = 0.75$ | $S_S = 1.00$ | $S_S \ge 1.25$ |
| A | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| B | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| C | 1.2 | 1.2 | 1.1 | 1.0 | 1.0 |
| D | 1.6 | 1.4 | 1.2 | 1.1 | 1.0 |
| E | 2.5 | 1.7 | 1.2 | 0.9 | 0.9 |
| F | See Section 11.4.7 of ASCE 7 | | | | |

Note: Use straight-line interpolation for intermediate values of $S_S$

**For Site Class = D and $S_S$ = 1.016 g, $F_a$ = 1.094**

Table 11.4-2: Site Coefficient $F_v$

| Site Class | Mapped $MCE_R$ Spectral Response Acceleration Parameter at 1-s Period | | | | |
|---|---|---|---|---|---|
| | $S_1 \le 0.10$ | $S_1 = 0.20$ | $S_1 = 0.30$ | $S_1 = 0.40$ | $S_1 \ge 0.50$ |
| A | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| B | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| C | 1.7 | 1.6 | 1.5 | 1.4 | 1.3 |
| D | 2.4 | 2.0 | 1.8 | 1.6 | 1.5 |
| E | 3.5 | 3.2 | 2.8 | 2.4 | 2.4 |
| F | See Section 11.4.7 of ASCE 7 | | | | |

Note: Use straight-line interpolation for intermediate values of $S_1$

**For Site Class = D and $S_1$ = 0.391 g, $F_v$ = 1.617**

**Equation (11.4-1):** $S_{MS} = F_a S_S = 1.094 \times 1.016 = 1.111$ g

**Equation (11.4-2):** $S_{M1} = F_v S_1 = 1.617 \times 0.391 = 0.633$ g

Section 11.4.4 — Design Spectral Acceleration Parameters

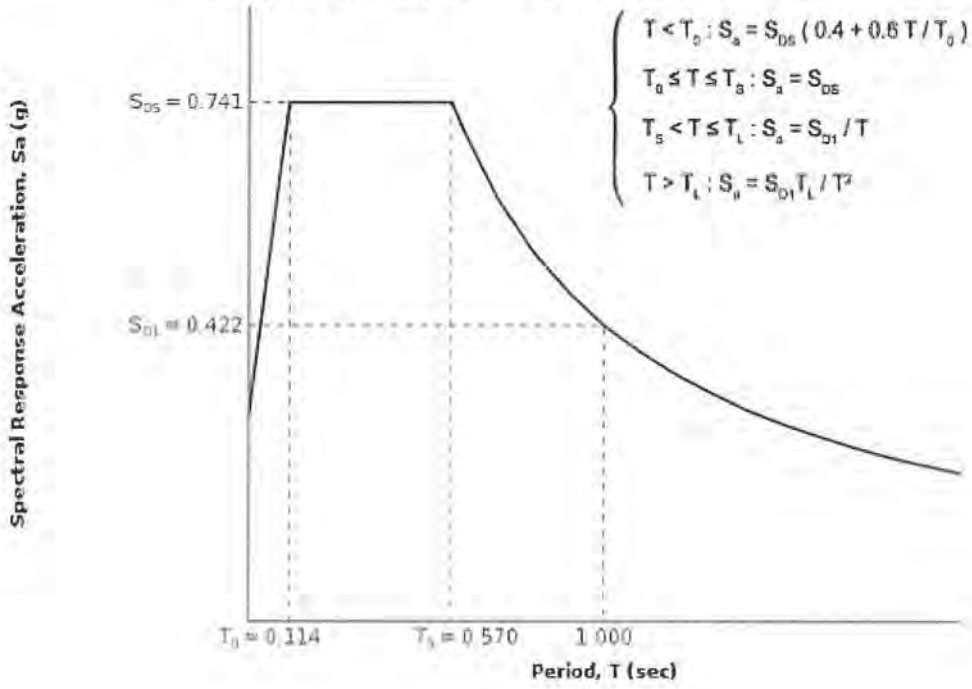
**Equation (11.4-3):** $S_{DS} = \frac{2}{3} S_{MS} = \frac{2}{3} \times 1.111 = 0.741$ g

**Equation (11.4-4):** $S_{D1} = \frac{2}{3} S_{M1} = \frac{2}{3} \times 0.633 = 0.422$ g

Section 11.4.5 — Design Response Spectrum

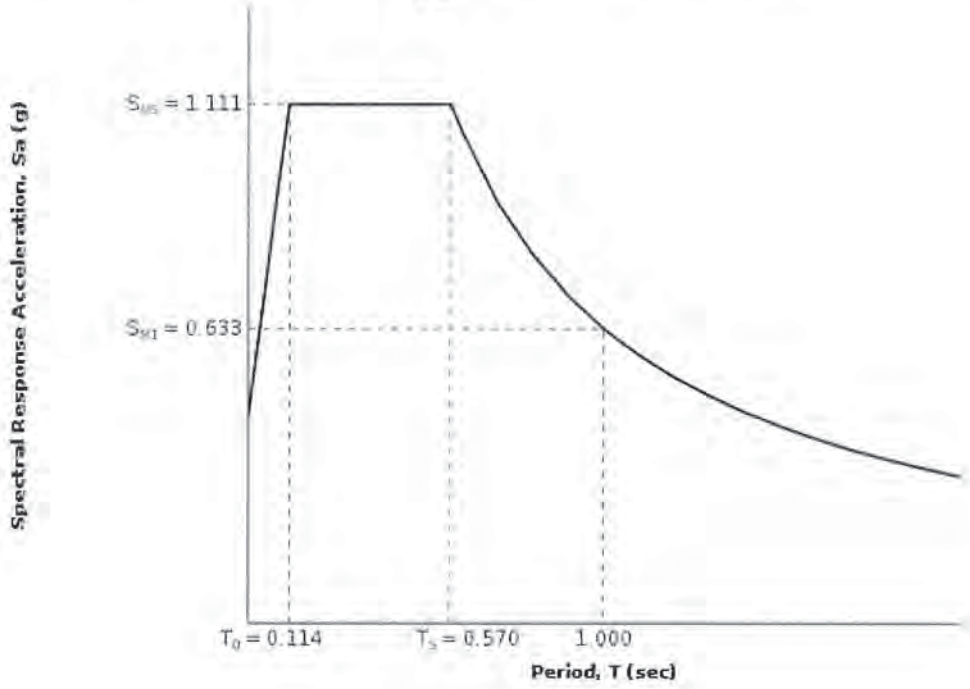
**From Figure 22-12** [3] $T_L = 8$ seconds

Figure 11.4-1: Design Response Spectrum



## Section 11.4.6 — Risk-Targeted Maximum Considered Earthquake ($MCE_R$) Response Spectrum

The $MCE_R$ Response Spectrum is determined by multiplying the design response spectrum above by 1.5.



Section 11.8.3 — Additional Geotechnical Investigation Report Requirements for Seismic Design Categories D through F

**From Figure 22-7** [4] PGA = 0.378

**Equation (11.8-1):** $PGA_M = F_{PGA}PGA = 1.122 \times 0.378 = 0.424$ g

Table 11.8-1: Site Coefficient $F_{PGA}$

| Site Class | Mapped MCE Geometric Mean Peak Ground Acceleration, PGA | | | | |
|---|---|---|---|---|---|
| | PGA ≤ 0.10 | PGA = 0.20 | PGA = 0.30 | PGA = 0.40 | PGA ≥ 0.50 |
| A | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| B | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| C | 1.2 | 1.2 | 1.1 | 1.0 | 1.0 |
| D | 1.6 | 1.4 | 1.2 | 1.1 | 1.0 |
| E | 2.5 | 1.7 | 1.2 | 0.9 | 0.9 |
| F | See Section 11.4.7 of ASCE 7 | | | | |

Note: Use straight-line interpolation for intermediate values of PGA

**For Site Class = D and PGA = 0.378 g, $F_{PGA}$ = 1.122**

Section 21.2.1.1 — Method 1 (from Chapter 21 - Site-Specific Ground Motion Procedures for Seismic Design)

**From Figure 22-17** [5] $C_{RS}$ = 1.038

**From Figure 22-18** [6] $C_{R1}$ = 1.079

## Section 11.6 — Seismic Design Category

Table 11.6-1 Seismic Design Category Based on Short Period Response Acceleration Parameter

| VALUE OF $S_{DS}$ | RISK CATEGORY | | |
|---|---|---|---|
| | I or II | III | IV |
| $S_{DS} < 0.167g$ | A | A | A |
| $0.167g \le S_{DS} < 0.33g$ | B | B | C |
| $0.33g \le S_{DS} < 0.50g$ | C | C | D |
| $0.50g \le S_{DS}$ | D | D | D |

**For Risk Category = I and $S_{DS}$ = 0.741 g, Seismic Design Category = D**

Table 11.6-2 Seismic Design Category Based on 1-S Period Response Acceleration Parameter

| VALUE OF $S_{D1}$ | RISK CATEGORY | | |
|---|---|---|---|
| | I or II | III | IV |
| $S_{D1} < 0.067g$ | A | A | A |
| $0.067g \le S_{D1} < 0.133g$ | B | B | C |
| $0.133g \le S_{D1} < 0.20g$ | C | C | D |
| $0.20g \le S_{D1}$ | D | D | D |

**For Risk Category = I and $S_{D1}$ = 0.422 g, Seismic Design Category = D**

Note: When $S_1$ is greater than or equal to 0.75g, the Seismic Design Category is **E** for buildings in Risk Categories I, II, and III, and **F** for those in Risk Category IV, irrespective of the above.

Seismic Design Category ≡ "the more severe design category in accordance with Table 11.6-1 or 11.6-2" = D

---

Note: See Section 11.6 for alternative approaches to calculating Seismic Design Category.

## References


1. *Figure 22-1*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-1.pdf
2. *Figure 22-2*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-2.pdf
3. *Figure 22-12*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-12.pdf
4. *Figure 22-7*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-7.pdf
5. *Figure 22-17*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-17.pdf
6. *Figure 22-18*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-18.pdf

# Appendix J Geotechnical Investigation Proposed Road Improvements (September 2016)

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Vinje & Middleton Engineering, Inc.

# Geotechnical Investigation

## Proposed Road Improvements
## Bear Valley Parkway
## Escondido, California

**September 27, 2016**

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TABLE OF CONTENTS

PAGE NO.

I. INTRODUCTION ..... 1

II. SITE DESCRIPTION ..... 1

III. PROPOSED DEVELOPMENT ..... 2

IV. SITE INVESTIGATION ..... 3

V. GEOTECHNICAL CONDITIONS ..... 3

VI. SITE CORROSION ASSESSMENT ..... 9

VII. CONCLUSIONS ..... 9

VIII. RECOMMENDATIONS ..... 11

A. Remedial Grading and Earthworks ..... 11
B. Soil Design Parameters ..... 17
C. Pavement Structural Section Design ..... 18
D. Re-Surfacing Asphalt ..... 19

IX. GENERAL RECOMMENDATIONS ..... 19

X. LIMITATIONS ..... 20

PLATE NO.

Vicinity Map ..... 1
Improvement Plans ..... 2-5
Test Pit Logs ..... 5-14
Geologic Cross-Sections ..... 15
Retaining Wall Drain Detail ..... 16

Appendix A: Seismic Ground Motion Values

Appendix B: R-Value Calculation Sheet

# GEOTECHNICAL INVESTIGATION
# PROPOSED ROAD IMPROVEMENTS
# BEAR VALLEY PARKWAY
# ESCONDIDO, CALIFORNIA

## I. INTRODUCTION

Portions of Bear Valley Parkway, adjacent to 661 Bear Valley Parkway, are planned for widening and improvements in association with a multi-family residential development at 661 Bear Valley Parkway. A Vicinity Map showing the study roadway section is included with this report as Plate 1. This investigation was initiated to determine soil and geotechnical conditions along the planned roadway improvement areas and to ascertain their influence upon the proposed improvements. Test pit digging, geologic mapping, soil sampling, and laboratory testing were among the activities conducted in conjunction with this effort which has resulted in the grading and paving recommendations presented in the following sections.

Geotechnical conditions at the proposed residential development, adjacent to the proposed roadway improvements, were previously studied by this office with our findings, conclusions and recommendations summarized in the following published technical report:

Geotechnical Investigation
Proposed Residential Subdivision
661 Bear Valley Parkway
Escondido, California
Job No. 13-116-P, dated April 3, 2013

The referenced report was reviewed as part of this effort. Portions of the referenced report pertinent to this effort are reproduced herein where applicable and appropriate.

## II. SITE DESCRIPTION

Improvement Plans for the project road sections showing the existing roadway and the proposed widening and improvements are included as Plates 2 through 5. The study portion of Bear Valley Parkway is between Choya Canyon Road to the north and Sunset Drive to the south.

Topographically, the existing Bear Valley Parkway descends in a southerly direction with approximately 135 feet in relief along the 3,500 feet of the project alignment. More recent improvements, including concrete curb & gutter and sidewalks, are present along a 500 foot section adjacent to Zlatibor Ranch Road.

Noted areas include:

- Choya Ranch Road to Zlatibor Ranch Road: Natural hilly areas and remnants of an old mine (spoils) are present along the westerly side of Bear Valley Parkway from Choya Ranch Road to the improved areas north at Zlatibor Ranch Road. The east side of Bear Valley Parkway mostly consists of gentle to modest natural terrain.

- Zlatibor Ranch Road to Encino Drive: The westerly side consists of natural terrain with local shallow fills that extend to approximately 500 feet from Encino Drive. Between this location and the entrance to Encino Drive, a local canyon flowline has been filled to allow the continuation of Bear Valley Parkway. The canyon road fill embankments are steep and heavily overgrown. Based on our field observations, the fill slopes generally approach 20 feet high maximum, and appear to locally approach 1:1 gradients.

  On the easterly side of Bear Valley Parkway, between Zlatibor Ranch Road and the filled-in canyon crossing, are existing cut slopes that approach near vertical and range to approximately 12 feet high. Much of the face of the slopes expose natural colluvial soils which are impacted by erosional ruts due to uncontrolled upslope runoff.

- Encino Drive to Sunset Drive: The westerly side is marked by developed residential properties that access Bear Valley Parkway. Ground surfaces appear generally natural with some minor modifications.

  The north portion of the easterly side of Bear Valley Parkway is marked by fill embankments that descend up to 20 feet, at locally oversteepened 1:1 gradients, to the flowline that was traversed at Encino Drive. The south portion of this section transitions into gentle to modest natural terrain, locally marked by erosional ruts. The apparent contact between the north and south sections is an access drive that was constructed across the flowline. An inlet and outlet with a connecting culvert allow the flowline runoff to continue southward under the access drive. Much of this entire length of roadway is heavily overgrown with limited to no access.

Documentation pertaining to the construction of Bear Valley Parkway along the study alignment is not available for review.

## III. PROPOSED DEVELOPMENT

The entire length of the study portion of Bear Valley Parkway is planned for widening with new curb & gutter and sidewalk improvements outside of the existing improved section adjacent to Zlatibor Ranch Road.

New road construction will include the following:

- A large cut slope for roadway widening is proposed on the westerly side of Bear Valley Parkway, north of Zlatibor Ranch Road. The cut slope is programmed for 2:1 gradients maximum and will daylight into natural terrain to the north and south. The cut slope will approach 25 feet high maximum in the central portion of the new graded embankment.

- Ground transitioning for roadway widening at the existing canyon fill slope constructed across the flowline at Encino Drive and the fill slope ascending from the flowline along east side of Bear Valley Parkway between Encino Drive and Sunset Drive will be provided by a variable height retaining walls that will approach 13 feet high maximum.

- Existing oversteepened cut slopes will be reconstructed to 2:1 gradients along the easterly side of Bear Valley Parkway between Encino Drive and Zlatibor Ranch Road to allow for roadway widening.

- Elsewhere, roadway widening elevations will be very near to existing grades adjacent to Bear Valley Parkway.

- New driveways and accesses will be constructed for existing residential properties along Bear Valley Parkway.

## IV. SITE INVESTIGATION

Geotechnical conditions along the study roadway were chiefly determined by a review of relevant test pits excavated near Bear Valley Parkway in connection with the referenced Geotechnical Report and the excavation of 5 additional test pits dug with a track-mounted Caterpiller hoe. Test pit locations were limited by existing graded embankments, existing roadway and private improvements, and underground utilities. All the excavations were logged by our project geologist who also retained representative soil / rock samples for laboratory testing. Test Pit locations are shown on the attached Improvement Plans, Plates 2-5. Logs of the recently excavated test pits and copies of the pertinent test pits from the referenced report are included as Plates 5 through 14. Laboratory test results and engineering properties of selected samples are summarized in following sections.

## V. GEOTECHNICAL CONDITIONS

Northern portions of the project roadway improvement areas are characterized by natural nearly level to modest terrain underlain at depth by crystalline bedrock units and mantled by ancient colluvial soils. The central and southern portions of the roadway include

oversteepened graded cuts and fills that generally approach 20 feet high. These areas are also expected to be underlain by crystalline bedrock units which are mantled by fills, ancient colluvium soil, and young alluvial soils. Landslides or areas of existing slope instability are not in evidence along the planned roadway improvements. The following earth materials are recognized:

## A. Earth Materials

**Bedrock (Kgb):** Crystalline bedrock units underlie all of the studied areas at or very near the surface. Exposures are typically fine to coarse grained granitic to gabbroic rocks that occur in a weathered and friable condition near the surface and grade to a hard condition quickly. Bedrock at the project site also include corestone units. These are spherical boulders of harder rock scattered throughout the surrounding bedrock. Larger corestones, if encountered during grading can create removal and disposal problems. Project bedrock are competent units which will adequately support new fills and road improvements.

**Colluvium (Qcol):** Much of the existing and proposed roadway areas are underlain directly by a modest to thick mantle of colluvial soils. As exposed, site colluvium consists largely of fine to medium grained sandy deposits. Developed exposures appear ancient and consolidated at depth. Overall, upper colluvium deposits were found in damp and loose conditions that grade more uniformly medium dense to dense at depth.

**Alluvium (Qal):** Local alluvium deposits are present within the local flowline in the south areas of the property. Due to inaccessibility of the flowline, test pits were not excavated in the alluvium. However, based on the previous geotechnical investigation, site alluvium is anticipated to occur in moist and loose to very loose conditions overall.

**Fill (af):** As exposed, site fill deposits consist of silty sand that locally includes trash debris. The fill was found in damp and loose to medium dense conditions overall.

The approximate distribution of earth deposits at the site are shown on the enclosed Improvement Plans, Plates 2-4. Details of site earth materials are given on the enclosed test pit logs, Plates 5-14. The subsurface relationship of site earth materials is depicted on Geologic Cross-Sections enclosed with this report as Plate 15.

## B. Slope Stability

Project natural hillsides are underlain by competent crystalline bedrock units which typically perform well in natural and graded slope conditions. Slope instability is not indicated along the project natural hillside areas. Oversteepened graded fill slopes

associated with ground transitioning along (or across) the existing flowline are heavily overgrown and appear to be currently performing well with no indication of instability. However, consideration should be given to reconstructing the slopes at 2:1 gradients minimum as part of the project development / street improvements.

Future graded cut embankments exposing crystalline bedrock are expected to be grossly stable to anticipated design heights. Graded cut slopes exposing natural colluvium or surficial soil should be track-walked with heavy construction equipment and compacted to 90% minimum on the slope face. Mine spoil, if exposed, should be entirely removed and reconstructed with compacted fills, as directed in the field by the project geotechnical engineer. All graded slopes should be constructed as recommended herein and provided with well-developed brow ditches. Runoff should not be allowed to occur in concentrated flow conditions or flow over slope faces.

## C. Surface Flow and Subsurface Groundwater

Subsurface water was not encountered in project test excavations to the depths explored. However, portions of the flowline adjacent to the project roadway has intermittent surface flow. The tributary flowline will be subject to seasonal conditions and varying degrees of flow conditions. Storm water control is critical to the stability of project new road widening. Uncontrolled runoff should not be allowed to flow over graded surfaces. Storm water runoff control facilities should be designed and installed as necessary and appropriate. Rock-lined sidewalls or armor protection for the flowline crossing or fill slopes adjacent to the flowline may be necessary to limit erosion.

Project retaining walls should be provided with an adequate back drain system which should outlet into approved locations.

## D. Seismic Ground Motion Values

Seismic ground motion values were determined as part of this investigation in accordance with Chapter 16, Section 1613 of the 2013 California Building Code (CBC) and ASCE 7-10 Standard using the web-based United States Geological Survey (USGS) ground motion calculator. Generated results including the Mapped ($S_S$, $S_1$), Risk-Targeted Maximum Considered Earthquake ($MCE_R$) adjusted for site Class effects ($S_{MS}$, $S_{M1}$) and Design ($S_{DS}$, $S_{D1}$) Spectral Acceleration Parameters as well as Site Coefficients ($F_a$, $F_v$) for short periods (0.20 second) and 1-second period, Site Class, Design and Risk-Targeted Maximum Considered Earthquake ($MCE_R$) Response Spectrums, Mapped Maximum Considered Geometric Mean ($MCE_G$) Peak Ground Acceleration adjusted for Site Class effects ($PGA_M$) and Seismic Design Category based on Risk Category and the severity of the design earthquake ground motion at the site are summarized in the enclosed Appendix A.

## E. Laboratory Testing / Results

Earth deposits encountered in our exploratory test excavations were closely examined and sampled for laboratory testing. Based upon our test pit and field exposures, site soils have been grouped into the following soil types:

TABLE 1

| Soil Type | Description |
|---|---|
| 1 | Brown / red brown silty sand - Road Fill (Raf) / Colluvium (Qcol) |
| 3 | Grey fine to coarse sand - Bedrock (Kgb) |

The following tests were conducted in support of this investigation:

1. **Sand Equivalent Test (S.E.):** Sand equivalent tests were performed on representative samples of Soil Type 1 in accordance with California Test 217. The test results are presented in Table 2.

TABLE 2

| Location | Soil Type | Description | Sand Equivalent (S.E.) |
|---|---|---|---|
| TP-101 @ 2' | 1 | Brown silty sand | 16 |
| TP-104 @ 2' | 1 | Brown silty sand | 18 |

2. **Maximum Dry Density and Optimum Moisture Content:** The maximum dry density and optimum moisture content of Soil Type1 was determined in accordance with ASTM D-1557. The results are presented in Table 3.

TABLE 3

| Location | Soil Type | Maximum Dry Density ($\gamma_m$-pcf) | Optimum Moisture Content ($\omega_{opt}$-%) |
|---|---|---|---|
| TP-104 @ 2' | 1 | 136.5 | 8.8 |

3. **Moisture-Density Tests (Undisturbed Chunk Samples):** In-place dry density and moisture content of representative soil deposits beneath the site were determined from relatively undisturbed chunk samples using the water displacement test method. Results are presented in Table 4 and tabulated on the attached Test Pit Logs.

TABLE 4

| Sample Location | Soil Type | Field Moisture Content (ω-%) | Field Dry Density (Yd-pcf) | Max. Dry Density (Ym-pcf) | In-Place Relative Compaction | Degree of Saturation S (%) |
|---|---|---|---|---|---|---|
| TP-101 @ 2' | 1 | 3 | 117.6 | 136.5 | 86 | 18 |
| TP-101 @ 4' | 1 | 7 | 119.0 | 136.5 | 87 | 44 |
| TP-102 @ 2' | 1 | 7 | 119.0 | 136.5 | 87 | 44 |
| TP-102 @ 3' | 1 | 7 | 124.2 | 136.5 | 91 | 51 |
| TP-103 @ 2' | 1 | 3 | 113.7 | 136.5 | 83 | 16 |
| TP-103 @ 4' | 1 | 7 | 123.0 | 136.5 | 90 | 48 |
| TP-104 @ 2' | 1 | 6 | 107.7 | 136.5 | 79 | 28 |
| TP-104 @ 4' | 1 | 7 | 119.3 | 136.5 | 87 | 44 |
| TP-104 @ 6' | 1 | 8 | 122.3 | 136.5 | 90 | 55 |
| TP-105 @ 4' | 1 | 4 | 111.8 | 136.5 | 82 | 21 |

Note 1: Sample may be somewhat disturbed.
Assumptions And relationships:
In-place Relative Compaction = (Yd ÷ Ym) X100
Gs = 2.75
e = (Gs Yω ÷ Yd) - 1
S = (ω Gs) ÷ e

4. **Direct Shear Test:** One direct shear test was performed on a representative sample of Soil Type 1. The prepared specimen was soaked overnight, loaded with normal loads of 1, 2, and 4 kips per square foot respectively, and sheared to failure in an undrained condition. The test result is presented in Table 5.

TABLE 5

| Sample Location | Soil Type | Sample Condition | Wet Density (Yw-pcf) | Angle of Int. Fric. (Φ-Deg.) | Apparent Cohesion (c-psf) |
|---|---|---|---|---|---|
| TP-104 @ 2' | 1 | remolded to 90% of YM @ % ωopt | 133 | 28 | 68 |

5. **pH and Resistivity Test:** pH and resistivity of a representative sample of Soil Type 1 was determined using "Method for Estimating the Service Life of Steel Culverts," in accordance with California Test Method (CTM) 643. The test result is tabulated in Table 6.

TABLE 6

| Sample Location | Soil Type | Minimum Resistivity (OHM-CM) | pH |
|---|---|---|---|
| TP-104 @ 2' | 1 | 2912 | 6.3 |

6. **Sulfate Test:** A sulfate test was performed on a representative sample of Soil Type 1 in accordance with California Test Method (CTM) 417. The test result is presented in Table 7.

TABLE 7

| Sample Location | Soil Type | Amount of Water Soluble Sulfate In Soil (% by Weight) |
|---|---|---|
| TP-104 @ 2' | 1 | 0.006 |

7. **Chloride Test:** A chloride test was performed on a representative sample of Soil Type 1 in accordance with the California Test Method (CTM) 422. The test result is presented in Table 8.

TABLE 8

| Sample Location | Soil Type | Amount of Water Soluble Chloride In Soil (% by Weight) |
|---|---|---|
| TP-104 @ 2' | 1 | 0.002 |

8. **R-Value Test:** Two R-value test were performed on representative samples of Soil Type 1 in accordance with the California Test Method 301. The test results are presented in Table 9.

TABLE 9

| Location | Soil Type | Description | R-Value |
|---|---|---|---|
| TP-102 @ 2' | 1 | Brown silty sand | 37 |
| TP-104 @ 2' | 1 | Red brown silty sand | 64 |

## VI. SITE CORROSION ASSESSMENT

A site is considered to be corrosive to foundation elements, walls and drainage structures if one or more of the following conditions exist:

* Sulfate concentration is greater than or equal to 2000 ppm (0.2% by weight).
* Chloride concentration is greater than or equal to 500 ppm (0.05 % by weight).
* pH is less than 5.5.

For structural elements, the minimum resistivity of soil (or water) indicates the relative quantity of soluble salts present in the soil (or water). In general, a minimum resistivity value for soil (or water) less than 1000 ohm-cm indicates the presence of high quantities of soluble salts and a higher propensity for corrosion. Appropriate corrosion mitigation measures for corrosive conditions should be selected depending on the service environment, amount of aggressive ion salts (chloride or sulfate), pH levels and the desired service life of the structure.

Laboratory test results performed on selected representative site samples indicate that the minimum resistivity is more than 1000 ohm-cm suggesting presence of low quantities of soluble salts. Test results further indicated pH greater than 5.5, sulfate concentration less than 2000 ppm, and chloride concentration less than 500 ppm. Based on the results of the corrosion analyses, the project site is considered non-corrosive. The project site is not located within 1000 feet of salt or brackish water.

Based upon the result of the tested soil sample, the amount of water soluble sulfate ($SO_4$) was found to be 0.006 percent by weight which is considered negligible according to ACI 318, Table 4.3.1. Portland cement Type II may be used. Table 10 is appropriate based on the pH-Resistivity test result:

**TABLE 10**

| Design Soil Type | Gage | 18 | 16 | 14 | 12 | 10 | 8 |
|---|---|---|---|---|---|---|---|
| 1 | Years to Perforation of Steel Culverts | 17 | 22 | 27 | 37 | 47 | 57 |

## VII. CONCLUSIONS

Based upon the foregoing investigation, subgrade and bearing soil underlying the planned roadway improvements range from loose silty sand fill / surficial soil deposits to dense ancient colluvium and very dense crystalline bedrock units. The following geotechnical factors will most impact the planned road improvements and associated construction costs:

- The existing roadway along the study areas are scheduled to remain. The existing road will be widened to include new travel lanes, curb & gutter, and sidewalk along the entire length of the study areas outside of the existing improved areas adjacent to Zlatibor Ranch Road.

- Documentation pertaining to existing fills, backfills, and graded embankments occurring along the existing roadway alignment is not available for review. Site fills are relatively thick deposits and were generally placed atop natural topsoils. Existing loose fills and upper natural soils in planned improvement areas should be regraded as a part of project earthwork operations as recommended below.

- Underlying bedrock and dense natural soils are competent units which will adequately support the planned improvements.

- Gross geologic instability is not indicated or expected within the project natural terrain.

- New roadway graded cut slopes are programmed at 2:1 gradients with an estimated maximum vertical height approaching 25 feet. New cut embankments exposing surficial soil deposits should be track-walked with heavy construction equipment to enhance surficial stability.

- Existing fill embankments constructed as transition slopes adjacent to Bear Valley Parkway, and canyon fill slopes are constructed mostly at oversteepened gradients that approach 1:1. Documentation for the existing fill slope construction or fill placement is not available for review. These fills are generally not deemed suitable for support of new transition walls and may need re-grading. Deep foundations for the walls on oversteepened fill slopes may also be appropriate.

  The overall stability of graded embankments and roadway surfaces developed over sloping terrain is most dependent upon adequate keying and benching of fill into the undisturbed dense colluvium or bedrock during the grading operations. At the project site, added care should be given to the proper construction of fill slope keyways and subsequent hillside benching.

- Based on our observation and subsurface exploratory excavations, moderate ripping utilizing medium to large dozers (Caterpillar D-8 or equivalent) will likely be required to achieve final design grades in the deeper cut areas of the project. The need for specialized ripping and / or rock breakers are not anticipated.

- Surface drainage and storm water control are very important in the future performance of the project roadway improvements. Storm water control facilities should be constructed as shown on the project civil drawings.

## VIII. RECOMMENDATIONS

The following recommendations are consistent with the indicated geotechnical conditions along the project roadway alignment and should be considered for designs and implemented during the construction phase. All excavations, grading, earthwork, construction, and bearing soil preparation should be completed in accordance with Chapter 18 (Soils and Foundations) and Appendix "J" (Grading) of the 2013 California Building Code (CBC), the Standard Specifications for Public Works Construction, City of Escondido Grading Ordinances, the requirements of the governing agencies and following sections, wherever appropriate and as applicable. Added or modified recommendations may also be appropriate as directed by the project geotechnical consultant in the field at the time of grading and construction and should be anticipated:

### A. Remedial Grading and Earthworks

1. **Clearing and Grubbing:** Surface vegetation, deleterious materials and debris should be removed from the roadway improvement areas, plus 5 feet outside the perimeter where possible, and as directed in the field. Ground preparation should be inspected and approved by the project geotechnical engineer or his designated field representative prior to remedial grading.

   Existing underground utilities in the roadway construction areas should be pot-holed, identified and marked prior to the actual work.

   Inactive lines should be properly removed or abandoned as approved. Abandoned underground structures should also be removed and the generated voids properly backfilled with compacted soils in accordance with the recommendations provided herein.

2. **Over-excavations and Removals:** The most effective method to mitigate loose and compressible subgrade and bearing soils will utilize removal and recompaction remedial grading techniques. The existing upper fills and loose colluvium in planned roadway, retaining walls, and underground utilities plus a minimum of 5 feet outside the perimeter where possible, and as directed in the field, should be over-excavated to well-compacted fills, dense colluvial deposits, or competent bedrock and placed back as properly compacted fills. Bottom of all removals should be additionally prepared and recompacted to a minimum depth of 6 inches. Bottom of all trenches should be over-excavated to a minimum depth of 12 inches and reconstructed to design invert elevations with compacted fills.

   Based on our exploratory excavations, removal depths will vary along the roadway alignment and are expected to be on the order of 2 feet to more than 7 feet. However, locally deeper removals may be necessary particularly near the project

flowline areas and should be anticipated. Fills/backfills can only be placed on level horizontal surfaces. Consequently, all ground surfaces steeper than 5:1 maximum receiving fills/backfills shall be horizontally benched and keyed as recommended herein and as directed in the field.

In the event over-excavations to suitable material cannot be achieved, ground stabilization techniques using Geogrid reinforcement may be used. For this purpose, the upper fills/topsoils should be removed as directed by the project geotechnical engineer. Removal depths will be determined in the field based upon actual exposures. A layer of Tensar BX-1200 (or greater from the same series) should be placed at the prepared bottom of over-excavation as directed in the field. Backfill placement can then proceed atop the Geogrid. Additional layers of Tensar BX-1200 may also be necessary within the compacted fill mass to construct stable and non-yielding conditions as directed in the field and should be anticipated. The upper most layer of geogrid should be at least 12 inches below the bottom of the deepest utility.

3. **Excavation Characteristics:** Project cuts and undercuts will likely excavate with moderate efforts. Harder rock conditions within deeper cut areas may require heavy ripping using large bulldozers (Caterpillar D-8 or equal) or excavators. Local corestones or large boulders may also be encountered during cut and remedial grading, and over-excavations which will require specialized and concentrated excavation efforts.

4. **Preparation of Wall Foundation Bearing Soils:** Over-excavation for treatment of bearing soil under the proposed wall foundations should be extended to well compacted fills or dense native ground and placed back as a properly compacted fill. Removals should extend a minimum of 3 feet laterally outside the wall foundations on both sides, where possible, and as directed in the field by the project geotechnical engineer. Benches slightly heeled back into the hillside as the wall backfill placement progresses will be necessary. There should be a minimum of 10 feet to daylight between the bottom outside edge of the wall footing and face of slope.

   New retaining walls are planned along existing 1:1 fill slopes. Oversteepened fill embankments are generally considered unsuitable for retaining wall support. Consideration should be given to reconstructing the fills slopes to more conventional 2:1 slopes. Alternatively, wall foundations may be supported on deep foundations embedded into the underlying competent ancient colluvium or crystalline bedrock. Additional recommendations can be given when specific wall details are known.

5. **Wall Back Drainage System:** A well-functioning back drainage system should be constructed behind all retaining wall type foundations. The wall back drainage system should consist of a minimum 4-inch diameter, Schedule 40 (SDR 35)

perforated pipe surrounded with a minimum of 1.5 cubic feet per foot of ¾-crushed rocks (12 inches wide by 18 inches deep) installed at the depths of the wall foundation level and wrapped in Mirafi 140N filter fabric. If Caltrans Class 2 permeable aggregate is used in lieu of the crushed rocks, the filter fabric can be deleted.

The wall back drain should be installed at suitable elevations to allow for adequate fall via a 4-inch diameter non-perforated solid pipe (SDR 35) to an approved outlet. A typical wall back drain system is depicted on the enclosed Plate 16. Provide adequate waterproofing as indicated on the approved project drawings. Protect pipe outlet(s) as appropriate. Wall back drains and outlet locations should also be shown on the project final as-build plans.

6. **Non-uniform Subgrade Soil Transitioning:** Foundation bearing and subgrade soil transitioning from excavated cut to placed fills should not be permitted underneath the proposed roadway and improvements. The cut portion of foundation bearing and subgrade transition areas should be undercut to a minimum depth of 12 inches below the bottom of footing/keyway or finish subgrade and reconstructed to design elevations as compacted fills. In the underground utility trenches there should also be a minimum of 12 inches of compacted fills below the pipe inverts.

7. **Trenching and Temporary Construction Slopes:** Excavations and removals adjacent to the existing underground pipes, utilities and improvements should be done under inspection of the project geotechnical engineer. Undermining existing improvements and structures by the removal operations shall not be allowed. Temporary construction slopes should be set back a minimum of 1-foot from the existing pipes, structures and improvements unless otherwise specified.

   Temporary trench excavations/embankments less than 5 feet high maximum may be constructed at near vertical gradients unless otherwise specified. Temporary trench side walls and construction slopes greater than 5 feet and less than 15 feet may be constructed at near vertical gradients within the lower 5 feet and laid back at 1:1 gradient within the upper portions with the remaining wedge of soil benched out and new backfills tightly keyed-in as the backfill placement progresses. Temporary trench and construction slopes greater than 5 feet maximum constructed at near vertical gradients will require shoring/trench shield support. In all cases groundwater, if encountered, shall be lowered at least 2 feet below the bottom of temporary trench/excavation slopes.

   All temporary construction slopes require continuous geotechnical inspection during the grading operations. Additional recommendations including revised slope gradients, setbacks and the need for temporary shoring support should be given at that time as necessary. The project contractor shall also obtain appropriate permits,

as needed, and conform to the Cal-OSHA and local governing agencies requirements for trenching / open excavations and safety of the workmen during construction.

8. **Fill Materials and Compaction:** On-site weathered bedrock and fill / colluvial excavations will predominantly generate good quality sandy deposits suitable for reuse as compacted site fills. Local trash debris may be expected within site existing fills.

   Project fills shall be clean deposits free of trash, debris, organic matter and deleterious materials consisting of minus 6-inch particles and include at least 40% finer than #4 sieve materials by weight. Rocks more than 6-inches should be properly disposed of from the site.

   Site fill should be adequately processed, thoroughly mixed, moisture conditioned to slightly (2%) above the optimum moisture levels, placed in thin uniform horizontal lifts and mechanically compacted to a minimum of 90% of the corresponding laboratory maximum dry density per the ASTM D-1557, unless otherwise specified. Fills and backfills placed within the project flowline areas, and where subject to potential saturations or flood inundations, should be mechanically compacted to a minimum 95% of the laboratory maximum dry density (ASTM D-1557).

   Subgrade soils below the asphalt pavement base layer should be compacted to at least 95% of the corresponding laboratory maximum dry density within the upper 12 inches. Additionally, all fills/backfills placed within areas subject to potential flooding/inundations should be compacted a minimum of 95% levels.

9. **Permanent Road Embankment Slopes:** Permanent road fill and cut embankment slopes should be constructed at 2:1 gradients maximum. Road embankment slopes constructed as recommended herein, will be grossly stable with respect to deep seated and surface failures for the anticipated maximum design heights.

   All embankment fill slopes shall be provided with a lower keyway. The keyway should maintain a minimum depth of 2 feet into the dense natural soil or competent bedrock with a minimum width of 15 feet. The keyway should expose dense natural soil or competent bedrock throughout with the bottom heeled back a minimum of 2% into the natural hillside and inspected and approved by the project geotechnical engineer. In the flowline areas where dense natural soil or bedrock depths can not be achieved and yielding bottom of keyway excavations are encountered, a layer of Tensar BX-1200 (or greater from the same series) stabilization Geogrid should be placed at the prepared bottom as directed in the field. Additional layers of Geogrid may be required within the compacted fill mass and should be anticipated.

Additional level benches should be constructed into the natural, or graded, hillside as the fill slope construction progresses. Fill slopes should also be compacted to 90% (minimum) of the laboratory standard out to the slope face. Over-building and cutting back to the compacted core, or backrolling at maximum 4 feet vertical increments and "track-walking" at the completion of grading is recommended for site fill slope construction. Geotechnical engineering inspection and testing will be necessary to confirm adequate compaction levels within the fill slope face.

Based on our observations and engineering analyses, gross instability is not indicated or expected within the planned 2:1 cut embankments exposing competent crystalline rocks or dense colluvium. However, some erosion, and sediment washout as well as minor debris fall-outs from above and face of the graded slope, cannot be ruled out and may be anticipated. A raised curb along the edge of pavement and a drainage ditch should be considered along the toe of the project cut embankments. In some cases, a debris fence constructed along the toe of project cut slopes may also become necessary as determined in the field by project geotechnical consultant at the time of slope construction. Graded embankment cut slopes should also be inspected and approved by the project geotechnical consultant during the grading to confirm stability. Additional and/or revised recommendations will be given at that time, if necessary.

All graded cut slopes exposing natural soil should be track-walked with heavy construction equipment to achieve 90% minimum compaction on the face of slope, as directed by the project geotechnical engineer.

10. **Embankment Cut Slope Toe Drainage:** Graded cut embankments developed into the site bedrock units may discharge up-slope drainage along the toe. Nearby pavements and improvements can best be protected by a toe drainage constructed along the base of the slope. Slope toe drains, if required, should consist of a minimum 4-inch diameter, Schedule 40 (SDR 35) perforated pipe surrounded in a minimum of 2.25 cubic feet, per foot, of ¾-inch crushed rocks (1½ feet by 1½ feet trench), wrapped in filter fabric (Mirafi 140-N or equivalent), or Caltrans Class 2 permeable aggregate. Filter fabric can be eliminated if Caltrans Class 2 permeable material is used. The subdrain shall be installed at suitable elevation to ensure positive drainage into an approved drainage facility. The location of the proposed subdrain, if necessary, should be provided by the project geotechnical engineer in the field at the time of grading.

11. **Surface Flow, Subsurface Water and Dewatering:** A critical element to the continued stability of the roadways and graded embankments is adequate surface drainage and storm water control. This can most effectively be achieved by adequate pavement surface cross-fall and the installation of drainage and storm water control facilities. Excessive or concentrated sheetflow over project

embankment slopes will cause erosion and shall not be allowed. Drainage swales should be constructed along the top of all graded slopes. Surface run-off should be collected and directed to a selected location in a controlled manner.

Inundation or flooding of pavement surfaces due to heavy rains and major storm events should be prevented by establishing final pavement surfaces at suitable elevations. Roadway surfaces and face of graded embankments should be protected from storm waters by the construction of flood control structures and slope face rip-rap armor as appropriate. Flood/storm water control facilities should be installed per approved drainage plans.

Slopes constructed in areas subject to inundation should be compacted to a minimum of 95% and may require armor / rip-rap protection to limit erosion and protect the lower portions of the graded embankments.

Special ground stabilization and remedial grading techniques may be required for the grading and construction / improvement within or near the project flowlines.

Surface flow can be expected within the flowline adjacent to Bear Valley Parkway. Actual surface flow conditions within the site flowline are expected to be largely seasonal. Surface water within the site flowlines, if occurring, may impact remedial grading and earthwork construction.

Temporary flow diversion efforts may be expected during seasonal surface flow. Any temporary diversion structures and methods such as diversion channels, sumps and pumps, sheet piles, earthen dikes and berms which could effectively redirect the flow from the project earthwork construction areas may be considered, provided it is reviewed and approved by the project geotechnical consultant.

Groundwater was not encountered in our exploratory test pit excavations at the time on our field investigation, however, dewatering efforts should also be anticipated for completing remedial grading and earthwork operations near the project flowline areas. Any dewatering technique suitable to the field conditions which can effectively remove the intruding water and allow soil removals and fill placement to proceed such as gravel-filled trench sumps with submersible pumps is acceptable unless otherwise considered inadequate or inefficient. Dewatering should continue until completion stabilization of the bottom of removals and over excavations, and initial backfill operations. Dewatering should only be discontinued upon approval of the project geotechnical engineer. Groundwater should be adequately lowered below the specified bottom of removals, over excavation, toe of temporary slope and trench excavations, as approved in the field. A qualified contractor may be consulted in this regard. Performing grading and earthwork construction within the site canyon flowline during the dry months of the year should be considered. Stabilization of

bottom of removals and over excavations with a rock mat placement may also be necessary and should be anticipated in the areas impacted by saturated yielding exposures.

## B. Soil Design Parameters

The following soil design parameters are based upon tested representative samples of on-site soils. All parameters should be re-evaluated when the characteristics of the final backfill and bearing soils have been specifically determined:

* Design wet density of soil = 133 pcf.
* Design angle of internal friction of soil = 28 degrees.
* Design active soil pressure for retaining structures = 48 pcf (EFP), level backfill, cantilever, unrestrained walls.
* Design at-rest soil pressure for retaining structures = 70 pcf (EFP), non-yielding, restrained walls.
* Design passive soil pressure for retaining structures = 368 pcf (EFP), level surface at the toe.
* Design coefficient of friction for concrete on soils = 0.34.
* Design net allowable foundation pressure (minimum 12 inches wide by 12 inches deep footings) = 1000 psf.
* Allowable lateral bearing pressure (all structures except retaining walls) for certified on-site soils = 100 psf/ft .

**Notes:**

* Use a minimum safety factor of 1.5 for wall over-turning and sliding stability. However, because large movements must take place before maximum passive resistance can be developed, a minimum safety factor of 2 may be considered for sliding stability particularly where sensitive structures and improvements are planned near or on top of retaining walls.

* When combining passive pressure and frictional resistance, the passive component should be reduced by one-third.

* The indicated net allowable foundation pressures provided herein were determined based on a minimum 12 inches wide by 12 inches deep footings and may be increased by 20% for each additional foot of depth and 20% for each additional foot of width to a maximum of 2500 psf. The allowable foundation pressures provided herein also apply to dead plus live loads and may be increased by one-third for wind and seismic loading.

* The lateral bearing earth pressures may be increased by the amount of designated value for each additional foot of depth to a maximum of 2000 pounds per square foot.

## C. Pavement Structural Section Design

The following pavement structural sections are based on tested subgrade R-values of 37 and 64 for Soil Type 1 materials and indicated assumed traffic Index (TI). A copy of the calculations is attached as Appendix B. A minimum section of 3 inches asphalt (AC) over 4 inches of Caltrans Class 2 aggregate base (AB) will be required and is specified herein when a lesser pavement section is indicated by design calculations:

**TABLE 11**

| Design R-value | Design Traffic Index (TI) | | | |
|---|---|---|---|---|
| | 4.5 | 5.0 | 6.0 | 7.0 |
| 37 | 3" AC over 4" AB | 3" AC over 4" AB | 4" AC over 4" AB | 4" AC over 8" AC |
| 64 | 3" AC over 4" AB | 3" AC over 4" AB | 4" AC over 4" AB | 4" AC over 4" AC |
| Class 2 aggregate base (AB) materials shall meet or exceed Caltrans specifications. | | | | |

Final pavement sections will depend on the actual R-Value test results performed on finish subgrade soils, design TI and approval of the City of Escondido. All design sections should be confirmed and/or revised as necessary at the completion of rough pavement grading. In the areas where the longitudinal grades exceed 10%, ½-inch asphalt should be added to the design asphalt thickness for each 2% increase in grade or portion thereof. PCC paving should be considered for longitudinal grades over 15%.

Base materials should be compacted to a minimum of 95% of the maximum dry density. Subgrade soils beneath the pavement base layer should also be compacted to a minimum of 95% of the corresponding maximum dry density within the upper 12 inches. Base materials and subgrade soils should be tested for proper moisture and minimum 95% compaction levels and be approved by the project geotechnical consultant prior to the placement of the base or asphalt layers.

Base section and subgrade preparations per structural section design will be required for all surfaces subject to traffic including roadways, travelways, drive lanes, driveway approaches and ribbon (cross) gutters. Driveway approaches within the public right-of-way should have 12 inches subgrade compacted to a minimum of 95% compaction levels and provided with a 95% compacted Class 2 base section per the structural

section design. Base layer under curb and gutters should be compacted to a minimum of 95%, while subgrade soils under curb and gutters, and base and subgrade under sidewalks should be compacted to a minimum of 90% compaction levels. Base section may not be required under curb and gutters, and sidewalks in the case of non-expansive subgrade soils (expansion index less than 21). Appropriate recommendations should be given in the final as-graded compaction report.

### D. Re-Surfacing Asphalt

Existing pavements may be improved by resurfacing with an asphalt overlay to upgrade pavement performance. Pavement fabric should be placed over areas impacted by the more prominent surface cracks prior to resurfacing as directed in the field by the project geotechnical engineer. Pavement fabric (petromat or approved equal) should be placed per the manufacturer's recommendations.

The surface of the existing pavement should be prepared to the satisfaction of the project geotechnical engineer prior to the placement of the tack coat and pavement fabric. All materials and construction procedures should conform with the Standard Specifications for Public Works Construction (Green Book) standards.

## IX. GENERAL RECOMMENDATIONS

1. All remedial grading including over-excavations, suitability of earth deposits used as compacted fills and backfills, and compaction procedures should be continuously inspected and tested by the project geotechnical consultant and presented in the final as-graded compaction report.

2. Adequate staking and grading control are critical factors in properly completing the recommended remedial grading operations. Grading control and staking should be provided by the project grading contractor or surveyor/civil engineer, and is beyond the geotechnical engineering services. Inadequate staking and/or lack of grading control may result in unnecessary additional grading which will increase construction costs.

3. All underground utility trenches should be compacted to a minimum of 90% of the maximum dry density unless otherwise specified. The upper 1-foot under the pavement base layer and in the areas subject to potential flooding or inundations shall be compacted to a minimum of 95% compaction levels. Care should be taken not to crush the utilities or pipes during the compaction of the soil. Non-expansive, granular backfill soils should be used.

4. Expansive clayey soils should not be used for backfilling of any site retaining structure. All retaining walls should be provided with a 1:1 wedge of granular,

compacted backfill measured from the base of the wall footing to the finished surface as shown on Plate 16.

5. Final road improvement and drainage plans should reflect preliminary recommendations given in this report. Final plans may also be reviewed by the project geotechnical consultant for conformance with the requirements of the geotechnical investigation report outlined herein. More specific recommendations may be necessary and should be given when final grading and architectural/structural drawings are available.

6. A preconstruction meeting between representatives of this office, the property owner or planner, and the grading contractor/paver is recommended in order to discuss grading/paving details associated with the site development.

## X. LIMITATIONS

The conclusions and recommendations provided herein have been based on all available data obtained from our field investigation and laboratory analysis, as well as our experience with the soils and formational materials located in the general area. The materials encountered on the project site and utilized in our laboratory testing are believed representative of the total area; however, earth materials may vary in characteristics between excavations.

Of necessity, we must assume a certain degree of continuity between exploratory excavations and / or natural exposures. It is necessary, therefore, that all observations, conclusions, and recommendations are verified during the grading operation. In the event discrepancies are noted, we should be contacted immediately so that an inspection can be made and additional recommendations issued if required.

The recommendations made in this report are applicable to the site at the time this report was prepared. It is the responsibility of the owner / developer to ensure that these recommendations are carried out in the field.

It is almost impossible to predict with certainty the future performance of a property. The future behavior of the site is also dependent on numerous unpredictable variables, such as earthquakes, rainfall, and on-site drainage patterns.

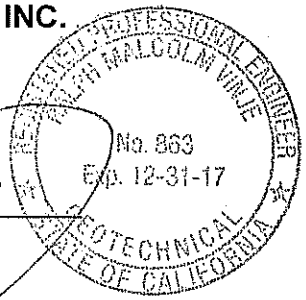
The firm of VINJE & MIDDLETON ENGINEERING, INC., shall not be held responsible for changes to the physical conditions of the property such as addition of fill soils or changing drainage patterns which occur subsequent to issuance of this report.

This report should be considered valid for a period of one year and is subject to review by our firm following that time. If significant modifications are made to your tentative development plan, especially with respect to the height and location of cut and fill slopes, this report must be presented to us for review and possible revision. Vinje & Middleton Engineering, Inc., warrants that this report has been prepared within the limits prescribed by our client with the usual thoroughness and competence of the engineering profession. No other warranty or representation, either expressed or implied, is included or intended.

Once again, should any questions arise concerning this report, please do not hesitate to contact this office. Reference to our Job #13-116-P will help to expedite our response to your inquiries.

We appreciate this opportunity to be of service to you.

**VINJE & MIDDLETON ENGINEERING, INC.**




Ralph M. Vinje
GE #863

Steven J. Melzer
CEG #2362

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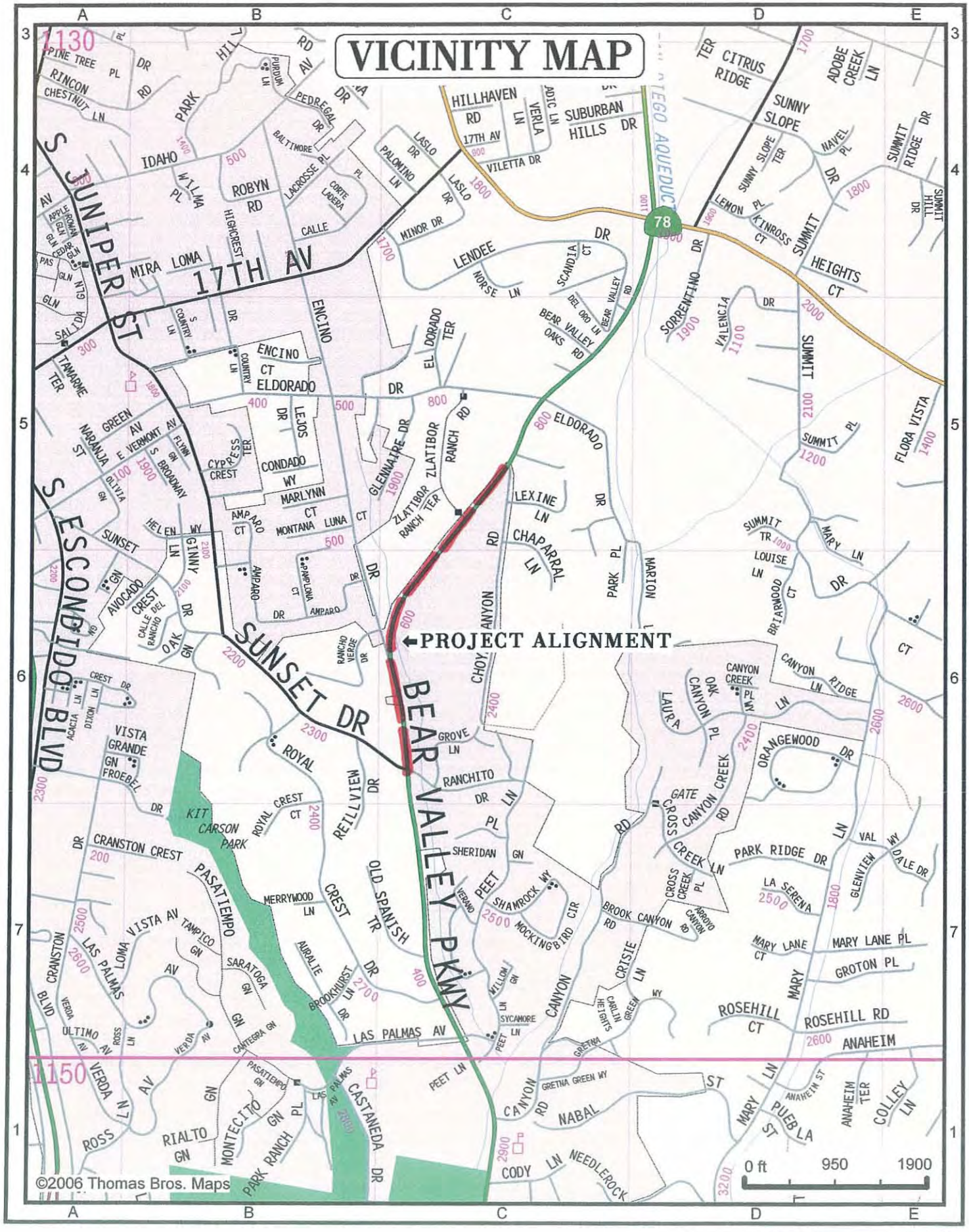



PLATE 1
V&M JOB #13-116-P

SEE SHEET 3

RELOCATE EXIST. BROW DITCH
RELOCATE EXIST. FENCE
PROP. ROW
PROP. CURB & GUTTER (TYP.)
EXIST. ROW
PROP. MEDIAN (TYP.)
EXIST. ROW
PROP. ROW
MATCH EXISTING CURB & SIDEWALK
MATCH EXISTING PAVING
RELOCATE POR. OF EXIST. RET. WALL
EXIST. ROW
BIKE LANE
PROP. STRIPING & LANE SYMBOLS (TYP.)
BIKE LANE
EXIST. ROW
MATCH EXISTING CURB & SIDEWALK
RELOCATE EXIST. FENCE & EXIST. HARDSCAPE
BIKE LANE
EXIST. ROW
MATCH EXISTING PAVING
PROP. ROW
PROJECT BOUNDARY
MATCH EXISTING IMPROVEMENTS
120' TRANS.
BIKE LANE
BIKE LANE

# BEAR VALLEY PKWY

TP-103
TP-5
TP-4
TP-104
TP-105
TP-1

Qcol
MSaf

A
A'
B
B'

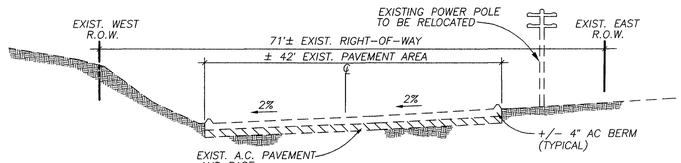
SCALE 1" = 40'
40 0 40 80 120

THIS AREA IS TO BE DEDICATED TO CITY OF ESCONDIDO AS PART OF PROJECT

THIS AREA TO BE ACQUIRED BY OTHERS & DEDICATED TO CITY OF ESCONDIDO IN FUTURE (TIMEFRAME UNKNOWN)

**GEOTECHNICAL LEGEND**

| | |
|---|---|
| | Approx. Location of Exploratory Test Pit (T-1 Excavated 2/28/13; T-101 Excavated 9/13/16) |
| | Geologic Cross-Section |
| *MSaf* | Mine Spoil Deposit |
| *Qcol* | Colluvium (Ancient Soil) |




## EXISTING BEAR VALLEY PKWY A-A'

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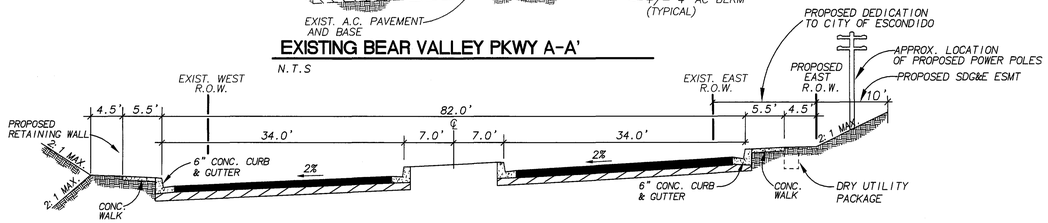


## PROPOSED BEAR VALLEY PKWY A-A'

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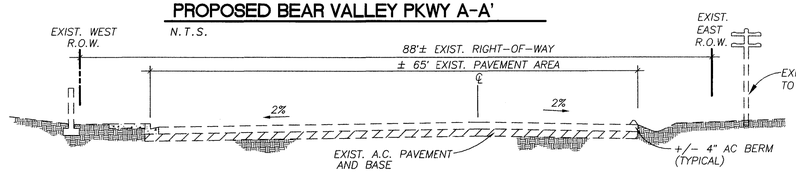


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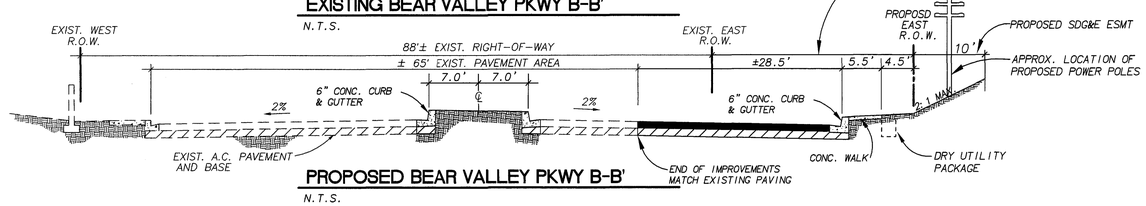


## PROPOSED BEAR VALLEY PKWY B-B'

N.T.S.

PLATE 2
V&M JOB #13-116-P

| CONSTRUCTION RECORD | REFERENCES | DATE | BY | REVISIONS | APP'D | DATE | BENCH MARK |
|---|---|---|---|---|---|---|---|
| CONTRACTOR | | | | | | | BENCH NUMBER |
| INSPECTOR | | | | | | | DESCRIPTION |
| DATE COMPLETED | | | | | | | ELEV. ? |

| SCALE | OFFICE | DESIGNED BY | DRAWN BY | CHECKED BY |
|---|---|---|---|---|
| HORIZONTAL AS NOTED | FILMED | SRC | SRC | RM |
| VERTICAL AS NOTED | TRAFFIC | PLANS PREPARED UNDER SUPERVISION OF | | |
| | | DATE | | |
| | | R.C.E. NO. | | |

APPROVED _____
BY _____
DEPUTY DIRECTOR OF ENGINEERING SERVICES

CITY OF ESCONDIDO — DEPT. OF PUBLIC WORKS
SPECIFIC PLAN FOR THE ALIGNMENT OF:
BEAR VALLEY PARKWAY (FULL WIDTH)

Drawing No.
XX-XXXX
Sheet 2 of 4

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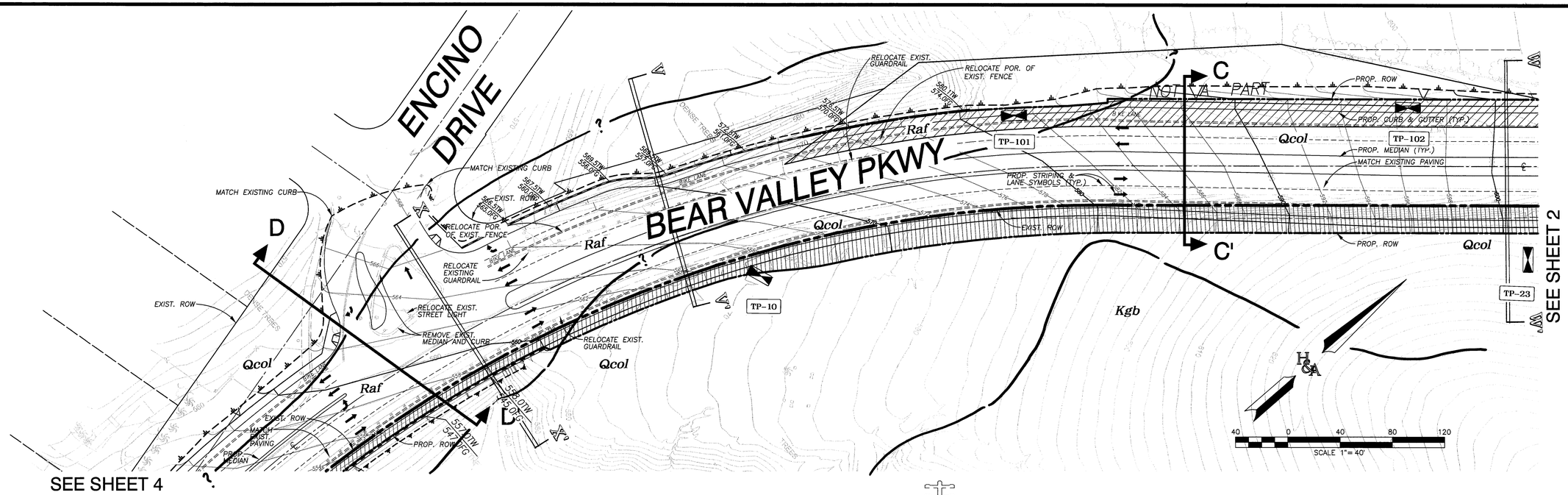
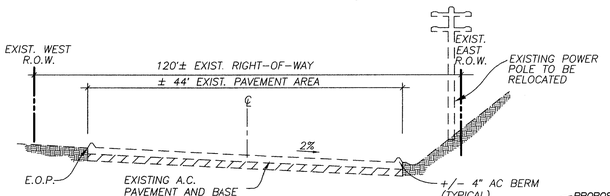



**GEOTECHNICAL LEGEND**

| | |
|---|---|
| | Approx. Location of Exploratory Test Pit (T-1 Excavated 2/28/13; T-101 Excavated 9/13/16) |
| | Geologic Cross-Section |
| *Raf* | Road Fill |
| *Qcol* | Colluvium (Ancient Soil) |
| *Kgb* | Crystalline Bedrock |

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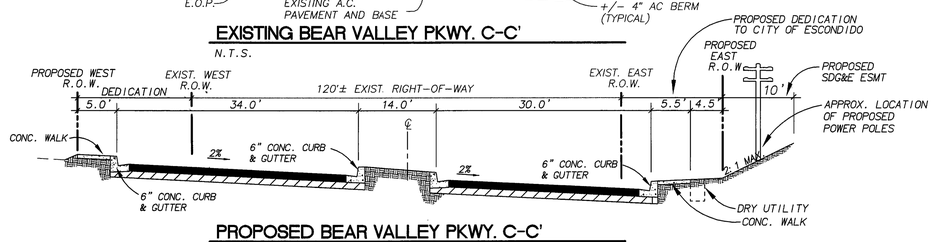


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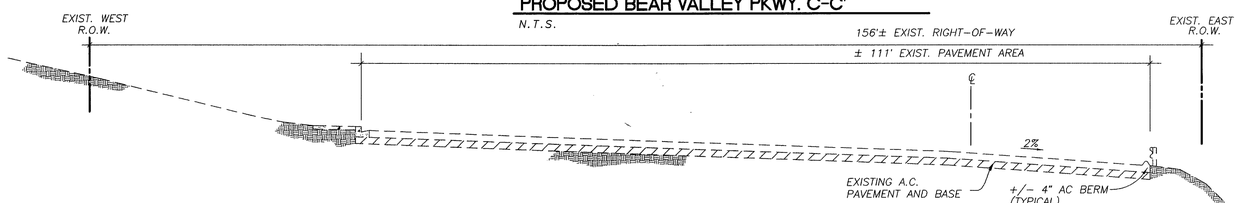


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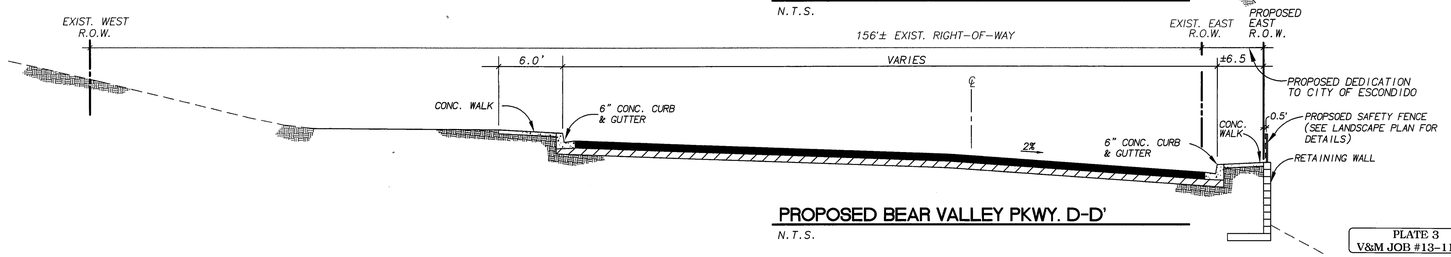


## PROPOSED BEAR VALLEY PKWY. D-D'

N.T.S.

THIS AREA IS TO BE DEDICATED TO CITY OF ESCONDIDO AS PART OF PROJECT

THIS AREA TO BE ACQUIRED BY OTHERS & DEDICATED TO CITY OF ESCONDIDO IN FUTURE (TIMEFRAME UNKNOWN)

PLATE 3
V&M JOB #13-116-P

| CONSTRUCTION RECORD | REFERENCES | DATE | BY | REVISIONS | APP'D | DATE | BENCH MARK | SCALE | OFFICE | DESIGNED BY | DRAWN BY | CHECKED BY | APPROVED | CITY OF ESCONDIDO | DEPT. OF PUBLIC WORKS | Drawing No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CONTRACTOR | | | | | | | BENCH NUMBER | HORIZONTAL | | SRC | SRC | RM | | SPECIFIC PLAN FOR THE ALIGNMENT OF: | | XX-XXXX |
| INSPECTOR | | | | | | | DESCRIPTION | AS NOTED | FILMED | PLANS PREPARED UNDER SUPERVISION OF | | | BY | BEAR VALLEY PARKWAY (FULL WIDTH) | | Sheet 3 of 4 |
| DATE COMPLETED | | | | | | | ELEV. ? | VERTICAL AS NOTED | TRAFFIC | DATE | | | DEPUTY DIRECTOR OF ENGINEERING SERVICES | | | |
| | | | | | | | | | | R.C.E. NO. | | | | | | |

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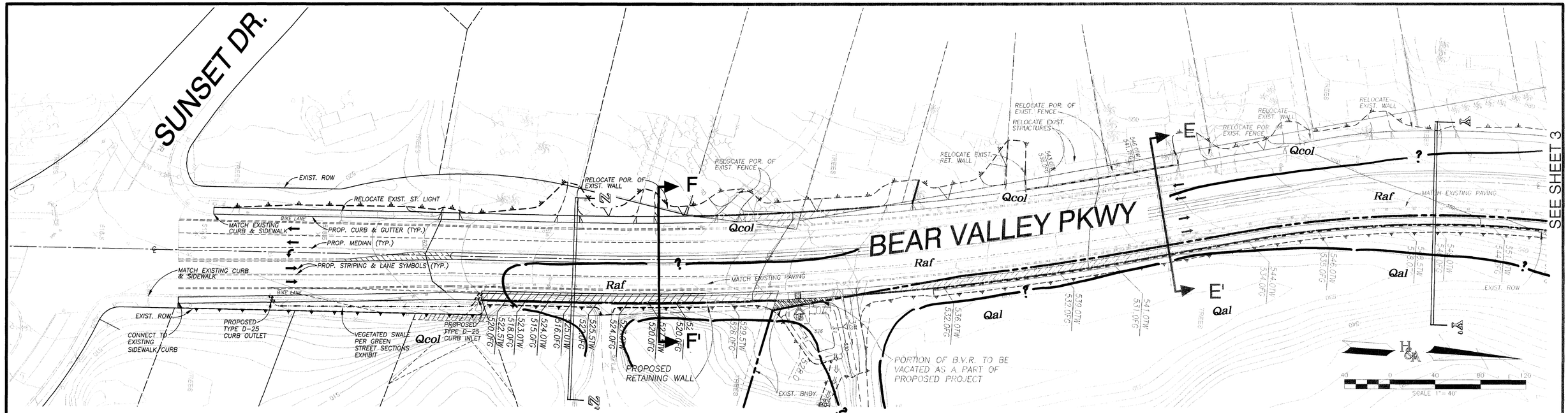


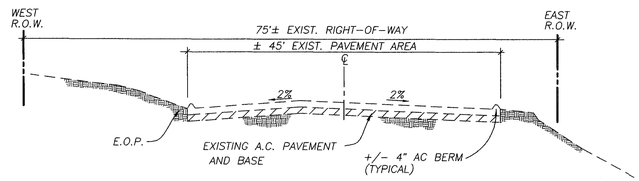

THIS AREA IS TO BE DEDICATED TO CITY OF ESCONDIDO AS PART OF PROJECT

THIS AREA IS TO BE VACATED AS PART OF PROJECT

THIS AREA TO BE ACQUIRED BY OTHERS & DEDICATED TO CITY OF ESCONDIDO IN FUTURE (TIMEFRAME UNKNOWN)

**GEOTECHNICAL LEGEND**

| | |
|---|---|
| | Approx. Location of Exploratory Test Pit (T-1 Excavated 2/28/13; T-101 Excavated 9/13/16) |
| | Geologic Cross-Section |
| ***Raf*** | Road Fill |
| ***Qcol*** | Colluvium (Ancient Soil) |
| ***Qal*** | Alluvium |




**EXISTING BEAR VALLEY PKWY. F-F'**

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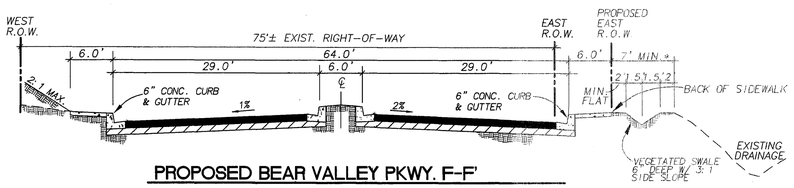


**PROPOSED BEAR VALLEY PKWY. F-F'**

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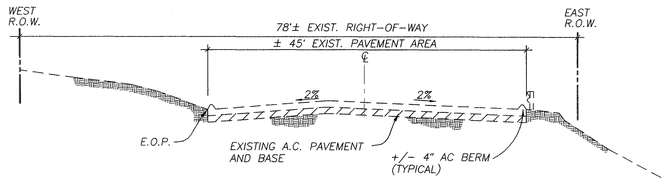
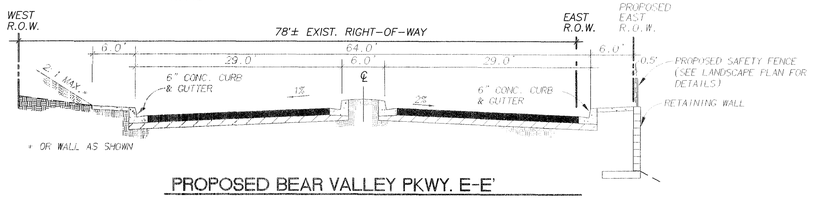



**EXISTING BEAR VALLEY PKWY. E-E'**

N.T.S.




**PROPOSED BEAR VALLEY PKWY. E-E'**

N.T.S.

PLATE 4
V&M JOB #13-116-P

| CONSTRUCTION RECORD | REFERENCES | DATE | BY | REVISIONS | APP'D | DATE |
|---|---|---|---|---|---|---|
| CONTRACTOR | | | | | | |
| INSPECTOR | | | | | | |
| DATE COMPLETED | | | | | | |

BENCH MARK
BENCH NUMBER
DESCRIPTION
ELEV. ?

SCALE
HORIZONTAL AS NOTED
VERTICAL AS NOTED

OFFICE
FILMED
TRAFFIC

| DESIGNED BY | DRAWN BY | CHECKED BY |
|---|---|---|
| SRC | SRC | RM |

PLANS PREPARED UNDER SUPERVISION OF
DATE
R.C.E. NO.

APPROVED
BY
DEPUTY DIRECTOR OF ENGINEERING SERVICES

CITY OF ESCONDIDO — DEPT. OF PUBLIC WORKS

SPECIFIC PLAN FOR THE ALIGNMENT OF:

BEAR VALLEY PARKWAY (FULL WIDTH)

Drawing No. XX-XXXX

Sheet 4 of 4

R:\1161\X&Pln\BEAR VALLEY - SAP FULL WIDTH SNT 04.dwg]Sep-01-2016:10:27

# VINJE & MIDDLETON ENGINEERING, INC. TEST PIT: TP-101

**PROJECT:** Bear Valley Parkway Road Improvements **CLIENT:** Spieth & Wohlford, Inc.

**PROJECT NO.:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Parkway, Escondido

**Date Excavated:** 9/13/16 **Bucket Size:** 24" **Logged By:** SJM

**Equipment:** Caterpillar 305 Excavator

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| 1 | | SM | **Fill (af):** Silty fine to medium sand. Brown color. Dry to damp. Relatively tight. Includes chunks of asphalt up to 3 feet long (piece of curb). Loose. ST-1 | | | | | |
| 2 | | | Also includes scattered trash debris consisting of paper, plastic, glass, and metal. | ■ □ | 3 | 117.6 | 86 | 18 |
| 3 | | | | | | | | |
| 4 | | | Loose to medium dense at 4 feet. Difficult to excavate due to large chunks of concrete. | □ | 7 | 119.0 | 87 | 44 |

Bottom of test pit at 4.5 feet.

■ BULK SAMPLE □ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 5

# VINJE & MIDDLETON ENGINEERING, INC. TEST PIT: TP-102

**PROJECT:** Bear Valley Parkway Road Improvements **CLIENT:** Spieth & Wohlford, Inc.

**PROJECT NO.:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Parkway, Escondido

**Date Excavated:** 9/13/16 **Bucket Size:** 24" **Logged By:** SJM

**Equipment:** Caterpillar 305 Excavator

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| 1 | | SM | **Topsoil:** Silty fine to medium sand. Brown to red brown color. Damp. Loose at the surface. Blocky at 1-foot. Local white carbonate specks. Appears to be an ancient soil. Medium dense to dense. ST-1 | | | | | |
| 2 | | | | ☐ | 7 | 119.0 | 87 | 44 |
| 3 | | | Becomes dense at 3 feet. Moist. | ☐ | 7 | 124.2 | 91 | 51 |

Bottom of test pit at 3.5 feet.

■ BULK SAMPLE ☐ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 6

# VINJE & MIDDLETON ENGINEERING, INC. TEST PIT: TP-103

**PROJECT:** Bear Valley Parkway Road Improvements **CLIENT:** Spieth & Wohlford, Inc.

**PROJECT NO.:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Parkway, Escondido

**Date Excavated:** 9/13/16 **Bucket Size:** 24" **Logged By:** SJM

**Equipment:** Caterpillar 305 Excavator

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| 1 | | SM | **Fill (af):** Silty fine to medium sand. Brown color. Dry. Very loose. ST-1 | | | | | |
| 2 | | | **Topsoil:** | ☐ | 3 | 113.7 | 83 | 16 |
| 3 | | SM | Silty fine to medium sand. Brown to red brown color. Dry to damp. Locallly porous. Blocky. Appears ancient. Loose to very loose. ST-1 | | | | | |
| 4 | | | Grades dense at 4 feet. Moist. | ☐ | 7 | 123.0 | 90 | 48 |

Bottom of test pit at 4.5 feet.

■ BULK SAMPLE ☐ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 7

# VINJE & MIDDLETON ENGINEERING, INC. TEST PIT: TP-104

**PROJECT:** Bear Valley Parkway Road Improvements **CLIENT:** Spieth & Wohlford, Inc.

**PROJECT NO.:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Parkway, Escondido

**Date Excavated:** 9/13/16 **Bucket Size:** 24" **Logged By:** SJM

**Equipment:** Caterpillar 305 Excavator

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| 1 | | SW | **Fill (af):** Silty fine to coarse sand (D.G.). Olive grey color. Dry. Loose. ST-3 | | | | | |
| 2 | | | **Topsoil:** Silty fine to medium sand. Red brown color. Damp to moist. Loose to very loose. Porous. ST-1 | ■ □ | 6 | 107.7 | 79 | 28 |
| 3 | | | | | | | | |
| 4 | | SM | Becomes blocky at 4 feet. Moist. Locally porous. Appears ancient. Medium dense to dense. ST-1 | □ | 7 | 119.3 | 87 | 44 |
| 5 | | | | | | | | |
| 6 | | | Becomes dense at 6 feet. Moist. | □ | 8 | 122.3 | 90 | 55 |

Bottom of test pit at 6.5 feet.

■ BULK SAMPLE □ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 8

# VINJE & MIDDLETON ENGINEERING, INC. TEST PIT: TP-105

**PROJECT:** Bear Valley Parkway Road Improvements **CLIENT:** Spieth & Wohlford, Inc.

**PROJECT NO.:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Parkway, Escondido

**Date Excavated:** 9/13/16 **Bucket Size:** 24" **Logged By:** SJM

**Equipment:** Caterpillar 305 Excavator

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| 1 | | | **Colluvium (Qcol) / Fill (MSaf):** Silty fine to medium sand. Brown color. Dry to damp. Porous. Very Loose. ST-1 | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | SM | Becomes somewhat blocky at 4 feet. Damp. Continues loose. | ☐ | 4 | 111.8 | 82 | 21 |
| 5 | | | | | | | | |
| 6 | | | | | | | | |
| 7 | | SW-GW | **Bedrock (Kgb):** Gabbroic to granitic rock. Fine to coarse grained. Red brown to grey color. Weathered. Excavates gravelly. Dense. ST-3 | | | | | |

Bottom of test pit at 7.5 feet.

■ BULK SAMPLE ☐ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 9

## VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-1**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 2/28/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| | | SM | **COLLUVIUM (Qcol):**<br>Silty fine to medium sand. Brown color. Damp. Loose. ST-1 | | | | | |
| 2 | | CL-ML | Sandy silt to sandy clay. Red brown color. Moist. Soft to loose. Plastic. ST-2 | ■□ | 14 | 104 | 79 | 56 |
| 4 | | | | | | | | |
| 6 | | SW-GP | **BEDROCK (Kgb):**<br>Gabbroic rock. Fine to medium grained. Red brown color. Weathered. Friable. Massive. ST-3 | | | | | |
| | | | Becomes blocky at 7 feet. Dense. | □ | 12 | - | Sample Disturbed | - |

Bottom of test pit at 7.5 feet.

■ BULK SAMPLE □ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 10

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-4**

PROJECT: Proposed Residential Subdivision CLIENT: Speith & Wohlford, Inc.

PROJECT NUMBER: 13-116-P PROJECT LOCATION: 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 2/28/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| 2 | | SM | **COLLUVIUM (Qcol):** Clayey sand. Red brown color. Moist. Soft to loose. Low plastic. ST-2 | | | | | |
| 4 | | SC-CL | Clayey sand / sandy clay (residual soil). Red brown color. Moist. Firm to stiff. Low - medium plastic. ST-4 | ■ | | | | |
| 6 | | SW-GP | **BEDROCK (Kgb):** Gabbroic rock. Fine to coarse grained. Red brown color. Weathered. Blocky. Dense. ST-3 | □ | 6 | 138.7 | 100+ | 61 |
| 8 | | | A mining excavation was encountered at 4-6 feet below the surface. The mining excavation appears to be an adit and measures approximately 7 feet wide and approximately 6 feet high. The excavation is trending N75E, and may be descending slightly in a northeast direction. | | | | | |
| 10 | | | | | | | | |
| 12 | | SW-GP | Gabbroic rock. Dense. | | | | | |

Bottom of test pit at 13.0 feet.

■ BULK SAMPLE □ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 11

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-5**

**PROJECT:** Proposed Residential Subdivision **CLIENT:** Speith & Wohlford, Inc.

**PROJECT NUMBER:** 13-116-P **PROJECT LOCATION:** 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 2/28/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| | | | **COLLUVIUM (Qcol):** Clayey sand. Red brown color. Moist. Soft to loose. Low plastic. ST-2 | | | | | |
| 2 | | | Becomes somewhat blocky and medium dense at 2.5 feet. | | | | | |
| | | SC | | ■ | 13 | 112.7 | 86 | 64 |
| 4 | | | | | | | | |
| 6 | | | | | | | | |
| | | SM | Silty fine to medium sand. Brown color. Moist. Somewhat blocky. Medium dense. ST-1 | □ | 15 | 116.7 | 84 | 82 |
| 8 | | | | | | | | |
| | | GP | **BEDROCK (kgr):** Granitic rock. Fine grained. Tan to reddish color. Fractured. Includes quartz veins. Local polished surfaces. Dense. Excavates blocky to gravelly. ST-5 | □ | 14 | 119.6 | 91 | 81 |
| 10 | | | | | | | | |

Bottom of test pit at 10.0 feet.

■ BULK SAMPLE □ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 12

## VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-10**

PROJECT: Proposed Residential Subdivision CLIENT: Speith & Wohlford, Inc.

PROJECT NUMBER: 13-116-P PROJECT LOCATION: 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 2/28/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| | | | **COLLUVIUM (Qcol):** | | | | | |
| | | | Silty fine to medium sand. Brown color. Dry at the surface, damp at 2 feet. Somewhat blocky. Medium dense. ST-1 | | | | | |
| 2 | | | | ■ | | | | |
| 4 | | | Very tight and blocky at 4 feet. Moist. Slow digging. Appears to be an ancient colluvium. Dense. | □ | 11 | 120.4 | 87 | 65 |
| | | SM | | | | | | |
| 6 | | | | □ | 10 | 118.0 | 85 | 56 |
| 8 | | | | | | | | |
| 10 | | | Continues very tight and blocky. Dense. Backhoe refusal at 10.5 feet. | □ | 11 | 120.3 | 87 | 65 |
| | | | Bottom of test pit at 10.5 feet. | | | | | |

■ BULK SAMPLE □ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

PLATE 13

# VINJE & MIDDLETON ENGINEERING, INC.

**TEST PIT: TP-23**

PROJECT: Proposed Residential Subdivision CLIENT: Speith & Wohlford, Inc.

PROJECT NUMBER: 13-116-P PROJECT LOCATION: 661 Bear Valley Pkwy, Escondido (APN's 237-131-01 & 02)

**Date Excavated:** 3/1/13 **Logged By:** SJM

**Equipment:** Caterpiller 420 Backhoe

**Remarks:** No caving. No groundwater.

| DEPTH (ft) | GRAPHIC LOG | U.S.C.S. | MATERIAL DESCRIPTION | SAMPLE TYPE | MOISTURE CONTENT (%) | DRY UNIT WT. (pcf) | RELATIVE DENSITY (%) | DEGREE OF SATURATION (%) |
|---|---|---|---|---|---|---|---|---|
| 2 | | SM | **COLLUVIUM (Qcol):** Silty fine to medium sand. Red brown color. Damp to moist. Loose. ST-1 | | | | | |
| 4 | | | | | | | | |
| 6 | | SW | **BEDROCK (Kgb):** Gabbroic rock. Fine to coarse grained. Grey color. Weathered. Friable. Massive. Medium dense to dense. ST-3 | ☐ | 14 | 113.4 | 87 | 70 |

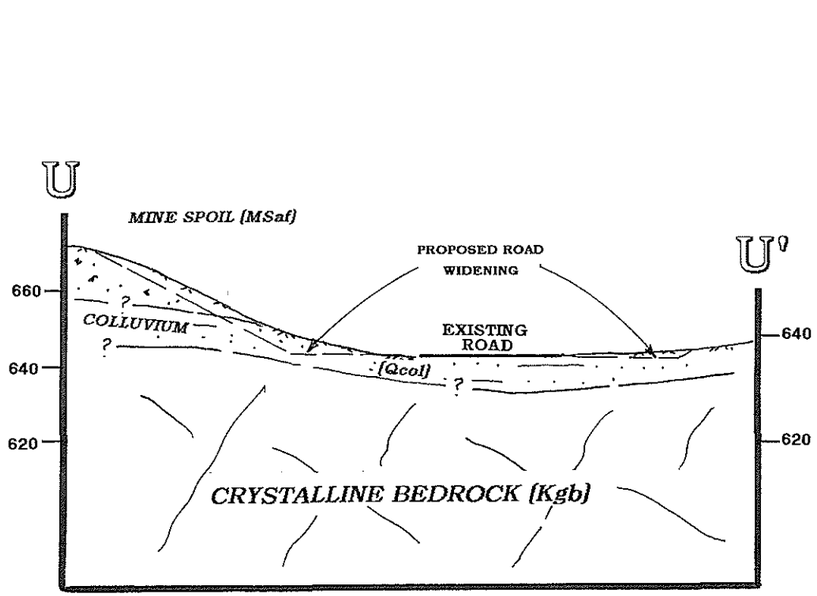
Bottom of test pit at 7.0 feet.

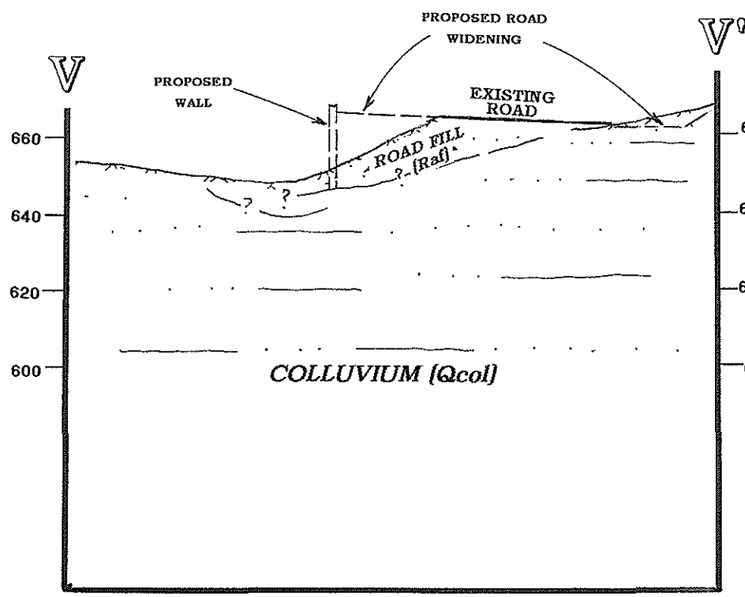
BULK SAMPLE ☐ CHUNK SAMPLE ▼ DENSITY TEST ▽ GROUND WATER

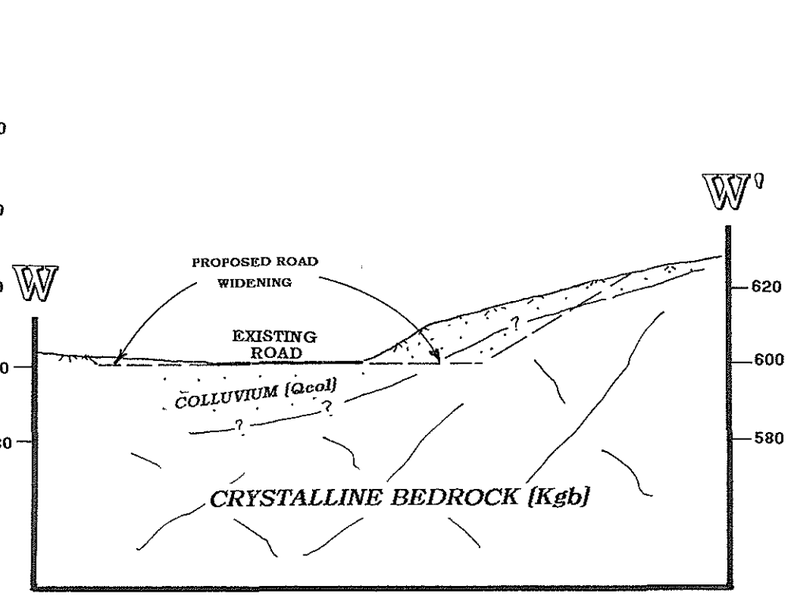
PLATE 14

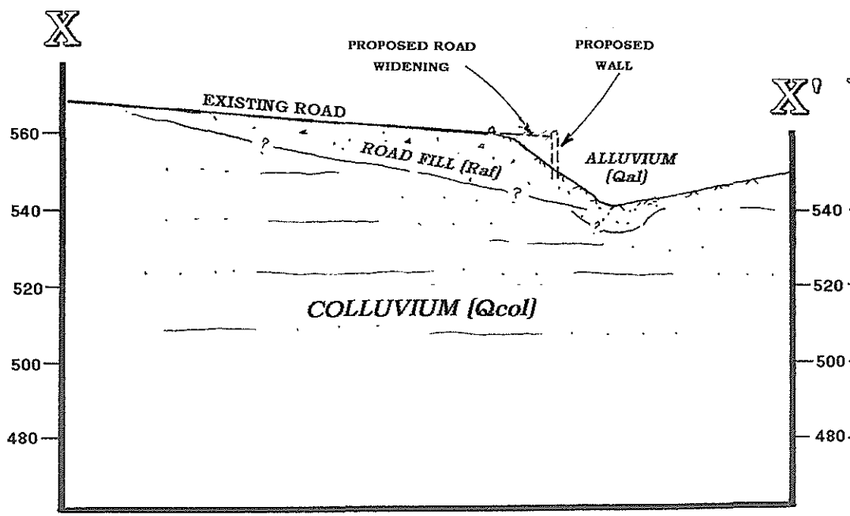
# GEOLOGIC CROSS-SECTIONS

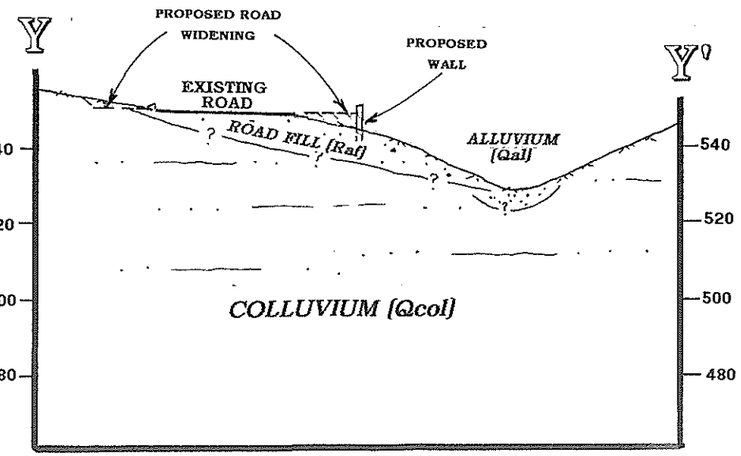
SCALE: 1" = 40'



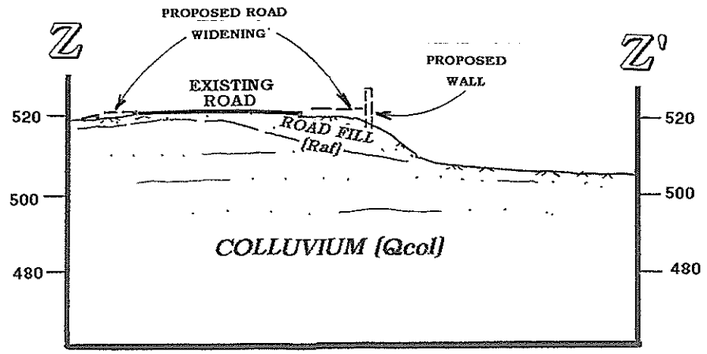
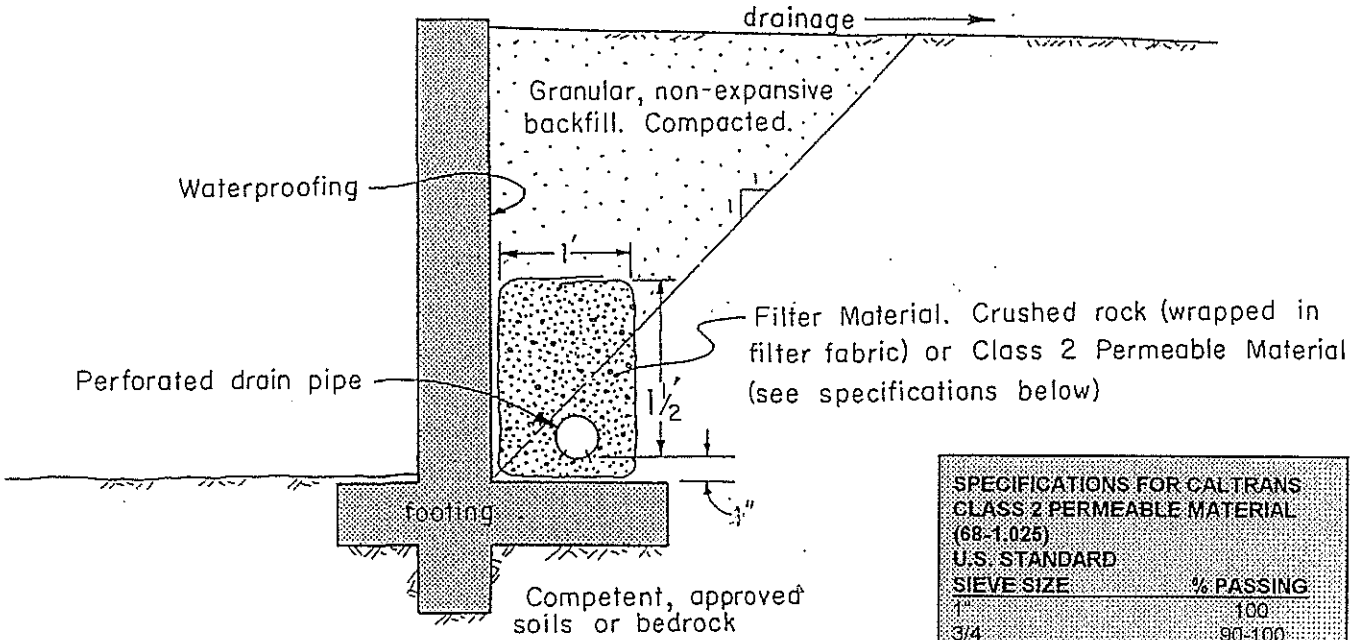




PLATE 15
V&M JOB #13-116-P

# RETAINING WALL DRAIN DETAIL

Typical - no scale




| SPECIFICATIONS FOR CALTRANS CLASS 2 PERMEABLE MATERIAL (68-1.025) U.S. STANDARD SIEVE SIZE | % PASSING |
|---|---|
| 1" | 100 |
| 3/4 | 90-100 |
| 3/8 | 40-100 |
| No. 4 | 25-40 |
| No. 8 | 18-33 |
| No. 30 | 5-15 |
| No. 50 | 0-7 |
| No. 200 | 0-3 |

Sand Equivalent > 75

## CONSTRUCTION SPECIFICATIONS:

1. Provide granular, non-expansive backfill soil in 1:1 gradient wedge behind wall. Compact backfill to minimum 90% of laboratory standard.
2. Provide back drainage for wall to prevent build-up of hydrostatic pressures. Use drainage openings along base of wall or back drain system as outlined below.
3. Backdrain should consist of 4" diameter PVC pipe (Schedule 40 or equivalent) with perforations down. Drain to suitable outlet at minimum 1%. Provide ¾" - 1½" crushed gravel filter wrapped in filter fabric (Mirafi 140N or equivalent). Delete filter fabric wrap if Caltrans Class 2 permeable material is used. Compact Class 2 material to minimum 90% of laboratory standard.
4. Seal back of wall with waterproofing in accordance with architect's specifications.
5. Provide positive drainage to disallow ponding of water above wall. Lined drainage ditch to minimum 2% flow away from wall is recommended.

* Use 1½ cubic foot per foot with granular backfill soil and 4 cubic foot per foot if expansive backfill soil is used.

## VINJE & MIDDLETON ENGINEERING, INC.

PLATE 16
V&M JOB #13-116-P

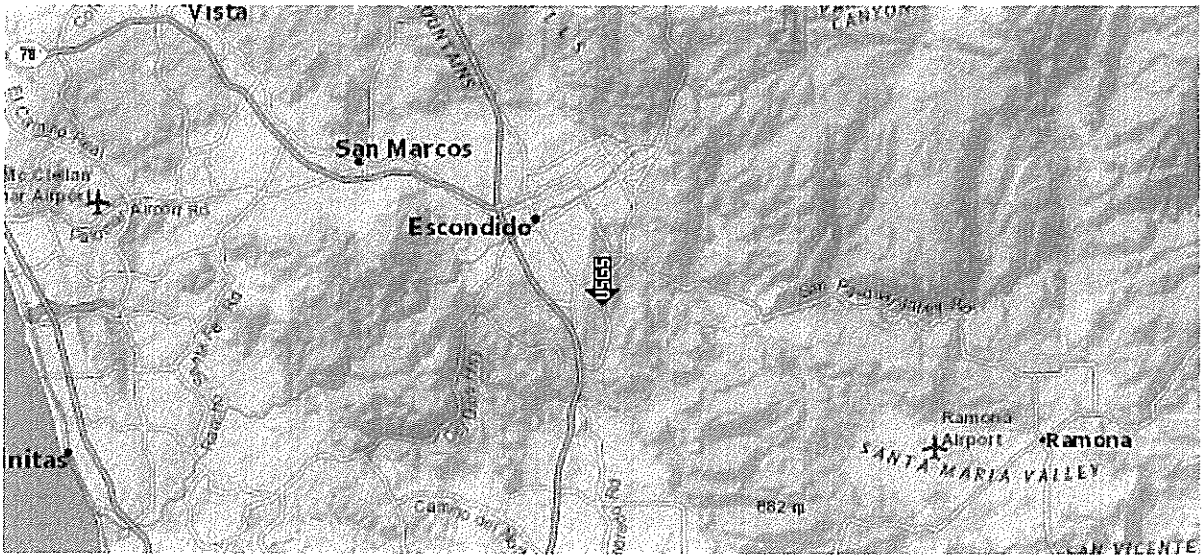
# APPENDIX A

## Seismic Ground Motion Values

# USGS Design Maps Summary Report

## User-Specified Input

| | |
|---|---|
| **Building Code Reference Document** | ASCE 7-10 Standard<br>(which utilizes USGS hazard data available in 2008) |
| **Site Coordinates** | 33.1°N, 117.06°W |
| **Site Soil Classification** | Site Class D – "Stiff Soil" |
| **Risk Category** | I/II/III |

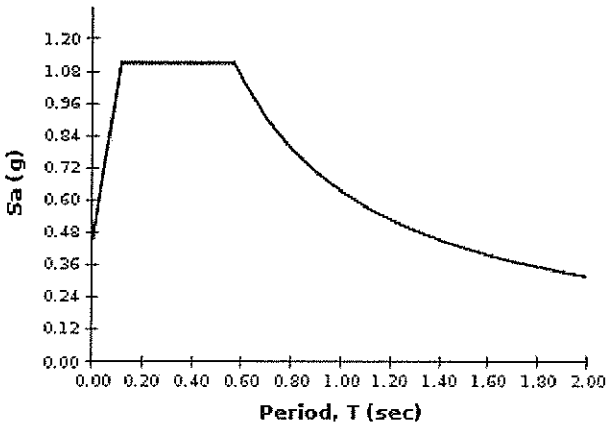



## USGS-Provided Output

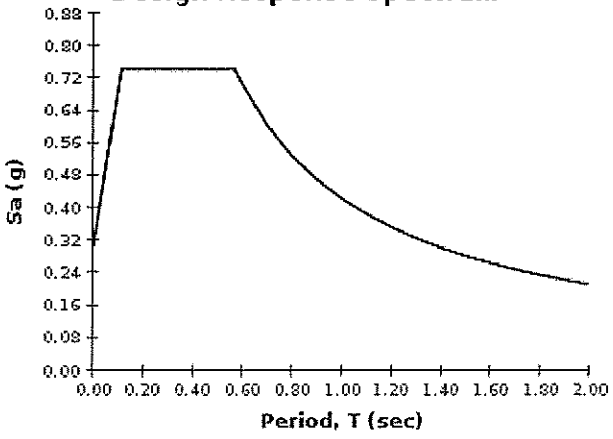
| | | | | | |
|---|---|---|---|---|---|
| $S_S$ = | 1.016 g | $S_{MS}$ = | 1.111 g | $S_{DS}$ = | 0.741 g |
| $S_1$ = | 0.391 g | $S_{M1}$ = | 0.633 g | $S_{D1}$ = | 0.422 g |

For information on how the SS and S1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.

**$MCE_R$ Response Spectrum**




**Design Response Spectrum**




For $PGA_M$, $T_L$, $C_{RS}$, and $C_{R1}$ values, please view the detailed report.

# USGS Design Maps Detailed Report

ASCE 7-10 Standard (33.1°N, 117.06°W)

Site Class D – "Stiff Soil", Risk Category I/II/III

## Section 11.4.1 — Mapped Acceleration Parameters

Note: Ground motion values provided below are for the direction of maximum horizontal spectral response acceleration. They have been converted from corresponding geometric mean ground motions computed by the USGS by applying factors of 1.1 (to obtain $S_s$) and 1.3 (to obtain $S_1$). Maps in the 2010 ASCE-7 Standard are provided for Site Class B. Adjustments for other Site Classes are made, as needed, in Section 11.4.3.

**From Figure 22-1** [1] $S_s = 1.016$ g

**From Figure 22-2** [2] $S_1 = 0.391$ g

## Section 11.4.2 — Site Class

The authority having jurisdiction (not the USGS), site-specific geotechnical data, and/or the default has classified the site as Site Class D, based on the site soil properties in accordance with Chapter 20.

Table 20.3–1 Site Classification

| Site Class | $\bar{v}_s$ | $\bar{N}$ or $\bar{N}_{ch}$ | $\bar{s}_u$ |
|---|---|---|---|
| A. Hard Rock | >5,000 ft/s | N/A | N/A |
| B. Rock | 2,500 to 5,000 ft/s | N/A | N/A |
| C. Very dense soil and soft rock | 1,200 to 2,500 ft/s | >50 | >2,000 psf |
| D. Stiff Soil | 600 to 1,200 ft/s | 15 to 50 | 1,000 to 2,000 psf |
| E. Soft clay soil | <600 ft/s | <15 | <1,000 psf |
| | Any profile with more than 10 ft of soil having the characteristics:<br>• Plasticity index $PI$ > 20,<br>• Moisture content $w \geq 40\%$, and<br>• Undrained shear strength $\bar{s}_u$ < 500 psf | | |
| F. Soils requiring site response analysis in accordance with Section 21.1 | See Section 20.3.1 | | |

For SI: 1ft/s = 0.3048 m/s 1lb/ft² = 0.0479 kN/m²

## Section 11.4.3 — Site Coefficients and Risk-Targeted Maximum Considered Earthquake ($MCE_R$) Spectral Response Acceleration Parameters

Table 11.4-1: Site Coefficient $F_a$

| Site Class | Mapped $MCE_R$ Spectral Response Acceleration Parameter at Short Period | | | | |
|---|---|---|---|---|---|
| | $S_S \leq 0.25$ | $S_S = 0.50$ | $S_S = 0.75$ | $S_S = 1.00$ | $S_S \geq 1.25$ |
| A | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| B | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| C | 1.2 | 1.2 | 1.1 | 1.0 | 1.0 |
| D | 1.6 | 1.4 | 1.2 | 1.1 | 1.0 |
| E | 2.5 | 1.7 | 1.2 | 0.9 | 0.9 |
| F | See Section 11.4.7 of ASCE 7 | | | | |

Note: Use straight-line interpolation for intermediate values of $S_S$

**For Site Class = D and $S_S$ = 1.016 g, $F_a$ = 1.094**

Table 11.4-2: Site Coefficient $F_v$

| Site Class | Mapped $MCE_R$ Spectral Response Acceleration Parameter at 1-s Period | | | | |
|---|---|---|---|---|---|
| | $S_1 \leq 0.10$ | $S_1 = 0.20$ | $S_1 = 0.30$ | $S_1 = 0.40$ | $S_1 \geq 0.50$ |
| A | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| B | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| C | 1.7 | 1.6 | 1.5 | 1.4 | 1.3 |
| D | 2.4 | 2.0 | 1.8 | 1.6 | 1.5 |
| E | 3.5 | 3.2 | 2.8 | 2.4 | 2.4 |
| F | See Section 11.4.7 of ASCE 7 | | | | |

Note: Use straight-line interpolation for intermediate values of $S_1$

**For Site Class = D and $S_1$ = 0.391 g, $F_v$ = 1.617**

**Equation (11.4–1):** $S_{MS} = F_a S_S = 1.094 \times 1.016 = 1.111$ g

---

**Equation (11.4–2):** $S_{M1} = F_v S_1 = 1.617 \times 0.391 = 0.633$ g

---

Section 11.4.4 — Design Spectral Acceleration Parameters

**Equation (11.4–3):** $S_{DS} = \frac{2}{3} S_{MS} = \frac{2}{3} \times 1.111 = 0.741$ g

---

**Equation (11.4–4):** $S_{D1} = \frac{2}{3} S_{M1} = \frac{2}{3} \times 0.633 = 0.422$ g

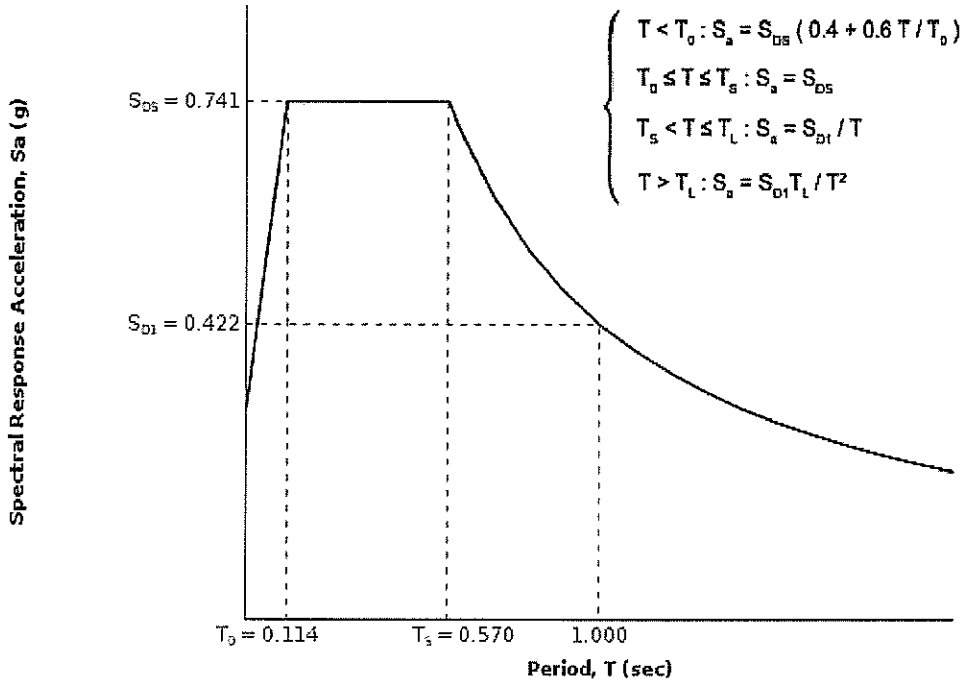
---

Section 11.4.5 — Design Response Spectrum

**From Figure 22-12** [3] $T_L = 8$ seconds

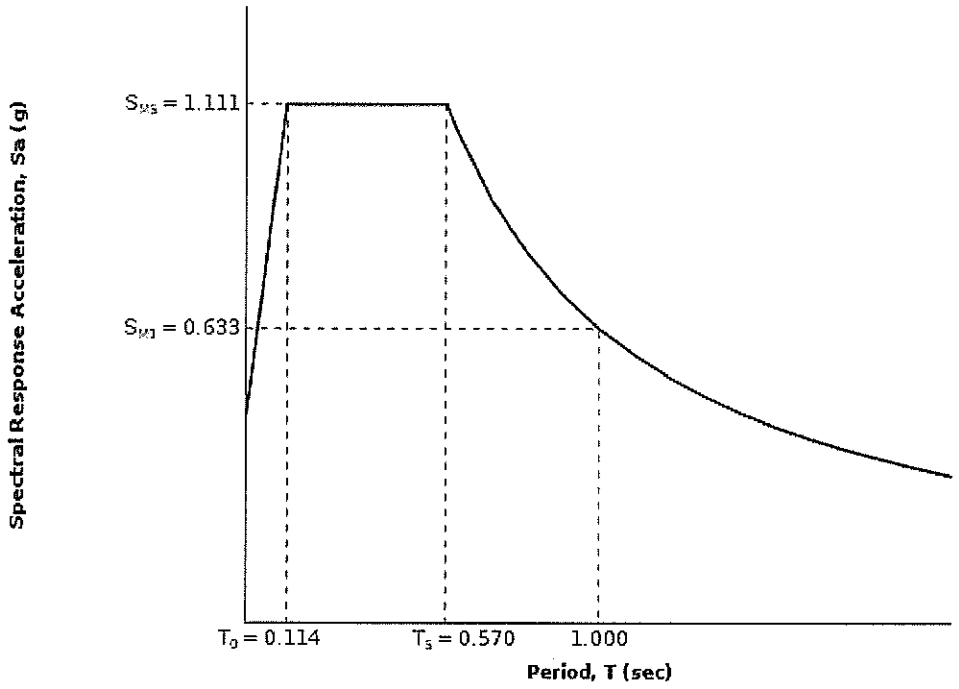
---

Figure 11.4–1: Design Response Spectrum



## Section 11.4.6 — Risk-Targeted Maximum Considered Earthquake ($MCE_R$) Response Spectrum

The $MCE_R$ Response Spectrum is determined by multiplying the design response spectrum above by 1.5.



Section 11.8.3 — Additional Geotechnical Investigation Report Requirements for Seismic Design Categories D through F

**From Figure 22-7** [4] PGA = 0.378

**Equation (11.8–1):** $PGA_M = F_{PGA}PGA = 1.122 \times 0.378 = 0.424$ g

Table 11.8–1: Site Coefficient $F_{PGA}$

| Site Class | Mapped MCE Geometric Mean Peak Ground Acceleration, PGA | | | | |
|---|---|---|---|---|---|
| | PGA ≤ 0.10 | PGA = 0.20 | PGA = 0.30 | PGA = 0.40 | PGA ≥ 0.50 |
| A | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| B | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| C | 1.2 | 1.2 | 1.1 | 1.0 | 1.0 |
| D | 1.6 | 1.4 | 1.2 | 1.1 | 1.0 |
| E | 2.5 | 1.7 | 1.2 | 0.9 | 0.9 |
| F | See Section 11.4.7 of ASCE 7 | | | | |

Note: Use straight–line interpolation for intermediate values of PGA

**For Site Class = D and PGA = 0.378 g, $F_{PGA}$ = 1.122**

Section 21.2.1.1 — Method 1 (from Chapter 21 – Site-Specific Ground Motion Procedures for Seismic Design)

**From Figure 22-17** [5] $C_{RS}$ = 1.038

**From Figure 22-18** [6] $C_{R1}$ = 1.079

## Section 11.6 — Seismic Design Category

Table 11.6-1 Seismic Design Category Based on Short Period Response Acceleration Parameter

| VALUE OF $S_{DS}$ | RISK CATEGORY | | |
|---|---|---|---|
| | I or II | III | IV |
| $S_{DS} < 0.167g$ | A | A | A |
| $0.167g \leq S_{DS} < 0.33g$ | B | B | C |
| $0.33g \leq S_{DS} < 0.50g$ | C | C | D |
| $0.50g \leq S_{DS}$ | D | D | D |

**For Risk Category = I and $S_{DS}$ = 0.741 g, Seismic Design Category = D**

Table 11.6-2 Seismic Design Category Based on 1-S Period Response Acceleration Parameter

| VALUE OF $S_{D1}$ | RISK CATEGORY | | |
|---|---|---|---|
| | I or II | III | IV |
| $S_{D1} < 0.067g$ | A | A | A |
| $0.067g \leq S_{D1} < 0.133g$ | B | B | C |
| $0.133g \leq S_{D1} < 0.20g$ | C | C | D |
| $0.20g \leq S_{D1}$ | D | D | D |

**For Risk Category = I and $S_{D1}$ = 0.422 g, Seismic Design Category = D**

Note: When $S_1$ is greater than or equal to 0.75g, the Seismic Design Category is **E** for buildings in Risk Categories I, II, and III, and **F** for those in Risk Category IV, irrespective of the above.

Seismic Design Category ≡ "the more severe design category in accordance with Table 11.6-1 or 11.6-2" = D

---

Note: See Section 11.6 for alternative approaches to calculating Seismic Design Category.

## References


1. *Figure 22-1*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-1.pdf
2. *Figure 22-2*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-2.pdf
3. *Figure 22-12*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-12.pdf
4. *Figure 22-7*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-7.pdf
5. *Figure 22-17*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-17.pdf
6. *Figure 22-18*: http://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-18.pdf

# Appendix B:

## R-Value Calculation Sheet

# *R-VALUE CALCULATION SHEET*

***Job #13-116-P***

Asphalt over Class 2 Aggregate Base Design:

Data: Subgrade ***R = 37***; ***TI = 4.5***; Minimum Section = 3" A.C. over 4" Cl. 2 base.

Calculations:

$GE_{TOT}$ = 0.0032 x TI x (100 - R) = 0.0032 x 4.5 x (100 - 37) = 0.91
GF: From Cal Trans 1990 Edition, Table #608.4B = 2.54
$GE_{AC}$ = ($T_{AC}$ ÷ 12) x GF = 3 ÷ 12 x 2.54 = 0.63
$GE_{AB}$ = $GE_{TOT}$ - $GE_{AC}$ = 0.91 - 0.63 = 0.28
$T_{AB}$ = ($GE_{AB}$ ÷ $GF_{AB}$ ) x 12 = (0.28 ÷ 1.1) x 12 = 3"

**Use 3 inches AC over 4 inches Caltrans Class 2**

Data: Subgrade ***R = 37***; ***TI = 5.0***; Minimum Section = 3" A.C. over 4" Cl. 2 base.

Calculations:

$GE_{TOT}$ = 0.0032 x TI x (100 - R) = 0.0032 x 5.0 x (100 - 37) = 1.01
GF: From Cal Trans 1990 Edition, Table #608.4B = 2.54
$GE_{AC}$ = ($T_{AC}$ ÷ 12) x GF = 3 ÷ 12 x 2.54 = 0.63
$GE_{AB}$ = $GE_{TOT}$ - $GE_{AC}$ = 1.01 - 0.63 = 0.38
$T_{AB}$ = ($GE_{AB}$ ÷ $GF_{AB}$ ) x 12 = (0.38 ÷ 1.1) x 12 = 4"

**Use 3 inches AC over 4 inches Caltrans Class 2**

Data: Subgrade ***R = 37***; ***TI = 6.0***; Minimum Section = 4" A.C. over 4" Cl. 2 base.

Calculations:

$GE_{TOT}$ = 0.0032 x TI x (100 - R) = 0.0032 x 6.0 x (100 - 37) = 1.21
GF: From Cal Trans 1990 Edition, Table #608.4B = 2.32
$GE_{AC}$ = ($T_{AC}$ ÷ 12) x GF = 4 ÷ 12 x 2.32 = 0.77
$GE_{AB}$ = $GE_{TOT}$ - $GE_{AC}$ = 1.21 - 0.77 = 0.44
$T_{AB}$ = ($GE_{AB}$ ÷ $GF_{AB}$ ) x 12 = (0.44 ÷ 1.1) x 12 = 4"

**Use 4 inches AC over 4 inches Caltrans Class 2**

Data: Subgrade ***R = 37***; ***TI = 7.0***; Minimum Section = 4" A.C. over 4" Cl. 2 base.

Calculations:

$GE_{TOT}$ = 0.0032 x TI x (100 - R) = 0.0032 x 6.5 x (100 - 37) = 1.41
GF: From Cal Trans 1990 Edition, Table #608.4B = 2.14
$GE_{AC}$ = ($T_{AC}$ ÷ 12) x GF = 4 ÷ 12 x 2.14 = 0.71
$GE_{AB}$ = $GE_{TOT}$ - $GE_{AC}$ = 1.41 - 0.71 = 0.70
$T_{AB}$ = ($GE_{AB}$ ÷ $GF_{AB}$ ) x 12 = (0.70 ÷ 1.1) x 12 = 8"

**Use 4 inches AC over 8 inches Caltrans Class 2**

***Job #13-116-P***

Asphalt over Class 2 Aggregate Base Design:

Data: Subgrade ***R = 64***; ***TI = 4.5***; Minimum Section = 3" A.C. over 4" Cl. 2 base.

Calculations:

$GE_{TOT}$ = 0.0032 x TI x (100 - R) = 0.0032 x 4.5 x (100 - 64) = 0.52
GF: From Cal Trans 1990 Edition, Table #608.4B = 2.54
$GE_{AC}$ = ($T_{AC}$ ÷ 12) x GF = 3 ÷ 12 x 2.54 = 0.63
$GE_{AB}$ = $GE_{TOT}$ - $GE_{AC}$ = 0.52 < 0.63

**Use 3 inches AC over 4 inches Caltrans Class 2**

Data: Subgrade ***R = 64***; ***TI = 5.0***; Minimum Section = 3" A.C. over 4" Cl. 2 base.

Calculations:

$GE_{TOT}$ = 0.0032 x TI x (100 - R) = 0.0032 x 5.0 x (100 - 64) = 0.58
GF: From Cal Trans 1990 Edition, Table #608.4B = 2.54
$GE_{AC}$ = ($T_{AC}$ ÷ 12) x GF = 3 ÷ 12 x 2.54 = 0.63
$GE_{AB}$ = $GE_{TOT}$ - $GE_{AC}$ = 0.58 < 0.63

**Use 3 inches AC over 4 inches Caltrans Class 2**

Data: Subgrade ***R = 64***; ***TI = 6.0***; Minimum Section = 4" A.C. over 4" Cl. 2 base.

Calculations:

$GE_{TOT}$ = 0.0032 x TI x (100 - R) = 0.0032 x 6.0 x (100 - 64) = 0.69
GF: From Cal Trans 1990 Edition, Table #608.4B = 2.32
$GE_{AC}$ = ($T_{AC}$ ÷ 12) x GF = 4 ÷ 12 x 2.32 = 0.77
$GE_{AB}$ = $GE_{TOT}$ - $GE_{AC}$ = 0.69 < 0.77

**Use 4 inches AC over 4 inches Caltrans Class 2**

Data: Subgrade ***R = 64***; ***TI = 7.0***; Minimum Section = 4" A.C. over 4" Cl. 2 base.

Calculations:

$GE_{TOT}$ = 0.0032 x TI x (100 - R) = 0.0032 x 6.5 x (100 - 37) = 0.81
GF: From Cal Trans 1990 Edition, Table #608.4B = 2.14
$GE_{AC}$ = ($T_{AC}$ ÷ 12) x GF = 4 ÷ 12 x 2.14 = 0.71
$GE_{AB}$ = $GE_{TOT}$ - $GE_{AC}$ = 0.81 - 0.71 = 0.10
$T_{AB}$ = ($GE_{AB}$ ÷ $GF_{AB}$ ) x 12 = (0.10 ÷ 1.1) x 12 = 1.1"

**Use 4 inches AC over 4 inches Caltrans Class 2**

# Appendix K Bear Valley Parkway Fire Protection Plan (July 2015)

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# BEAR VALLEY PARKWAY
# FIRE PROTECTION PLAN
## APN Nos. 237-131-01 and -02

*Prepared for:*

**Escondido Fire Department**

*On behalf of Applicant:*

**Spieth-Wohlford Inc.**
P.O. Box 5005 N0. 17
Rancho Santa Fe, California 92067
*Contact: Mr. Burnet Wohlford*

*Prepared by:*

**DUDEK**
605 Third Street
Encinitas, California 92024
*Contact: Michael Huff*

**JULY 2015**

FIRE MARSHAL

Rincon Del Diablo Fire Protection District
1163 N Centre City Parkway
Escondido, CA 92026
(760) 839-5400

APPROVED

Date 7/30/15

By _____
Fire Marshall or Designee

OBTAIN FIRE AGENCY APPROVAL
PRIOR TO THE FOLLOWING INSPECTIONS

BUILDING FINAL _____

OTHER _____

It is unlawful to make any changes or alterations on this set of plans and specifications

Printed on 30% post-consumer recycled material.

# TABLE OF CONTENTS

**Section** **Page No.**

**EXECUTIVE SUMMARY** ..... **1**

**1 INTRODUCTION** ..... **3**

1.1 Project Summary ..... 3

1.1.1 Location ..... 3

1.1.2 Project Description ..... 4

1.1.3 Environmental Setting ..... 4

**2 DETERMINATION OF PROJECT EFFECTS** ..... **15**

**3 ANTICIPATED FIRE BEHAVIOR** ..... **17**

3.1 Fire Behavior Modeling ..... 17

3.1.1 BehavePlus Fire Behavior Modeling Effort ..... 17

3.1.2 Fuel Model Results ..... 17

3.2 On-Site Risk Assessment ..... 18

**4 EMERGENCY RESPONSE AND SERVICE** ..... **21**

**5 FIRE SAFETY REQUIREMENTS - INFRASTRUCTURE, BUILDING IGNITION RESISTANCE, AND DEFENSIBLE SPACE** ..... **23**

5.1 Fire Access ..... 23

5.1.1 Roads ..... 23

5.1.2 Entrances ..... 23

5.1.3 Dead Ends ..... 24

5.1.4 Width and Turning Radius ..... 24

5.1.5 Grade ..... 25

5.1.6 Surface ..... 25

5.1.7 Identification ..... 25

5.1.8 Gates ..... 25

5.2 Ignition Resistant Construction and Fire Protection Systems ..... 26

5.2.1 Fire Protection Systems ..... 26

5.2.2 Structure Setback Requirements ..... 27

5.3 Defensible Space and Vegetation Management ..... 27

5.3.1 Fuel Modification ..... 27

**6 ADDITIONAL STRUCTURAL PROTECTION MEASURES** ..... **37**

**7 CONCLUSION** ..... **41**

**8 REFERENCES** ..... **43**

**9 LIST OF PREPARERS** ..... **45**

# TABLE OF CONTENTS (Continued)

**Page No.**

## APPENDICES


A Photograph Log
B Fire History
C BehavePlus Fire Behavior Analysis
D Prohibited Plant List


## FIGURES


1 Vicinity Map ..... 5
2 Project Site Plan ..... 7
3 Vegetation and Land Cover Exhibit ..... 11
4 Fire BehavePlus Analysis Exhibit ..... 19
5 Fuel Modification Exhibit ..... 30


## TABLES


1 Vegetation Communities and Land Covers ..... 9
2 Bear Valley Parkway Fire Behavior Model Variables ..... 17
3 Oak Creek Community BehavePlus Fire Behavior Model Results ..... 18
4 Escondido Fire Department Responding Stations Summary ..... 21
5 Project Lot by Lot Fuel Modification Zone Summary. ..... 33
6 Distance Between Tree Canopies by Percent Slope ..... 34
7 Additional Fire Protection Measures by Lot ..... 39

## EXECUTIVE SUMMARY

The Bear Valley Parkway Project is a proposed private residential development located on two parcels encompassing 40.9 acres within the City of Escondido, California. The project is generally located in southeastern Escondido, generally 1.5 miles east of Interstate 15, and south of State Route 78 (SR-78)/San Pasqual Valley Road. More specifically, the Project is located at 661 Bear Valley Parkway. The entrance to the Bear Valley Parkway project site will be located in the northwestern portion of the project site off Bear Valley Parkway and across from Zlatibor Ranch Road. The proposed development will include:

- A total of 55 single-family home lots
- "open space" lots on the southern portion of the residential development
- residential streets, driveways, fire hydrants, and associated infrastructure
- primary ingress/egress off of Bear Valley Parkway with secondary ingress/egress from Private Street "A" onto Bear Valley Parkway for 41 lots in the southern portion of the development
- Fuel Modification Zone designated on lots adjacent to open space

The Bear Valley Parkway property lies within an area statutorily designated a Local Responsibility Area (LRA) "High Fire Hazard Severity Zone (HFHSZ)," by Escondido Fire Department and CAL FIRE. Fire hazard designations are based on topography, vegetation, and weather, amongst other factors, with more hazardous sites including steep terrain, unmaintained fuels/vegetation, and wildland urban interface locations. The nearest open space areas that include very high fire hazard severity designation occur east of the site towards the San Pasqual Valley area. The site is surrounded on three sides by existing, estate-type neighborhoods, a vacant parcel to the east, and a narrow strip of oak riparian forest (preserved open space) to the south. The site is currently undeveloped, disturbed and dominated by past agricultural use as an avocado orchard. One occupied residence is located in the middle of the site. The terrain on, and within the vicinity of the project, is characterized by flat to gently rolling land, with the steepest gradients reaching approximately 16%. The area, like all of San Diego County, is subject to seasonal weather conditions that can heighten the likelihood of fire ignition and spread, however, considering the site's terrain and vegetation, would be expected to result in primarily a low- to moderate-intensity wildfire.

The project site is technically within the jurisdiction of the Escondido Fire Department (EFD) and is situated in the upper section of Service Area District 4. The EFD operates four fire stations that could respond to an incident on the site in under 7 minutes travel time, and one (Station 4) that is within 4.19 minutes of the site. In addition, automatic/mutual aid agreements are in place with neighboring fire agencies to augment response, especially at the fringe area of EFD's jurisdiction.

The project will be constructed to the ignition resistant code requirements of the 2013 California Fire and Building (Chapter 7-A) Codes as amended by the City of Escondido (Chapters 6 and 11 of the Escondido Municipal Code; Ordinance No. 2013-13). Construction shall include enhanced ignition resistant features, automatic interior sprinklers, conforming fire flow and water capacity, roads, supporting infrastructure, and fuel modification areas, as well as additional fire protection features above and beyond the requirements where they are expected to compensate for lots where a 30-foot structure setback for a two-story home cannot be achieved.

# 1 INTRODUCTION

This Fire Protection Plan (FPP) has been prepared for the proposed Bear Valley Parkway project in the City of Escondido, California. The purpose of the FPP is to assess the potential impacts resulting from wildland fire hazards and identify the measures necessary to adequately mitigate those impacts. As part of the assessment, this plan has considered the fire risk presented by the site including: property location and topography, geology (soils and slopes), combustible vegetation (fuel types), climatic conditions, fire history and the proposed land use and configuration. This FPP addresses water supply, access (including secondary/emergency access), structural ignitability and ignition resistive building features, fire protection systems and equipment, impacts to existing emergency services, defensible space, and vegetation management. The plan identifies fuel modification/management zones and recommends the types and methods of treatment that will protect this project and its essential infrastructure. The FPP recommends measures that property owners will take to reduce the probability of structural ignition throughout the project.

This FPP is consistent with the City of Escondido Fire Code (Municipal Code Chapter 11, Article 2; Ordinance No. 2013-13), and Building Code (Municipal Code Chapter 6, Article 3). Further, it is consistent with the California Code of Regulations Titles 14 and 24 and 2013 State Fire and Building Codes. The purpose of this plan is to generate and memorialize the fire safety requirements of the Fire Authority Having Jurisdiction (FAHJ), namely the Escondido Fire Department (EFD). Requirements are based on site-specific characteristics and incorporate input from the project developer (Jack Henthorn and Associates on behalf of Spieth-Wohlford Inc.), project planners, engineers, biologists, architects, and the EFD.

## 1.1 Project Summary

### 1.1.1 Location

The Bear Valley Parkway project site consists of approximately 40.9 acres in the City of Escondido, San Diego County, California. It is located in a rural part of southeast Escondido, approximately 1.5 miles east of Interstate 15 (I-15) and south of State Route 78 (SR-78)/San Pasqual Valley Road (Figure 1). More specifically, the project site resides at 661 Bear Valley Parkway near Zlatibor Ranch Road. The site is bordered on the west by Bear Valley Parkway S., on the east by Choya Canyon Road, and on the south by Valley Grove Lane. The Project Area is situated in the U.S. Geological Survey (USGS) 7.5 minute Escondido quadrangle map in section 26, Township 12 South, and Range 2 West.

The project site consists of the following Assessor Parcel Numbers (APNs): 237-131-01-00 (tear drop shape parcel) and 237-131-02-00 (parcel northwest of Bear Valley Parkway).

The property lies within a LRA HFHSZ area as statutorily designated by the EFD in cooperation with CAL FIRE (CAL FIRE 2014).

### 1.1.2 Project Description

The project consists of a proposed subdivision of 40.9 acres into 55 residential lots, each containing a minimum of 10,000 square feet (Figure 2). In addition to the residential lots, the project proposes two private street lots, seven open space lots and one recreation lot. Private open space will occupy 19.47 acres. The open space lots will include any necessary mitigation areas related to upland or wetland habitat. Two drainage basins are proposed at the entry location and next to the proposed main recreation area.

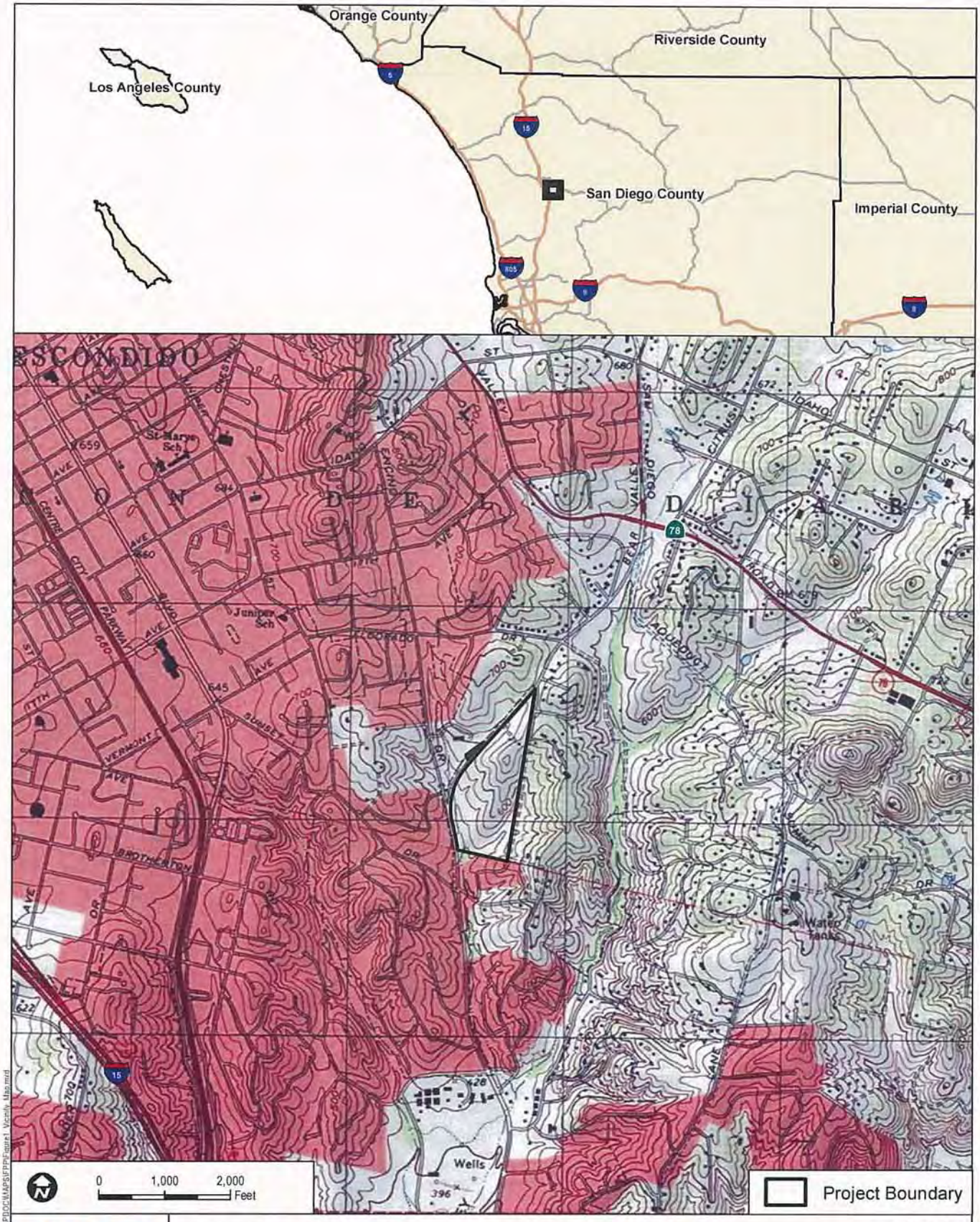
A park will be constructed near the secondary access point. Pedestrian linkages will be via non-curb adjacent private streets where walkways are separated from vehicle traffic by privately maintained parkways. This system will tie into the public Bear Valley Parkway sidewalk system.

The project will take access from Bear Valley Parkway at the intersection of Zlatibor Ranch Road and Bear Valley Parkway. A secondary, gated emergency ingress and egress will be provided south of the primary access and north of the intersection of Bear Valley Parkway and Encino Drive. The project includes frontage right-of-way (ROW) dedication to complete a road widening to from the center line of existing Bear Valley Parkway (51 feet total) ROW. In addition the project will be obligated to construct frontage improvements along Bear Valley Parkway consisting of curb, gutter, side walk, parkway, bike lane and one full travel lane with transitions that will tie into existing improvements. A portion of these frontage improvements are located off-site of the subject property.

### 1.1.3 Environmental Setting

Dudek conducted a site evaluation on January 20, 2015. The site inspection included:

- Topography evaluation
- Vegetation/fuel assessments
- Existing infrastructure evaluations
- Documentation of the existing condition
- Off-site, adjacent property fuel and topography conditions
- Surrounding land use confirmations
- Necessary fire behavior modeling data collection




DUDEK

7833

SOURCE: USGS 7.5-Minute Series Escondido Quadrangle.

**FIGURE 1**
**Vicinity Map**

Bear Valley Parkway FPP

Path: Z:\Projects\7833\01\MAPDOC\MAPS\FPP\Figure1 Vicinity Map.mxd

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SOURCE: Hunsaker 2015; Bing 2015

**FIGURE 2**
**Project Site Plan**

Bear Valley Parkway FPP

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### 1.1.3.1 Topography

The Bear Valley Parkway project site consists of relatively flat to gentle slopes with gradients less than 16%. The slopes throughout the project site previously supported an avocado grove. Much of the site is traversable on dirt roads that provided access to the avocado grove. Elevations on the site range from approximately 590 feet above mean sea level (AMSL) to 680 feet AMSL at the top of the hill. An unnamed intermittent stream channel runs north to south through the western portion of the project site.

### 1.1.3.2 Fuels

Vegetative fuels on site are primarily disturbed or developed land, although smaller pockets of southern coast live oak riparian forest and disturbed southern cactus scrub are present (Dudek, 2015). The area proposed for development and within the project grading limits will be converted to roads, structures, and landscaped vegetation following project completion. There are currently no vegetative fuels within proposed fuel modification zones. These areas were disturbed by grove removal resulting in the growth of very few native perennials. Areas outside of proposed development and fuel modification zones can be classified primarily as ornamental landscaping on adjacent properties or vacant parcels that have been maintained per the City's vegetation clearance standards. Appendix A provides photographs of the site in its current, undeveloped condition as well as the off-site land uses. The acreage of each on-site vegetation community or land cover type is provided in Table 1 and illustrated in Figure 3.

**Table 1**
**Vegetation Communities and Land Covers**

| Habitat Type | Existing Acres |
|---|---|
| *Wetlands/Riparian Areas* | |
| Southern Coast Live Oak Riparian Forest | 3.39 |
| Non-native Riparian | 0.13 |
| *Upland* | |
| Disturbed Southern Cactus Scrub | 0.17 |
| *Other Land Covers* | |
| Disturbed Habitat | 0.55 |
| Developed Land | 36.67 |
| **Total** | **40.90** |

### 1.1.3.3 Fuel Loads

The vegetation described above translates to fuel models used for fire behavior modeling, discussed in Chapter 3 of this FPP. Variations in vegetative cover type and species composition

have a direct effect on fire behavior. Some plant communities and their associated plant species have increased flammability based on plant physiology (resin content), biological function (flowering, retention of dead plant material), physical structure (leaf size, branching patterns), and overall fuel loading. For example, the native shrub species that compose the sage scrub plant communities on site are considered to exhibit higher potential hazard based on such criteria.

The importance of vegetative cover on fire suppression efforts is its role in affecting fire behavior. For example, while fires burning in grasslands may exhibit lower flame lengths than those burning in sage scrub fuels, fire spread rates in grasslands are often much more rapid than those in other vegetation types. Fine fuel loading for oak riparian forest areas is estimated at 9.0 tons/acre whereas the disturbed habitats are less than .1 ton/acre.

#### *1.1.3.4 Fire History*

Fire history is an important component of a Project FPP. Fire history information can provide an understanding of fire frequency, fire type, most vulnerable project areas, and significant ignition sources, amongst others. Fire frequency, behavior, and ignition sources are important for fire response and planning purposes. One important use for this information is as a tool for pre-planning. It is advantageous to know which areas may have burned recently and, therefore, may provide a tactical defense position, what type of fire burned on the site, and how a fire may spread. According to available data from CAL FIRE's Fire and Resource Assessment Program (CAL FIRE 2014), numerous fires have burned in the vicinity of the project site since the beginning of the historical fire data record (Appendix B). These fires, occurring in 1955, 1967, 1972, 1974, 1980, 1987, 1988, 1993, and 2007 burned within 3 miles of the project site. No fires in the recorded history have burned across the project site. The 2007 Witch Fire, which burned approximately 1.0 mile to the south and east of the project site, was the most recent, and largest wildfire in the vicinity of the project, with a total burned area of over 160,000 acres.

Based on an analysis of this fire history data set, specifically the years in which the fires burned, the average interval between wildfires burning within a 3-mile radius of the project site was calculated to be six years with intervals ranging between 0 (multiple fires in the same year) and 14 years. Based on this analysis, along with the changes in the immediate surrounding area over the last few decades that resulted in conversion of fuels to lower flammability rural-suburban development, the area is not expected to be subject to regular, wide-spread wildfire, but may include smaller fires during typical weather conditions and has the potential for larger wildfires during extreme weather conditions. Based on fire history, wildfire risk for the project site is associated primarily with a Santa Ana wind-driven wildfire burning or spotting onto the site from the east, although a fire approaching from the west during more typical on-shore weather patterns is possible.

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SOURCE: BING 2015

**FIGURE 3**

## Vegetation and Land Cover Map

Bear Valley Parkway FPP

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### 1.1.3.5 Climate

North San Diego County and the project area are influenced by the Pacific Ocean and are frequently under the influence of a seasonal, migratory subtropical high pressure cell known as the "Pacific High." Wet winters and dry summers with mild seasonal changes characterize the Southern California climate. This climate pattern is occasionally interrupted by extreme periods of hot weather, winter storms, or dry, easterly Santa Ana winds. The average high temperature for the project area is approximately 70°F, with daily highs in the summer and early fall months (July–October) exceeding 95°F. Precipitation typically occurs between November and March.

The prevailing wind pattern is from the west (on-shore), but the presence of the Pacific Ocean causes a diurnal wind pattern known as the land/sea breeze system. During the day, winds are from the west–southwest (sea) and at night winds are from the northeast (land), averaging 2 miles per hour (mph). During the summer season, the diurnal winds may average slightly higher (approximately 16 mph) than the winds during the winter season due to greater pressure gradient forces. Surface winds can also be influenced locally by topography and slope variations. The highest wind velocities are associated with downslope, canyon, and Santa Ana winds.

Typically the highest fire danger is produced by the high-pressure systems that occur in the Great Basin, which result in the Santa Ana winds of Southern California. Sustained wind speeds recorded during recent major fires in San Diego County exceeded 30 mph and may exceed 50 mph during extreme conditions. The Santa Ana wind conditions are a reversal of the prevailing southwesterly winds that usually occur on a region-wide basis during late summer and early fall. Santa Ana winds are warm winds that flow from the higher desert elevations in the north through the mountain passes and canyons. As they converge through the canyons, their velocities increase. Consequently, peak velocities are highest at the mouths of canyons and dissipate as they spread across valley floors. Santa Ana winds generally coincide with the regional drought period and the period of highest fire danger. The Bear Valley Parkway site is affected by strong winds, such as Santa Anas.

### 1.1.3.6 Current Land Use

The majority of the Project area was once an avocado orchard. The orchard was removed at some point and is now considered disturbed habitat. There is one residence on site in the central portion of the property that is currently occupied. A power line runs along the western edge of the property from Encino Drive up to Choya Canyon Road and northward. An on-site paved road provides access to the residence with numerous dirt roads traversing the hillside that in the past provided access to the orchard. The remaining portions of the site are undeveloped.

### 1.1.3.7 Proposed Land Use

The Bear Valley Parkway project proposes to construct a 55-lot, residential development on approximately 40.9 acres with a park near the proposed secondary access point. As indicated in Figure 2, private streets will provide access to the development areas. In addition to the 55 individual single-family residential lots, the project will include lots dedicated to private streets, open space, and maintained fuel modification zones by the project Homeowners Association (HOA). The project, as proposed, will also include:

- Primary access road extending from Bear Valley Parkway into the property
- Emergency ingress/egress route south of the primary access road t and north of the intersection of Bear Valley Parkway and Encino Drive.
- 19.47 acres designated to remain as private open space lands

The proposed improvements described above would be completed according to the City of Escondido Fire and Building code standards in effect at the time of building plan submittal and would include ignition-resistive construction, residential fire sprinkler systems, structure setbacks, required fire flow, and a designated fuel modification area, among other requirements as described further in this FPP.

# 2 DETERMINATION OF PROJECT EFFECTS

FPPs provide an evaluation of the adverse environmental effects a proposed project may have from wildland fire. The FPP must provide mitigation for identified impacts to ensure that development projects do not unnecessarily expose people or structures to a significant loss, injury or death involving wildland fires. Significance is determined by answering the following guidelines:

***Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?***

The wildland fire risk in the vicinity of the Project site has been analyzed and it has been determined that wildfires may occur in wildland areas to the east of the project site as well as potentially in the preserved on-site fuels in the southern portion of the property, but would not be significantly increased in frequency, duration, or size with the construction of the Project. The Project includes fire resistant landscaping, fuel modification areas, and ignition resistant structures. With the project, the site, which is currently dominated by flashy fuels, will be converted to ignition resistant landscapes.

The types of potential ignition sources that currently exist in the area include vehicle and roadway, electrical transmission line, and off-site residential neighborhoods. The project would introduce potential ignition sources, but would include better access throughout the site, managed and maintained landscapes, more eyes and ears on the ground, and generally a reduction in the receptiveness of the area's landscape to ignition. Fires from off-site would not have the same spread potential due to a lack of continuous fuels across this site and would therefore be expected to burn around and/or over the site via spotting.

Preserved riparian vegetation to the southwest of the project is typically well hydrated and the types of plants/trees are more resistive to ignition. However, these fuels can ignite and burn during extreme conditions. Burning vegetation embers may land on Project structures, but are not likely to result in ignition based on ember decay rates and the types of non-combustible and ignition resistant materials that will be used on site. The Project would comply with applicable fire and building codes and would include a layered fire protection system designed to current codes and inclusive of site-specific measures that will result in a Project that is less susceptible to wildfire than surrounding landscapes and that would facilitate fire fighter and medical aid response.

***Would the project result in inadequate emergency access?***

The Project includes fire access throughout the neighborhood and is consistent with the Escondido Fire Code. Fire apparatus access throughout the development will include 36-foot-wide roads. Fire access on the Project site will be improved from its current condition, which provides only limited access on dirt/gravel roads. The on-site roadways include dead ends that are inclusive of cul-de-sacs meeting fire department requirements. In addition, emergency access is provided at a remote location from the primary access, and strategically enables faster egress for residents or ingress for responders from Fire Station 4, which is roughly two miles from this site. Roads will conform with surface, width, turning radius, and vertical clearance Code requirements for emergency access. Therefore, emergency access is considered adequate for this site.

***Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance service ratios, response times or other performance objectives for fire protection?***

The Project is projected to add an estimated fewer than 16 calls per year to the Escondido Fire Department's existing call load. The primary response (first in) would be provided by Station 4, which ran 968 calls in 2014. The addition of 16 calls/year (1.3 calls per month, 0.31 call per week,) to an urban fire station that currently responds to approximately 81 calls per month (19 calls per week, 3 calls per day) is considered less than significant and will not require the construction of additional Fire Station facilities based on that increase alone. For perspective, urban fire stations that respond to five calls per day are considered average and 10 calls per day would be considered a busy station. A portion of the project's parcel tax revenue will be allocated to fire protection, which can be used to maintain current levels of protection without impacting existing citizens.

***Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?***

The project is within the City of Escondido's Water Service Area and sufficient water supplies will be available to serve the project from existing entitlements and resources. The Water Division requires new development within HFHSZ area to meet 2,500 gpm fire flow. The pressures in the development will remain above 20 psi for a minimum 2 hour duration when meeting the fire requirements for the water service area.. The measures described in the responses to these significance questions are provided more detail in the following sections.

# 3 ANTICIPATED FIRE BEHAVIOR

## 3.1 Fire Behavior Modeling

Following field data collection efforts and available data analysis, fire behavior modeling was conducted to document the type and intensity of fire that would be expected on or adjacent to the Bear Valley Parkway project site given characteristic site features such as topography, vegetation, and weather. The BehavePlus 5.0.5. fire behavior modeling software package was utilized in evaluating anticipated fire behavior adjacent to proposed fuel modification zones for the entire project site. Results are provided below and a more detailed presentation of the BehavePlus analysis, including fuel moisture and weather input variables, is provided in Appendix C.

### 3.1.1 BehavePlus Fire Behavior Modeling Effort

Fuel Models are simply tools to help fire experts realistically estimate fire behavior for a vegetation type. Fuel models are selected by their vegetation type; fuel stratum most likely to carry the fire; and depth and compactness of the fuels. Fire behavior modeling was conducted for vegetative types that surround the proposed development. The vegetation types are represented primarily by three fuel models as shown in Table 2. Other fuel models may exist, but not at quantities that significantly influence fire behavior in and around the proposed development. Fuel models were selected from *Standard Fire Behavior Fuel Models: a Comprehensive Set for Use with Rothermel's Surface Fire Spread Model* (Scott and Burgan 2005).

**Table 2**
**Bear Valley Parkway Fire Behavior Model Variables**

| Scenario | Weather | Fuel Model(s) | Slope | Aspect |
|---|---|---|---|---|
| 1 | Peak (Santa Ana) | Ornamental Vegetation (tu1) | 14% | Northwest |
| 2 | Peak (Santa Ana) | Disturbed, sparse grasslands (gr1) | 16% | West |
| 3 | Summer (On-shore) | Oak forest riparian/Ornamental vegetation (FM10, tu1) | 3-10% | Flat/East |

### 3.1.2 Fuel Model Results

Fire Behavior results derived from the BehavePlus modeling efforts are presented in Table 3 and in Figure 4. Three focused analyses (fire scenarios) were completed, each assuming worst-case fire weather conditions for a fire approaching the project site from the northeast or southwest. The site and adjacent areas were modeled as a Fuel Model *gr1* (Disturbed, sparse grasslands fuelbed), Fuel Model *FM 10* (Coastal live oak riparian forest fuelbed), and Fuel Model *tu1* (Ornamental vegetation fuelbed). This detailed analysis compared fire behavior outside the proposed development with outputs including flame length (feet), rate of spread (mph), and fireline intensity (BTU/ft/s).

**Table 3**
**Oak Creek Community BehavePlus Fire Behavior Model Results**

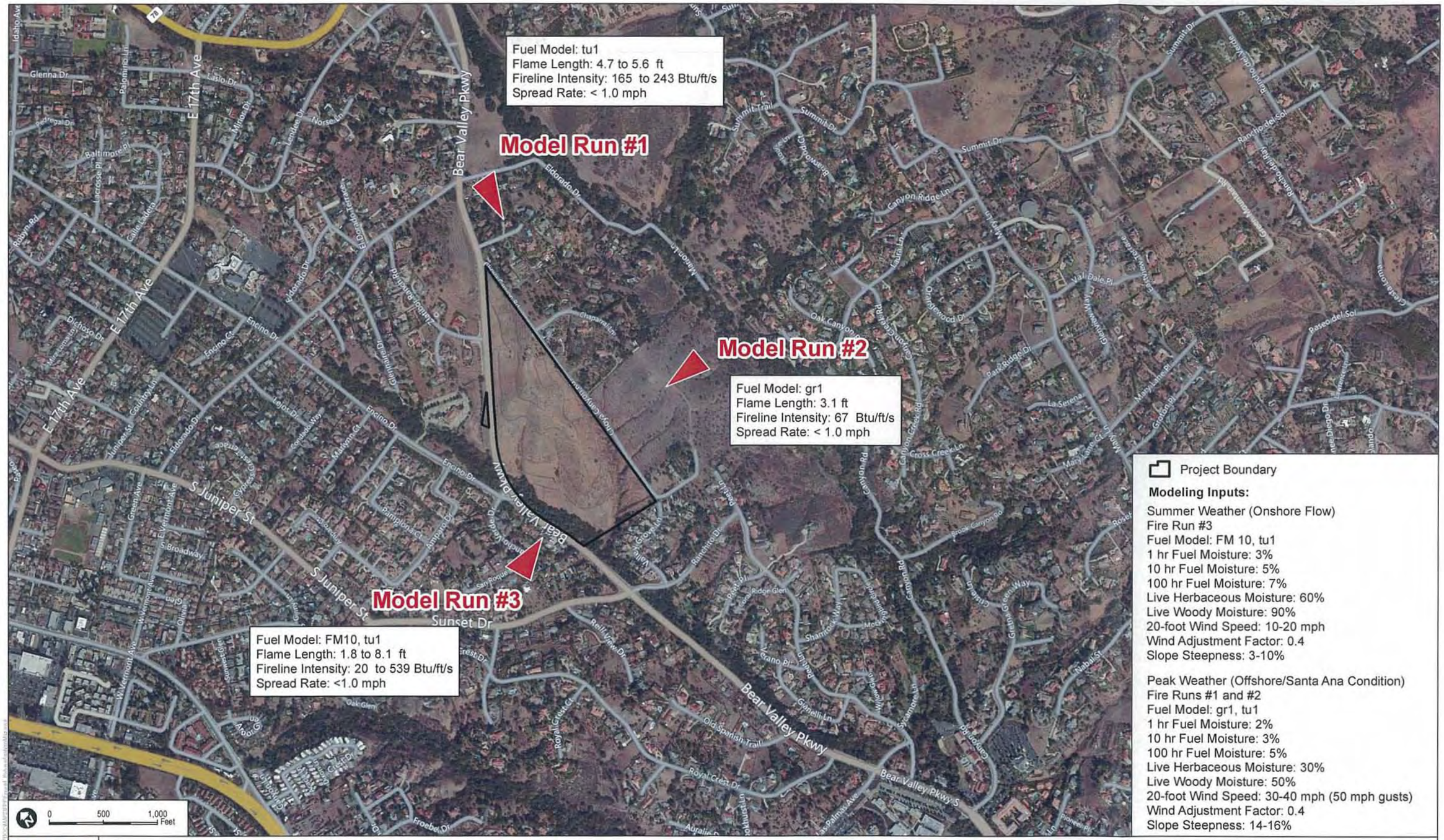
| Model Run | Fuel Model(s) | Flame Length (feet) | Fireline Intensity (Btu/ft/s) | Surface Rate of Spread (mph) |
|---|---|---|---|---|
| 1 | tu1 | 4.7 to 5.6 | 165 to 243 | < 1.0 |
| 2 | gr1 | 3.1 | 67 | < 1.0 |
| 3 | FM 10, tu1 | 1.8 to 8.1 | 20 to 539 | < 1.0 |

Based on the results of BehavePlus analysis, wildfires with the most fire intensity will occur during on-shore wind patterns and are expected to be of low to moderate severity with flames lengths of 8 feet and slow spread rates (less than 1.0 mph) due to higher fuel moisture content and reduced wind speeds. Even though grass fires can typically ignite or spread quickly, the grass fuelbed is routinely cut in height to reduce their fire potential.

The results presented in Table 3 depict values based on inputs to the BehavePlus software and are not intended to capture changing fire behavior as it moves across a landscape. Changes in slope, weather, or pockets of different fuel types are not accounted for in this analysis. For planning purposes, the averaged worst-case fire behavior is the most useful information for conservative fuel modification design. Model results should be used as a basis for planning only, as actual fire behavior for a given location will be affected by many factors, including unique weather patterns, small-scale topographic variations, or changing vegetation patterns.

## 3.2 On-Site Risk Assessment

Given the lack of wildfire on the site, the history of wildfire in the vicinity of the site, as well as the 2007 Witch Fire, that burned within 1.0 mile to the south and east of the Bear Valley Parkway site, combined with the flat terrain, post-project vegetation conversion, climate, potential ignition sources, and anticipated fire behavior, the project is not expected to be vulnerable to recurring wildfire ignition and spread, but may be subject to nearby wildfire that could, under worst case conditions, spread into preserve coast live oak riparian forest areas adjacent to southern portion of Project or from burning embers landing in receptive fuels. Fire is not expected to have readily ignitable fuels in the post-project landscape. Preserved riparian forest corridors on site will be predominantly oak woodland (southern drainage), well hydrated, inclusive of surface water, and generally more difficult to ignite. Should the riparian vegetation ignite, it would be expected to burn in a spotty manner due to the presence of heavy shading, higher humidity under canopy, and hydrated fuels.

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SOURCE: Bing Maps 2015

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Bear Valley Parkway FPP

**FIGURE 4**

**Fire Behave Plus Analysis Map**

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# 4 EMERGENCY RESPONSE AND SERVICE

## 4.1 Emergency Response

The project is located within the jurisdiction of the EFD Service Area District 4, and consequently, EFD provides initial response. The EFD operates four Fire Stations (Stations 1, 2, 4, and 5) that could respond within 7 minutes to an incident at the Bear Valley Parkway site, although primary response would be from Station 4, with the other stations responding as necessary. Table 4 presents a summary of the location, equipment, staffing levels, maximum travel distance, and travel time for the four EFD stations. Travel distances are derived from Google road data while travel times are calculated applying the nationally recognized Insurance Services Office (ISO) Public Protection Classification Program's Response Time Standard formula (T=0.65 + 1.7 D, where T= time and D = distance). The ISO response travel time formula discounts speed for intersections, vehicle deceleration and acceleration, and does not include turnout time.

**Table 4**
**Escondido Fire Department Responding Stations Summary**

| Station | Location | Equipment | Staffing | Maximum Travel Distance* | Travel Time** |
|---|---|---|---|---|---|
| Station 1 | 310 Quince<br>Escondido, CA 92029 | Paramedic Engine<br>Truck Company<br>Brush Engine<br>Ambulances (2) | 27 | 3.5 mi. | 6.7 min. |
| Station 2 | 421 North Midway<br>Escondido, CA 92029 | Paramedic Engine<br>Brush Engine<br>Ambulance | 9 | 3.2 mi. | 6.2 min. |
| Station 4 | 3301 Bear Valley Parkway, Escondido, CA 92029 | Paramedic Engine<br>Brush Engine | 9 | 2.1 mi. | 4.2 min. |
| Station 5 | 2319 Felicita Road, Escondido, CA 92029 | Paramedic Engine<br>Brush Engine<br>Ambulance (June 2013) | 15 | 3.4 mi. | 6.4 min. |

* Distance measured to most remote structure in development.
** Assumes travel time to the project entrance, an adjusted speed based on the ISO travel time formula, and does not include turnout time

Based on the Bear Valley Parkway site location in relation to existing EFD stations, travel time to the site for the first responding engine from Station 4 to the most remote structure (lot 27) of the Project is roughly 4.2 minutes. Secondary response would arrive within seven minutes from Stations 1, 2 and 5. All response calculations take into account the average speed and the time required for an apparatus to accelerate from a stop to the travel speed. Based on these calculations, emergencies within the project can be responded to according to Escondido's

threshold standard (average maximum initial response to priority Level One or Emergency type calls of no more than 7.5 minutes, a total of 90% of the time).That is, when dispatch (1.0 minute) and turnout time (1.3 minutes) are added to the 4.2 minutes for response from Station 4, the total response time is approximately 6.5 minutes for most of the site. The full-effective firefighting force is estimated to arrive within 8 to 9 minutes. Therefore, the project complies with the City's response time standards.

In addition, the City has a signed automatic aid agreement on first alarm or greater with all surrounding communities. The City is also part of both the San Diego County and State of California Master Mutual Aid Agreements.

## 4.2 Emergency Service Level

The EFD estimates approximately 13,389 total annual calls (Palmer 2015) and a City population of approximately 148,738 (SANDAG 2014). The per capita call volume is roughly 0.09 for City of Escondido. Based on the proposed development plans, the project's estimated 172 residents (assumes an average of 3.12 occupants per residence for this type of community (SANDAG 2014)) would generate roughly 16 calls per year (1.3 calls per month), most of which are expected to be medical-related calls.

Service level requirements are not expected to be significantly impacted with the increase of 16 calls per year for a station (EFD Station 4) that currently responds to roughly 3 calls per day (968 calls per year, 81 calls per month, 19 calls per week) in its primary service area. For reference, a station that responds to 5 calls per day in an urban setting is considered average and 10 calls per day is considered busy. Therefore, the project is not expected to cause a decline in EFD response times. The requirements described in this FPP are intended to aid firefighting personnel and minimize the demand placed on the existing emergency service system.

## 4.3 Cumulative Impacts on Fire Response

Cumulative impacts from multiple projects can cause fire response service decline and must be analyzed for each project. The Bear Valley Parkway project and its proposed usage by up to 172 residents represents an increase in potential service demand of approximately 16 calls per year, well within the capacity of the existing Fire Stations that will service the project. However, this total adds to an existing busy service obligation for Station 4 and, when considered cumulatively, the impact is considered potentially significant, but mitigated through increased funding available to the EFD through property taxes and other fees.

# 5 FIRE SAFETY REQUIREMENTS - INFRASTRUCTURE, BUILDING IGNITION RESISTANCE, AND DEFENSIBLE SPACE

The Escondido Building and Fire Codes (Ordinance No. 2013-13) govern the building, infrastructure, and defensible space requirements detailed in this FPP. The project will meet or exceed applicable codes or will provide alternative materials and/or methods. The following summaries highlight important fire protection features. Prior to bringing combustible materials onto the site, utilities shall be in place, fire hydrants operational, an approved all-weather roadway in place, and interim fuel modification zones established and approved.

While these standards will provide a high level of protection to structures in this development, there is no guarantee that compliance with these standards will prevent damage or destruction of structures by fire in all cases.

## 5.1 Fire Access

### 5.1.1 Roads

The primary project access for the Bear Valley Parkway project will be via proposed private street A, which will be accessed from Bear Valley Parkway just across from Zlatibor Road. Private Street "A" will be a 36 feet wide paved road with parking allowed on both sides, resulting in two 12 foot, unobstructed travel lanes. Interior Project roads, including proposed Private Streets "B", "C", and "D", will also be constructed to minimum 36-foot widths and shall be improved with asphalt paving materials. All residential streets will be designed to accommodate a minimum of a 75,000-lb. fire apparatus load. Any dead-end roads serving new buildings that are longer than 150 feet shall have approved provisions for fire apparatus turnaround.

### 5.1.2 Entrances

Access gates, will comply with Escondido Fire Code (503.6.1). Gates on private roads will comply with EFD standards for electric gates including an emergency key-operated switch overriding all command functions and opening the gate as described in section 5.1.8. The gates will automatically open from the project interior based on a magnetic or pressure activated device. The secondary/emergency access will be gated on both ends. The gates will be interconnected so that if one is open, both will open. The ingress gate will be set back 30 feet from Bear Valley Parkway while the interior gate is positioned as close to the interior street as possible to eliminate vehicle parking. The gates will be provided back up power (solar).

### 5.1.3 Dead Ends

All site access roads are provided fire department turnarounds (cul-de-sacs). Roadway cul-de-sacs will comply with the EFD's minimum 36-foot radius (72-foot diameter) cul-de-sac bulb standard. Private residential driveways more than 150 feet in length will have an EFD-approved hammerhead for turning around emergency vehicles. Hammerhead turnarounds are provided for lots 5 and 27. Hammerheads may be required for lots 33, and 49 depending on the positioning of the structures on the lots due to the lot configuration and potential length of the driveway as illustrated in Figure 2.

**Secondary/Emergency Access**

Per City's Ordinance No. 2013-13 and 2014 County of San Diego Consolidated Fire Code (Section 503.1.3 Dead-end roads), the maximum dead end road length for this development is 800 feet. All lengths are measured from the edge of the roadway surface at the intersection that begins the road (Bear Valley Parkway and Street "A") to the end of the road surface at its farthest point (Street "D" cul-de-sac). Street "A" from the entrance at Bear Valley Parkway to farthest point in the development (Street "D" cul-de-sac) is 2,070 feet. A road length of 800 feet is achievable up to lot #14.

Therefore, the Bear Valley Parkway project includes secondary/emergency access for 40 lots (Lots #15 through 55). For these 40 lots, access from Private Street "A" between lots 42 and 43 would serve as the secondary access road that connects with the public Bear Valley Parkway Road to the west of the Project.

Access from Private Street "A" to Bear Valley Parkway would provide unimpeded access or serve as an emergency egress. This roadway would be 24 feet wide, and marked no parking with HOA enforcement through a contract with a tow company. This road would be available to the project's residents and fire personnel in case of an emergency and supports the imposed loads of responding fire apparatus (up to 75,000 pounds). The road would be gated, but would enable traffic both ways.

### 5.1.4 Width and Turning Radius

All proposed internal private streets will have a minimum paved width of 36 feet, allowing parking on both sides. Proposed driveways within the project are a minimum 16 feet in width. Turning radius for fire apparatus access roads will be 28 feet as measured on the inside edge of the improved width.

### 5.1.5 Grade

The maximum grade for new roads and driveways on the Project do not exceed 20%. Although not anticipated, should any sections of road or driveway exceed 15%, they will be provided heavy broom finish or equivalent surfacing to Fire Department approval. Sections exceeding 15% grade will be constructed with Portland Concrete surface and capable of supporting the dynamic weight of a 75,000 pound fire apparatus.

### 5.1.6 Surface

All fire access and vehicle roadways will be of asphaltic concrete, except as noted for grades exceeding 15%, and designed and maintained to support the imposed loads of fire apparatus (not less than 75,000 pounds) that may respond, including Type I engines, Type III engines, and ladder trucks. Access roads shall be completed and paved prior to issuance of building permits and prior to combustible construction occurring.

### 5.1.7 Identification

Identification of roads and structures will comply with County and City of Escondido Codes Section 505.1, as follows: All structures shall have a permanently posted address, which shall be legible from the street. If it is not legible from the street, an address shall also be posted at street entrance to driveway and shall be visible from both directions of travel. Numbers shall be 4 inches high with 0.5-inch stroke, and located 6–8 feet above ground level. Numbers will contrast with background.

Streets and roads shall be identified with City approved signs. Temporary signs shall be installed at each street intersection when construction of proposed Private Streets "A" through "D" allows passage by vehicles. Signs shall be of an approved size, weather resistant and be maintained until replaced by permanent signs.

### 5.1.8 Gates

1. All automatic gates shall be equipped with a Knox, emergency key-operated switch overriding all command functions and opening the gate(s). Automatic gates accessing through the secondary/emergency access roadways shall be equipped with approved emergency traffic control-activating strobe light sensor(s) which will activate the gate from both directions of travel on the approach of emergency apparatus. The automatic gate will have a battery back-up or manual mechanical disconnect in case of a power failure. The gate(s) will include a magnetic or pressure activated switch for automatically opening the gate from the interior of the project for resident egress.

2. Pole gates or other structures or devices which could obstruct fire access roadways or otherwise hinder emergency operations shall be equipped with an approved, Knox padlock.
3. See Section 5.1.2 for details regarding secondary access gates.

## 5.2 Ignition Resistant Construction and Fire Protection Systems

All new structures within Project will be constructed to EFD standards. Each of the proposed buildings will comply with the enhanced ignition-resistant construction standards of the 2013 CBC (Chapter 7-A). These requirements address roofs, eaves, exterior walls, vents, appendages, windows, and doors and result in hardened structures that have been proven to perform at high levels (resist ignition) during the typically short duration of exposure to burning vegetation from wildfires.

While these standards will provide a high level of protection to structures in this development, there is no guarantee that compliance with these standards will prevent damage or destruction of structures by fire in all cases.

### 5.2.1 Fire Protection Systems

#### *5.2.1.1 Water*

Water service for the Bear Valley Parkway project will be provided by the City of EscondidoWater Division and will be consistent with EFD requirements (Section 507.2/507.3) for a residential development within a HFHSZ area.. The City's water service area requires new development to meet a 2,500 gpm fire flow which can be supplied from two or more fire hydrants. The pressures in Bear Valley Parkway will remain above 20 psi for a minimum duration of two hours when meeting the fire requirements for the City's water service area and EFD fire flows.

#### *5.2.1.2 Hydrants*

Hydrants shall be located along fire access roadways as determined by the EFD Fire Marshal to meet operational needs, at the beginning radius of cul-de-sac streets and every 350 feet . Hydrants will be consistent with EFD Design Standards (507.5.1.1).

#### *5.2.1.3 Fire Sprinklers*

All structures will be provided interior fire sprinklers. Automatic internal fire sprinklers shall be in accordance with National Fire Protection Association (NFPA) 13-D (903.1.2) and City of Escondido installation requirements.

### 5.2.2 Structure Setback Requirements

EFD has adopted setback standards from adjacent slopes (Ordinance 2013-13, Section 4907.1.2.). Structure setback from top of slope is based on structure height. A single story structure (12 feet plate height) requires a minimum 15 feet horizontal setback from top of slope to the farthest projection from the roof. A two- story structure requires a minimum of 30 feet of horizontal setback from top of slope to the farthest projection from a roof. These setbacks are typically calculated using a 30% slope factor. When buildings are set back from slopes, flames spreading up those slopes are deflected vertically and over the structure where cooling occurs, reducing the effects of convective heat on the structure. Except for lots 31 to 41, the majority of the lots do not require a structure setback as previously-defined. Lots 31 to 41, which are adjacent to fuel modification and open space beyond that, include constraints to backyard setbacks. Therefore, without mitigation, the buildable pad for some of these lots could be restricted to single-story structures, depending on final structure footprint and whether 30 feet can be provided for two story structures. As an alternative, allowance for two story structures may be provided with mitigation measures, such as the provided extension of the Zone 1, irrigated zone, placement of a non-combustible, six-foot-tall, heat-deflecting landscape view wall at top of slope to provide additional upward heat deflection for these lots and the wildland exposed sides of these structures will also include code-exceeding dual pane, both panes tempered windows. Additional fire protection features are detailed below in Chapter 6.0.

## 5.3 Defensible Space and Vegetation Management

### 5.3.1 Fuel Modification

Fuel modification zones are designed to gradually reduce fire intensity and flame lengths from advancing fire by strategically placing thinning zones, restricted vegetation zones, and irrigated zones adjacent to each other on the perimeter of the wildland–urban interface (WUI) exposed structures. Because this site will utilize ignition resistant construction techniques and materials, the proposed fuel modification areas are anticipated to provide adequate set back from naturally occurring fuels under typical weather conditions.

#### *5.3.1.1 Escondido Fire Department Fuel Modification Zone Standards*

The purpose of this section is to document EFD's standards and make them available for reference. However, we are proposing a site-specific fuel modification zone program with additional measures that are consistent with the intent of the following standards. The Escondido Fire Code (Section 4907.2 — Fuel Modification) requires that fuel modification zones be provided around every building that is designed primarily for human habitation or use and buildings designed specifically to house farm animals. Decks, sheds, gazebos, freestanding open-

sided shade covers and similar accessory structures less than 250 square feet and 30 feet or more from a dwelling, and fences more than 5 feet from a dwelling, are not considered structures for the establishment of a fuel modification zone.

Fuel modification zones on Bear Valley Parkway Project shall comply with the following:

**Escondido Fire Department's Residential Fuel Modification Zone Standards**

1. The area (Zone 1) within 50 feet of a building or structure shall be cleared of vegetation that is not fire resistant and re-planted with fire-resistant plants. In the area between 50–100 feet (Zone 2) from a building (where applicable), all dead and dying vegetation shall be removed. Native vegetation may remain in this area provided that the vegetation is modified so that combustible vegetation does not occupy more than 50% of the square footage of this area. Weeds and annual grasses are to be mowed to a height of 4–6 inches. Any chipping that is done on site should be spread not to exceed 6 inches in height. Trees may remain in both areas provided that the horizontal distance between crowns of adjacent trees and crowns of trees and structures is not less than 10 feet.
2. When a building or structure in a hazardous fire area is setback less than 100 feet from the property line, the person owning or occupying the building or structure shall meet the requirements in subsection (1) above, to the extent possible, in the area between the building or structure and the property line.
3. The building official and the FAHJ may provide lists of prohibited and recommended plants. This FPP includes a proposed list of prohibited plants (Appendix D).
4. The fuel modification zone will be located entirely on the property.
5. When the subject property contains an area designated to protect biological or other sensitive habitat or resource, no building or other structure requiring a fuel modification zone shall be located so as to extend the fuel modification zone into a protected area.

The Bear Valley Parkway project is an infill project surrounded by estate-type residential land uses on three sides. The FMZ widths provided the project vary, depending on the location within the project and the off-site adjacent landscape. For example, most of the off-site areas include rural residential, roadways, or other disturbances that have reduced the fuels and are maintained, thus providing reciprocal FMZ. There is one undeveloped property adjacent the site, but it does not include shrub-dominated wildland, and is mowed annually in compliance with EFD's weed abatement requirements. This area will continually to be a reciprocal FMZ based on EFD's enforcement of its weed abatement standards. All on-site fuels will be converted to urbanized, maintained landscapes except for the riparian/oak corridor on the southern boundary of the site

that is located more than 100 feet from the site's FMZ. Fuel modification areas will occur along roadways, and in the southern portion of the development (Figure 5).

**Bear Valley Parkway Fuel Modification Zones**

Project Wide: The entire project will include a "Firesafe", maintained and irrigated landscape. Private lots that do not include designated Fuel Modification Zone will not be authorized to include flammable plant species (ground cover, shrubs or trees) that are known to be highly flammable or readily facilitate fire spread. Landscapes will be maintained in a high moisture content, low fuel condition (no accumulation of dead plant material).

Lots 31 to 36 receive extended Zone 1 FMZs on the manufactured slope. These 100+ foot wide FMZs exceed the code requirement by providing low fuel densities and irrigated fuels for the entire distance versus 50 feet of irrigated and 50 feet of thinned area.

Lot 27 receives a 90 foot FMZ with 50 feet of irrigated zone and 40 feet of thinning zone.

Lot 38 receives a 94 foot FMZ with all 94 feet as irrigated zone.

Lot 39 receives an 86 foot FMZ with all 86 feet as irrigated zone.

Remaining lots receive a variation of FMZ including irrigated and thinned FMZ or internal firesafe common area landscaping that is maintained by the HOA.

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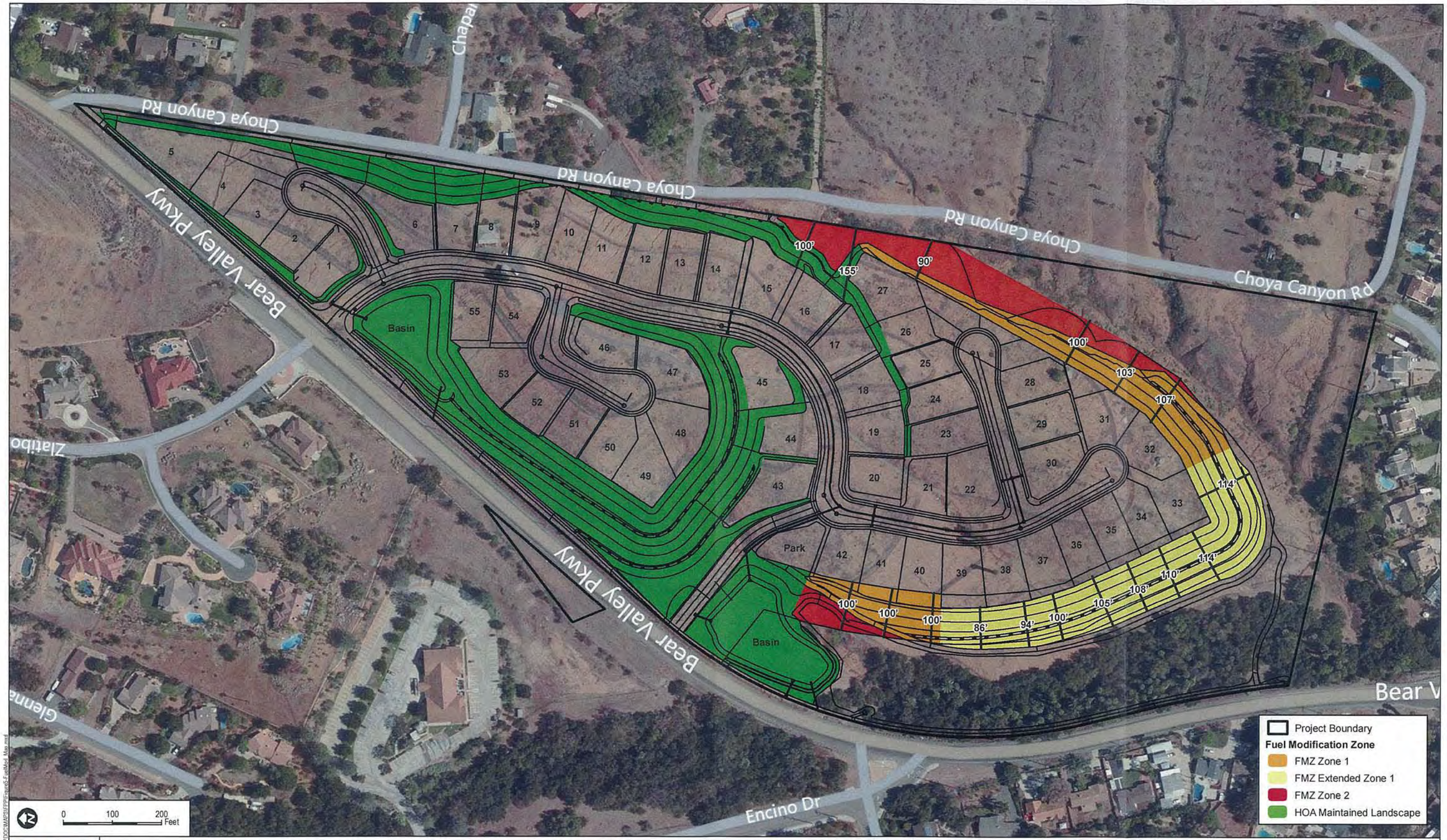


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SOURCE: Bing Maps 2015

**FIGURE 5**

**Fuel Modification Map**

Bear Valley Parkway FPP

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Table 5 includes a summary of the proposed Fuel Modification Zones on a lot by lot basis

**Table 5**
**Project Lot by Lot Fuel Modification Zone Summary.**

| Lot #'s | Fuel Modification Requirements |
|---|---|
| 1 through 26 | No designated Fuel Modification Zone due to off-site landscapes that function as FMZ. Firesafe Landscaping on Lots and for HOA-maintained common areas to be provided and off-site weed abatement from adjacent properties provides additional FMZ |
| 27 and 28 | Designated 100 foot wide Fuel Modification Zone includes sideyards/backyards of lots 27 and 28 with Zone 1 and 2 requirement. Firesafe Landscaping to be provided throughout lot. |
| 29 and 30 | No designated Fuel Modification Zone due to interior project location. Firesafe Landscaping to be provided throughout lot. And off-site weed abatement from adjacent lots provides additional FMZ |
| 28, 31 and 32 | Lot 28 includes a standard 100 foot FMZ; Lots 31 and 32 receive 103 and 107 foot FMZs respectively. Both lots will include full irrigated zones with a small thinning zone to the property line. |
| 33 through 37 | Code exceeding 100 foot wide Fuel Modification Zone 1 includes backyards of lots . Firesafe Landscaping to be provided throughout lots and HOA-maintained common areas, including detention basin and park. |
| 38 and 39 | Slightly reduced FMZs of 94 and 86 feet, respectively, but the entire distance will be irrigated zone (FMZ 1) |
| 43 through 55 | No designated Fuel Modification Zone. Firesafe Landscaping to be provided throughout lot and on adjacent HOA-maintained common areas, including the detention basin. |

### Roadway Fuel Modification Zones

Roadway fuel modification is addressed by the Escondido Fire Code (Section 4907.2.1— Fuel Modification of Combustible Vegetation from Sides of Roadways). The FAHJ may require a property owner to modify combustible vegetation in the area within 20 feet from each side of the driveway or a public or private road adjacent to their property to establish a fuel modification zone. The FAHJ has the right to enter private property to insure the fuel modification zone requirements are met. The Code allows an exception to reduce the width of the fuel modification zone if it will not impair access. On the Bear Valley Parkway site, roadside fuel modification will range from 10–20 feet wide, larger where roads front private lots and front yard landscaping provides the equivalent of fuel modification zone.

### Special Fuel Management Issues

Trees may be planted within FMZs as long as they conform to the City's Fire Code (Section 4907.3.3 – Trees). On the Project site, tree planting in the fuel modification zones and along roadways is acceptable, as long as they meet the following restrictions as described below and in the Vegetation Management Section:

- For streetscape plantings, fire resistive trees can be planted 10 feet from edge of curb to center of tree trunk. Care should be given to the type of tree selected, that it will not encroach into the roadway, or produce a closed canopy effect.

- Crowns of trees located within defensible space shall maintain a minimum horizontal clearance of 10 feet for fire resistant trees. Mature trees shall be pruned to remove limbs one-third the height or 6 feet, whichever is less, above the ground surface adjacent to the trees.
- Dead wood and litter shall be regularly removed from trees.
- Ornamental trees shall be limited to groupings of 2–3 trees with canopies for each grouping separated horizontally as described in Table 6 (Table 4907.3 from Escondido Fire Code).

**Table 6**
**Distance Between Tree Canopies by Percent Slope**

| Percent of Slope | Required Distances Between Edge of Mature Tree Canopies[1] |
|---|---|
| 0–20 | 10 feet |
| 21–40 | 20 feet |
| 41+ | 30 feet |

[1] Determined from canopy dimensions as described in Sunset Western Garden Book (Current Edition)

### Vegetation Management

The following requirements are provided for designated fuel modification zones. These zones are presented graphically in Figure 5. Each zone would include permanent field markers at the property line to delineate the zones, aiding ongoing maintenance activities that will occur on site. All fuel modification zones shall be maintained by the Homeowners Association.

Per Escondido Fire Code (Section 4907.4.2 — Landscaping Requirements), all plant materials used shall be from the Wildland/Urban Interface Development Standards plant palette. The addition of plant material to the approved list will be at the discretion of the Fire Marshal. Landscape plans shall be in accordance with the following criteria:

1. No non-fire resistive trees (including conifers, pepper trees, eucalyptus, cypress, *Washingtonia* palms and acacia species), shall not be planted on this site. All fire resistive tree species (many species including oak) shall be planted and maintained at a minimum of 10 feet from the tree's drip line to any combustible structure.
2. For streetscape plantings, fire resistive trees can be planted 10 feet from edge of curb to center of tree trunk. Care should be given to the type of tree selected, that it will not encroach into the roadway, or produce a closed canopy effect.
3. Limit planting of large unbroken masses especially trees and large shrubs. Groups should be two to three trees maximum, with mature foliage of any group separated horizontally

by at least 10 feet, if planted on less than 20% slope, and 20 feet, if planted on greater than 20% slope.

4. If shrubs are located underneath a tree's drip line, the lowest branch should be at least three times as high as the understory shrubs or 10 feet, whichever is greater.
5. Existing trees can be pruned 10 feet away from roof, eave, or exterior siding, depending on the tree's physical or flammable characteristics and the building construction features.
6. All tree branches shall be removed within 10 feet of a fireplace chimney or outdoor barbecue.

**Other Vegetation Management**

***Roadway-Adjacent Defensible Space***

- Includes an area up to 20 feet on either side of each fire apparatus access road and driveways as well as clear to 13 feet 6 inches above roadway
- Shall be maintained clear of all but fire resistive vegetation
- Maintained by homeowners and homeowner association.

***Environmentally Sensitive Areas/Riparian Areas***

Once the fuel modification zones are in place, there will not be a need to expand them as they have been planned conservatively larger than necessary. However, if unforeseen circumstances were to arise that removal of non-native species, such as Mexican fan palms, or dead palm fronds for hazard reduction within an area considered environmentally sensitive, it would require approval from the County and the appropriate resource agencies (California Department of Fish and Game, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers) prior to any vegetation management activities occurring within those areas.

***Pre-Construction Requirements***

- Perimeter fuel modification areas must be implemented and approved by the EFD prior to combustible materials being brought on site.
- Existing flammable vegetation shall be removed on vacant lots prior to commencement of construction.
- Dead fuel, ladder fuel (fuel which can spread fire from ground to trees), and downed fuel shall be removed and trees/shrubs shall be properly limbed, pruned, and spaced per this plan.

### Undesirable Plants

Certain plants are considered to be undesirable in the landscape due to characteristics that make them highly flammable. These characteristics can be physical or chemical.

The plants included in the Prohibited Plant List (Appendix D) are unacceptable from a fire safety standpoint, and shall not be planted on the site unless otherwise approved by the EFD.

### Vegetation Management Compliance Schedule

All fuel modification area vegetation management shall be completed annually by May 15 of each year and more often as needed for fire safety, as determined by the EFD. The project HOA shall be responsible for all vegetation management throughout the common areas of the project site, including the designated FMZ areas, in compliance with the requirements detailed herein and EFD requirements. The project HOA shall be responsible for ensuring long-term funding and ongoing compliance with all provisions of this FPP, including vegetation planting, fuel modification, vegetation management, and maintenance requirements throughout the private portions of the Bear Valley Parkway site.

# 6 ADDITIONAL STRUCTURAL PROTECTION MEASURES

As previously mentioned, due to constraints associated with limited building area, the backyards for lots 32 to 41 are limited to 20 feet of setback from top of slope, which would not allow a two-story house. As such, this FPP incorporates additional analysis and measures that will be implemented to compensate for potential fire related threats. These measures are customized for this site based on the analysis results and focus on providing functional equivalency as a City-defined, structure setback.

**Extended Zone 1 Fuel Modification Zone**

The FMZ adjacent lots 32 to 41 is designed to exceed the code standard of 100 feet that includes a 50 foot wide irrigated zone and a 50 foot wide thinning zone. The FMZ adjacent these lots will include a 100 foot or more irrigated, low fuel zone and no thinning zone. This extension of the irrigated zone results in high moisture plants that are have higher ignition resistance than unirrigated fuels. This will also reduce flame spread and length as well as Btu production, resulting in a lower fire hazard for these lots.

**Heat Deflecting Walls**

*Example heat deflecting wall*

The project's slopes and the elevated lots/pads adjacent the extended Zone 1 FMZ areas, provide an opportunity to place heat-deflecting landscape view walls of masonry construction with fire-rated glazing that are six feet in height (roughly lower two feet masonry construction and upper three feet dual pane, one pane tempered glazing or equivalent and meeting Chapter 7A and/or EFD approval). The view walls will be incorporated at top of slope/edge of lot for Lots where appropriate structure setbacks (15 feet for single story or 30 feet for two story) are not achievable. Only Lots 31-34 may be constrained in terms of structure set back. . The landscape walls provide a vertical, non-combustible surface in the line of heat, fumes, and flame travel up the slope. Once these fire byproducts intersect the wall, they are deflected upward or, in the case where lighter fuels are encountered, they are quickly consumed, heat and flame are absorbed or deflected by the wall, and the fuel burns out within a short (30 second–2 minute) time frame (Quarles and Beall 2002). Walls like these have proven to deflect heat and airborne embers and are consistent with NFPA 1144 Standard for Reducing Structure Ignition Hazards from Wildland Fire – 2008 Edition, Section 5.1.3.3 and A.5.1.3.3 and International Urban Wildland Interface Code (ICC 2012). NFPA 1144, A.5.1.3.3 states: "Noncombustible walls and barriers are effective for deflecting radiant heat and windblown embers from structures."

### Exterior Windows

Since the structures will be hardened to wildland urban interface standards, they will be ignition resistant. However, a potentially vulnerable structure component with regard to radiant or convective heat exposure would be the WUI exposed side windows for lots 31 to 41. To address this issue, it is worthwhile to examine the structure ignitability modeling, independent ignition experiments, and case studies that support fuel treatments as low as roughly 34 feet from structures, and compare them with the project. Cohens' (1995) structure ignitability model (SIAM) assesses ignitability of bare wood when exposed to a continuous heat source. The model assumes a worst-case condition of a constant 1700 degrees (F). A constant, maximum heat source is typically not the case during a wildfire due to the movement of a fire, non-uniform vegetation distribution, and the lack of a uniform, constant flame front.

The analysis conducted for this report indicates that the structure setbacks of a minimum of 35 feet from the fuels is consistent with study results for separating the structures from the short-duration heat and flame associated with a fire burning within one of the preserved riparian woodland drainages. The typical duration of large flames from burning vegetation is on the order of 1 minute and up to several minutes for larger fuels at a specific location (Cohen 1995; Butler et al. 2004, Ramsay and Rudolph 2003, Cohen and Quarles 2011)). Tests of various glazing products indicate that single pane, tempered glass failure may occur between 120–185 seconds from exposure (University of California 2011; Manzello et al. 2007) but those tests include direct and constant heating that would not be experienced during a wildfire on this site. Depending on the heat applied and the type of glass used in the various studies, the cracking/failure time varied. However, given the short duration of maximum heat (likely several minutes for the oaks), the loss of heat over distance (25 feet minimum), the dual pane, two pane tempered glazing specified for this project, wildfire heat and flame experienced by the windows from the wildland fire is not expected to be enough (in temperature or duration) to cause failure of both panes. Quarles et al. (2010) provides strong endorsement for tempered glass performance. His research and tests conclude that multi-pane (2–3 panes) with at least one pane tempered is well-suited for wildfire exposures. He indicates that tempered glass is at least four times stronger and much more resistant to thermal exposures than normal annealed glass. The use of code required dual pane, one pane tempered glass provides several benefits, with thermal exposure performance the most important for this study. This FPP requires both panes tempered for the side of the house facing the open space areas to improve the strength of the windows.

### Additional Structure and Fire Protection Measures Summary

The following additional measures will be implemented to "mitigate" potential structure fire exposure related to structure setback from top of slope requirements on this project. These measures are customized for this site, its unique topographical and vegetative conditions, and

focus on providing functional equivalency in lieu of the required structure setback. Table 7 provides a summary of the additional measures by lot.

**Table 7**
**Additional Fire Protection Measures by Lot**

| Lot #'s | Fuel Modification Requirements |
|---|---|
| 1 through 31 | No additional fire protection measures beyond Code Requirements. |
| 32 through 41 | Where final setback from structure to top of slope is less than 30 feet for 2 story structures, a six foot tall non-combustible view wall will be provided and dual pane, both panes tempered windows will be maintained on wildland exposed side of structure at all times. FMZ areas for all of these lots will be modified to extend the irrigated zones the entire 100 feet. |
| 42 through 55 | No additional fire protection measures beyond Code Requirements. |

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# 7 CONCLUSION

This FPP is submitted in support of an application for project entitlement of the Bear Valley Parkway development project. It is submitted in compliance with requirements of the Escondido Fire Department and the Escondido Fire Code. The requirements in this document meet fire safety, building design elements, fuel management/modification, and landscaping recommendations of the EFD. Where the project does not strictly comply with the Code, such as with some lot setbacks and fuel modification zone widths, alternative materials and methods have been proposed that provide functional equivalency as the code intent.

Fire and Building Codes and other local, county, and state regulations in effect at the time of each building permit application supersede these recommendations unless the FPP recommendation is more restrictive.

The recommendations provided in this FPP have been designed specifically for the proposed construction of structures adjacent the WUI zone at the Bear Valley Parkway project site. The project site's fire protection system includes a redundant layering of protection methods that have been shown through post-fire damage assessments to reduce risk of structural ignition and compensate for fuel modification area reductions.

Modern infrastructure will be provided along with implementation of the latest ignition resistant construction methods and materials. Further, all structures are required to include interior sprinklers consistent with City of Escondido Fire Code. Fuel modification will occur on exposed edges and adjacent biological preserve areas of the project site. The fuel modification zone will be maintained by the Project's HOA and inspected annually by the EFD. Maintenance includes removing all dead and dying materials and maintaining appropriate horizontal and vertical spacing. In addition, plants that establish or are introduced to the fuel modification zone that are not on the approved plant list will be removed.

Ultimately, it is the intent of this FPP to guide, through code and other project specific requirements, the construction of structures that are defensible from wildfire and, in turn, do not represent significant threat of ignition source for the adjacent native habitat. It must be noted that during extreme fire conditions, there are no guarantees that a given structure will not burn. Precautions and mitigating actions identified in this report are designed to reduce the likelihood that fire would impinge upon the proposed structures. There are no guarantees that fire will not occur in the area or that fire will not damage property or cause harm to persons or their property. Implementation of the required enhanced construction features provided by the applicable codes and the mitigating fuel modification requirements provided in this FPP will accomplish the goal of this FPP to assist firefighters in their efforts to defend these structures and reduce the risk associated with this project's WUI location. For maximum benefit, the developer, contractors,

engineers, and architects are responsible for proper implementation of the concepts and requirements set forth in this report. Homeowners are responsible to maintain their structures and lots as required by this report, the applicable Fire Code and the EFD.

Although the proposed development and landscape will be significantly improved in terms of ignition resistance, it should not be considered a shelter-in-place community. It is recommended that the homeowners or other occupants who may reside within the Bear Valley Parkway neighborhood adopt a conservative approach to fire safety. This approach must include maintaining the landscape and structural components according to the appropriate standards and embracing a "Ready, Set, Go[1]" stance on evacuation. Accordingly, occupants should evacuate the residence and the area as soon as they receive notice to evacuate, or sooner, if they feel threatened by wildfire or structure fire in a nearby residence. Fire is a dynamic and somewhat unpredictable occurrence and it is important for residents to educate themselves on practices that will improve their home survivability and their personal safety.

[1] International Fire Chiefs Association "Ready, Set, Go" website link: http://wildlandfirersg.org/

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# 9 LIST OF PREPARERS

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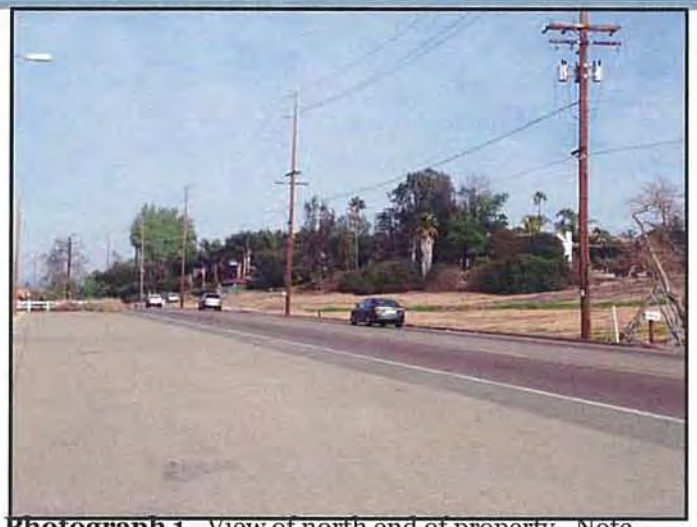
# APPENDIX A

*Photograph Log*

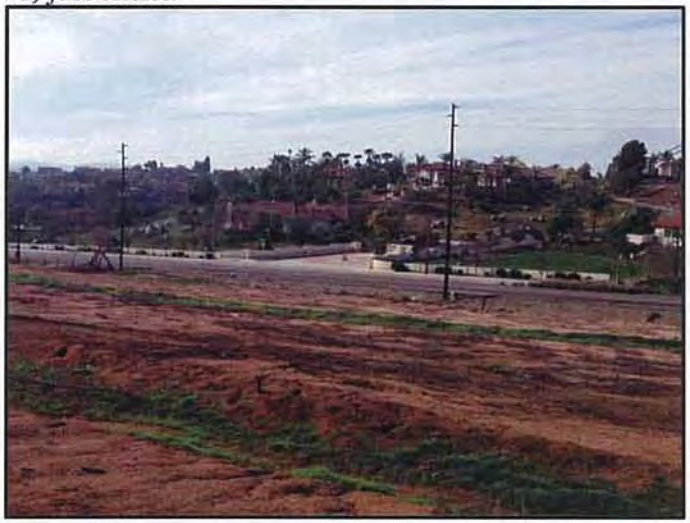
# Photograph log

## Bear Valley Parkway Project



**Photograph 1.** View of north end of property. Note power line runs along entire west edge of project site and semi-rural homes and landscaping (modeled in Fire Run #1) just offsite.

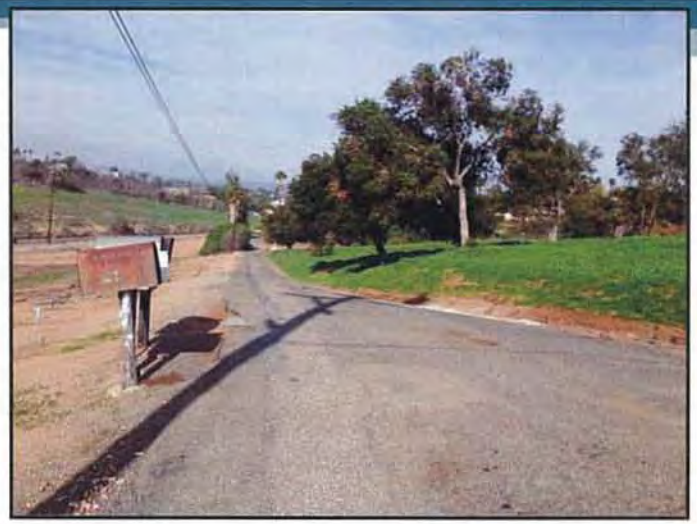
**Photograph 2.** Another view of north end of property. The project site, which was previously an avocado orchard, is now disturbed.



**Photograph 3**. Photograph shows residential neighborhood to north of Project along Zlatibor Ranch Road.

**Photograph 4**. View looking south along eastern boundary of property from Bear Valley Parkway and Choya Canyon Road.

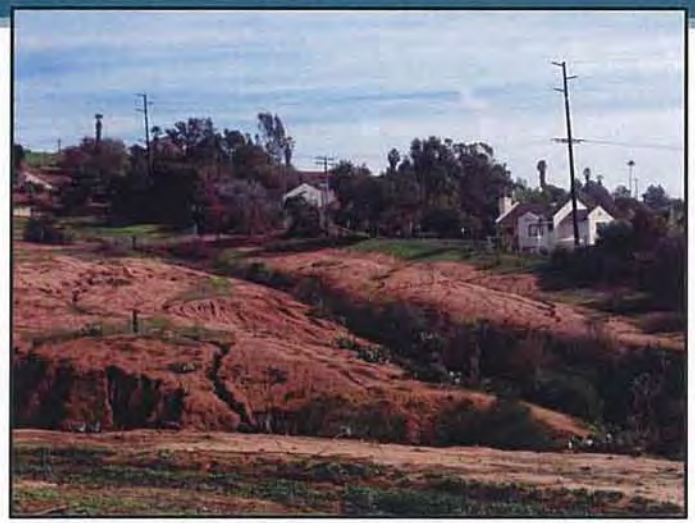
**Photograph 5**. One residence in the middle of the site is currently occupied.



**Photograph 6**. View looking north along Choya Canyon Road. Eastern border of the project site is located on left-hand side of road.

**Photograph 7.** Residential lots (offsite) with well-maintained landscapes occur along northeast edge of property. This fuelbed was modeled in Fire Run #1.

**Photograph 8.** Adjacent vacant land that has been regularly mowed resides along the southeast side of the property, just east of Choya Canyon Road. This fuelbed was modeled in Fire Run #2



**Photograph 9**. Ephemeral streambeds are located along southeast corner of property and are adjacent to residential development off Valley Grove Lane.

**Photograph 10**. Southern coast live oak riparian forest is found along southwestern portion of property and outside the fuel modification area for the proposed development.

**Photograph 11.** View of southwestern portion of property. Note oak riparian forest on right-hand side of photograph . Bear Valley Parkway is in the foreground.

**Photograph 12.** Photograph shows north section of oak riparian forest from intersection of Encino Drive and Bear Valley Parkway.

**Photograph 13**. Another view of oak riparian forest looking south . Note pockets of Mexican fan palms in the riparian corridor.

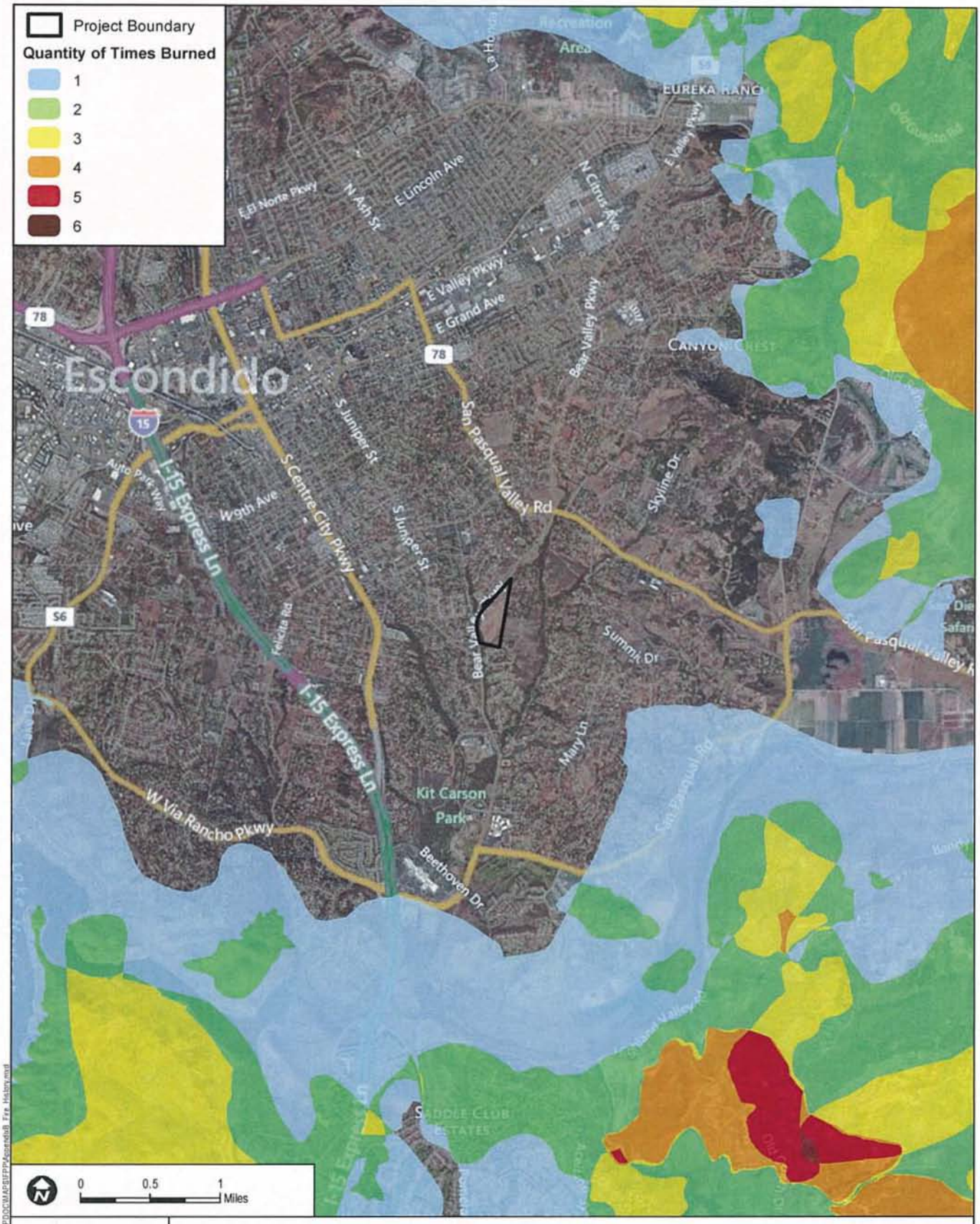
**Photograph 14**. A more urban development is located west of the site and Bear Valley Parkway . Ornamental landscaping was modeled in Fire Run #3.

**Photograph 15.** Close up view of oak riparian canopy and understory fuelbeds that were modeled for Fire Run #3.

**Photograph 16.** Another view of oak riparian forest with invasive palms. Fuel types were included for Fire Run #3.

# APPENDIX B

*Fire History*

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SOURCE: BING 2014, CDF 2013

**Appendix B**
**Fire History**

7833

Bear Valley Parkway FPP

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# APPENDIX C

*BehavePlus Fire Behavior Analysis*

# APPENDIX C
# BehavePlus Fire Behavior Analysis

## BEHAVEPLUS FIRE BEHAVIOR MODELING

Fire behavior modeling includes a high level of analysis and information detail to arrive at reasonably accurate representations of how wildfire would move through available fuels on a given site. Fire behavior calculations are based on site-specific fuel characteristics supported by fire science research that analyzes heat transfer related to specific fire behavior. To objectively predict flame lengths, spread rates, and fireline intensities, the BehavePlus 5.0.5 fire behavior modeling system was applied using predominant fuel characteristics, slope percentages, and extreme weather variables for the site.

Predicting wildland fire behavior is not an exact science. As such, the movement of a fire will likely never be fully predictable, especially considering the variations in weather and the limits of weather forecasting. Nevertheless, practiced and experienced judgment, coupled with a validated fire behavior modeling system, results in useful and accurate fire prevention planning information.

To be used effectively, the basic assumptions and limitations of BehavePlus must be understood.

- First, it must be realized that the fire model describes fire behavior only in the flaming front. The primary driving force in the predictive calculations is dead fuels less than one-quarter inch in diameter. These are the fine fuels that carry fire. Fuels greater than one inch have little effect while fuels greater than three inches have no effect on fire behavior.
- Second, the model bases calculations and descriptions on a wildfire spreading through surface fuels that are within six feet of the ground and contiguous to the ground. Surface fuels are often classified as grass, brush, litter, or slash.
- Third, the software assumes that weather and topography are uniform. However, because wildfires almost always burn under non-uniform conditions, length of projection period and choice of fuel model must be carefully considered to obtain useful predictions.
- Fourth, the BehavePlus fire behavior computer modeling system was not intended for determining sufficient fuel modification zone widths. However, it does provide the average length of the flames, which is a key element for determining "defensible space" distances for minimizing structure ignition.

Although BehavePlus has some limitations, it can still provide valuable fire behavior predictions which can be used as a tool in the decision-making process. In order to make reliable estimates of fire behavior, one must understand the relationship of fuels to the fire environment and be able to recognize the variations in these fuels. Natural fuels are made up of the various components of vegetation, both live and dead, that occur on a site. The type and quantity will depend upon the soil, climate, geographic features, and the fire history of the site. The major fuel groups of grass,

shrub, trees, and slash are defined by their constituent types and quantities of litter and duff layers, dead woody material, grasses and forbs, shrubs, regeneration, and trees. Fire behavior can be predicted largely by analyzing the characteristics of these fuels. Fire behavior is affected by seven principal fuel characteristics: fuel loading, size and shape, compactness, horizontal continuity, vertical arrangement, moisture content, and chemical properties.

The seven fuel characteristics help define the 13 standard fire behavior fuel models (Anderson 1982) and the more recent custom fuel models developed for southern California (Weise and Regelbrugge 1997). According to the model classifications, fuel models used in BehavePlus have been classified into four groups, based upon fuel loading (tons/acre), fuel height, and surface to volume ratio. Observation of the fuels in the field (on site) determines which fuel models should be applied in BehavePlus. The following describes the distribution of fuel models among general vegetation types for the standard 13 fuel models and the custom southern California fuel models:

- Grasses — Fuel Models 1 through 3
- Brush — Fuel Models 4 through 7, SCAL 14 through 18
- Timber — Fuel Models 8 through 10
- Logging Slash — Fuel Models 11 through 13

In addition, the aforementioned fuel characteristics were utilized in the recent development of 40 new fire behavior fuel models (Scott and Burgan 2005) developed for use in BehavePlus modeling efforts. These new models attempt to improve the accuracy of the standard 13 fuel models outside of severe fire season conditions, and to allow for the simulation of fuel treatment prescriptions. The following describes the distribution of fuel models among general vegetation types for the new 40 fuel models:

- Non-Burnable — Models NB1, NB2, NB3, NB8, NB9
- Grass — Models GR1 through GR9
- Grass-shrub — Models GS1 through GS4
- Shrub — Models SH1 through SH9
- Timber-understory — Models TU1 through TU5
- Timber litter — Models TL1 through TL9
- Slash blowdown — Models SB1 through SB4

# BEHAVEPLUS FIRE BEHAVIOR MODELING INPUTS

## Vegetation/Fuels

To support the fire behavior modeling efforts conducted for this Fire Protection Plan (FPP), fuel models were identified for three key locations in order to represent multiple wildfire scenarios on or adjacent to the project site. While vegetation types other than the selected three are located on site, the selected areas represent the most likely wildfire threat for the proposed project. Table 1 summarizes fuel model assignments by modeling scenario.

**Table 1**
**BehavePlus Fine Dead Fuel Moisture Calculation**

| Scenario | Vegetation Type | Fuel Model |
|---|---|---|
| 1 | Ornamental vegetation | tu1 |
| 2 | Disturbed, sparse non-native grasses | gr1 |
| 3 | Ornamental vegetation/Oak riparian forest | FM 10, tu1 |

## Weather

Fire behavior modeling conducted in support of this FPP utilized the guidelines and standards presented by the County of San Diego, Department of Planning and Land Use[1]. These guidelines identify acceptable fire weather inputs for extreme fire conditions during summer months and Santa Ana fire weather patterns. The County analyzed and processed fire weather from Remote Automated Weather Stations (RAWS) between April 15 to December 31 in order to represent the general limits of the fire season. Data provided by the County's analysis included temperature, relative humidity, and sustained wind speed and is categorized by weather zone, including Maritime, Coastal, Transitional, Interior, and Desert.

To evaluate potential fire behavior for the project site, Dudek utilized the BehavePlus (v. 5.0.5) fire behavior modeling software package to determine fuel moisture values and expected fire behavior for the site. The temperature, relative humidity, and wind speed data for the Transitional[2] weather zone were utilized for this FPP based on the project location. Reference fuel moistures were calculated in BehavePlus and were based on site-specific topographic data inputs. Fire behavior for the site was calculated in three different locations using worst-case fuels and topography (steepest slopes). One of the modeling scenarios analyzed potential fire behavior along the western edge (Scenario 3) during summer fire weather conditions. The other two modeling scenarios (Scenarios 1 and 2) analyzed potential fire behavior along the eastern and

[1] County of San Diego Report Format and Content Requirements – Wildland Fire and Fire Protection (August 31, 2010). On-line at http://www.sdcounty.ca.gov/dplu/docs/Fire-Report-Format.pdf

[2] http://mappingsandiego.com/viewMap.html

northeastern edge of the development during Peak weather conditions. Table 2 summarizes the fuel moisture calculations utilized for this FPP.

**Table 2**
**BehavePlus Fine Dead Fuel Moisture Calculation**

| Variable | Summer Weather | Peak Weather |
|---|---|---|
| Dry Bulb Temperature | 90 -109 deg. F | 90 -109 deg. F |
| Relative Humidity | 10 - 14 % | 5 - 9 % |
| Reference Fuel Moisture | 2 % | 1 % |
| Month | Feb Mar Apr Aug Sept Oct | Feb Mar Apr Aug Sept Oct |
| Time of Day | 12:00 - 13:59 | 12:00 - 13:59 |
| Elevation Difference | Level (within 1,000 ft.) | Level (within 1,000 ft.) |
| Slope | 3-10% | 14-16% |
| Aspect | Southwest/East | West |
| Fuel Shading | Exposed (< and > 50% shading) | Exposed (< 50% shading) |
| Fuel Moisture Correction | 1 % | 1 % |
| Fine Dead Fuel Moisture | 3 % | 2 % |

## Topography

The topography of the site is discussed in greater detail in the FPP. Slope is a measure of angle in degrees from horizontal and can be presented in units of degrees or percent. Slope is important in fire behavior analysis as it affects the exposure of fuel beds. Additionally, fire burning uphill spreads faster than those burning on flat terrain or down hill as uphill vegetation is pre-heated and dried in advance of the flaming front, resulting in faster ignition rates. Slope values for this site were measured from site topographic maps and are presented in units of percent.

The modeling locations were adjacent to proposed development areas on the site with slope measurements ranging from relatively flat to 16%. Scenarios to the east and northeast were selected based on the strong likelihood of fire approaching from the both directions during a Santa Ana wind-driven fire event. The scenario on the west was selected to evaluate fire behavior potential during a summer fire occurring during typical on-shore wind flow patterns. The fire behavior modeling input variables for the project site are presented in Table 3. Locations for each modeling run are presented graphically in Figure 4 of the FPP.

**Table 3**
**BehavePlus Fire Behavior Modeling Inputs**

| Variable | Summer Weather (Onshore Flow) | Peak Weather (offshore/Santa Ana Condition) |
|---|---|---|
| Scenario | 3 | 1 and 2 |
| Fuel Model | FM 10, tu1 | gr1, tu1 |
| 1h Moisture | 3% | 2% |

**Table 3**
**BehavePlus Fire Behavior Modeling Inputs**

| Variable | Summer Weather (Onshore Flow) | Peak Weather (offshore/Santa Ana Condition) |
|---|---|---|
| 10h Moisture | 5% | 3% |
| 100h Moisture | 7% | 5% |
| Live Herbaceous Moisture | 60% | 30% |
| Live Woody Moisture | 90% | 50% |
| 20-foot Wind Speed (upslope/downslope) | 10-20 mph | 30-40( 50 mph gusts) |
| Wind Adjustment Factor | 0.4 | 0.4 |
| Slope Steepness | 3-10% | 14-16% |

## BEHAVEPLUS FIRE BEHAVIOR MODELING RESULTS

Three fire behavior variables were selected as outputs from the BehavePlus analysis conducted for the project site, and include flame length (feet), rate of spread (mph), and fireline intensity (BTU/feet/second). The aforementioned fire behavior variables are an important component in understanding fire risk and fire agency response capabilities. Flame length, the length of the flame of a spreading surface fire within the flaming front, is measured from midway in the active flaming combustion zone to the average tip of the flames (Andrews, Bevins, and Seli 2004). It is a somewhat subjective and non-scientific measure of fire behavior, but is extremely important to fireline personnel in evaluating fireline intensity and is worth considering as an important fire variable (Rothermel 1983). Fireline intensity is a measure of heat output from the flaming front, and also affects the potential for a surface fire to transition to a crown fire. Fire spread rate represents the speed at which the fire progresses through surface fuels and is another important variable in initial attack and fire suppression efforts. The information in Table 4 presents an interpretation of these fire behavior variables as related to fire suppression efforts. The results of fire behavior modeling efforts are presented in Table 5, as well as in Table 3 of the FPP. Additionally, identification of modeling run locations is presented graphically in Figure 4 of the FPP.

**Table 4**
**Fire Suppression Interpretation**

| Flame Length (ft) | Fireline Intensity (Btu/ft/s) | Interpretations |
|---|---|---|
| Under 4 feet | Under 100 BTU/ft/s | Fires can generally be attacked at the head or flanks by persons using hand tools. Hand line should hold the fire. |
| 4 to 8 feet | 100-500 BTU/ft/s | Fires are too intense for direct attack on the head by persons using hand tools. Hand line cannot be relied on to hold the fire. Equipment such as dozers, pumpers, and retardant aircraft can be effective. |
| 8 to 11 feet | 500-1000 BTU/ft/s | Fires may present serious control problems -- torching out, crowning, and spotting. Control efforts at the fire head will probably be ineffective. |

**Table 4**
**Fire Suppression Interpretation**

| Flame Length (ft) | Fireline Intensity (Btu/ft/s) | Interpretations |
|---|---|---|
| Over 11 feet | Over 1000 BTU/ft/s | Crowning, spotting, and major fire runs are probable. Control efforts at head of fire are ineffective. |

**Source:** BehavePlus 5.0.5 fire behavior modeling program (Andrews, Bevins, and Seli 2004)

**Table 5**
**BehavePlus Fire Behavior Modeling Results**

| Model Run | Fuel Model(s) | Flame Length (feet) | Fireline Intensity (Btu/ft/s) | Surface Rate of Spread (mph) |
|---|---|---|---|---|
| 1 | tu1 | 4.7 to 5.6 | 165 to 243 | < 1.0 |
| 2 | gr1 | 3.1 | 67 | < 1.0 |
| 3 | FM 10, tu1 | 1.8 to 8.1 | 20 to 539 | < 1.0 |

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# APPENDIX D

*Prohibited Plant List*

# APPENDIX D
# Prohibited Plant List

| Botanical Name | Common Name |
|---|---|
| *Trees* | |
| *Abies* species | Fir |
| *Acacia* species (numerous) | Acacia |
| *Agonis juniperina* | Juniper Myrtle |
| *Araucaria* species *(A. heterophylla, A. araucana, A. bidwillii)* | Araucaria (Norfolk Island Pine, Monkey Puzzle Tree, Bunya Bunya) |
| *Callistemon* species *(C. citrinus, C. rosea, C. viminalis)* | Bottlebrush (Lemon, Rose, Weeiping) |
| *Calocedrus decurrens* | Incense Cedar |
| *Casuarina cunninghamiana* | River She-Oak |
| *Cedrus* species *(C. atlantica, C. deodara)* | Cedar (Atlas, Deodar) |
| *Chamaecyparis* species (numerous) | False Cypress |
| *Cinnamomum camphora* | Camphor |
| *Cryptomeria japonica* | Japanese Cryptomeria |
| *Cupressocyparis leylandii* | Leyland Cypress |
| *Cupressus* species *(C. fobesii, C. glabra, C. sempervirens,)* | Cypress (Tecate, Arizona, Italian, others) |
| *Eucalyptus* species (numerous) | Eucalyptus |
| *Juniperus* species (numerous) | Juniper |
| *Larix* species *(L. decidua, L. occidentalis, L. kaempferi)* | Larch (European, Japanese, Western) |
| *Leptospermum* species *(L. laevigatum, L. petersonii)* | Tea Tree (Austrailian, Tea) |
| *Lithocarpus densiflorus* | Tan Oak |
| *Melaleuca* species *(M. linariifolia, M. nesophylla, M. quinqenervia)* | Melaleuca (Flaxleaf, Pink, Cajeput Tree) |
| *Olea europea* | Olive |
| *Picea* (numerous) | Spruce |
| *Palm* species (numerous) | Palm |
| *Pinus* species *(P. brutia, P. canariensis, P. eldarica, P. halopensis, P. pinea, P. radiate,* numerous others) | Pine (Calabrian, Canary Island, Mondell, Aleppo, Italian Stone, Monterey) |
| *Platycladus orientalis* | Oriental arborvitae |
| *Podocarpus* species *(P. gracilior, P. macrophyllus, P. latifolius)* | Fern Pine (Fern, Yew, Podocarpus) |
| *Pseudotsuga menziesii* | Douglas Fir |
| *Schinus* species *(S. molle, S. terebenthifolius)* | Pepper (California and Brazilian) |
| *Tamarix* species *(T. Africana, T. apylla, T. chinensis, T. parviflora)* | Tamarix (Tamarisk, Athel Tree, Salt Cedar, Tamarisk) |
| *Taxodium* species *(T. ascendens, T. distichum, T. mucronatum)* | Cypress (Pond, Bald, Monarch, Montezuma) |
| *Taxus* species *(T. baccata, T. brevifolia, T. cuspidata)* | Yew (English, Western, Japanese) |
| *Thuja* species *(T. occidentalis, T. plicata)* | Arborvitae/Red Cedar |
| *Tsuga* species *(T. heterophylla, T. mertensiana)* | Hemlock (Western, Mountain) |
| *Groundcovers, Shrubs & Vines* | |
| *Acacia* species | Acacia |
| *Adenostoma fasciculatum* | Chamise |
| *Adenostoma sparsifolium* | Red Shanks |

# APPENDIX D (Continued)

| Botanical Name | Common Name |
|---|---|
| *Agropyron repens* | Quackgrass |
| *Anthemis cotula* | Mayweed |
| *Arbutus menziesii* | Madrone |
| *Arctostaphylos* species | Manzanita |
| *Arundo donax* | Giant Reed |
| *Artemesia* species *(A. abrotanium, A. absinthium, A. californica, A. caucasia, A. dracunulus, A. tridentate, A. pynocephala)* | Sagebrush (Southernwood, Wormwood, California, Silver, True tarrangon, Big, Sandhill) |
| *Atriplex* species (numerous) | Saltbush |
| *Auena fatua* | Wild Oat |
| *Baccharis pilularis* | Coyote Bush |
| *Bambusa* species | Bamboo |
| *Bougainvillea* species | Bougainvillea |
| *Brassica* species *(B. campestris, B. nigra, B. rapa)* | Mustard (Field, Black, Yellow) |
| *Bromus rubens* | Foxtail, Red brome |
| *Cardera draba* | Noary Cress |
| *Carpobrotus* species | Ice Plant, Hottentot Fig |
| *Castanopsis chrysophylla* | Giant Chinkapin |
| *Cirsium vulgare* | Wild Artichoke |
| *Conyza bonariensis* | Horseweed |
| *Coprosma pumila* | Prostrate Coprosma |
| *Cortaderia selloana* | Pampas Grass |
| *Cytisus scoparius* | Scotch Broom |
| *Dodonea viscose* | Hopseed Bush |
| *Eriodyctyon californicum* | Yerba Santa |
| *Eriogonum* species *(E. fasciculatum)* | Buckwheat (California) |
| *Fremontodendron* species | Flannel Bush |
| *Hedera* species *(H. canariensis, H. helix)* | Ivy (Algerian, English) |
| *Heterotheca grandiflora* | Telegraph Plant |
| *Hordeum leporinum* | Wild barley |
| *Juniperus* species | Juniper |
| *Lactuca serriola* | Prickly Lettuce |
| *Larix* species (numerous) | Larch |
| *Larrea tridentata* | Creosote bush |
| *Lolium multiflorum* | Ryegrass |
| *Lonicera japonica* | Japanese Honeysuckle |
| *Mahonia* species | Mahonia |
| *Mimulus aurantiacus* | Sticky Monkeyflower |
| *Miscanthus* species | Eulalie Grass |
| *Muehlenbergia* species | Deer Grass |
| *Nicotania* species *(N. bigelevil, N. glauca)* | Tobacco (Indian, Tree) |
| *Pennisetum setaceum* | Fountain Grass |
| *Perronskia Atriplicifloria* | Russian Sage |

# APPENDIX D (Continued)

| Botanical Name | Common Name |
|---|---|
| *Phoradendrom* species | Mistletoe |
| *Pickeringia montana* | Chaparral Pea |
| *Rhus* species *(R. diversiloba, R. laurina, R. lentii)* | Sumac (Poison oak, Laurel, Pink Flowering) |
| *Ricinus communis* | Castor Bean |
| *Rosmarinus* species | Rosemary |
| *Salvia* species (numerous) | Sage |
| *Sacsola austails* | Russian Thistle |
| *Solanium Xantii* | Purple Nightshade (toxic) |
| *Sylibum marianum* | Milk Thistle |
| *Thuja* species | Arborvitae |
| *Urtica urens* | Burning Nettle |
| *Vinca major* | Periwinkle |
| *Rhus Lentii* | Pink Flowering Sumac |

**Notes:**

1 For the purpose of using this list as a guide in selecting plant material, it is stipulated that all plant material will burn under various conditions.

2 The absence of a particular plant, shrub, groundcover, or tree, from this list does not necessarily mean it is fire resistive.

3 All vegetation used in Vegetation Management Zones and elsewhere in this development shall be subject to approval of the Fire Marshal.

4 Additional plants that are considered undesirable due to their invasiveness nature are detailed on the California Invasive Plant Council's Web site at www.cal-ipc.org/ip/inventory/index.php.

5 Landscape architects may submit proposals for use of certain vegetation on a project specific basis. They shall also submit justifications as to the fire resistivity of the proposed vegetation.

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# Appendix L-1 Phase I Environmental Site Assessment (ESA) (February 2013)

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# PHASE I ENVIRONMENTAL SITE ASSESSMENT
# 661 BEAR VALLEY PARKWAY
# ESCONDIDO, CALIFORNIA 92025

**Assessors Parcel Numbers: 237-131-01 & -02**

**Prepared For:**

**Spieth & Wohlford, Inc.**
**c/o Jack Henthorn & Associates, Inc.**
**P.O. Box 237**
**Carlsbad, California 92018**

**Prepared By:**

**Vinje & Middleton Engineering, Inc.**
**2450 Auto Park Way**
**Escondido, California 92029**

**Project No. 13-118-H**

**February 14, 2013**

EXECUTIVE SUMMARY


1.0 INTRODUCTION ..... 1
1.1 PURPOSE ..... 1
1.2 SCOPE OF SERVICES ..... 1
1.3 LIMITATIONS AND EXCEPTIONS ..... 2
1.4 SPECIAL TERMS AND CONDITIONS ..... 3

2.0 SITE DESCRIPTION ..... 4
2.1 LOCATION AND LEGAL DESCRIPTION ..... 4
2.2 CURRENT/PROPOSED USES OF PROPERTY ..... 5
2.3 DESCRIPTION OF STRUCTURES/IMPROVEMENTS ..... 6
2.4 CURRENT USE OF ADJOINING PROPERTIES ..... 6

3.0 RECORDS REVIEW ..... 6
3.1 STANDARD ENVIRONMENTAL RECORD SOURCES ..... 7
3.2 RESULTS OF DATABASE SEARCH ..... 11
3.2.1 Federal Records Review ..... 11
3.2.2 State and Local Agency, Tribal and EDR Proprietary Records Review ..... 11
3.2.3 Environmental Liens and Usage Limitations ..... 13
3.2.4 Orphans List ..... 13
3.3 OTHER RECORDS REVIEWED/AGENCIES CONTACTED ..... 14
3.4 PHYSICAL SETTINGS SOURCES ..... 16
3.4.1 Topography ..... 16
3.4.2 Geologic ..... 16
3.4.3 Hydrogeologic ..... 17
3.5 USER PROVIDED INFORMATION ..... 18
3.5.1 Title Records ..... 18
3.5.2 Environmental Liens or Activity and Use Limitations ..... 18
3.5.3 Value Reduction ..... 19
3.5.4 Other information/Documents Provided ..... 19
3.5.5 Specialized Knowledge ..... 19
3.5.6 Reason for Performing Phase I ESA ..... 20

4.0 HISTORY OF THE SITE ..... 20
4.1 HISTORIC AERIAL PHOTOGRAPHS ..... 20
4.1.1 Subject Site ..... 21
4.1.2 Surrounding Area ..... 21
4.2 SANBORN FIRE INSURANCE MAPS ..... 22
4.3 BUILDING PERMIT RECORDS ..... 22

5.0 SITE RECONNAISSANCE ..... 22
5.1 METHODOLOGY AND LIMITING CONDITIONS ..... 23
5.2 SITE OBSERVATIONS ..... 23
5.3 RESULTS OF SITE OBSERVATIONS ..... 26
5.4 ADJOINING PROPERTIES ..... 27

6.0 INTERVIEWS ..... 27

7.0 FINDINGS AND CONCLUSIONS ..... 28

8.0 RECOMMENDATIONS ..... 30
8.1 DATA GAPS ..... 30
8.2 ENVIRONMENTAL PROFESSIONALS STATEMENT ..... 30

9.0 LIMITATIONS ..... 31

TABLES:

2-1 Location and Legal Description ..... 5
2-2 Current/Proposed Uses ..... 5
2-3 Structures/Improvements ..... 6
3-1 Owner/Occupant Information ..... 18
4-1 Historical Sources ..... 20
4-2 Historic Aerial Photographs ..... 21
5-1 Site Observations ..... 23
6-1 Persons Interviewed ..... 27

FIGURES:

1. Regional Index Map
2. Site Plan Map and Surrounding Land Use

APPENDICES:

A. QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONAL
B. ASSESSORS BUILDING PERMIT RECORDS
C. EDR RADIUS MAP REPORT WITH GEOCHECK
D. OTHER GOVERNMENT RECORDS REVIEWED
E. CHICAGO TITLE COMPANY-PRELIMINARY REPORT
F. EDR AERIAL PHOTO DECADE PACKAGE
G. SANBORN MAP REPORT
H. SITE PHOTOGRAPHS
I. REFERENCES

## EXECUTIVE SUMMARY

This Phase I Environmental Site Assessment (ESA) was performed to satisfy the Clients due diligence requirements and follows the American Society for Testing and Materials (ASTM) E1527-05, Standard Practice for Environmental Site Assessments. Work on this Phase I ESA was conducted between January 9 and February 10, 2013.

The subject property, located at 661 Bear Valley Parkway, Escondido, California 92025, is a 42.12 acre parcel of land situated on two assessors parcels (237-131-01 and -02), Site is located on the east side of Bear Valley Parkway approximately 0.70 miles south of the intersection of San Pasqual Road and Bear Valley Parkway. Regional setting is posted on Figure 1, attached. Detailed topography, project boundary and surrounding land use are illustrated on Figure 2.

Improvements include a 1,120 square foot single story, 3-bedroom, 1-bath house with a 96 square foot detached garage, both built in 1946. Currently the property is a rental with no active use of the majority of land. Access is via an asphalt paved driveway off Bear Valley Parkway opposite Zlatibor Ranch Road. The house is serviced by a septic tank and leach line, a 250-gallon above ground propane tank, overhead electrical, and City of Escondido Water. Three abandoned irrigation water wells are situated along the west/southwest property boundary (Figure 2).

Historically, the Site was first evaluated for its potential as a gold/silver mine prior to the beginning of the 20th Century. Adjacent properties to the northwest, west, and southwest were actively productive mining properties (Oro Fino and Escondido Mines), from approximately 1840 - 1928. Subject property was primarily used as a citrus and avocado grove from before the earliest historic photograph (pre-1946) until approximately 1998.

Geologically, the subject property is underlain by Cretaceous Granodiorite and Tonalite. This basement complex weathers at the surface into the Fallbrook loamy topsoil in the higher elevations, and the Ramona loamy soil in the lower elevations.

The Site is located within the Los Lomas Muertas Hydrologic Sub-Area within the San Pasqual Hydrologic Area within the San Dieguito Hydrologic Unit. Groundwater and surface water within the Hydrologic Sub-Area currently has designated beneficial uses.

Surface water was observed in the stream/tributary drainage coarse located in the subject properties southwest corner during the site walkthrough conducted January 11, 2013.

Depth to groundwater below the Site was not determined within this scope of work; however, it is estimated to be shallow (10-15 foot bgs) in the lower elevations.

Subject Property was not identified on any Federal database listing. The target property has been identified on two databases within the State, Local, EDR, and Proprietary listings for permits related to chemicals used, stored, and/or disposed off-site.

Interviews with property management personnel indicate that the Site is sprayed annually with chemicals identified as: Caliber 90, a selective herbicide, and Roundup, a non selective post emergence herbicide. Herbicides have been used to keep the site clear of vegetation and reduce the fire potential.

Immediately adjacent properties and those within close proximity are a church, single family residences, and vacant land. Adjacent land use does not pose a recognized environmental concern to the Subject Property at the time of this writing.

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM practice E 1527-05 on the Site at 661 Bear Valley Parkway, Escondido, California 92125 (a.k.a. A.P.N. 237-131-01, and -02). This assessment has revealed no evidence of RECs in connection with the property except the following:

- Evidence and testimony by knowledgeable persons that attempt to find and possibly mine precious metals occurred on the Site near the end of the 19th Century and the early 20th Century by the Spieth family prior to joining in partnership with the Wohlford family. The potential uses of hazardous compounds associated with the mining and separation of precious metals from the ore represents a potential REC.

- Subject property was a citrus and avocado grove for more than 50 years as confirmed in historical aerial photographs of the Site, interviews with the property owners, property manager, and our site reconnaissance. This former land use designation presents a REC for the potential use of persistent agricultural chemicals.

- Records reviewed at the San Diego County Recorders Office and interview with property manager, verified the location and size of two (2) ASTs which were used for storage of oil and diesel fuel on the Site. Sizes of the tanks were estimated at 6,460 gallons which formerly containing oil, and a 1,260 gallon tank which formerly contained diesel. Both ASTs were installed in 1958. The ASTs no longer exist on the subject property and no surficial soil stains were observed at their former locations. Actual dates of their removal were not determined within available records reviewed.

- Dark surficial soil stains at regular spacing intervals, approximately 2-3 feet in radiuses were observed during the site reconnaissance throughout the former grove areas. Soil exhibited a weather petroleum hydrocarbon odor. These stains are presumably the result of overfilling or spilling diesel fuel at former smudge pot locations and are considered an REC.

- It is understood that the existing structures will be raised prior to development of the Site. There is a likelihood that some building materials may contain asbestos and lead-based paint due to the age of the structures (1946). These potential RECs may become airborne during demolition and represent environmental concerns during that activity.

- Fill dirt appears to encroach over the northeast property boundary adjacent Choya Canyon Road resulting from illegal dumping from an unknown source.

Our Site Reconnaissance performed on January 11, 2013, identified the following ***de minimis*** concerns associated with past use of the property.

1. Three (3) hand dug irrigation water wells along the west/southwest perimeter, and;
2. In ground and above ground irrigation piping

Based on the data, discussions, and conclusions presented in this Report, the following recommendations are presented for the Clients consideration.

- If the Client desires a quantitative confirmation of qualitative judgements and opinions presented in this Report regarding the possible impact to soil from possible pesticide/herbicide applications during the sites former agricultural use, exploratory mining operation, petroleum hydrocarbons, and illegally dumped fill soil, then the Client may desire to consider the collection and analysis of soil samples, as appropriate.

- Prior to demolition of the existing structures, the Client may consider conducting an asbestos and lead-based paint assessment of building materials.

- It is further suggested the three (3) irrigation water wells be properly destroyed under a permit issued by San Diego County Department of Environmental Health. Disposal of all irrigation piping is recommended prior to grading the Site.

## 1.0 INTRODUCTION

This Phase I Environmental Site Assessment (ESA) is being performed on a 42.12 acre parcel of land consisting of two assessors parcels (237-131-01 and -02) with a street address of 661 Bear Valley Parkway, Escondido, California 92025. Work was performed under contract executed January 08, 2013, between Vinje & Middleton Engineering, Inc. (Vinje & Middleton) and property owners, Spieth & Wohlford, Inc.

This Phase I Environmental Site Assessment report is a summary of work performed following guidelines set forth in American Society for Testing and Materials Standard E 1527-05, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM Standard). The Environmental Site Assessment (ESA) was performed by an environmental professional from this office. A statement of the environmental professionals qualifications are provided in Appendix A.

### 1.1 PURPOSE

The purpose of this Phase I ESA is to identify, to the extent possible, recognized environmental concerns (REC's) as defined in our contract. As defined in the ASTM Standard, a REC is:

*The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis are not recognized environmental conditions.*

### 1.2 SCOPE OF SERVICES

The following sections describe Vinje & Middleton work scope:

- Section 1, **Introduction**, includes discussion of the purpose for performing this Phase I ESA, and any additional services requested by the Client, limitations, exceptions, and special terms and conditions.

- Section 2, **Site Description**, is a collection of information about the Site location, legal description, current use of the Site, description of structures, and immediately surrounding land use.

- Section 3, **Record Review**, is a review of publically available Federal, State, and Local database records regarding use, storage, disposal of hazardous substances and petroleum products. Review of unauthorized releases of hazardous substances and petroleum products. Additionally, record review identifies sites within ASTM reporting distance from the Site which are evaluated by the Environmental Professional as to their potential impact to the Site. Physical setting sources (including topography, soil, geology and groundwater conditions) and Client provided information (title reports, environmental liens, owner, property manager, and 0ccupant information) are also summarized in this section.

- Section 4, **History of the Site**, summarizes the history of the site and adjoining properties. This Site history is based on various sources which may include: historical aerial photographs, Sanborn Fire Insurance Maps, topographic maps, building department records, historical society photographs-records, and personal interviews with knowledgeable persons.

- Section 5, **Site Reconnaissance**, describes Vinje & Middleton observations during the Site reconnaissance. Specifically evaluating the Site for hazardous substance including storage, handling, and disposal; hazardous substance containers and unidentified containers; storage tanks, indication of solid waste disposal; and hazardous substances on adjoining properties.

- Section 6, **Interviews**, is a summary of telephone and personal interviews that may include the owner/site manager, occupants/tenants, local government officials, or others knowledgeable about past activities at the Site.

- Section 7, **Conclusions**, is a presentation of our findings and opinions regarding information in Sections 3 - 6, and presents our conclusions and recommendations regarding the presence of RECs at the Site. Identifies data gaps not made available by others, or not determined due to time and resource limitations. In addition, this section contains the Environmental Professionals Statement as required under ASTM Standard 1527-05.

- Section 8, **Limitations**, is Vinje & Middleton statement detailing the duration of time the findings presented in this report are valid and reliable. It further indemnifies Vinje & Middleton from liable issues resulting from opinions based on outside sources of information.

## 1.3 LIMITATIONS AND EXCEPTIONS

The following list of constituents of potential environmental concern is excluded from Comprehensive Environmental Response, Compensation, and Liability Act 1980 (CERCLA) liability. This Phase I ESA does not address radon, asbestos, lead-based paint, lead in drinking water, and mold, Fungi or microbial growth.

Radon is naturally occurring in the environment. "Remedial actions taken in response to hazardous substances as they occur naturally are specifically excluded from the National Contingency Plan (NCP) and are therefore not recoverable" (43 U.S.C. Section 9604(a) 3 and 4). Radon in San Diego County however, has been demonstrated by Federal EPA Radon database to be less than 2 pCi/L (picocuries per liter). The Federal level which represents an exposure concern for indoor air quality is greater than 4 pCi/L. Therefore, radon is not considered an environmental exposure concern for this Site. Within Zip Code area 92025 the average radon levels in indoor air are <1.0 pCi/L.

With regard to asbestos, the analysis is similar to radon. 42 U.S.C. Section 9604(a)(3)(B) prohibits response actions involving a release or threat of release "from products which are part of the structure (residential buildings or structures)." A federal court in the case of *First United Methodist Church of Hyattsville vs. United States Gypsum Co.,* the *First United* court concluded, "in view of this clear expression of Congressional intent, we will not expand CERCLA to encompass asbestos-removal actions. To extend CERCLA strict liability schemes to all past and present owners of buildings containing asbestos, as well as all persons who manufactured, transported, and installed asbestos products into buildings, would be to shift literally billions of dollars of removal cost liability based on nothing more than an improvident interpretation of a statute that Congress never intended to apply in this context."

Note however, if asbestos is disposed of on a Site and therefore, is no longer part of the structure of a building, the cleanup of the disposed asbestos is subject to CERCLA response actions. Likewise, if a building is sold with the knowledge that it will be demolished, then that sale constitutes a disposal falling under CERCLA liability provision. Based on our understanding of intended use of property, demolition of structures and associated outbuildings is planned.

Lead in Drinking Water, Lead-Based Paint, and Mold, Fungi and Microbial Growth in Building Structures can be evaluated in terms of the exclusions of 42 U.S.C, Section 9604(a)(3)(B) and (C), in an analysis similar to the analysis applied above to radon and asbestos. These environmental hazards are not encompassed in CERCLA appropriate inquiry responsibilities.

## 1.4 SPECIAL TERMS AND CONDITIONS

The following terms are used in this report:

- 'Subject Site', 'Subject Property', 'Site', 'Study Site', or Target Property' refers to the property within the approximate boundaries described in Section 2.

'Immediate site vicinity' refers to properties immediately adjacent to the site that share a common boundary or is opposite a road or highway from the Site.

- 'Site vicinity' refers to the area within approximately a 1-mile radius of the Site boundary.

The term 'hazardous substance' is defined in the following documents:

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980; and

- Superfund Amendment and Reauthorization Act (SARA) of 1986.

The terms 'material', 'waste', and 'substances' are used interchangeably, and no legal distinction is implied between the terms. The words 'impact' or 'impacted' are used to mean the effect or result of a hazardous substance that could result in a hazardous waste being present at the Site. All search distances for government agencies were designated by the ASTM Standard E1527-05.

## 2.0 SITE DESCRIPTION

The site description is presented in this section and describes the conditions of the site at the time of the Phase I ESA.

### 2.1 LOCATION AND LEGAL DESCRIPTION

Subject Property comprises two assessors parcels (237-131-01 and -02) totaling 42.12 acres of land zoned *Avocado Grove*. Subject property is located within the incorporated City of Escondido, California with a street address of 661 Bear Valley Parkway. The Properties regional location in Escondido, California is illustrated on Escondido 7.5' Quadrangle Map attached herein as Figure 1.

The irregularly shaped parcel is bound on the west and southwest sides by Bear Valley Parkway and on the north by the intersection of Bear Valley Parkway and Choya Canyon Road. Subject properties east boundary is marked by Choya Canyon Road and rural residential properties. A single family housing development bounds the Site on the South. Subject property is rolling hilly terrain with moderate to steep drainage coarse trending in a southwest direction. Surrounding land use is identified on Figure 2.

Fire protection is provided by the Escondido Fire Department. Potable water is provided by the City of Escondido. Electricity provided by San Diego Gas & Electric via overhead transmission lines. Property has an on-site wastewater septic system and heat provided by a 250-gallon steel propane tank located in the south lawn area.

Information presented in Table 2-1 describes the physical location and legal description of the site. The information was obtained from review of Tax Assessor maps, Preliminary Title Report, San Diego County Topographic Maps, public records at county offices, interviews and/or information provided by the Client.

**Table 2-1**
**Location and Legal Description**

| Parameter | Information |
|---|---|
| ADDRESS | 661 Bear Valley Parkway, Escondido, CA 92025 |
| SITE COORDINATE LOCATION | 33.098052° N, -117.057416° W |
| ASSESSOR'S PARCEL NO. | 237-131-01 and -02 |
| LEGAL DESCRIPTION | a detailed legal description is provided in the Chicago Title Co., Preliminary Report attached as Appendix E |
| ACREAGE | 42.12 ACRES |
| ELEVATION ABOVE Sea-level | 516-678 feet above sea level |

## 2.2 CURRENT/PROPOSED USES OF PROPERTY

Current and proposed uses are described in Table 2-2.

**Table 2-2**
**Current/Proposed Uses**

| Parameter | General Observation |
|---|---|
| CURRENT USE | Single family residence on former/vacant avocado/citrus grove |
| PROPOSED USE | Single Family Residential Development |

## 2.3 DESCRIPTION OF STRUCTURES/IMPROVEMENTS

Structures and improvements observed on site at the time of Vinje & Middleton site reconnaissance are described in Table 2-3. Official San Diego County Assessors Records are attached as **Appendix B**.

**Table 2-3**
**Structures/Improvements**

| Parameter | General Observation |
|---|---|
| STRUCTURES | (1) 1,120 sq. ft., 3-bedroom, 1-bathroom, single story wood-framed house with stucco siding, gabled roof with composite shingles, on concrete foundation, built 1946. (1) 8' x 12' detached garage, built in 1946. |
| OTHER IMPROVEMENTS | Electricity provided by San Diego Gas & Electric via over-head lines.<br>Water provided by the City of Escondido.<br>Gas provided by 250-gallon propane tank.<br>Sewer is served by on-site waste water septic system.<br>(3) water wells with 15 hp pumps installed in 1946.<br>Undetermined length of irrigation piping installed in 1938. |

The house is a rental property. Ms. Lee Scott is the tenant who has resided on the property for approximately fifteen years.

## 2.4 CURRENT USE OF ADJOINING PROPERTIES

Review of adjoining land use to the site was conducted during our site reconnaissance. Adjacent land use is described as rural residential, custom residential, the Park Hill Congregation of Jehovah Witnesses, and vacant land. Figure 2 attached shows the Subject Property with adjacent land use designations.

# 3.0 RECORDS REVIEW

The purpose of the records review is to obtain and review records that will help identify recognized environmental conditions (RECs) in connection with the property.

## 3.1 STANDARD ENVIRONMENTAL RECORD SOURCES

Environmental Data Resources, Inc. (EDR), were subcontracted to perform a search of available Federal, Tribal, State, and local database records which meets the ASTM E1527-05 Standard. The ASTM Standard searches are designed to identify sites which store, treat, and dispose of hazardous materials or have experienced a release of which are capable of impacting the Site. Maximum search radius is one mile from the Subject Property. The study site was not identified on any database reviewed. For a detailed account of all listed sites the EDR Radius Map Report is attached as Appendix C.

### DATABASE RECORDS REVIEWED

| Database Listing | Search Distance (Miles) | <1/8 mile | 1/8 - 1/4 mile | 1/4 - ½ mile | ½ - 1 mile | <1 mile | Total Sites |
|---|---|---|---|---|---|---|---|
| NPL | 1.0 | 0 | 0 | 0 | 0 | NA | 0 |
| Proposed NPL | 1.0 | 0 | 0 | 0 | 0 | NA | 0 |
| NPL LIENS | TP | NA | NA | NA | NA | NA | 0 |
| Delisted NPL | 1.0 | 0 | 0 | 0 | 0 | NA | 0 |
| CERCLIS | 0.5 | 0 | 0 | 0 | NA | NA | 0 |
| Federal Facility | 1.0 | 0 | 0 | 0 | 0 | NA | 0 |
| CERC-NFRAP | 0.5 | 0 | 0 | 0 | NA | NA | 0 |
| CORRACTS | 1.0 | 0 | 0 | 0 | 0 | NA | 0 |
| RCRA-TSDF | 0.5 | 0 | 0 | 0 | NA | NA | 0 |
| RCRA-LQG | 0.25 | 0 | 0 | 0 | 0 | NA | 0 |
| RCRA-SQG | 0.25 | 0 | 0 | NA | NA | NA | 0 |
| RCRA-CESQG | 0.25 | 0 | 0 | NA | NA | NA | 0 |
| US ENG CONTROLS | 0.5 | 0 | 0 | 0 | NA | NA | 0 |
| US INST CONTROL | 0.5 | 0 | 0 | 0 | NA | NA | 0 |
| ERNS | TP | NA | NA | NA | NA | NA | 0 |
| RESPONSE - CA | 1.0 | 0 | 0 | 0 | 0 | NA | 0 |

| Database Listing | Search Distance (Miles) | <1/8 mile | 1/8 - 1/4 mile | 1/4 - ½ mile | ½ - 1 mile | <1 mile | Total Sites |
|---|---|---|---|---|---|---|---|
| ENVIRO-STOR - CA | 1.0 | 0 | 0 | 0 | **1** | NA | **1** |
| SWF/LF - CA | 0.5 | 0 | 0 | 0 | NA | NA | 0 |
| LUST - CA | 0.5 | 0 | 0 | 0 | NA | NA | 0 |
| SLIC - CA | 0.5 | 0 | 0 | 0 | NA | NA | 0 |
| SAN DIEGO CO. SAM - LOCAL | 0.5 | 0 | 0 | NA | NA | NA | 0 |
| INDIAN LUST - FED. | 0.5 | 0 | 0 | 0 | NA | NA | 0 |
| UST - CA | 0.25 | 0 | 0 | NA | NA | NA | 0 |
| AST - CA | 0.25 | 0 | 0 | NA | NA | NA | 0 |
| INDIAN UST -FED. | 0.25 | 0 | 0 | NA | NA | NA | 0 |
| FEMA UST - FED. | 0.25 | 0 | 0 | NA | NA | NA | 0 |
| VCP - CA | 0.5 | 0 | 0 | 0 | NA | NA | 0 |
| INDIAN VCP - FED. | 0.5 | 0 | 0 | 0 | 0 | NA | 0 |
| US BROWNFIELDS - FED. | 0.5 | 0 | 0 | 0 | NA | NA | 0 |
| DEBRIS REGION 9 - SDCO | 0.5 | 0 | 0 | 0 | NA | NA | 0 |
| ODI - FED. | 0.5 | 0 | 0 | 0 | NA | NA | 0 |
| WMUDS/SWAT - CA | 0.5 | 0 | 0 | 0 | NA | NA | 0 |
| SWRCY - CA | 0.5 | 0 | 0 | 0 | NA | NA | 0 |
| HAULERS - CA | TP | NA | NA | NA | NA | NA | 0 |
| INDIAN ODI - FED. | 0.5 | 0 | 0 | 0 | NA | NA | 0 |
| US-CDL - FED. | TP | NA | NA | NA | NA | NA | 0 |
| HIST CAL-SITES - CA | 1.0 | 0 | 0 | 0 | 0 | NA | 0 |
| SCH - CA | 0.25 | 0 | 0 | NA | NA | NA | 0 |

| Database Listing | Search Distance (Miles) | <1/8 mile | 1/8 - 1/4 mile | 1/4 - ½ mile | ½ - 1 mile | <1 mile | Total Sites |
|---|---|---|---|---|---|---|---|
| TOXIC PITS - CA | 1.0 | 0 | 0 | 0 | 0 | NA | 0 |
| CDL - CA | TP | NA | NA | NA | NA | NA | 0 |
| SDCO - HMMD - LOCAL | TP | NA | NA | NA | NA | NA | 1 |
| US HIST CDL - FED. | TP | NA | NA | NA | NA | NA | 0 |
| CA FID UST - CA | 0.25 | 0 | 0 | NA | NA | NA | 0 |
| HIST UST - CA | 0.25 | 0 | 0 | NA | NA | NA | 0 |
| SWEEPS - CA | 0.25 | 0 | 0 | NA | NA | NA | 0 |
| LIENS 2. | TP | NA | NA | NA | NA | NA | 0 |
| LUCIS - FED. | 0.5 | 0 | 0 | 0 | NA | NA | 0 |
| LIENS - CA | TP | NA | NA | NA | NA | NA | 0 |
| DEEDS - CA | 0.5 | 0 | 0 | 0 | NA | NA | 0 |
| HMIRS - FED. | TP | NA | NA | NA | NA | NA | 0 |
| CHIRMS - CA | TP | NA | NA | NA | NA | NA | 0 |
| LDS - CA | TP | NA | NA | NA | NA | NA | 0 |
| MSC - CA | TP | NA | NA | NA | NA | NA | 0 |
| RCRA-NonGen - EPA | 0.25 | 0 | NA | NA | NA | NA | 0 |
| DOT OPS - FED. | TP | NA | NA | NA | NA | NA | 0 |
| DOD - FED. | 1.0 | 0 | 0 | 0 | 0 | NA | 0 |
| FUDS - FED. | 1.0 | 0 | 0 | 0 | 0 | NA | 0 |
| CONSENT - FED. | 1.0 | 0 | 0 | 0 | 0 | NA | 0 |
| ROD - EPA | 1.0 | 0 | 0 | 0 | 0 | NA | 0 |
| UMTRA - FED. | 0.5 | 0 | 0 | 0 | NA | NA | 0 |
| MINES - FED. | 0.25 | 0 | 0 | NA | NA | NA | 0 |
| TRIS - EPA | TP | NA | NA | NA | NA | NA | 0 |
| TSCA - EPA | TP | NA | NA | NA | NA | NA | 0 |

| Database Listing | Search Distance (Miles) | <1/8 mile | 1/8 - 1/4 mile | 1/4 - ½ mile | ½ - 1 mile | <1 mile | Total Sites |
|---|---|---|---|---|---|---|---|
| FTTS - EPA | TP | NA | NA | NA | NA | NA | 0 |
| HIST FTTS - EPA | TP | NA | NA | NA | NA | NA | 0 |
| SSTS - EPA | TP | NA | NA | NA | NA | NA | 0 |
| ICIS - EPA | TP | NA | NA | NA | NA | NA | 0 |
| PADS -EPA | TP | NA | NA | NA | NA | NA | 0 |
| MLTS - FED. | TP | NA | NA | NA | NA | NA | 0 |
| RADINFO - EPA | TP | NA | NA | NA | NA | NA | 0 |
| FINDS - EPA | TP | NA | NA | NA | NA | NA | 0 |
| RAATS - EPA | TP | NA | NA | NA | NA | NA | 0 |
| CA BOND EXP. PLAN - CA | 1.0 | 0 | 0 | 0 | 0 | NA | 0 |
| WDS - CA | TP | NA | NA | NA | NA | NA | 0 |
| NPDES - CA | TP | NA | NA | NA | NA | NA | 0 |
| CORTESE - CA | 0.5 | 0 | 0 | 0 | NA | NA | 0 |
| HIST CORTESE - CA | 0.5 | 0 | 0 | 0 | NA | NA | 0 |
| NOTIFY 65 - CA | 1.0 | 0 | 0 | 0 | **2** | NA | **2** |
| DRYCLEANERS - CA | 0.25 | 0 | 0 | NA | NA | NA | 0 |
| WIP - LA CO. | 0.25 | 0 | 0 | NA | NA | NA | 0 |
| HAZNET - CA | TP | NA | NA | NA | NA | NA | **1** |
| EMI - CA | TP | NA | NA | NA | NA | NA | 0 |
| INDIAN RES - FED. | 1.0 | 0 | 0 | 0 | 0 | NA | 0 |
| SCRD DRYCLEANERS - EPA | 0.5 | 0 | 0 | 0 | NA | NA | 0 |
| HWP -CA | 1.0 | 0 | 0 | 0 | 0 | NA | 0 |
| HWT - CA | 0.25 | 0 | 0 | NA | NA | NA | 0 |
| COAL ASH EPA | TP | NA | NA | NA | NA | NA | 0 |

| Database Listing | Search Distance (Miles) | <1/8 mile | 1/8 - 1/4 mile | 1/4 - ½ mile | ½ - 1 mile | <1 mile | Total Sites |
|---|---|---|---|---|---|---|---|
| FINANCIAL ASSURANCE - CA | TP | NA | NA | NA | NA | NA | 0 |
| PCB TRANSFORMER - EPA | TP | NA | NA | NA | NA | NA | 0 |
| PROC - FED. | 1.0 | 0 | 0 | 0 | 0 | NA | 0 |
| MWMP - FED. | 0.25 | 0 | 0 | NA | NA | NA | 0 |
| COAL ASH DOE - FED. | TP | NA | NA | NA | NA | NA | 0 |
| MANUFACTURE GAS PLANTS - EDR | 1.0 | 0 | 0 | 0 | 0 | NA | 0 |
| HIST AUTO STATIONS - EDR | 0.25 | 0 | 0 | NA | NA | NA | 0 |
| HIST CLEANERS - EDR | 0.25 | 0 | 0 | NA | NA | NA | 0 |

NA = Not Applicable at this search distance

TP = Target Property

Site may be listed in more than one database

## 3.2 RESULTS OF DATABASE SEARCH

The following sections contain information on results of the EDR database records search.

### 3.2.1 Federal Records Review

Neither the Study Site nor any sites within ASTM reporting distances from the subject property were identified on any federal database lists reviewed.

### 3.2.2 State and Local Agency, Tribal and EDR Proprietary Records Review

The target property has been identified on two databases within the State, Local, EDR, and Proprietary database listings:

**Hazardous Materials Management Division Database**

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non tank cases, groundwater contamination, and soil contamination are included.)

Subject property was identified under permit number H199458. S.D. County HMMD Permit is inactive and expired June 4, 1993.

**HAZNET: Facility and Manifest Data**

Data included in the HAZNET database is extracted from the copies of hazardous waste manifests received each year by the California Department of Toxic Substance Control (DTSC). Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, Treatment, Storage, & Disposal ID, waste category, and disposal method.

Subject Property was identified on the HAZNET database in 1998. That is approximately the last period the Site was utilized for agricultural purposes (15-20 years ago). Site is on record for recycling approximately 4 tons of aqueous solution with less than 10% organic matter. Without references, this record implies agricultural chemical amendments were applied at the Site in the past while an active grove.

There are three identified sites between one-half and one mile from the Site. Vinje & Middleton has reviewed available information on all listed sites. Identified sites do not, in our judgement, represent an environmental concern to the study site due to their proximity away from, down gradient location from the Site, or case status.

Based on review of all files identified in EDR's Radius Map Report with GeoCheck, Vinje & Middleton identified no sites within close proximity (i.e., adjacent sites or <0.125 miles) which represent a material threat to environmental media (soil, surface water, or groundwater) at the Site.

### 3.2.3 Environmental Liens and Usage Limitations

Property owner representative, Mr. Jack Henthorn, informed Vinje & Middleton there were no environmental liens nor usage limitations on the subject property. No environmental liens on the Target Property were identified by review of EDR's two databases (LIENS2 and LIENS). Subject Property was not identified on Federal Institutional Controls or Engineering Controls databases. In addition, the property at this time is being mapped to support a residential subdivision by current property owner.

Review of the Chicago Title Company Preliminary Report, dated May 22, 2008, identified no liens or usage limitations. Recorded easements on, over, or under the Site were identified as:

- pipelines and ditches granted to Escondido Irrigation District, recorded July 1, 1892;
- public road purposes, recorded April 13, 1939;
- public utilities, ingress and egress, granted to San Diego Gas & Electric, recorded Au7gust 20, 1962, and September 39, 1975;
- public utilities and incidental purposes, recorded April 1, 1963; and October 28, 1968.

Chicago Title Company Preliminary Report is attached herein as Appendix D.

### 3.2.4 Orphans List

Facilities not plotted by EDR due to poor or inadequate addresses are referred to as orphan sites. There are 15 unmapped sites in the EDR report. The unmapped orphan sites were reviewed to determine if the orphan/unmapped properties pose a REC to the Site. Based on our review, identified sites have been closed with no further action required, or are beyond ASTM search distance from the site. Sites within a one-mile radius are either located in other hydrologic areas, are down-gradient or cross-gradient relative to the site, and in Vinje & Middleton's opinion, do not represent RECs to the site.

## 3.3 OTHER RECORDS REVIEWED/AGENCIES CONTACTED

The following additional records/agencies were reviewed/contacted for purposes of meeting the ASTM Standard. Local regulatory agencies were contacted for reasonably ascertainable and practically reviewable records regarding RECs present at the site and adjoining facilities. Regulatory agency contact documentation and agency responses are provided in Appendix D. The following agencies were contacted for documentation:

- San Diego County Department of Environmental Health-Site Assessment & Mitigation Division
- San Diego County Department of Agriculture, Weights, and Measures
- State Department of Toxic Substance Control
- California Department of Oil, Gas, and Geothermal Resources
- City of Escondido Building Department
- San Diego County Assessors Office

**San Diego County Department of Environmental Health-Site Assessment & Mitigation Division (DEH-SAM)**

DEH-SAM on-line database was searched on January 10, 2013, the Subject Property was identified as having an Establishment Number 199458 however, posted no information for Wastes, Inventory, Environmental Assessment nor Tank information. Two sites were identified within 0.3 miles up-gradient of the Site with petroleum hydrocarbon fuel storage tanks. One is a closed system and the other is exempt. Both are located at distances which do not represent a REC to the study property, in our judgement.

**San Diego County Department of Agriculture, Weights, and Measures**

On January 10, 2013, Vinje & Middleton submitted a written request to review San Diego County Department of Agriculture, Weights, and Measures files on the subject property. Their response dated January 22, 2013, indicated they do not maintain records after four years (2009).

**State Department of Toxic Substance Control**

Vinje & Middleton reviewed the State Department of Toxic Substance Control (DTSC) EnviroStor on-line database on January 9, 2013. EnviroStor identifies Federal and State Superfund Sites, GeoTracker Sites, UST sites, hazardous materials sites, School Evaluation Sites, and cleanup sites. The database identified no sites within a 0.5 mile radius of the subject property.

**California Department of Oil, Gas, and Geothermal Resources**

Vinje & Middleton reviewed California Department of Oil, Gas, and Natural Resources (DOGNR) Wildcat Well Map W1-7, to determine whether oil or gas wells are located on or near the Site. No oil or gas wells are located within 2 mile radiuses of the Site.

**City of Escondido Building Department**

On January 10, 2013, Vinje & Middleton visited the offices of the City of Escondido Building Department. The subject property was annexed into the City of Escondido in approximately 2004. However, the construction age of the house and garage were not on record at City offices. Construction records are found at San Diego County offices.

**San Diego County Assessors Office**

Information provided in this section was previously presented in Table 2-3. On January 17, 2013, Vinje & Middleton visited San Diego County Assessors Office to determine age of structures and improvements to the Site. Both the existing 1,120 square feet, 3-bedroom house and the 96 square foot shed/single car-detached garage were constructed in 1946.

A wood shed/barn was located on the south side of driveway midway between Bear Valley Parkway and the existing house. The structure measured 660 square feet in area and was built in 1925. Only the graded pad remains where the former shed was located.

Additional records include two (2) steel above ground storage tanks (ASTs). One measured eight feet high by twelve feet in diameter and used according to property manager, Mr. Adrian Olquin, for storage of oil. The concrete pad and remnant tank ring are located northeast of the existing house adjacent Choya Canyon Road.

A second AST was located on the west side of the former 12-foot by 55-foot storage shed/barn. According to assessors records the AST measured six feet high by six feet in diameter, and was used for storage of diesel fuel. No evidence that the AST was situated on a concrete pad was observed. The fuel was burned in smudge pots during periods of cold weather. Both ASTs were installed in 1958. A copy of these records is provided in Appendix B.

Stained or discolored soil surrounding the two former AST's was not observed during our site reconnaissance.

## 3.4 PHYSICAL SETTING SOURCES

This information was obtained from published data and maps, interviews with public agencies, and/or from previous investigations performed by Vinje & Middleton on/in the vicinity of the subject site.

### 3.4.1 Topography

Topographically, the site is marked by a northeast/southwest trending ridge dissected by southwest trending erosional gullies/ravines cut into the gentle to moderate sloping hillside terrain (14% - 31 % gradient). Significant surface erosion has occurred in the southeast corner of the property resulting in a steep drainage channel (up to 45% gradient). Site elevations range between 516 - 678 feet above sea level (Figure 2).

Subject property is equal in elevation to west adjacent property, lower in elevation than north and east adjacent properties, and higher than the south adjacent properties.

### 3.4.2 Geologic

Regionally, San Diego is located within the Peninsula Range Geomorphic Province of California. Typified by prominent northwest-trending mountains which include from north to south, the Santa Ana, Agua Tibia, Palomar, Volcan, Cuyamaca and Laguna mountains. The region exhibits gently sloping dissected western surfaces and a steep eastern slope separated from the Colorado River area by abrupt fault scarps.

The San Diego Region is divided into a coastal plain area, a central mountain-valley area, and an eastern mountain valley area. The western edge of the Peninsular Ranges province corresponds with the gently sloping dissected western hills and mountains (Site locale).

Subject property is underlain by late Cretaceous undifferentiated granodiorite with minor tonalite locally intruded by quartz rich pegmatite veins (1999, Tan & Kennedy). This igneous basement complex weathers into top soils identified as the Fallbrook and Ramona Loams, both sandy loams are well draining with fine to coarse grains.

### 3.4.3 Hydrogeologic

The Site is located within the Las Lomas Muertas Hydrologic Sub-Area (905.32), within the San Pasqual Hydrologic Area (905.30), within the San Dieguito Hydrologic Unit (905.00). Groundwater within the Las Lomas Muertas Hydrologic Sub-Area currently has existing beneficial uses designated for municipal, agricultural, and industrial supply purposes.

Surface waters within the 5.32 Hydrologic Sub-Area also have beneficial use designations for municipal, agricultural, industrial process supply, recreation 2, warm fresh water habitat, wildlife habitat, and rare species habitat.

A south trending flow line exists in the southwest corner of the Site and is marked by dense foliage (Figure 2). Three water wells, and a water weir to regulate water flow and/or water measurement purposes were observed during the site reconnaissance of the west/southwest property boundary.

Depth to groundwater below the Site was not determined within this scope of work; however, it is estimated to be shallow in the lower elevations of the Site.

## 3.5 USER PROVIDED INFORMATION

Information regarding the current owner/occupant is listed in Table 3-3.

**TABLE 3-1**
**OWNER / OCCUPANT INFORMATION**

| Entity | Name | Address |
|---|---|---|
| **Owner(s)** | Spieth & Wohlford, Inc. | P.O. Box 5005<br>Rancho Santa Fe, CA<br>92067-5005 B900 |
| **Property Manager** | Heritage Grove Management, Inc. | Burnet Wohlford<br>(760) 455-3289 |
| **Occupant** | Ms. Lee Scott | 661 Bear Valley Parkway<br>Escondido, CA 92025 |

Summaries of interviews with key individuals having knowledge of the site are provided in Section 6. The following sections present information provided by the Client.

### 3.5.1 Title Records

Chicago Title Company-Preliminary Report, dated May 22, 2008, Order 830014656-U50 was reviewed for legal property description, liens, and easements which may indicate environmental concern. No easements were reported in the document which are RECs to the Site. For details, please see Title Report attached as Appendix E.

### 3.5.2 Environmental Liens or Activity and Use Limitations

Review of documents assembled in the writing of this document, and interviews with knowledgeable persons, no environmental liens, activities, or property use limitations on the Site were identified.

### 3.5.3 Value Reduction

As part of the ASTM Standard Practice E 1527-05 process, information must be gathered regarding prospective purchase price of the property relative to the fair market value of the site. If there appears to be a value reduction, that reduction must be identified with respect to whether the difference could be attributed to environmental degradation of the property. Because the subject property is not being sold, and the extent of recognized environmental concerns has not been quantified, the value of the property with regard to fair market value cannot be assessed at this time.

### 3.5.4 Other Information/Documents Provided

The Client did not provide other documents or information commonly known or reasonably ascertainable, for the subject property beyond the information already contained in this report.

### 3.5.5 Specialized Knowledge

Both the occupant and owner's representatives indicated that mine shafts or mine adits were hand dug on the property prior to or near the turn of the 20th Century in attempts to find gold/silver. Having been previously backfilled with soil, several shafts have reappeared during periods of heavy rain, most recently as 2005. These cave ins required backfilling with soil to stabilize the surface. Property owner and consultant know they are there and have necessary information on their location.

Research has determined that two productive gold mines were located on the west side of Bear Valley Parkway beginning in the 1840s and continued on and off until approximately 1926. The Oro Fino Mine, formerly the Del Diablo was located north of the study site off Eldorado Drive west of Bear Valley Parkway.

The Cleveland-Pacific Mine formerly the Escondido Mine was located, according to historical maps reviewed, adjacent the Sites southwest corner on the west side of Bear Valley Parkway.

No record of mining nor production of ore on the Subject Property has been recorded or referenced. However, the reference to six existing mine shafts with previous cave-ins represents a potential environmental and safety concern and suggests that mining attempts were conducted at the Site.

### 3.5.6 Reason for Performing Phase I ESA

This phase I ESA is performed to determine what environmental concerns exist as a result of the Sites former agricultural land use designation and as a possible mining operation, understanding that the Site is being evaluated for the development of a residential subdivision.

## 4.0 HISTORY OF THE SITE

The history of the site was researched to identify past land uses. Historical land use was researched to the first developed use, or to 1973, whichever is earlier or readily available. Table 4-1 summarizes records reviewed.

**Table 4-1**
**Historical Sources**

| Source | Years Reviewed | Availability |
|---|---|---|
| HISTORICAL AERIAL PHOTOGRAPHS | 1947, 1953, 1963, 1974, 1980, 1990, 1995, 2005 | EDR report attached, Appendix F |
| SANBORN FIRE INSURANCE MAPS | No Coverage | EDR report attached, Appendix G |
| BUILDING PERMIT RECORDS | 1925, 1946, 1958 | EDR report attached, Appendix B |

### 4.1 HISTORIC AERIAL PHOTOGRAPHS

Historic aerial photographs are reviewed to determine previous land use activities which may not be documented by other means. The ability of the environmental professional to identify land use activities is dependent upon scale and photographic quality. Aerial photographs were obtained from several photograph collections through EDR. Aerial photographs spanning 67 years were reviewed for the site and immediate vicinity. Table 4-2 below tabulates photographs reviewed. Historical photographs are attached as Appendix F.

**Table 4-2**
**Historic Aerial Photographs**

| Date | Scale | Source | Quality |
|---|---|---|---|
| 1947 | 1 inch = 500 feet | Ammann | Good |
| 1953 | 1 inch = 555 feet | Park | Good |
| 1963 | 1 inch = 655 feet | Cartwright | Good |
| 1974 | 1 inch = 600 feet | AMI | Good |
| 1980 | 1 inch = 500 feet | AMI | Good |
| 1990 | 1 inch = 666 feet | USGS | Good |
| 1995 | 1 inch = 604 feet | EDR | Good |
| 2005 | 1 inch = 604 feet | EDR | Good |

Note: Aerial photographs only provide information on indication of land use and no conclusions regarding use, release, or storage of hazardous substances or petroleum products can be drawn from review of photographs alone.

### 4.1.1 Subject Site

The earliest historic photograph (1947) shows the Site as a mature citrus and avocado grove. This land use designation was visible in all photographs up through 1990. It can be presumed that agriculture predated the earliest photograph of the Site. Citrus occupied the lower elevations of the property while the higher elevations supported the avocado grove.

The 1995 photograph shows the grove trees had been cut down. Photographic evidence of an active grove spanned a minimum of 48 years. The 12 x 55-foot storage shed and diesel tanks are present in 1995 photo. By 2005, the referenced shed/barn and diesel AST were not visible and had been removed. No records of demolition were provided nor recorded.

### 4.1.2 Surrounding Area

Adjoining properties surrounding the Site was viewed as agricultural groves to the west and southwest in 1947. By 1953, all adjacent land was developed agricultural property. By 1974, the adjacent property to the southwest was converted to residential. The south adjacent land was vacant. All other adjacent properties were agricultural groves. In 1995, land use changed from agricultural to residential was witnessed at the north and west adjacent properties with the grading of Zlatibor

Ranch Road west side of Bear Valley Parkway. The Park Hill Congregation of Jehovah Witnesses Church was constructed between 1990 - 1995. In 2005, the adjacent property to the southeast was a vacant hillside.

Since 2005, adjacent property is unchanged, a mix of custom, subdivision residential, and rural residential, with some vacant land adjacent the southeastern boundary line.

The agricultural land use combined with the oil and diesel ASTs at the study site represent a potential environmental concern. No evidence of mining activity was seen in the historical photographs reviewed. Historically, all mining activity in Escondido was discontinued by 1926.

### 4.2 SANBORN FIRE INSURANCE MAPS

EDR searched available Sanborn Fire Insurance Map collection using the site coordinates and fire insurance maps depicting the site were not identified. EDRs search findings are attached as Appendix G.

### 4.3 BUILDING PERMIT RECORDS

Review of building permit records kept on file at the San Diego County Recorders Office have previously been referenced in Table 2-3, Section 3.3 and Appendix B.

## 5.0 SITE RECONNAISSANCE

Assessment activities included a site reconnaissance. This section summarizes the findings from the site reconnaissance.

Subject Property was visited by the environmental professional on January 11, 2013. Weather conditions were clear, dry, and cool. The site reconnaissance included a visual inspection for evidence of environmental conditions which could potentially identify RECs at the subject property. While conducting the site inspection, an off-site visual inspection was performed of adjoining properties for indications of environmental conditions/activities which may represent RECs.

## 5.1 METHODOLOGY AND LIMITING CONDITIONS

Features of surface environment related to soil staining, discharged waste(s), and distressed vegetation was the focus of the field reconnaissance. Limiting conditions included:

- inspection of interior conditions of the two structures was not performed as the house was occupied and garage was locked.

## 5.2 SITE OBSERVATIONS

In support of our site observations, Vinje & Middleton took digital photographs to illustrate current site conditions described herein. Site Photographs are presented in Appendix H. Site observations are summarized in Table 5-1.

**Table 5-1**
**Site Observations**
**January 11, 2013**

| GENERAL OBSERVATIONS | REMARKS | OBSERVED | NOT OBSERVED |
|---|---|---|---|
| Current Use | Vacant hillside property with one single family residence & detached one car garage | X | |
| Current use likely to indicate RECs | No | X | |
| Past Use | Avocado & Citrus Grove-Tree stumps and irrigation piping | X | |
| Past use likely to indicate RECs | Yes | X | |
| Structure | Previously described SFR and garage | X | |
| Topography of Site and surrounding area | Hilly terrain with erosional gullies | X | |
| Aboveground storage tank (AST) | Concrete pad and steel ring behind house adjacent Choya Canyon Road | X | |
| Asbestos-containing materials | Possibly present in house construction materials, due to structures age | | X |

| GENERAL OBSERVATIONS | REMARKS | OBSERVED | NOT OBSERVED |
|---|---|---|---|
| Lead-based paint | Possible (house), based on age | | X |
| Below grade vaults | | | X |
| Burned or buried debris | Did not observe, however were told by tenant dump debris was located on east PL near gate. Has been removed | | X |
| Chemical storage | Tenant has small volume of automotive oil, gasoline, & lubricant in garage | | X |
| Chemical mixing areas | Heritage Grove Management, Inc. indicated no chemicals mixed/stored on-site | | X |
| Discolored soil or water | Circular ~2-ft. diameter discolored soil at even spacing over large portion of former grove area (smudge pot diesel stains) | X | |
| Ditches or streams | Natural drainage channels and an active stream in southwest corner of Site | X | |
| Drains and piping (e.g. floor drains, floor trenches, bay drains, sand traps, grease traps) | Storm drain on north side of driveway, remnant pieces of concrete storm drain in northern portion of Site. Extensive irrigation piping network | X | |
| Drums | | | X |
| Electrical or hydraulic equipment (PCBs) | (1) 12 kva pole mounted elec. transformer adjacent former oil tank; (3) 10 kva pole mounted elec. transformers at driveway entrance | X | |
| Fill dirt from an unknown source. | Dump fill dirt on berm of Choya Canyon Road at north end of property encroaching Site | X | |
| Fill dirt from a known source | | | X |
| Hazardous chemicals and petroleum products in connection with *known* use | Physical evidence of oil tank, recorded evidence of diesel tank, and soil stains at former smudge pot locations | X | |

| GENERAL OBSERVATIONS | REMARKS | OBSERVED | NOT OBSERVED |
|---|---|---|---|
| Hazardous chemicals and petroleum products in connection with *unknown* use | | | X |
| Non-hazardous containers with contents | | | X |
| Hazardous waste storage | | | X |
| Heating and cooling system and fuel source | Heat provided by 250-gallon AST containing propane located south side of house. Cooling provided by window mounted air conditioner. | X | |
| Loading and unloading areas | | | X |
| Odors | | | X |
| Pits, Ponds, Lagoons | | | X |
| Pools of liquid | | | X |
| Process waste water | | | X |
| Sanitary sewer system | | | X |
| Septic System | New leach line installed 5-6 years ago and extends downhill along north side of driveway with ~ 50 feet of pipe extending laterally on contour | | X |
| Solid waste/evidence of Unauthorized Dumping | Was reportedly removed | | X |
| Stained pavement, soil, or concrete | Stained soil in former grove areas | X | |
| Stains or corrosion (interior, non-water) | | | X |
| Storm drain/ catch basins | Open culvert along Bear Valley Parkway | X | |
| Stressed vegetation | Entire site is void of vegetation except southwest drainage swale. Caliber 90, and Roundup herbicides reportedly applied annually. | X | |

| GENERAL OBSERVATIONS | REMARKS | OBSERVED | NOT OBSERVED |
|---|---|---|---|
| Sumps and clarifiers | | | X |
| Surface water | Flow line in southwest property corner | X | |
| Underground storage tank(s) (including heating oil tanks) | | | X |
| Unidentified substance containers | | | X |
| Waste water discharge | | | X |
| Water supplies (potable and process) | City of Escondido | X | |
| Wells (irrigation, monitoring, or domestic) | (3) Irrigation | X | |
| Wells (dry) | | | X |
| Wells (oil and gas) | | | X |

## 5.3 RESULTS OF SITE OBSERVATIONS

Based on our site reconnaissance at the Subject Property on January 11, 2013, Vinje & Middleton observed the following RECs:

- (2) former AST locations used for storage of oil and diesel fuel;
- multiple surficial soil stains in former grove areas resulting from spilling/overfilling smudge pots;
- potential for persistent agricultural chemical amendment residue in surface soils;
- A total of four (4) pole mounted electrical transformers ranging in size between 10 - 12 kva is located on two power poles. Pole mounted transformers are on poles near the Site entrance off Bear Valley Parkway, the other is adjacent Choya Canyon Road at former AST location. Historically, there exists a potential REC they contain(ed) PCB impacted dielectric oil.
- Fill dirt from an unknown source is located on berm of Choya Canyon Road near intersection with Bear Valley Parkway. Material potentially represents an REC.

The owner, may petition San Diego Gas & Electric to analyzed dielectric oil in pole mounted transformers and if PCBs are present will remove the PCB impacted oil at no charge to the property owner. If PCB impacted oil is not present, analytical cost

and sample collection time charges are the responsibility of the property owner. No soil stains or transformer leaks were observed and represent a very low likelihood of environmental concern. It is anticipated that above ground electrical service will be replaced by underground utilities during property development.

- potential residue of hazardous chemicals typically associated with gold/silver ore extraction

### 5.4 ADJOINING PROPERTIES

Land use associated with adjoining properties has historically been gold/silver mining, agricultural, and more recently residential. Within close proximity (< 1/8 mile) to the Site there were no sites identified on Government Database Lists.

## 6.0 INTERVIEWS

Interviews were conducted with knowledgeable persons regarding past and present land use and associated activities on the subject site. Table 6-1 identifies persons contacted and historical perspective of property development.

**Table 6-1**
**Persons Interviewed**

| Person Interviewed | Title / Position | Date | Results of Interview |
|---|---|---|---|
| Mr. Jack Henthorn | Planner/ Jack Henthorn & Associates, Inc. | Jan. 8, 10, & 16, 2013 | 42 acre former grove with mining shafts. Property planned for development of residential subdivision (~ 60 lots). Mine activity stopped 1910. Provided Title Report. Said AAI questionnaire not necessary as owner is not selling property at this time. Provided maps of the Site. Thinks mine shafts were exploratory only. |
| Ms. Lee Scott | Tenant @ 661 Bear Valley Parkway | Jan. 11, 2013 | Has lived at Site for past 15 years. Described work Adrian Olquin did to repair shaft cave-ins and provided his phone number. Trash was illegally dumped along the east property boundary but Adrian Olquin removed it. |

| Person Interviewed | Title / Position | Date | Results of Interview |
|---|---|---|---|
| Mr. Adrian Olquin | Property Manager/ Heritage Grove Management, Inc. | Jan. 14, 2013 | Thought house was ~ 60 years old. Identified the concrete slab and former tank location northeast of the house contained oil. He showed Vinje & Middleton the approximate locations of the mine shafts and size of repair (~ 6' wide x 20' deep). Property is annually sprayed for weed control with Calibur 90, Roundup. Showed location of septic system and leach field line repair 6-8 years ago. Said the grove trees were removed 15-20 years ago. |
| Mr. Burnet Wohlford | Property owner & owner Heritage Grove Management, Inc. | Jan. 16, 2013 | House was built after WWII. Thought the gold mining operation did not produce any ore. Spieth family had owned the property for undisclosed period and was active in developing as a gold/silver mine prior to Wohlfords involvement. The partnership between the Spieth and the Wohlford families occurred because Burnet's grandfather's knowledge about farming. |
| Mr. Tigg Wohlford | Property Owner | Jan. 17, 2013 | Precious metals exploration occurred well before grove was developed. Tigg did not witness mining operation. Said his father did not do any ore smelting. Gave name of knowledgeable person (Don Belding) who lived up on the adjacent site (former mine area opposite and adjacent Subject Property) who may know more about the history. Mr. Belding did not return our phone call. |

## 7.0 FINDINGS AND CONCLUSIONS

The findings and opinions of Vinje & Middleton presented in this report result from review of current regulatory databases, a site reconnaissance, review of historic documents, and interviews with knowledgeable persons familiar with the Site.

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM practice E 1527-05 at the Site located at 661 Bear Valley Parkway, Escondido, California 92125 (a.k.a. A.P.N. 237-131-01, and -02). This assessment has revealed no evidence of RECs in connection with the property except the following:

- Evidence and testimony by knowledgeable persons that attempt to find and mine precious metals occurred on the Site near the end of the 19th Century and the early 20th Century. These attempts were performed by the Spieth family prior to their partnership with the Wohlford family. The extraction and amalgamation of precious metals involve use of hazardous compounds which would potentially represent an REC.

- Subject property was a citrus and avocado grove for approximately 60 years as confirmed in review of historical aerial photographs of the Site, interviews with the property owners and manager, our site reconnaissance, and review of construction records. This former land use designation presents a REC for the potential use of persistent agricultural chemicals.
- Records reviewed at the San Diego County Recorders Office and interview with property manager, verified the location and size of two (2) ASTs which were used for storage of oil and diesel fuel. Sizes of the tanks were estimated at 6,460 gallons formerly containing oil, and 1,260 gallons formerly containing diesel. Both ASTs were installed in 1958 according to Assessors records. These ASTs and reported contents represent a REC to the Site, however, no evidence of spillage (stained soil or distressed vegetation) was observed at the two AST locations.

- Surficial soil stains at regular spacing intervals, approximately 2-3 feet in radiuses were observed during the site reconnaissance throughout the former grove areas in lower elevations of the property. These stains are presumably the result of overfilling or spilling of diesel fuel at former smudge pot locations and are considered RECs.

- It is understood that the existing structures will be raised prior to development of the proposed residential sub-division. There is a likelihood that some building materials may contain asbestos and lead-based paint due to the age of construction (1946). These potential RECs may become airborne during demolition and represent potential environmental concerns. In addition, if present these building materials would require proper disposal at an authorized facility.
- There is evidence of fill dirt from an unknown source believed to be encroaching over the subject properties northeast boundary line near the intersection of Bear Valley Parkway and Choya Canyon Road (identified on Figure 2). Boundary stakes were not present. Therefore, it is unknown whether this material resides on the subject property. If located on the study site it may be considered an REC.

Our Site Reconnaissance performed on January 11, 2013,identified the following ***de minimis*** concerns associated with past uses of the property.

1. Three (3) hand dug irrigation water wells
2. In ground and above ground irrigation piping

## 8.0 RECOMMENDATIONS

Based on the data, discussions, and conclusions presented in this Report, the following recommendations are presented for the Clients consideration.

- If the Client desires a quantitative confirmation of qualitative judgements and opinions presented in this Report regarding the possible impact to soil from pesticide/herbicide applications during the sites former agricultural use, impacts to soil from overfilling smudge pots, petroleum hydrocarbon on-site storage areas, and exploratory mining operation, then the Client may desire to consider the collection and analysis of soil samples, as appropriate.

- Prior to demolition of the existing structures, the Client may consider conducting an asbestos and lead-based paint assessment of building materials.

- It is further recommended to properly destroy the three (3) irrigation water wells under San Diego County Department of Environmental Health permit, and disposal of all irrigation piping.

- Contacting neighbors on north Choya Canyon Road regarding the source of the undocumented fill soil encroaching the Subject Property may provide useful information on the source of the undocumented dump fill material and the concern for it being considered a potential REC.

### 8.1 DATA GAPS

In performance of this Phase I ESA no data gaps were identified.

### 8.2 ENVIRONMENTAL PROFESSIONALS STATEMENT

As required by 40 CFR 312.21(d), we declare that, to the best of our professional knowledge and belief, we meet the definition of *Environmental Professional* as defined in Section 312.10 of 40 CFR 312 and we have the specific qualifications based on education, training, and experience to assess a *property* of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

## 9.0 LIMITATIONS

This report was prepared for the exclusive use by our client, Spieth & Wohlford, Inc., and their designated representative(s) and only for the purposes stated within a reasonable time from its issuance, *but in no event later than 1 year from the date of the report.* It should be noted that changes within the condition of a site can occur with time due to natural or man created conditions, either on-site or from adjacent properties. In addition, changes in the standard-of-practice and/or government codes and regulations may occur. Findings and opinions can be considered valid only as of the date of the Site visit.

In performance of our professional services, we comply with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions. The client recognizes that conditions often change and that our conclusions are based upon observations and available information. We will not be liable for conditions or consequences arising from relevant facts of information either incorrect, concealed, withheld or not fully disclosed from other sources.

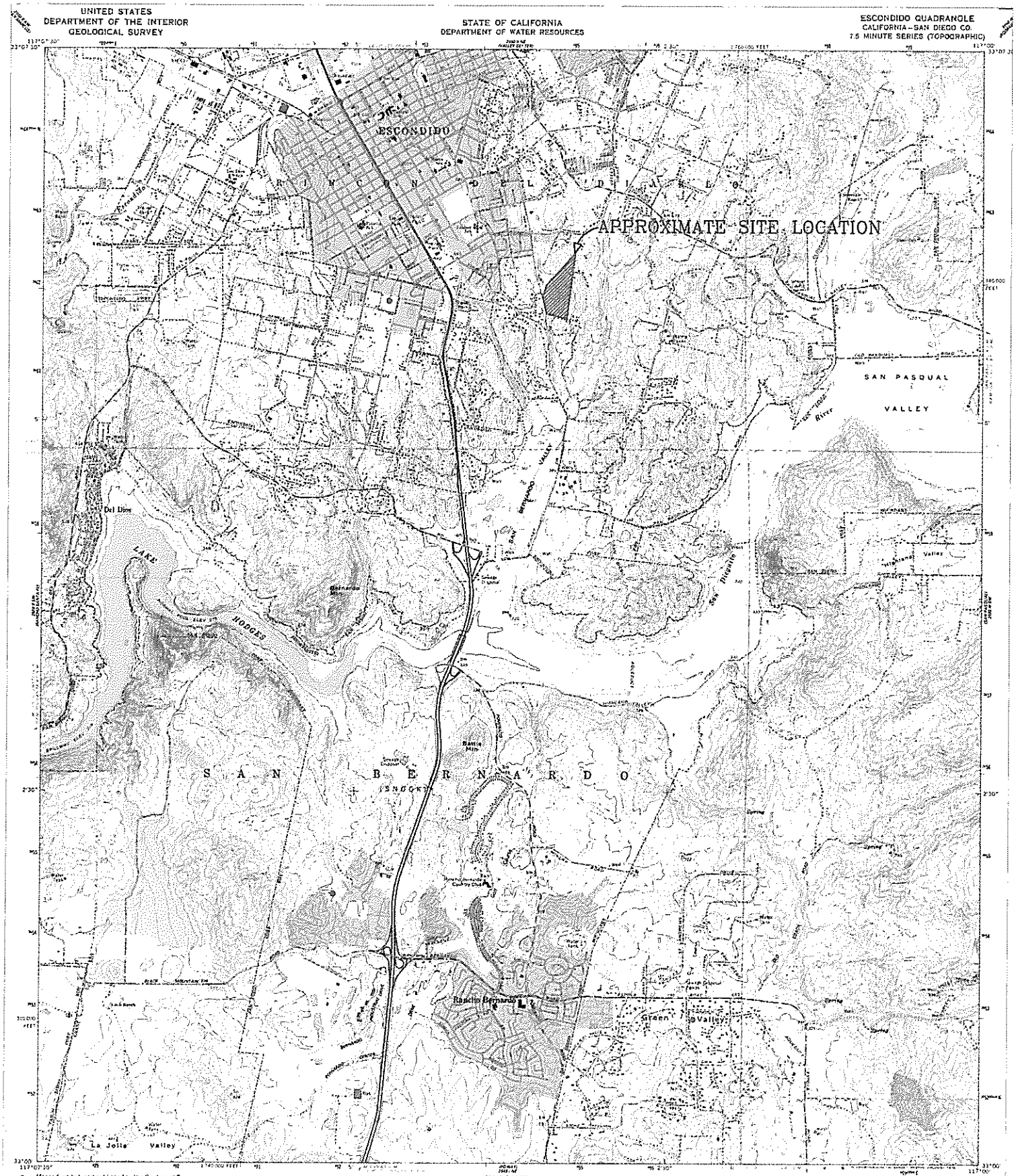
**VINJE & MIDDLETON ENGINEERING, INC.**

Ralph M. Vinje
Principal Engineer
RCE #25115

Bradley W. Crawshaw Jr.
Project Manager
PG #7888

Attachments

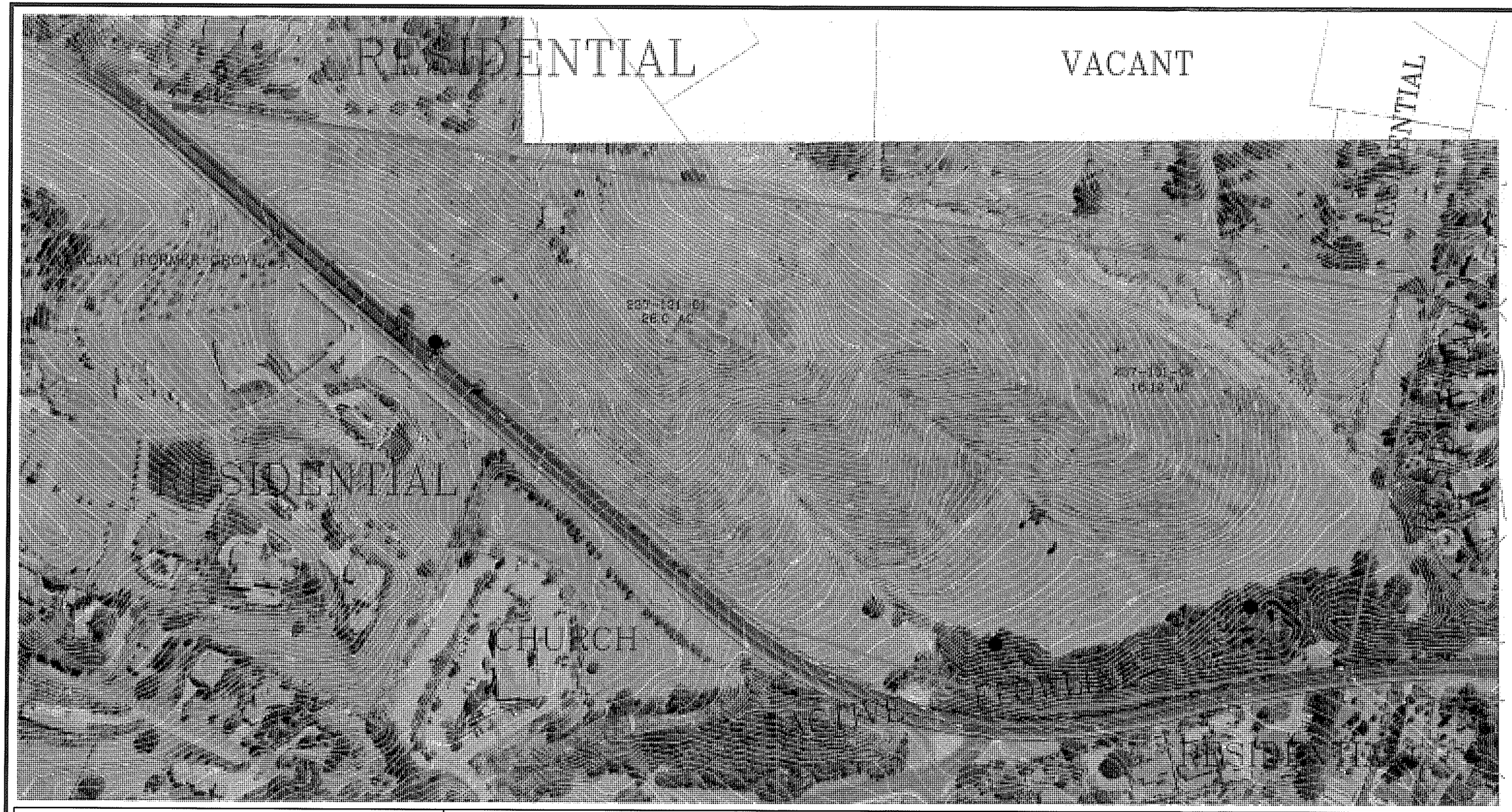
Distribution: Addressee (3, e-mail)




# REGIONAL INDEX MAP

SPIETH & WOHLFORD, INC.
661 BEAR VALLEY PARKWAY
ESCONDIDO, CALIFORNIA 92025

FIGURE 1




VINJE & MIDDLETON ENGINEERING, INC.
2450 Auto Park Way
Escondido, CA 92029-1229
760-743-1214

LEGEND

- Property Boundary Line
- Parcel Line
- Leach Line
- Former Oil and Diesel AST Tank Locations
- Location of Existing Wells
- Approximate Location of Fill Dirt Placed on Subject Property Source Unknown

Spieth & Wohlford, Inc.
661 Bear Valley Parkway
Escondido, California 92025

VME Job # 13-118-H

0 100 200 300 400
GRAPHIC SCALE

FIGURE 2

# APPENDIX A

Bradley W. Crawshaw Jr., PG # 7888
Consultant

## CAPABILITIES

Phase I, II & III Environmental Site Assessments
Regulatory Compliance Services
On-Site Wastewater System Designs
Underground Storage Tank Removal
Soil/Groundwater-Investigations
Environmental Remediation

## EXPERIENCE SUMMARY

Mr. Crawshaw has performed soils and environmental engineering services in San Diego County since 1986. He provides experienced support for projects involving above ground and underground storage tank removals, subsurface contamination investigations, contaminate remediation, regulatory compliance audits, and engineering design services.

Mr. Crawshaw has provided soils engineering services on residential and commercial construction sites. He has performed Geotechnical investigations, ASTM laboratory procedures for evaluating soil mechanics, and field investigations for evaluating residential and commercial sites which assist the engineers recommendations for structural placement.

Mr. Crawshaw has for the past 23 years conducted Phase I Environmental Site Assessments (ESAs) on commercial and agricultural properties following ASTM Standard 1527-05 for evaluating environmental impacts associated with past and present land uses. This practice has been regulated to be performed by persons meeting the ASTM Standard 1527-05 experience requirements. Mr. Crawshaw has extensive experience in evaluating Phase I findings and conducting Phase II ESA's. These subsurface investigations are performed to identify environmental impacts, assess impacted media, and evaluate cost effective remediation options.

Mr. Crawshaw has supervised the remediation of petroleum impacted soil at Municipal Facilities for the Cities of Carlsbad, Chula Vista and Imperial Beach, California. He has successfully provided remediation guidance for mitigating impacts of pesticide contaminated soil on current and former agricultural property planned for residential developments resulting in regulatory agency approval within the Cities of Carlsbad, Encinitas, Escondido, and Vista, California. Additional Phase I and II ESA work has been performed at dry cleaners, metal plating shops, and burn ash dump sites. Additional skills include design and certification of On-Site Wastewater Disposal Systems for residential properties in San Diego County.

## EDUCATION

BS, Geology, University of Edinboro, Edinboro, Pennsylvania
Asbestos In Buildings: Inspection and Assessment, The Environmental Institute
Professional Certificate in Hazardous Materials Management, University of California-San Diego
Professional Credit; Vapor Intrusion: Practical and Cost Saving Strategies, University of California-Irvine

## REGISTRATIONS & TRAINING

California Professional Geologist #7888
40-Hr. Hazwopper and 8-Hr. Annual Refresher
American Concrete Institute (ACI) Tech-Grade I #01244084

# APPENDIX B

ASSESSOR, SAN DIEGO COUNTY

# SUBURBAN-RURAL APPRAISAL RECORD

Sheet ____ of ____

Name Spieth & Wohlford Inc.

Parcel No 237-131-01

Address 661 Bear Valley Parkway

Acreage 26.00

## PROPERTY CHARACTERISTICS

| A-1(7) Zone | LAND USE | ACCESS | ROADS | UTILITIES | WATER | | | |
|---|---|---|---|---|---|---|---|---|
| Site | Field Crops | Easement | X Public Rd | X Elec | X Develop | X District | Domestic | Irrig |
| X Orchard | Dry Farm | X Developed | Private Rd | Gas | Avail | Well | Limited | |
| Poultry | Grazing | Undeveloped | X Surfaced | X Tele | Unavail | Spring | X Ample | X |
| X Por Econ Unit | Vacant | Landlocked | Unsurfaced | Sewer | | | | |

Bk. 11 D 7649

| SUMMARY | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cut Data | | SOR | | | | | | | | | | | | | | | | | | | |
| Initial-Appraisal Yr -Add Chng | ER 1974 | | 237-131-01 | 11/17/76 | I-120 | JR 1978 | | PROP-13 IMPS | 38,200 | QM 1979 | | 19 | | 19 | | 19 | | 19 | | | |
| Appraiser code | 15057 | | | | | 20-031 | | | | 22-168 | | | | | | | | | | | |
| Date | 10-16 73 | | | | | 4-5-78 | | | | 9-8-78 | | | | | | | | | | | |
| Improvement R C N | | | | | | | | | | | | | | | | | | | | | |
| Improvement R C N L D | | | | | | | | | | | | | | | | | | | | | |
| Land value | | | | | | | | | | | | | | | | | | | | | |
| Summation | | | | | | | | | | | | | | | | | | | | | |
| Indicated sale price | | | | | | | | | | | | | | | | | | | | | |
| Use Code | L 54 | | | | | I-52 | | | | I-52 | | | | | | | | | | | |
| **APPRAISAL** | | | | | | | | | | | | | | | | | | | | | |
| Total Real Property Value | 105 000 | | 203,000 | 43,000 | 246,000 | 325,000 | | 237-131-01 | 179,300 | 223900 | | | | | | | | | | | |
| Land Value | 69 000 | | | | | 265000 | | 06/21/78 LAND | | 182800 | | | | | | | | | | | |
| Improvement Value | 36 000 | | | | | 60 000 | | | | 41100 | | | | | | | | | | | |
| Computer / Units | N 1 | | | | | 47 1 | | | | K 1 | | | | | | | | | | | |
| Posted | NOV 21 DPS | | L- | I- | T- | MAY 11 78 KB | | | | NOV 23 78 KP | | | | | | | | | | | |

| SUMMARY | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cut Data | | | | | | | | | | | | | | | | | | | | | |
| Initial-Appraisal Yr -Add Chng | 19 | | 19 | | 19 | | 19 | | 19 | | 19 | | 19 | | 19 | | 19 | | 19 | | |
| Appraiser code | | | | | | | | | | | | | | | | | | | | | |
| Date | | | | | | | | | | | | | | | | | | | | | |
| Improvement R C N | | | | | | | | | | | | | | | | | | | | | |
| Improvement R C N L D | | | | | | | | | | | | | | | | | | | | | |
| Land Value | | | | | | | | | | | | | | | | | | | | | |
| Summation | | | | | | | | | | | | | | | | | | | | | |
| Indicated sale price | | | | | | | | | | | | | | | | | | | | | |
| Use Code | | | | | | | | | | | | | | | | | | | | | |
| **APPRAISAL** | | | | | | | | | | | | | | | | | | | | | |
| Total Real Property Value | | | | | | | | | | | | | | | | | | | | | |
| Land Value | | | | | | | | | | | | | | | | | | | | | |
| Improvement Value | | | | | | | | | | | | | | | | | | | | | |
| Computer / Units | | | | | | | | | | | | | | | | | | | | | |
| Posted | | | | | | | | | | | | | | | | | | | | | |

REL-A4 (8-72) 10M1

| DATE | DTS | INDIC PRICE | SALE PRICE | DOC NO | GRANTEE | SOURCE | | | | | Trust Deeds, Sales Conditions, Other Sales Data |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | DEED | BKR | SLR | BUY | OTH. | |
| | | | | | | | | | | | |
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SOIL DATA

| AREA NO | ACRES | DESCRIPTION | AREA NO | ACRES | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|---|
| | | | | | | (1) EXPLAINED BREAKDOWN OF APPRAISAL |
| | | | | | | TO MR. WOHLFORD IN ANSWER TO HIS LETTER |
| | | | | | | OF MAY 9, 1974. ESR 5/15/74 |
| | | | | | | Inv Book ID 7649 |
| | | | | | | |
| | | | | | | |
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| | | | | | | |
| | | | | | | |

LAND VALUE

| AREA NO | 19 74 A | | | 19 78 | | | 19 | | | 19 | | | 19 | | | 19 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | acres | V/A | | acres | V/A | | acres | V/A | | acres | V/A | | acres | V/A | | acres | V/A | |
| 1 | 26.00 | 6500 | 169 000 | | 10000 | 260,000 | | | | | | | | | | | | |
| | | | | | SITE | 5,000 | | | | | | | | | | | | |
| | | | | | | 265,000 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

| AREA NO. | 19 | | | 19 | | | 19 | | | 19 | | | 19 | | | 19 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | acres | V/A | | acres | V/A | | acres | V/A | | acres | V/A | | acres | V/A | | acres | V/A | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
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COUNTY ASSESSOR
SAN DIEGO CO CALIFORNIA

# RESIDENTIAL BUILDING RECORD

SHEET 1 OF 3 SHEETS | PARCEL 237-131-01

ADDRESS East off Fin of Bear Valley Pkwy

18E504 70C 2583

## DESCRIPTION OF BUILDING

| CLASS & SHAPE | CONSTRUCTION | STRUCTURAL | EXTERIOR | ROOF | LIGHTING | AIR CONDITION |
|---|---|---|---|---|---|---|
| D5.0 | Light | Y Frame | X Stucco on | Flat A Pitch | ✓ Wiring | Y Heating / Cooling |
| ARCHITECTURE | X Standard | Sheathing | Siding | X Gable 1/4 Inc | K T / Conduit | Forced / Clean'g |
| | Above Standard | Concrete Block | | ✓ Hip 3/4 Inc | B X / Cable | Gravity / Humid |
| 1 Stories | Special | B & B / T & G | | Shed 4 | Fixtures | Wall Unit |
| TYPE | | Brick | Shingle | Cut Up | Few / Cheap | |
| Use / Design | FOUNDATION | Adobe | Shake | Dormers | X Avg / X Med | Y Floor Unit |
| X Single | Y Concrete | X Floor Joist | Y B & B / T & G | Raft 2"x4"-24" | Many / Special | Zone Unit |
| Double | Reinforced | 1st " x " | FR & JT | Gutters | | Central |
| Duplex | Brick | 2nd " x " | Brick | | PLUMBING | |
| Apartment | Wood | Sub-Floor | Stone | Shingle | Poor / Std / Spec | |
| Flat-Court | Piers | Concrete Floor | WINDOWS | Shake | | Oil Burner |
| Motel | | | X D H / Casement | Tile | | |
| | | | Metal Sash | Tile Trim | ✓ Sink | |
| Units | Light / Heavy | Insulated Ceilings | Screens | Compo, | ✓ Laundry | M-B T U |
| | | Insulated Walls | | X Compo Shingle | ✓ Water Htr-Auto | Fireplace |
| | | | | | Water-Softner | |

### ROOM AND FINISH DETAIL

| ROOMS | FLOORS B | 1 | 2 | FLOOR FINISH Material | Grade | TRIM | INTERIOR FINISH Walls | Ceilings |
|---|---|---|---|---|---|---|---|---|
| All | | X | | Hwd | A | S | PL-PT | |
| Ent Hall | | | | | | | | |
| Living | | 1 | | | | | | |
| Dining | | 1 | | | | | | |
| | | | | | | | | |
| Bed | | 3 | | | | | | |
| Bed | | | | | | | | |
| Kitchen | | 1 | | Lino | | | | |
| Drain Bd | Material C ✓ | | | Lgth | Ft | Splash | | |

### CONSTRUCTION RECORD

| Permit No | Permit For | Amount | Date | EFFEC. YEAR | APPR YEAR | NORMAL % GOOD Age | Remaing Life | Table | % | RATING (E,G,A,F,P) Cond | Arch Attr | Func Plan | Conform | Storage Space Cupbd | Closet | Work-mnshp |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 23517 | D&G | 8500 | 11/6/64 | '46 | '64 | 18 | 38 | R-55 | 76 | G | A | A | A | A | G | A |
| | | | | '46 | 74 | 28 | | R60 | | G | A | | A | | | |
| | | | | | 78 | 32 | | R60 | | A | A | | A | | | A |

### BATH DETAIL

| Fl | No | FINISH Floors | Walls | FIXTURES Wc | Lo | Tub | Type | Grade | SHOWER St | QT | GO | Finish |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Lino | PL PT | 1 | 1 | 1 | 1PAD | A | | 1 | | |

### SPECIAL FEATURES

| | | | |
|---|---|---|---|
| Book Cases | | Built in Range | Venetian Blinds |
| Shutters | | " " Oven & Plate | |
| Vent Fan | | " " Dishwasher | |

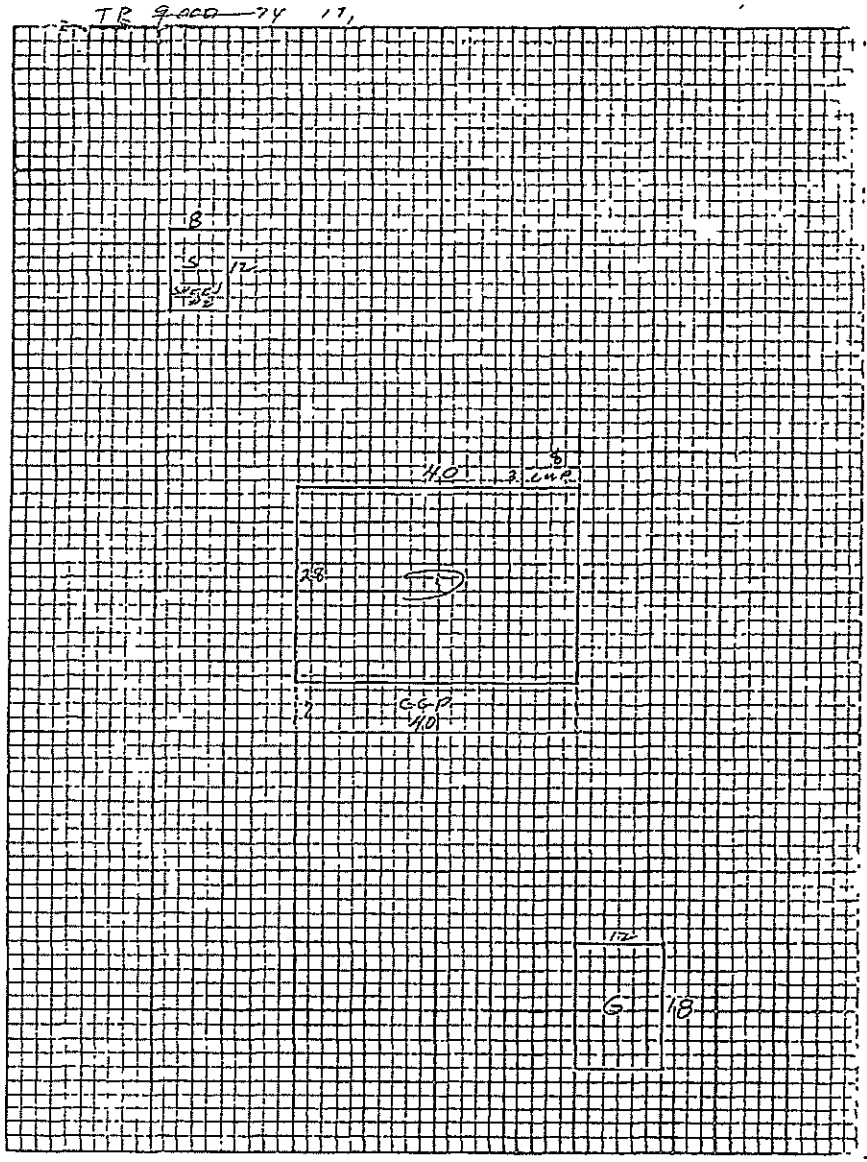
## COMPUTATION

Appraiser & Date: RCH 6-2-63 | 74.CC

| Unit | Area | Unit Cost | Cost | Unit Cost | Cost | Unit Cost | Cost | Unit Cost | Cost | Unit Cost | Cost | Unit Cost | Cost | Unit Cost | Cost | Unit Cost | Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | 1120 | 7.20 | 8064 | | | | | | | | | | | | | | |
| AC | | | 240 | | | | | | | | | | | | | | |
| CCP | 280 | 1.90 | 532 | | | | | | | | | | | | | | |
| CUP | 24 | 1.00 | 24 | | | | | | | | | | | | | | |
| G | 216 | 2.80 | 605 | | | | | | | | | | | | | | |
| 7193 | | | | | | | | | | | | | | | | | |
| 7193 | | | | | | | | | | | | | | | | | |
| TOTAL | | | 9465 | | | | | | | | | | | | | | |
| NORMAL % GOOD | | | 76 | | | | | | | | | | | | | | |
| RCLND | | | 7193 | | | | | | | | | | | | | | |

A-11 8-58 A 3-54

TR 9-000—74 11,




MISCELLANEOUS STRUCTURES

| Structure | Found. | Cons | Ext. | Roof | Floor | Int. | Size |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
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| | | | | | | | |

D 5.0 COMPUTATIONS P-136

28 X 40 = 1120. BF 72.

Remarks: DALOU RHG 3-8-71

COUNTY ASSESSOR
SAN DIEGO CO CALIFORNIA

# MISCELLANEOUS BUILDING RECORD

PARCEL 237-131-01

ADDRESS E/O of Ranchito Road

SHEET 2 OF 3 SHEETS

68C5041

## DESCRIPTION OF BUILDINGS

| Bldg. No | Structure | Size | Found | Wall & Exterior | Roof Type | Roof Cover | Floor & Interior Detail | 2nd Story or Loft | Year Built | Effec Year | T-11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SHED SHOP #1 | 9 X 12 | RIDGE M/S | FR B&B | SHED | RR | OP UNFIN | 1ST | 1946 | 1946 | R-30 |
| 2 | SHED | 12 X 55 | M/S | Post Corr I | SHED | Corr I | DIRT | 3ST | 1945 | 1945 | R-3 |
| 3 | ~~Pump~~ | 15HP Turbine | | | | | | 1ST | 1946 | 1946 | OR1 |
| 4 | ~~Pump~~ | 25HP Turbine | | | | | | 1ST | 1946 | 1946 | OR2 |
| 5 | Tank metal | 8' Diameter | Conc | - | | | | 1ST | 1958 Est | 1958 Est | OR1 |
| 6 | Tank Metal | 12' x 12' Dia | Conc | - | | | | 1ST | 1954 Est | 1954 Est | OR1 |
| 7 | ± 12/100 Ac Perm Irrig | | | | | | | | 1938 | | MIN |
| 8 | ± 73/100 Ac Part Irrig | | | | | | | | 1938 | | MIN |

## COMPUTATION

| Appraiser - Date | | DE Both 4/17/63 | | | | RCW 3-7-68 | | | | 68C# 5041 RCW | | | | AHU '78 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bldg. No. | Area | Unit Cost | Cost | % Good | R.C.N. L.N.D. | Unit Cost | Cost | % Good | R.C.N. L.N.D. | Unit Cost | Cost | % Good | R.C.N. L.N.D. | Unit Cost | Cost | % Good | R.C.N. L.N.D. |
| 1 | .96 | 180 | 173 | .50 | 86 | | 173 | 44 | 76 | | | | 76 | | | | 100 |
| 2 | 660 | 40 | 264 | .20 | 53 | | 264 | 15 | 40 | | | | 40 | | | | 50 |
| 3 | | | 2080 | 44 | 915 | | 2080 | 40 | 832 | | | | 832 | | | | |
| 4 | | | 1640 | 44 | 722 | | 1640 | 40 | 656 | | | | 656 | | | | |
| 5 | | | 610 | .78 | 476 | | 610 | 60 | 366 | | | | 366 | | | | 400 |
| 6 | | | 345 | .78 | 269 | | 345 | 60 | 207 | | | | 207 | | | | 250 |
| 7 | 125/100 | | | | | 480 | 7680 | 75 | 5760 | 480 | 6000 | 75 | 4500 | | | | 4500 |
| 8 | 73/100 | | | | | 240 | 2160 | 75 | 1620 | 240 | 1800 | 75 | 1350 | | | | 1350 |
| Total | | | 5112 | CD | 2521 | | 14952 | | 9557 | | | | 8027 | | | | 6650 |

| Appraiser - Date | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bldg No | Area | Unit Cost | Cost | % Good | R.C.N. L.N.D. | Unit Cost | Cost | % Good | R.C.N. L.N.D. | Unit Cost | Cost | % Good | R.C.N. L.N.D. | Unit Cost | Cost | % Good | R.C.N. L.N.D. |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
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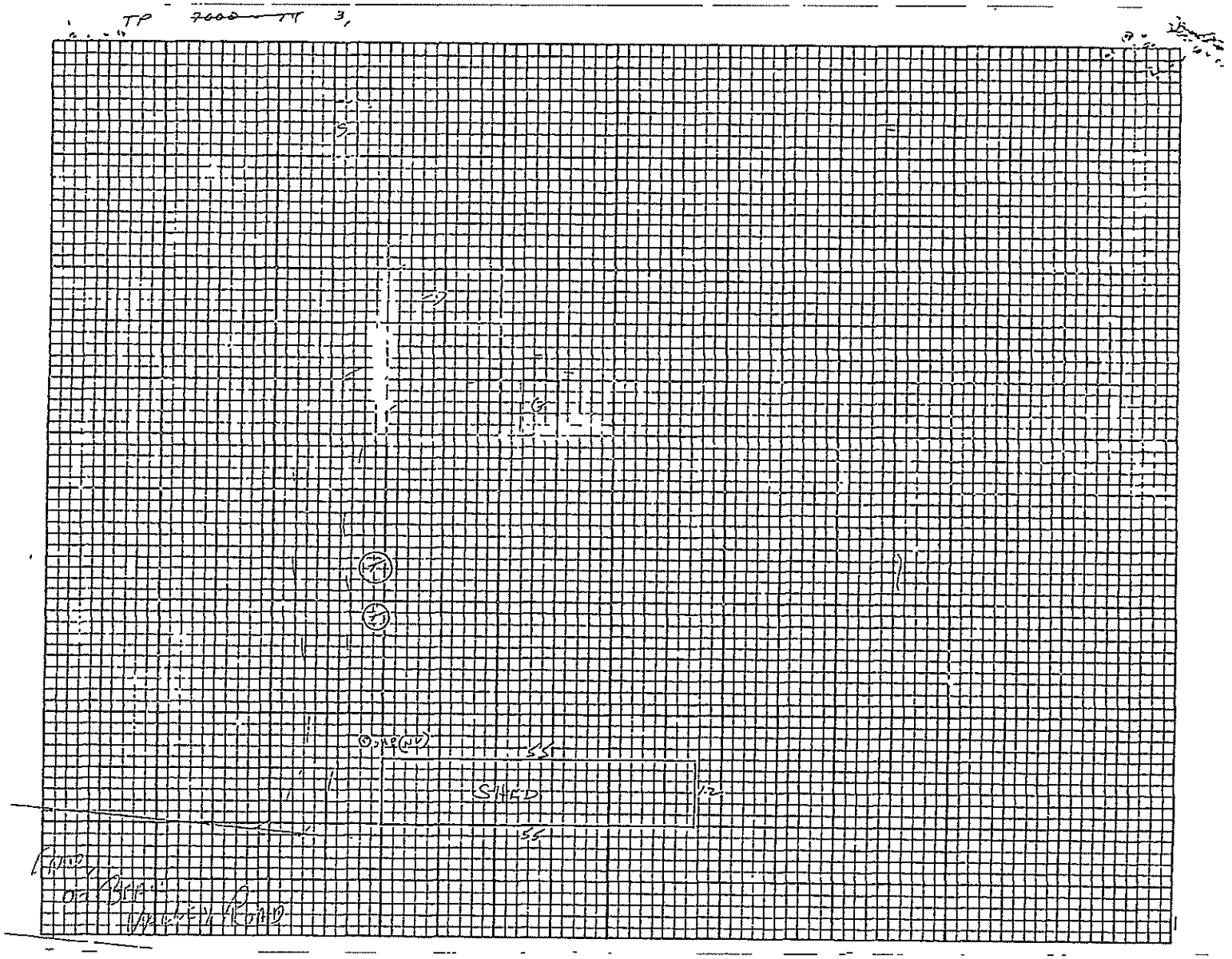
| | | | | | | | | | | | | | | | | | |
| Total | | | | | | | | | | | | | | | | | |

A-15 8-58


SHED

COUNT NO 4 68e5041 70C2583

# TREES - VINES APPRAISAL RECORD

ASSESSOR, SAN DIEGO COUNTY

PARCEL NO 237-131-01

ICA 37A019

CROSS REFERENCE PARCELS

NAME SPIETH LOCATION Bear Valley Rd ACREAGE 26 ~~42~~ SHEET 3 OF 3 SHTS

| KIND OF TREES | Mo & Yr Set | Grade | Acres | 78 | | | | 78 | | | | 78 | | | | 78 | | | | 79 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Age | Value per ac | $ Value | Age | Value per ac | $ Value | Age | Value per ac | $ Value | Age | Value per ac | $ Value | Age | Value per ac | $ Value | Age | Value per ac | $ Value |
| AVOCADOS | 1938 | F | ~~7.8~~ 7.6 | M | 700 | 7840 | | 700 | 5390 | M | RS 13 | 7500 | M | 1500 | 9000 | | 2500 | 15000 | | | |
| | 1958 | M | 5.1 | M | 900 | 4590 | | | 4590 | 13 | RS 13 | 7500 | M | 1500 | 7500 | | 3000 | 15300 | | | |
| ORANGES | 1938 | G | ~~5.5~~ 5 | M | 1200 | 8400 | | 1200 | 6000 | M | | 5500 | M | 1000 | 5000 | | 1500 | 7250 | | | |
| | 1958 | P | ~~1.2~~ 1 | 10 | 700 | 240 | | | 240 | | | N.V. | | | — | Removed | | NV | | | |
| | 1913 | G | ~~.7~~ .5 | 5 | 400 | 280 | | | 280 | 8 | | 2000 | M | 1000 | 700 | Removed | | NV | | | |
| | | | | | | 21350 | | | 17000 | | | ~~22500~~ 19000 | | | | | | | | | |
| | | | | | USE | 21000 | | USE | 17000 | USE | | 19000 | | | | | | | | | |
| AVOS. BACON (15x18 mixed) | 6/73 | G | 1.5± | | | | | | | | | | | FUT | | | .78 FUT | | | 1400 | 2100 |
| LEMONS 45 TREES | | | 0.7 | | | | | | | | | | M | 1000 | 700 | | 1500 | 1050 | | | |
| GRAPEFRUIT 700# | | | | | | | | | | | | | | | | | | | | | 73 FUT. |
| APPRAISED VALUE | | | | Row 3761 | | 21000 | | | 17000 | | | 19000 | | | 23400 | 4-4-78 HILL | | 39,600 | | | |
| POSTED TO P A R - DATE & NAME | | | | 5 | | | 4 | | | | | used | | | | | | 40,000 | | | |

TYPE OF IRRIG SYSTEM 1½ Ac Perm 3 ½ Ac Port

REMARKS (1) Adequate Reduced For Dry Rot Scale Rain Ex 1½ Ac Graded Plnd Due To Nematode
Some Continuous Top Work & Removal Of Dead Trees (Row 3-7-78

(2) Grovemanager Gave Tree Count As 548 Mature Avos On 30x30 Planting. Misc Varieties ER 10-16 73

(3) Irrig. System In Very Poor Condition. ER 5-15 74

(4) Viewed '79 Futures W/Grove Mgr - Misc Varieties, Incl Bacon Gm 9-8 78

A 62 1964

ACCOUNT NO TP 20000 — 74 40,

# TREES - VINES APPRAISAL RECORD

ASSESSOR, SAN DIEGO COUNTY

PARCEL NO

T C A

CROSS REFERENCE PARCELS

NAME LOCATION ACREAGE SHEET OF SH

| KIND OF TREES | Mo & Yr Set | Grade | Acres | Age | Value per ac | $ Value | Age | Value per ac | $ Value | Age | Value per ac | $ Value | Age | Value per ac | $ Value | Age | Value per ac | $ Value | Age | Value per ac | $ Value |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |

# 571-F AGRICULTURAL PROPERTY STATEMENT

E.C. WILLIAMS, ASSESSOR
SAN DIEGO COUNTY PHONE: 236-3093
1600 PACIFIC HIGHWAY, SAN DIEGO, CA 92101

RECEIVED MAR 7 7 39 AM '82

1982

FILE RETURN BY APRIL 1, 1982

NAME AND MAILING ADDRESS (make necessary corrections)

158-134000 806
SPIETH&WOHLFORD INC
3355 E VALLEY PARKWAY
ESCONDIDO CA 92027

d When did you start business at this location? 1936

e Accounting records located at (complete address and ZIP code) 3355 E. Valley Pkwy. Escondido 92027

f Person to contact for Audit (name, address, telephone number) Mary M. Wohlford 2275 Broadway # 624, San Francisco 94115

g Do you have 1 Registered or Show Horses YES ☐ ☒ NO
2 Racehorse(s) YES ☐ ☒ NO (If yes is checked-See Instructions)

h During the period of March 1, 1981 through February 28, 1982 (1) Did you own this real property? YES ☒ ☐ NO, (2) Has all or part of this real property been subject to a change in ownership? YES ☐ ☒ NO, (3) If you leased this real property, has it been the subject of a lease agreement for a period of 35 years or more (including options)? YES ☐ ☒ NO, (4) Did you acquire "control" of a legal entity which owns real property in this county? YES ☐ ☒ NO, (5) Did another person or entity acquire "control" of this corporation or entity? YES ☐ ☐ NO (See Instructions)

i Are there mobilehomes located on the property? YES ☐ ☒ NO If yes, indicate number currently licensed ____ number not currently licensed ____

PART I GENERAL INFORMATION

Type of Farm or Business Citrus-Avocado Ranch

Local Telephone Number 746-7225

☒ Check (✓) if ownership of land or Location of Property is in your name

LOCATION OF THE PROPERTY (file a separate statement for each location)

661 BEAR VALLEY PY

Parcel Number of This Location: S237-131-01-00

Tax Rate Area: 74019

SOURCE

PART II DECLARATION OF PROPERTY BELONGING TO YOU As Of 12 01 A M March 1, 1982 Attach Schedule For Any Adjustment To Cost

| | | | COST (omit cents) SEE INSTRUCTIONS | ASSESSOR'S USE ONLY FULL CASH VALUE IMPROVEMENTS | PERSONAL PROPERTY |
|---|---|---|---|---|---|
| Supplies | (33-40) | (From Schedule A) | 1,975.00 | | 1900 |
| Animals | (41-48) | (From Schedule B) | | | |
| Fixed Machinery and Equipment | (49-56) | (From Schedule C) | | | |
| Movable Farm Equipment | (49-56) | (From Schedule D) | 5,519.00 | | 2300 |
| Office Furniture and Equipment | (49-56) | (From Schedule E) | | | |
| Equipment Out on Lease or Rent to Others | (57-64) | Attach Schedule | | | |
| | (65-72) | | | | |

PART III REAL PROPERTY ALTERATIONS – SINCE 12 01 A M MARCH 1, 1981 (Describe and Report Cost – See Instructions)

IMPROVEMENTS ADDED OR REMOVED (Structures, Pumps, Pipe Lines, Wind Machines, Etc)

| Parcel | Description | Check Added | Check Removed | X X X X X |
|---|---|---|---|---|
| | | | | |
| | | | | |

TREES, VINES OR PERENNIALS PLANTED OR REMOVED

| Parcel | Date Planted | Number | Species | Variety | Spacing | Acres | Check Planted | Check Removed | X X X X X |
|---|---|---|---|---|---|---|---|---|---|
| 237-131-01 | 9/81 | 90 | Lemon | Eur. | 15X15 | 2 | X | | |
| 2 " | 1939 | 40 | Avo. | Bac Fur | 15X15 | 2 | | X | |
| " | Var. | 60 | Avo. | Bac Fur | 25X25 | 2 | Bud to Hass | | |

CHANGES IN THE LAND SURFACE (Leveling, Ripping, Drainage, Well Drilling, Etc)

| Parcel | Description | Acres | X X X X X |
|---|---|---|---|
| | | | |
| | | | |

TOTAL FULL CASH VALUE IMPS (81 88): 4200

TOTAL FULL CASH VALUE PERS PROP

EXEMPTIONS

ANALYZED | COMP | COMP

APPRAISER T.W. Hunt 5/6 5251

PARCEL NUMBER | IND | COST | CKD

B A NO

*SIGNATURE: I certify (or declare) under penalty of perjury under the laws of the State of California that I have examined this return, including accompanying schedules and statements, and to the best of my knowledge and belief it is true, correct, and complete and covers all property required to be reported which is owned, claimed, possessed, controlled, or managed by the person named in the statement at 12 01 a.m. on March 1, 1982. If prepared by a person other than the taxpayer, his declaration is based on all information of which he has knowledge*

OWNERSHIP
PROPRIETORSHIP -
PARTNERSHIP -
CORPORATION X
OTHER -

Full Legal Name if Incorporated

X B.F. Wohlford President 4/2 1982
Signature of Owner, Partner, Officer or Authorized Agent — Title — Date

X _____ 1982
Signature and Address of Preparer Other Than Taxpayer — Date

237-131-01

R

ASD AH 571 F FRONT 7-31-80 (REVISED 8-3-81) HASP 056 ASSESSOR'S USE ONLY

| NEW | NAME CHG | ADDR CHG | SITUS CHG | TRA. CHG | BUS CHG | HOLD CHG | HOLD DEL | DIST CHG | DIST DEL | AUDIT CHG | AUDIT DEL | SECD CHG | SECD DEL | PAR CHG | PAR DEL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | |

158-134000 SPIETH&WOHLFORD INC 372H00 372H00

```
 AS01P002                  Parcel Detail Screen 1- 2014        01/18/13 07:56:17
PN: 237-131-01-00  TRA:  04296           OC Trans:           Cd: X    Tax St: T
Ctl Doc: R1967-204198   ED: 12-28-67 DD: 12-28-67 DT: 001 AD/SRC: 04-26-07 / OR
FI: 1   NCNS SPIETH&WOHLFORD INC

 P.O. BOX 5005 #17 RANCHO SANTA FE, CA 92067
------------------------------ Property Data ------------------------------
Situs: 661 BEAR VALLEY PKY CA
Legal: BLK 257*LOT 4*26.00 AC M/L IN ST CLSD ADJ&IN LOTS 2 THRU
Map 000725      SD Acrg 26.00     AVOCADO
--------------------- Values and Exemptions ---------------------       HCY:
        329,638 Land                      Fix                   Ex     Ex Cd
         74,100 Imps                      BPP                   Ex     Ex Cd
        403,738 L+I                       Opp                   Ex     Ex Cd
        403,738 Tot              403,738 Net
------------------------------------ Codes -------------------------------------
Appl Area: 61   VCD: 11-23-78  VAD:            S/RY:    S/RC:   Def Tx Yr:
---------------------------------- Cut Data ------------------------------------
                    PPN: 237-130-08-00     PTra: 074019
Cut#/Yr/Typ: 002583 / 1970 /    Tra#/Yr: 005039 / 1989 Rep#/Yr: 10012  / 1972
Cut Doc Id:                Cut Eff Dt:           State Assmnt #:

<F2> T/S             <F9> XREF <ENTER> MENU AYR _
```

No file

# APPENDIX C

**Spieth & Wohlford, Inc.**
661 Bear Valley Parkway
Escondido, CA 92025

Inquiry Number: 03491546.2r
January 09, 2013

# The EDR Radius Map™ Report with GeoCheck®

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
Toll Free: 800.352.0050
www.edrnet.com

# TABLE OF CONTENTS


| SECTION | PAGE |
|---|---|
| Executive Summary | ES1 |
| Overview Map | 2 |
| Detail Map | 3 |
| Map Findings Summary | 4 |
| Map Findings | 8 |
| Orphan Summary | 12 |
| Government Records Searched/Data Currency Tracking | GR-1 |

**GEOCHECK ADDENDUM**

| | |
|---|---|
| Physical Setting Source Addendum | A-1 |
| Physical Setting Source Summary | A-2 |
| Physical Setting SSURGO Soil Map | A-5 |
| Physical Setting Source Map | A-13 |
| Physical Setting Source Map Findings | A-15 |
| Physical Setting Source Records Searched | A-17 |


*Thank you for your business.*
Please contact EDR at 1-800-352-0050
with any questions or comments.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# EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

## TARGET PROPERTY INFORMATION

### ADDRESS

661 BEAR VALLEY PARKWAY
ESCONDIDO, CA 92025

### COORDINATES

| | |
|---|---|
| Latitude (North): | 33.0981000 - 33° 5' 53.16" |
| Longitude (West): | 117.0574000 - 117° 3' 26.64" |
| Universal Tranverse Mercator: | Zone 11 |
| UTM X (Meters): | 494643.8 |
| UTM Y (Meters): | 3661972.5 |
| Elevation: | 618 ft. above sea level |

### USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

| | |
|---|---|
| Target Property Map: | 33117-A1 ESCONDIDO, CA |
| Most Recent Revision: | 1975 |

### AERIAL PHOTOGRAPHY IN THIS REPORT

| | |
|---|---|
| Portions of Photo from: | 2009, 2010 |
| Source: | USDA |

## TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

| Site | Database(s) | EPA ID |
|---|---|---|
| SPIETH & WOHLFORD INC<br>661 BEAR VALLEY PY<br>ESCONDIDO, CA 92025 | San Diego Co. HMMD | N/A |
| SPIETH AND WOHLFORD INC.<br>661 BEAR VALLEY PKWY.<br>ESCONDIDO, CA 92025 | HAZNET | N/A |

# EXECUTIVE SUMMARY

## DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

## STANDARD ENVIRONMENTAL RECORDS

### *Federal NPL site list*

NPL ..... National Priority List
Proposed NPL ..... Proposed National Priority List Sites
NPL LIENS ..... Federal Superfund Liens

### *Federal Delisted NPL site list*

Delisted NPL ..... National Priority List Deletions

### *Federal CERCLIS list*

CERCLIS ..... Comprehensive Environmental Response, Compensation, and Liability Information System
FEDERAL FACILITY ..... Federal Facility Site Information listing

### *Federal CERCLIS NFRAP site List*

CERC-NFRAP ..... CERCLIS No Further Remedial Action Planned

### *Federal RCRA CORRACTS facilities list*

CORRACTS ..... Corrective Action Report

### *Federal RCRA non-CORRACTS TSD facilities list*

RCRA-TSDF ..... RCRA - Treatment, Storage and Disposal

### *Federal RCRA generators list*

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-SQG ..... RCRA - Small Quantity Generators
RCRA-CESQG ..... RCRA - Conditionally Exempt Small Quantity Generator

### *Federal institutional controls / engineering controls registries*

US ENG CONTROLS ..... Engineering Controls Sites List
US INST CONTROL ..... Sites with Institutional Controls
LUCIS ..... Land Use Control Information System

### *Federal ERNS list*

ERNS ..... Emergency Response Notification System

### *State- and tribal - equivalent NPL*

RESPONSE ..... State Response Sites

# EXECUTIVE SUMMARY

***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF---------- Solid Waste Information System

***State and tribal leaking storage tank lists***

LUST---------- Geotracker's Leaking Underground Fuel Tank Report
SLIC---------- Statewide SLIC Cases
SAN DIEGO CO. SAM---------- Environmental Case Listing
INDIAN LUST---------- Leaking Underground Storage Tanks on Indian Land

***State and tribal registered storage tank lists***

UST---------- Active UST Facilities
AST---------- Aboveground Petroleum Storage Tank Facilities
INDIAN UST---------- Underground Storage Tanks on Indian Land
FEMA UST---------- Underground Storage Tank Listing

***State and tribal voluntary cleanup sites***

INDIAN VCP---------- Voluntary Cleanup Priority Listing
VCP---------- Voluntary Cleanup Program Properties

**ADDITIONAL ENVIRONMENTAL RECORDS**

***Local Brownfield lists***

US BROWNFIELDS---------- A Listing of Brownfields Sites

***Local Lists of Landfill / Solid Waste Disposal Sites***

DEBRIS REGION 9---------- Torres Martinez Reservation Illegal Dump Site Locations
ODI---------- Open Dump Inventory
WMUDS/SWAT---------- Waste Management Unit Database
SWRCY---------- Recycler Database
HAULERS---------- Registered Waste Tire Haulers Listing
INDIAN ODI---------- Report on the Status of Open Dumps on Indian Lands

***Local Lists of Hazardous waste / Contaminated Sites***

US CDL---------- Clandestine Drug Labs
HIST Cal-Sites---------- Historical Calsites Database
SCH---------- School Property Evaluation Program
Toxic Pits---------- Toxic Pits Cleanup Act Sites
CDL---------- Clandestine Drug Labs
US HIST CDL---------- National Clandestine Laboratory Register

***Local Lists of Registered Storage Tanks***

CA FID UST---------- Facility Inventory Database
HIST UST---------- Hazardous Substance Storage Container Database
SWEEPS UST---------- SWEEPS UST Listing

***Local Land Records***

LIENS 2---------- CERCLA Lien Information

LIENS..... Environmental Liens Listing
DEED..... Deed Restriction Listing

***Records of Emergency Release Reports***

HMIRS..... Hazardous Materials Information Reporting System
CHMIRS..... California Hazardous Material Incident Report System
LDS..... Land Disposal Sites Listing
MCS..... Military Cleanup Sites Listing

***Other Ascertainable Records***

RCRA-NonGen..... RCRA - Non Generators
DOT OPS..... Incident and Accident Data
DOD..... Department of Defense Sites
FUDS..... Formerly Used Defense Sites
CONSENT..... Superfund (CERCLA) Consent Decrees
ROD..... Records Of Decision
UMTRA..... Uranium Mill Tailings Sites
MINES..... Mines Master Index File
TRIS..... Toxic Chemical Release Inventory System
TSCA..... Toxic Substances Control Act
FTTS..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS..... FIFRA/TSCA Tracking System Administrative Case Listing
SSTS..... Section 7 Tracking Systems
ICIS..... Integrated Compliance Information System
PADS..... PCB Activity Database System
MLTS..... Material Licensing Tracking System
RADINFO..... Radiation Information Database
FINDS..... Facility Index System/Facility Registry System
RAATS..... RCRA Administrative Action Tracking System
RMP..... Risk Management Plans
CA BOND EXP. PLAN..... Bond Expenditure Plan
NPDES..... NPDES Permits Listing
UIC..... UIC Listing
Cortese..... "Cortese" Hazardous Waste & Substances Sites List
HIST CORTESE..... Hazardous Waste & Substance Site List
CUPA Listings..... CUPA Resources List
DRYCLEANERS..... Cleaner Facilities
WIP..... Well Investigation Program Case List
ENF..... Enforcement Action Listing
EMI..... Emissions Inventory Data
INDIAN RESERV..... Indian Reservations
SCRD DRYCLEANERS..... State Coalition for Remediation of Drycleaners Listing
EPA WATCH LIST..... EPA WATCH LIST
WDS..... Waste Discharge System
US AIRS..... Aerometric Information Retrieval System Facility Subsystem
PRP..... Potentially Responsible Parties
US FIN ASSUR..... Financial Assurance Information
2020 COR ACTION..... 2020 Corrective Action Program List
PCB TRANSFORMER..... PCB Transformer Registration Database
PROC..... Certified Processors Database
MWMP..... Medical Waste Management Program Listing
COAL ASH DOE..... Steam-Electric Plant Operation Data

COAL ASH EPA..... Coal Combustion Residues Surface Impoundments List
HWT..... Registered Hazardous Waste Transporter Database
HWP..... EnviroStor Permitted Facilities Listing
Financial Assurance..... Financial Assurance Information Listing

**EDR HIGH RISK HISTORICAL RECORDS**

***EDR Exclusive Records***

EDR MGP..... EDR Proprietary Manufactured Gas Plants
EDR US Hist Auto Stat..... EDR Exclusive Historic Gas Stations
EDR US Hist Cleaners..... EDR Exclusive Historic Dry Cleaners

**SURROUNDING SITES: SEARCH RESULTS**

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

**STANDARD ENVIRONMENTAL RECORDS**

***State- and tribal - equivalent CERCLIS***

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 11/05/2012 has revealed that there is 1 ENVIROSTOR site within approximately 1 mile of the target property.

| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| ***BROTHERTON PLAZA*** | ***2250 S ESCONDIDO BL*** | ***WSW 1/2 - 1 (0.845 mi.)*** | *4* | *9* |
| Status: Refer: 1248 Local Agency | | | | |

# EXECUTIVE SUMMARY

## ADDITIONAL ENVIRONMENTAL RECORDS

### *Other Ascertainable Records*

Notify 65: Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

A review of the Notify 65 list, as provided by EDR, and dated 10/21/1993 has revealed that there are 2 Notify 65 sites within approximately 1 mile of the target property.

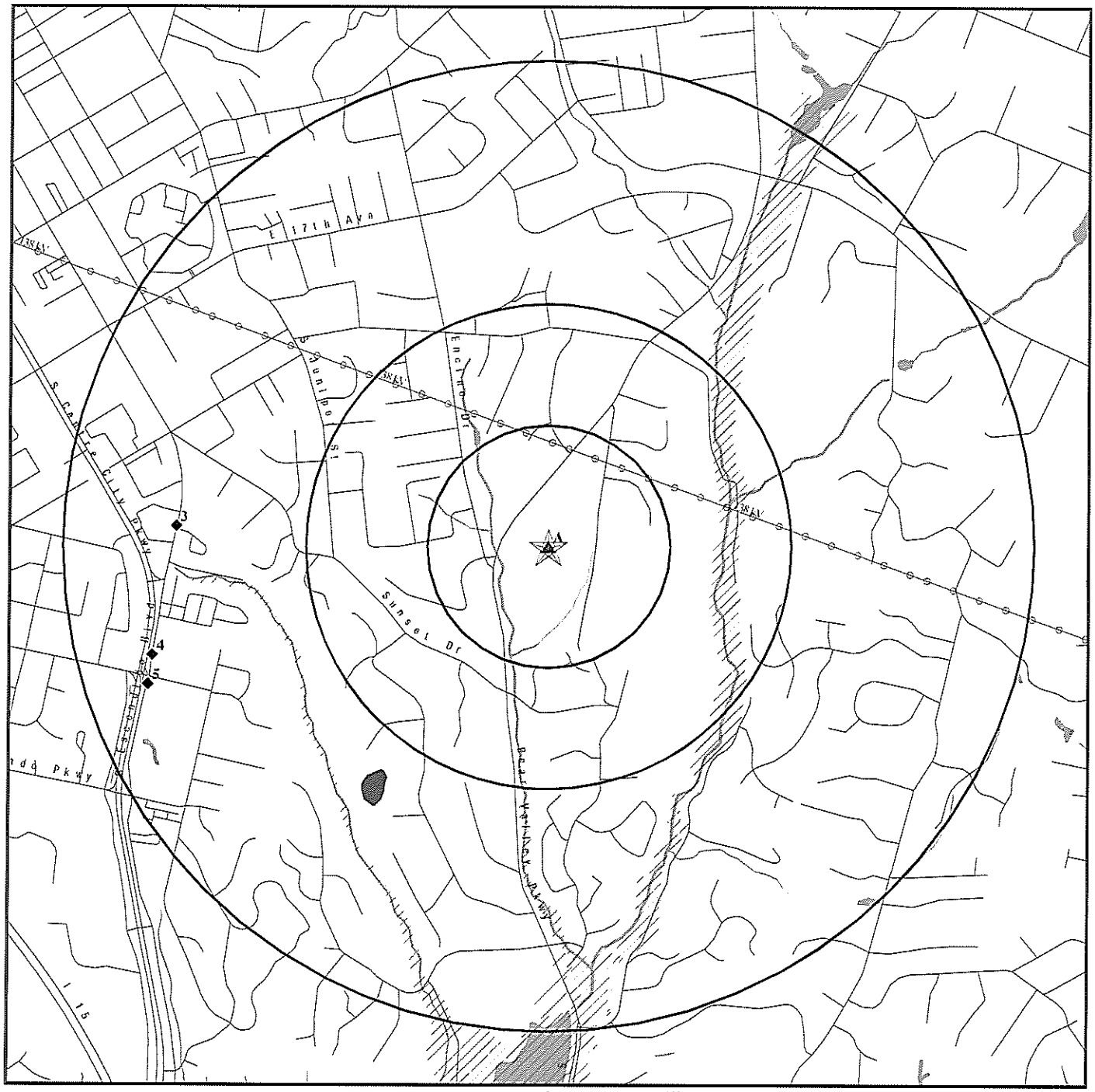
| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| LIFT STATION 3 | 2045 SO. ESCONDIDO BLVD | W 1/2 - 1 (0.768 mi.) | 3 | 9 |
| ARCO GASOLINE STATION | 2306 SO. ESCONDIDO BLVD | WSW 1/2 - 1 (0.872 mi.) | 5 | 11 |

# EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 15 records.

| Site Name | Database(s) |
|---|---|
| KONYN, FRANK J DAIRY | HIST CORTESE |
| SAN PASQUAL UNION SCHOOL DIST | LUST, SWEEPS UST, San Diego Co. HMMD |
| JUSTINE FENTON | SWEEPS UST, San Diego Co. HMMD |
| CHATHAM BROS | CERCLIS |
| SANTA YSABEL CREEK GROUNDWATER CON | CERCLIS, FINDS |
| DIXON DAM | SWF/LF |
| MAYHEW DUMP (ESCONDIDO I) | SWF/LF |
| BENTON DUMP | SWF/LF |
| A & W RANCH | AST |
| HILLEBRECHT CO | AST, San Diego Co. HMMD |
| 2500 BLOCK OF WOHLFORD RD | ERNS |
| LAKE WOHLFORD RESORT | FINDS |
| EUREKA RANCH, FORMER SPEITH & WOHL | SLIC, SAN DIEGO CO. SAM |
| VULCAN MATERIALS CO. | MINES |
| NORDIEGO II | SAN DIEGO CO. SAM |

# OVERVIEW MAP - 03491546.2r




- ☆ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

| | |
|---|---|
| SITE NAME: Spieth & Wohlford, Inc.<br>ADDRESS: 661 Bear Valley Parkway<br>Escondido CA 92025<br>LAT/LONG: 33.0981 / 117.0574 | CLIENT: Vinje & Middleton Engineering<br>CONTACT: Brad Crawshaw<br>INQUIRY #: 03491546.2r<br>DATE: January 09, 2013 6:22 pm |

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# DETAIL MAP - 03491546.2r

0 1/16 1/8 1/4 Miles

- ☆ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

| | |
|---|---|
| SITE NAME: Spieth & Wohlford, Inc.<br>ADDRESS: 661 Bear Valley Parkway<br>Escondido CA 92025<br>LAT/LONG: 33.0981 / 117.0574 | CLIENT: Vinje & Middleton Engineering<br>CONTACT: Brad Crawshaw<br>INQUIRY #: 03491546.2r<br>DATE: January 09, 2013 6:23 pm |

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# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| **STANDARD ENVIRONMENTAL RECORDS** | | | | | | | | |
| ***Federal NPL site list*** | | | | | | | | |
| NPL | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| Proposed NPL | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| NPL LIENS | TP | | NR | NR | NR | NR | NR | 0 |
| ***Federal Delisted NPL site list*** | | | | | | | | |
| Delisted NPL | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***Federal CERCLIS list*** | | | | | | | | |
| CERCLIS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| FEDERAL FACILITY | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal CERCLIS NFRAP site List*** | | | | | | | | |
| CERC-NFRAP | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal RCRA CORRACTS facilities list*** | | | | | | | | |
| CORRACTS | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***Federal RCRA non-CORRACTS TSD facilities list*** | | | | | | | | |
| RCRA-TSDF | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal RCRA generators list*** | | | | | | | | |
| RCRA-LQG | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| RCRA-SQG | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| RCRA-CESQG | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ***Federal institutional controls / engineering controls registries*** | | | | | | | | |
| US ENG CONTROLS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| US INST CONTROL | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| LUCIS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal ERNS list*** | | | | | | | | |
| ERNS | TP | | NR | NR | NR | NR | NR | 0 |
| ***State- and tribal - equivalent NPL*** | | | | | | | | |
| RESPONSE | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***State- and tribal - equivalent CERCLIS*** | | | | | | | | |
| ENVIROSTOR | 1.000 | | 0 | 0 | 0 | 1 | NR | 1 |
| ***State and tribal landfill and/or solid waste disposal site lists*** | | | | | | | | |
| SWF/LF | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***State and tribal leaking storage tank lists*** | | | | | | | | |
| LUST | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| SLIC | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| SAN DIEGO CO. SAM | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| INDIAN LUST | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***State and tribal registered storage tank lists*** | | | | | | | | |
| UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| AST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| INDIAN UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| FEMA UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ***State and tribal voluntary cleanup sites*** | | | | | | | | |
| INDIAN VCP | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| VCP | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| **ADDITIONAL ENVIRONMENTAL RECORDS** | | | | | | | | |
| ***Local Brownfield lists*** | | | | | | | | |
| US BROWNFIELDS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Local Lists of Landfill / Solid Waste Disposal Sites*** | | | | | | | | |
| DEBRIS REGION 9 | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ODI | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| WMUDS/SWAT | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| SWRCY | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| HAULERS | TP | | NR | NR | NR | NR | NR | 0 |
| INDIAN ODI | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Local Lists of Hazardous waste / Contaminated Sites*** | | | | | | | | |
| US CDL | TP | | NR | NR | NR | NR | NR | 0 |
| HIST Cal-Sites | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| SCH | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| Toxic Pits | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| CDL | TP | | NR | NR | NR | NR | NR | 0 |
| San Diego Co. HMMD | TP | 1 | NR | NR | NR | NR | NR | 1 |
| US HIST CDL | TP | | NR | NR | NR | NR | NR | 0 |
| ***Local Lists of Registered Storage Tanks*** | | | | | | | | |
| CA FID UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| HIST UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| SWEEPS UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ***Local Land Records*** | | | | | | | | |
| LIENS 2 | TP | | NR | NR | NR | NR | NR | 0 |
| LIENS | TP | | NR | NR | NR | NR | NR | 0 |
| DEED | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Records of Emergency Release Reports*** | | | | | | | | |
| HMIRS | TP | | NR | NR | NR | NR | NR | 0 |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| CHMIRS | TP | | NR | NR | NR | NR | NR | 0 |
| LDS | TP | | NR | NR | NR | NR | NR | 0 |
| MCS | TP | | NR | NR | NR | NR | NR | 0 |
| ***Other Ascertainable Records*** | | | | | | | | |
| RCRA-NonGen | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| DOT OPS | TP | | NR | NR | NR | NR | NR | 0 |
| DOD | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| FUDS | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| CONSENT | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ROD | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| UMTRA | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| MINES | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| TRIS | TP | | NR | NR | NR | NR | NR | 0 |
| TSCA | TP | | NR | NR | NR | NR | NR | 0 |
| FTTS | TP | | NR | NR | NR | NR | NR | 0 |
| HIST FTTS | TP | | NR | NR | NR | NR | NR | 0 |
| SSTS | TP | | NR | NR | NR | NR | NR | 0 |
| ICIS | TP | | NR | NR | NR | NR | NR | 0 |
| PADS | TP | | NR | NR | NR | NR | NR | 0 |
| MLTS | TP | | NR | NR | NR | NR | NR | 0 |
| RADINFO | TP | | NR | NR | NR | NR | NR | 0 |
| FINDS | TP | | NR | NR | NR | NR | NR | 0 |
| RAATS | TP | | NR | NR | NR | NR | NR | 0 |
| RMP | TP | | NR | NR | NR | NR | NR | 0 |
| CA BOND EXP. PLAN | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| NPDES | TP | | NR | NR | NR | NR | NR | 0 |
| UIC | TP | | NR | NR | NR | NR | NR | 0 |
| Cortese | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| HIST CORTESE | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| CUPA Listings | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| Notify 65 | 1.000 | | 0 | 0 | 0 | 2 | NR | 2 |
| DRYCLEANERS | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| WIP | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ENF | TP | | NR | NR | NR | NR | NR | 0 |
| HAZNET | TP | 1 | NR | NR | NR | NR | NR | 1 |
| EMI | TP | | NR | NR | NR | NR | NR | 0 |
| INDIAN RESERV | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| SCRD DRYCLEANERS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| EPA WATCH LIST | TP | | NR | NR | NR | NR | NR | 0 |
| WDS | TP | | NR | NR | NR | NR | NR | 0 |
| US AIRS | TP | | NR | NR | NR | NR | NR | 0 |
| PRP | TP | | NR | NR | NR | NR | NR | 0 |
| US FIN ASSUR | TP | | NR | NR | NR | NR | NR | 0 |
| 2020 COR ACTION | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| PCB TRANSFORMER | TP | | NR | NR | NR | NR | NR | 0 |
| PROC | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| MWMP | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| COAL ASH DOE | TP | | NR | NR | NR | NR | NR | 0 |
| COAL ASH EPA | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| HWT | 0.250 | | 0 | 0 | NR | NR | NR | 0 |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| HWP | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| Financial Assurance | TP | | NR | NR | NR | NR | NR | 0 |
| **EDR HIGH RISK HISTORICAL RECORDS** | | | | | | | | |
| ***EDR Exclusive Records*** | | | | | | | | |
| EDR MGP | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| EDR US Hist Auto Stat | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| EDR US Hist Cleaners | 0.250 | | 0 | 0 | NR | NR | NR | 0 |

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

**A1**
**Target Property**
**SPIETH & WOHLFORD INC**
**661 BEAR VALLEY PY**
**ESCONDIDO, CA 92025**

**San Diego Co. HMMD** **S104761447**
**N/A**

**Site 1 of 2 in cluster A**

**Actual:**
**618 ft.**

SAN DIEGO CO. HMMD:

| | |
|---|---|
| Facility Id: | 199458 |
| Business Type: | 6HKAG-AGRICULTURE SITE INSPECT BY AG, FEE EXEM |
| EPA Id Number: | Not reported |
| APN: | 237-131-01-00 |
| Last HMMD Inspection: | 06/04/1993 |
| Permit Status: | INAC |
| Permit Expiration: | 06/04/1993 |
| Facility Owner: | SPIETH & WOHLFORD INC |
| Facility Address: | 661 BEAR VALLEY PY |
| Facility City: | ESCONDIDO |
| Facility State: | CA |
| Facility Zip: | 92025-6701 |
| UST Owner: | Not reported |
| Handle Regulated Hazmat: | Not reported |
| Own Or Operate UST: | Not reported |
| Subject To APSA: | Not reported |
| Generate Haz Waste: | Not reported |
| Treat Haz Waste: | Not reported |
| Generate Medical Waste: | Not reported |

---

**A2**
**Target Property**
**SPIETH AND WOHLFORD INC.**
**661 BEAR VALLEY PKWY.**
**ESCONDIDO, CA 92025**

**HAZNET** **S103988990**
**N/A**

**Site 2 of 2 in cluster A**

**Actual:**
**618 ft.**

HAZNET:

| | |
|---|---|
| Year: | 1998 |
| Gepaid: | CAC001482952 |
| Contact: | BURNET F WOHLFORD |
| Telephone: | 7607455255 |
| Mailing Name: | Not reported |
| Mailing Address: | 3355 EAST VALLEY PKWY. |
| Mailing City,St,Zip: | ESCONDIDO, CA 920270000 |
| Gen County: | San Diego |
| TSD EPA ID: | CAT080025711 |
| TSD County: | San Bernardino |
| Waste Category: | Aqueous solution with total organic residues less than 10 percent |
| Disposal Method: | Recycler |
| Tons: | 4.1700 |
| Facility County: | San Diego |

**3**
**West**
**1/2-1**
**0.768 mi.**
**4057 ft.**

**LIFT STATION 3**
**2045 SO. ESCONDIDO BLVD.**
**ESCONDIDO, CA 92025**

**Notify 65** **S100178215**
**N/A**

**Relative:**
**Lower**

**Actual:**
**613 ft.**

Notify 65:

| | |
|---|---|
| Date Reported: | Not reported |
| Staff Initials: | Not reported |
| Board File Number: | Not reported |
| Facility Type: | Not reported |
| Discharge Date: | Not reported |
| Incident Description: | 92025-8207 |

---

**4**
**WSW**
**1/2-1**
**0.845 mi.**
**4464 ft.**

**BROTHERTON PLAZA**
**2250 S ESCONDIDO BL**
**ESCONDIDO, CA 92025**

**SLIC** **S106065979**
**San Diego Co. HMMD** **N/A**
**ENVIROSTOR**
**SAN DIEGO CO. SAM**

**Relative:**
**Lower**

**Actual:**
**613 ft.**

SLIC:

| | |
|---|---|
| Region: | STATE |
| **Facility Status:** | **Completed - Case Closed** |
| Status Date: | 04/05/2001 |
| Global Id: | T0608141457 |
| Lead Agency: | SAN DIEGO COUNTY LOP |
| Lead Agency Case Number: | H39422-001 |
| Latitude: | 33.094542 |
| Longitude: | -117.071077 |
| Case Type: | Cleanup Program Site |
| Case Worker: | NS |
| Local Agency: | SAN DIEGO COUNTY LOP |
| RB Case Number: | N/A |
| File Location: | Local Agency |
| Potential Media Affected: | Not reported |
| Potential Contaminants of Concern: | Not reported |
| Site History: | Not reported |

Click here to access the California GeoTracker records for this facility:

SAN DIEGO CO. HMMD:

| | |
|---|---|
| Facility Id: | 139422 |
| Business Type: | Business Activity Not Recorded |
| EPA Id Number: | Not reported |
| APN: | 236-390-50-00 |
| Last HMMD Inspection: | 01/03/2001 |
| Permit Status: | INAC |
| Permit Expiration: | Not reported |
| Facility Owner: | Not reported |
| Facility Address: | Not reported |
| Facility City: | Not reported |
| Facility State: | Not reported |
| Facility Zip: | Not reported |
| UST Owner: | Not reported |
| Handle Regulated Hazmat: | Not reported |
| Own Or Operate UST: | Not reported |
| Subject To APSA: | Not reported |
| Generate Haz Waste: | Not reported |
| Treat Haz Waste: | Not reported |

**BROTHERTON PLAZA (Continued)** S106065979

Generate Medical Waste: Not reported

ENVIROSTOR:
Site Type: Evaluation
Site Type Detailed: Evaluation
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Referred - Not Assigned
Division Branch: Cleanup Cypress
Facility ID: 37000025
Site Code: Not reported
Assembly: 75
Senate: 38
Special Program: Not reported
Status: Refer: 1248 Local Agency
Status Date: 03/07/2001
Restricted Use: NO
Site Mgmt. Req.: NONE SPECIFIED
Funding: Not Applicable
Latitude: 33.09456
Longitude: -117.0711
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: T0608141457
Alias Type: GeoTracker Global ID
Alias Name: 37000025
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: SB 1248 Notification
Completed Date: 03/07/2001
Comments: SB 1248 San Diego County

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SAN DIEGO CO. SAM:
Case Number: H39422-001
Agency: DEH Site Assessment & Mitigation
**Funding: Private - VAP**
Facility Type: Soils Only
Facility Status: Closed Case

**BROTHERTON PLAZA (Continued)** S106065979

Date: 4/5/2001
Date Began: 2/26/2001

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**5**
**WSW**
**1/2-1**
**0.872 mi.**
**4602 ft.**

**ARCO GASOLINE STATION**
**2306 SO. ESCONDIDO BLVD.**
**ESCONDIDO, CA 92025**

Notify 65 **S100178478**
N/A

**Relative:**
**Lower**

**Actual:**
**616 ft.**

Notify 65:
Date Reported: Not reported
Staff Initials: Not reported
Board File Number: Not reported
Facility Type: Not reported
Discharge Date: Not reported
Incident Description: 92025-7028

Count: 15 records.

ORPHAN SUMMARY

| City | EDR ID | Site Name | Site Address | Zip | Database(s) |
|---|---|---|---|---|---|
| ESCONDIDO | 1015730664 | CHATHAM BROS | 2257 BERNARDO AVE | 92025 | CERCLIS |
| ESCONDIDO | 93338283 | 2500 BLOCK OF WOHLFORD RD | 2500 BLOCK OF WOHLFORD RD | 92025 | ERNS |
| ESCONDIDO | S109349420 | DIXON DAM | DIXON DM & LAKE DIXON SPILLWA | | SWF/LF |
| ESCONDIDO | S109821542 | MAYHEW DUMP (ESCONDIDO I) | GREENWOOD PL | | SWF/LF |
| ESCONDIDO | 1000710152 | SANTA YSABEL CREEK GROUNDWATER CON | 15 MILES SE OF ESCONDIDO | 92025 | CERCLIS, FINDS |
| ESCONDIDO | S105023677 | KONYN, FRANK J DAIRY | OLD SAN PASQUAL RD | 92025 | HIST CORTESE |
| ESCONDIDO | S104761438 | A & W RANCH | 18990 SAN PASQUAL VALLEY R | 92027 | AST |
| ESCONDIDO | S104761106 | HILLEBRECHT CO | 17204 SAN PASQUAL VLY | 92027 | AST, San Diego Co. HMMD |
| ESCONDIDO | S104746355 | SAN PASQUAL UNION SCHOOL DIST | 16666 SAN PASQUAL VLY | 92027 | LUST, SWEEPS UST, San Diego Co. HMMD |
| ESCONDIDO | S109349416 | BENTON DUMP | STILWATER GLN | | SWF/LF |
| ESCONDIDO | 1014674714 | LAKE WOHLFORD RESORT | UNKNOWN | 92025 | FINDS |
| ESCONDIDO | S109118207 | EUREKA RANCH, FORMER SPEITH & WOHL | 0 VALLEY | 92027 | SLIC, SAN DIEGO CO. SAM |
| ESCONDIDO | S108407155 | NORDIEGO II | 1825 E VALLEY PARKWAY BLVD | 92027 | SAN DIEGO CO. SAM |
| SAN DIEGO | S104750034 | JUSTINE FENTON | 17141 SAN PASQUAL VALLEY R | 92027 | SWEEPS UST, San Diego Co. HMMD |
| SAN DIEGO COUNTY | M300003190 | VULCAN MATERIALS CO. | MISSION VALLEY (#022) | | MINES |

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Number of Days to Update:** Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

***Federal NPL site list***

NPL: National Priority List
National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 10/01/2012
Date Data Arrived at EDR: 10/11/2012
Date Made Active in Reports: 12/20/2012
Number of Days to Update: 70

Source: EPA
Telephone: N/A
Last EDR Contact: 01/04/2013
Next Scheduled EDR Contact: 04/22/2013
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites
A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 10/01/2012
Date Data Arrived at EDR: 10/11/2012
Date Made Active in Reports: 12/20/2012
Number of Days to Update: 70

Source: EPA
Telephone: N/A
Last EDR Contact: 01/04/2013
Next Scheduled EDR Contact: 04/22/2013
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens
Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

***Federal Delisted NPL site list***

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 10/01/2012
Date Data Arrived at EDR: 10/11/2012
Date Made Active in Reports: 12/20/2012
Number of Days to Update: 70

Source: EPA
Telephone: N/A
Last EDR Contact: 01/04/2013
Next Scheduled EDR Contact: 04/22/2013
Data Release Frequency: Quarterly

***Federal CERCLIS list***

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 11/02/2012
Date Data Arrived at EDR: 11/28/2012
Date Made Active in Reports: 01/07/2013
Number of Days to Update: 40

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 01/04/2013
Next Scheduled EDR Contact: 03/11/2013
Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 10/09/2012
Date Made Active in Reports: 12/20/2012
Number of Days to Update: 72

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 10/09/2012
Next Scheduled EDR Contact: 01/21/2013
Data Release Frequency: Varies

***Federal CERCLIS NFRAP site List***

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 11/02/2012
Date Data Arrived at EDR: 11/28/2012
Date Made Active in Reports: 01/07/2013
Number of Days to Update: 40

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 01/04/2013
Next Scheduled EDR Contact: 03/11/2013
Data Release Frequency: Quarterly

***Federal RCRA CORRACTS facilities list***

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 08/19/2011
Date Data Arrived at EDR: 08/31/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 132

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 11/12/2012
Next Scheduled EDR Contact: 02/25/2013
Data Release Frequency: Quarterly

***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 09/11/2012
Date Data Arrived at EDR: 10/04/2012
Date Made Active in Reports: 12/04/2012
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Quarterly

***Federal RCRA generators list***

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/11/2012
Date Data Arrived at EDR: 10/04/2012
Date Made Active in Reports: 12/04/2012
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 09/11/2012
Date Data Arrived at EDR: 10/04/2012
Date Made Active in Reports: 12/04/2012
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/11/2012
Date Data Arrived at EDR: 10/04/2012
Date Made Active in Reports: 12/04/2012
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

***Federal institutional controls / engineering controls registries***

US ENG CONTROLS: Engineering Controls Sites List
A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 07/18/2012
Date Data Arrived at EDR: 07/24/2012
Date Made Active in Reports: 11/05/2012
Number of Days to Update: 104

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 12/10/2012
Next Scheduled EDR Contact: 03/25/2013
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls
A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 07/18/2012
Date Data Arrived at EDR: 07/24/2012
Date Made Active in Reports: 11/05/2012
Number of Days to Update: 104

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 12/10/2012
Next Scheduled EDR Contact: 03/25/2013
Data Release Frequency: Varies

LUCIS: Land Use Control Information System
LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005
Date Data Arrived at EDR: 12/11/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 31

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 11/15/2012
Next Scheduled EDR Contact: 03/04/2013
Data Release Frequency: Varies

***Federal ERNS list***

ERNS: Emergency Response Notification System
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 04/02/2012
Date Data Arrived at EDR: 04/03/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 72

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 01/04/2013
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Annually

***State- and tribal - equivalent NPL***

RESPONSE: State Response Sites
Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 11/05/2012
Date Data Arrived at EDR: 11/06/2012
Date Made Active in Reports: 11/30/2012
Number of Days to Update: 24

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 12/06/2012
Next Scheduled EDR Contact: 02/18/2013
Data Release Frequency: Quarterly

***State- and tribal - equivalent CERCLIS***

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 11/05/2012
Date Data Arrived at EDR: 11/06/2012
Date Made Active in Reports: 11/30/2012
Number of Days to Update: 24

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 12/06/2012
Next Scheduled EDR Contact: 02/18/2013
Data Release Frequency: Quarterly

***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/19/2012
Date Data Arrived at EDR: 11/19/2012
Date Made Active in Reports: 01/04/2013
Number of Days to Update: 46

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 11/19/2012
Next Scheduled EDR Contact: 03/04/2013
Data Release Frequency: Quarterly

***State and tribal leaking storage tank lists***

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 10/17/2012
Date Data Arrived at EDR: 10/18/2012
Date Made Active in Reports: 11/07/2012
Number of Days to Update: 20

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 12/17/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Quarterly

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC: Statewide SLIC Cases
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 10/17/2012
Date Data Arrived at EDR: 10/18/2012
Date Made Active in Reports: 11/07/2012
Number of Days to Update: 20

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/17/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 08/01/2012
Date Data Arrived at EDR: 08/02/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 75

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/30/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Quarterly

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 12/14/2011
Date Data Arrived at EDR: 12/15/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 26

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Semi-Annually

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 08/17/2012
Date Data Arrived at EDR: 08/28/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 49

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 09/12/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 59

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/12/2012
Date Data Arrived at EDR: 05/09/2012
Date Made Active in Reports: 07/10/2012
Number of Days to Update: 62

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 11/01/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 09/06/2012
Date Data Arrived at EDR: 09/07/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Quarterly

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/27/2012
Date Data Arrived at EDR: 08/28/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 49

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Quarterly

***State and tribal registered storage tank lists***

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 10/17/2012
Date Data Arrived at EDR: 10/18/2012
Date Made Active in Reports: 11/07/2012
Number of Days to Update: 20

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 12/18/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
Registered Aboveground Storage Tanks.

Date of Government Version: 08/01/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 916-327-5092
Last EDR Contact: 01/07/2013
Next Scheduled EDR Contact: 04/22/2013
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/12/2012
Date Data Arrived at EDR: 05/02/2012
Date Made Active in Reports: 07/16/2012
Number of Days to Update: 75

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 11/01/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 12/14/2011
Date Data Arrived at EDR: 12/15/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 26

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 08/02/2012
Date Data Arrived at EDR: 08/03/2012
Date Made Active in Reports: 11/05/2012
Number of Days to Update: 94

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/10/2011
Date Data Arrived at EDR: 05/11/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 34

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 08/17/2012
Date Data Arrived at EDR: 08/28/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 49

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 08/27/2012
Date Data Arrived at EDR: 08/28/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 49

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 08/01/2012
Date Data Arrived at EDR: 08/02/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 75

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 09/06/2012
Date Data Arrived at EDR: 09/07/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 39

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Quarterly

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 10/15/2012
Next Scheduled EDR Contact: 01/28/2013
Data Release Frequency: Varies

***State and tribal voluntary cleanup sites***

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 09/28/2012
Date Data Arrived at EDR: 10/02/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 14

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 01/04/2013
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 11/05/2012
Date Data Arrived at EDR: 11/06/2012
Date Made Active in Reports: 11/30/2012
Number of Days to Update: 24

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 12/06/2012
Next Scheduled EDR Contact: 02/18/2013
Data Release Frequency: Quarterly

## ADDITIONAL ENVIRONMENTAL RECORDS

### *Local Brownfield lists*

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/10/2012
Date Data Arrived at EDR: 12/11/2012
Date Made Active in Reports: 12/20/2012
Number of Days to Update: 9

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 12/11/2012
Next Scheduled EDR Contact: 04/08/2013
Data Release Frequency: Semi-Annually

### *Local Lists of Landfill / Solid Waste Disposal Sites*

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/03/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: No Update Planned

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 11/12/2012
Next Scheduled EDR Contact: 02/25/2013
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 09/17/2012
Date Data Arrived at EDR: 09/19/2012
Date Made Active in Reports: 10/12/2012
Number of Days to Update: 23

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/20/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 11/15/2012
Date Data Arrived at EDR: 11/20/2012
Date Made Active in Reports: 01/04/2013
Number of Days to Update: 45

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 12/14/2012
Next Scheduled EDR Contact: 03/04/2013
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 11/05/2012
Next Scheduled EDR Contact: 02/18/2013
Data Release Frequency: Varies

***Local Lists of Hazardous waste / Contaminated Sites***

US CDL: Clandestine Drug Labs
A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 07/11/2012
Date Data Arrived at EDR: 09/12/2012
Date Made Active in Reports: 11/05/2012
Number of Days to Update: 54

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 12/03/2012
Next Scheduled EDR Contact: 03/18/2013
Data Release Frequency: Quarterly

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 11/05/2012
Date Data Arrived at EDR: 11/06/2012
Date Made Active in Reports: 11/30/2012
Number of Days to Update: 24

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 12/06/2012
Next Scheduled EDR Contact: 02/18/2013
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 06/30/2012
Date Data Arrived at EDR: 09/12/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 21

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 12/28/2012
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 11/19/2008
Date Made Active in Reports: 03/30/2009
Number of Days to Update: 131

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

***Local Lists of Registered Storage Tanks***

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/23/2009
Date Data Arrived at EDR: 09/23/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 12/03/2012
Next Scheduled EDR Contact: 03/18/2013
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

***Local Land Records***

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/16/2012
Date Data Arrived at EDR: 03/26/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 80

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 11/01/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Varies

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 09/18/2012
Date Data Arrived at EDR: 09/19/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 14

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 12/10/2012
Next Scheduled EDR Contact: 03/25/2013
Data Release Frequency: Varies

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 09/10/2012
Date Data Arrived at EDR: 09/11/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 22

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 12/11/2012
Next Scheduled EDR Contact: 03/25/2013
Data Release Frequency: Semi-Annually

***Records of Emergency Release Reports***

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 04/01/2012
Date Data Arrived at EDR: 04/03/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 72

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Annually

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 03/28/2012
Date Data Arrived at EDR: 05/01/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 24

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 11/02/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 10/17/2012
Date Data Arrived at EDR: 10/18/2012
Date Made Active in Reports: 11/07/2012
Number of Days to Update: 20

Source: State Water Quality Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/17/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 10/17/2012
Date Data Arrived at EDR: 10/18/2012
Date Made Active in Reports: 11/07/2012
Number of Days to Update: 20

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/17/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Quarterly

***Other Ascertainable Records***

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

RCRA-NonGen: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 09/11/2012
Date Data Arrived at EDR: 10/04/2012
Date Made Active in Reports: 12/04/2012
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 11/06/2012
Next Scheduled EDR Contact: 02/18/2013
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 10/18/2012
Next Scheduled EDR Contact: 01/28/2013
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 08/12/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 112

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 12/10/2012
Next Scheduled EDR Contact: 03/25/2013
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 10/01/2012
Date Data Arrived at EDR: 10/19/2012
Date Made Active in Reports: 12/20/2012
Number of Days to Update: 62

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 12/28/2012
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 02/27/2012
Date Data Arrived at EDR: 03/14/2012
Date Made Active in Reports: 06/14/2012
Number of Days to Update: 92

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 12/11/2012
Next Scheduled EDR Contact: 03/25/2013
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 11/28/2012
Next Scheduled EDR Contact: 03/11/2013
Data Release Frequency: Varies

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/18/2011
Date Data Arrived at EDR: 09/08/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 21

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 12/05/2012
Next Scheduled EDR Contact: 03/18/2013
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 09/01/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 131

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 11/28/2012
Next Scheduled EDR Contact: 03/11/2013
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 64

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/28/2012
Next Scheduled EDR Contact: 04/08/2013
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 11/26/2012
Next Scheduled EDR Contact: 03/11/2013
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 11/26/2012
Next Scheduled EDR Contact: 03/11/2013
Data Release Frequency: Quarterly

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 11/01/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 07/20/2011
Date Data Arrived at EDR: 11/10/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 10/19/2012
Next Scheduled EDR Contact: 01/28/2013
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 11/01/2010
Date Data Arrived at EDR: 11/10/2010
Date Made Active in Reports: 02/16/2011
Number of Days to Update: 98

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/19/2012
Next Scheduled EDR Contact: 01/28/2013
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 06/21/2011
Date Data Arrived at EDR: 07/15/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 60

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 12/10/2012
Next Scheduled EDR Contact: 03/25/2013
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 10/02/2012
Date Data Arrived at EDR: 10/02/2012
Date Made Active in Reports: 11/05/2012
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/09/2013
Next Scheduled EDR Contact: 04/22/2013
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 10/23/2011
Date Data Arrived at EDR: 12/13/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 79

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 12/11/2012
Next Scheduled EDR Contact: 03/25/2013
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 05/08/2012
Date Data Arrived at EDR: 05/25/2012
Date Made Active in Reports: 07/10/2012
Number of Days to Update: 46

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 11/01/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 03/01/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 62

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 11/30/2012
Next Scheduled EDR Contact: 03/11/2013
Data Release Frequency: Biennially

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UIC: UIC Listing

A listing of underground control injection wells.

Date of Government Version: 08/14/2012
Date Data Arrived at EDR: 09/19/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 14

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 12/21/2012
Next Scheduled EDR Contact: 12/31/2012
Data Release Frequency: Varies

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 08/20/2012
Date Data Arrived at EDR: 08/20/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 44

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/19/2012
Next Scheduled EDR Contact: 03/04/2013
Data Release Frequency: Quarterly

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 10/01/2012
Date Data Arrived at EDR: 10/02/2012
Date Made Active in Reports: 10/23/2012
Number of Days to Update: 21

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NOTIFY 65: Proposition 65 Records

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 12/18/2012
Next Scheduled EDR Contact: 04/08/2013
Data Release Frequency: No Update Planned

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 12/11/2012
Date Data Arrived at EDR: 12/12/2012
Date Made Active in Reports: 01/04/2013
Number of Days to Update: 23

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 12/10/2012
Next Scheduled EDR Contact: 12/24/2012
Data Release Frequency: Annually

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 12/28/2012
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 08/15/2011
Date Data Arrived at EDR: 08/23/2011
Date Made Active in Reports: 10/03/2011
Number of Days to Update: 41

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/15/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 06/22/2012
Date Made Active in Reports: 07/06/2012
Number of Days to Update: 14

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 10/15/2012
Next Scheduled EDR Contact: 01/28/2013
Data Release Frequency: Annually

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 10/18/2010
Number of Days to Update: 19

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 12/28/2012
Next Scheduled EDR Contact: 04/08/2013
Data Release Frequency: Varies

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/18/2012
Next Scheduled EDR Contact: 01/28/2013
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing
The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 10/22/2012
Next Scheduled EDR Contact: 02/04/2013
Data Release Frequency: Varies

COAL ASH DOE: Steam-Electric Plan Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 10/16/2012
Next Scheduled EDR Contact: 01/28/2013
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 08/17/2010
Date Data Arrived at EDR: 01/03/2011
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 12/11/2012
Next Scheduled EDR Contact: 03/25/2013
Data Release Frequency: Varies

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 10/15/2012
Date Data Arrived at EDR: 10/16/2012
Date Made Active in Reports: 11/07/2012
Number of Days to Update: 22

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 10/16/2012
Next Scheduled EDR Contact: 01/28/2013
Data Release Frequency: Quarterly

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 11/26/2012
Date Data Arrived at EDR: 11/28/2012
Date Made Active in Reports: 01/09/2013
Number of Days to Update: 42

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/28/2012
Next Scheduled EDR Contact: 03/11/2013
Data Release Frequency: Quarterly

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 11/19/2012
Date Data Arrived at EDR: 11/20/2012
Date Made Active in Reports: 01/04/2013
Number of Days to Update: 45

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 11/16/2012
Next Scheduled EDR Contact: 03/04/2013
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 06/01/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 28

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 11/02/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Varies

2020 COR ACTION: 2020 Corrective Action Program List
The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 11/11/2011
Date Data Arrived at EDR: 05/18/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 08/16/2012
Next Scheduled EDR Contact: 11/26/2012
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands
Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 10/18/2012
Next Scheduled EDR Contact: 01/28/2013
Data Release Frequency: N/A

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 10/01/2012
Date Data Arrived at EDR: 10/04/2012
Date Made Active in Reports: 11/05/2012
Number of Days to Update: 32

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Quarterly

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 11/26/2012
Next Scheduled EDR Contact: 03/11/2013
Data Release Frequency: Quarterly

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)
The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 01/18/2012
Date Data Arrived at EDR: 01/27/2012
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 34

Source: EPA
Telephone: 202-564-5962
Last EDR Contact: 12/28/2012
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 01/18/2012
Date Data Arrived at EDR: 01/27/2012
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 34

Source: EPA
Telephone: 202-564-5962
Last EDR Contact: 12/28/2012
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Annually

EPA WATCH LIST: EPA WATCH LIST
EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/13/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 11/12/2012
Next Scheduled EDR Contact: 02/25/2013
Data Release Frequency: Quarterly

US FIN ASSUR: Financial Assurance Information
All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 08/20/2012
Date Data Arrived at EDR: 08/28/2012
Date Made Active in Reports: 11/05/2012
Number of Days to Update: 69

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 11/16/2012
Next Scheduled EDR Contact: 03/04/2013
Data Release Frequency: Quarterly

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 11/02/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Varies

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 09/17/2012
Date Data Arrived at EDR: 09/19/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 14

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/20/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 09/06/2012
Date Data Arrived at EDR: 09/12/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 21

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 12/10/2012
Next Scheduled EDR Contact: 03/25/2013
Data Release Frequency: Varies

**EDR HIGH RISK HISTORICAL RECORDS**

***EDR Exclusive Records***

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR US Hist Auto Stat: EDR Exclusive Historic Gas Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

**COUNTY RECORDS**

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 10/09/2012
Date Data Arrived at EDR: 10/12/2012
Date Made Active in Reports: 11/07/2012
Number of Days to Update: 26

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 12/28/2012
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 10/09/2012
Date Data Arrived at EDR: 10/12/2012
Date Made Active in Reports: 10/24/2012
Number of Days to Update: 12

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 12/28/2012
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Semi-Annually

BUTTE COUNTY:

CUPA Facility Listing

Cupa facility list.

Date of Government Version: 10/16/2012
Date Data Arrived at EDR: 10/17/2012
Date Made Active in Reports: 11/13/2012
Number of Days to Update: 27

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 10/15/2012
Next Scheduled EDR Contact: 01/28/2013
Data Release Frequency: Varies

COLUSA COUNTY:

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA Facility List
Cupa facility list.

Date of Government Version: 08/16/2012
Date Data Arrived at EDR: 08/22/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 42

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 01/02/2013
Next Scheduled EDR Contact: 02/25/2013
Data Release Frequency: Varies

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 10/10/2012
Date Data Arrived at EDR: 10/11/2012
Date Made Active in Reports: 11/07/2012
Number of Days to Update: 27

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 11/05/2012
Next Scheduled EDR Contact: 02/18/2013
Data Release Frequency: Semi-Annually

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 08/20/2012
Date Data Arrived at EDR: 08/22/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 42

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 11/05/2012
Next Scheduled EDR Contact: 02/18/2013
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 09/30/2012
Date Data Arrived at EDR: 10/05/2012
Date Made Active in Reports: 10/23/2012
Number of Days to Update: 18

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 10/28/2012
Next Scheduled EDR Contact: 01/28/2013
Data Release Frequency: Semi-Annually

HUMBOLDT COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 09/10/2012
Date Data Arrived at EDR: 09/11/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 22

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 11/26/2012
Next Scheduled EDR Contact: 03/11/2013
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 05/01/2012
Date Data Arrived at EDR: 05/02/2012
Date Made Active in Reports: 06/11/2012
Number of Days to Update: 40

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 10/04/2012
Next Scheduled EDR Contact: 11/12/2012
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 06/26/2012
Date Data Arrived at EDR: 06/27/2012
Date Made Active in Reports: 08/17/2012
Number of Days to Update: 51

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 11/26/2012
Next Scheduled EDR Contact: 03/11/2013
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 08/31/2010
Date Data Arrived at EDR: 09/01/2010
Date Made Active in Reports: 09/30/2010
Number of Days to Update: 29

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 11/12/2012
Next Scheduled EDR Contact: 02/25/2013
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List
A listing of sites included in the county?s Certified Unified Program Agency database. California?s Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 07/10/2012
Date Data Arrived at EDR: 07/12/2012
Date Made Active in Reports: 09/06/2012
Number of Days to Update: 56

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 12/10/2012
Next Scheduled EDR Contact: 03/11/2013
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 12/18/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 06/28/2012
Date Data Arrived at EDR: 09/25/2012
Date Made Active in Reports: 10/23/2012
Number of Days to Update: 28

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 07/16/2012
Next Scheduled EDR Contact: 10/26/2012
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 10/22/2012
Date Data Arrived at EDR: 10/23/2012
Date Made Active in Reports: 11/30/2012
Number of Days to Update: 38

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 10/23/2012
Next Scheduled EDR Contact: 02/04/2013
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/05/2009
Date Data Arrived at EDR: 03/10/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 29

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 11/16/2012
Next Scheduled EDR Contact: 03/04/2013
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 12/29/2011
Date Data Arrived at EDR: 02/02/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 19

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 10/22/2012
Next Scheduled EDR Contact: 02/04/2013
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 10/23/2012
Date Data Arrived at EDR: 10/25/2012
Date Made Active in Reports: 11/30/2012
Number of Days to Update: 36

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 10/22/2012
Next Scheduled EDR Contact: 02/04/2013
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/28/2003
Date Data Arrived at EDR: 10/23/2003
Date Made Active in Reports: 11/26/2003
Number of Days to Update: 34

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 11/01/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 10/15/2012
Date Data Arrived at EDR: 10/19/2012
Date Made Active in Reports: 11/07/2012
Number of Days to Update: 19

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 10/15/2012
Next Scheduled EDR Contact: 01/28/2013
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List

A listing of sites included in the county?s Certified Unified Program Agency database. California?s Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 09/17/2012
Date Data Arrived at EDR: 09/18/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 15

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 11/26/2012
Next Scheduled EDR Contact: 03/11/2013
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 07/24/2012
Date Data Arrived at EDR: 07/31/2012
Date Made Active in Reports: 09/14/2012
Number of Days to Update: 45

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 01/07/2013
Next Scheduled EDR Contact: 04/22/2013
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 09/18/2012
Date Data Arrived at EDR: 09/19/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 14

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 12/18/2012
Next Scheduled EDR Contact: 03/11/2013
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing

CUPA Program listing from the Environmental Health Division.

Date of Government Version: 09/18/2012
Date Data Arrived at EDR: 09/18/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 15

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 11/26/2012
Next Scheduled EDR Contact: 03/11/2013
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination

A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 12/03/2012
Next Scheduled EDR Contact: 03/18/2013
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 12/05/2012
Next Scheduled EDR Contact: 03/18/2013
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 11/05/2012
Date Data Arrived at EDR: 11/06/2012
Date Made Active in Reports: 11/30/2012
Number of Days to Update: 24

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 11/05/2012
Next Scheduled EDR Contact: 02/18/2013
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 11/05/2012
Date Data Arrived at EDR: 11/16/2012
Date Made Active in Reports: 12/03/2012
Number of Days to Update: 17

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/12/2012
Next Scheduled EDR Contact: 02/25/2013
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 11/05/2012
Date Data Arrived at EDR: 11/16/2012
Date Made Active in Reports: 12/03/2012
Number of Days to Update: 17

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/05/2012
Next Scheduled EDR Contact: 02/25/2013
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 11/05/2012
Date Data Arrived at EDR: 11/15/2012
Date Made Active in Reports: 12/03/2012
Number of Days to Update: 18

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/12/2012
Next Scheduled EDR Contact: 02/25/2013
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 09/05/2012
Date Data Arrived at EDR: 09/11/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 22

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 12/10/2012
Next Scheduled EDR Contact: 03/25/2013
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 10/16/2012
Date Data Arrived at EDR: 10/18/2012
Date Made Active in Reports: 11/07/2012
Number of Days to Update: 20

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/26/2012
Next Scheduled EDR Contact: 04/08/2013
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 10/16/2012
Date Data Arrived at EDR: 10/18/2012
Date Made Active in Reports: 11/07/2012
Number of Days to Update: 20

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/26/2012
Next Scheduled EDR Contact: 04/08/2013
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 08/01/2012
Date Data Arrived at EDR: 10/11/2012
Date Made Active in Reports: 11/02/2012
Number of Days to Update: 22

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/07/2013
Next Scheduled EDR Contact: 04/22/2013
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 08/08/2012
Date Data Arrived at EDR: 10/11/2012
Date Made Active in Reports: 11/13/2012
Number of Days to Update: 33

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/07/2013
Next Scheduled EDR Contact: 04/22/2013
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 08/29/2012
Date Data Arrived at EDR: 08/30/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 34

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 11/12/2012
Next Scheduled EDR Contact: 02/25/2013
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 08/17/2012
Date Data Arrived at EDR: 08/20/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 44

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 01/02/2013
Next Scheduled EDR Contact: 03/25/2013
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2012
Date Data Arrived at EDR: 11/06/2012
Date Made Active in Reports: 11/30/2012
Number of Days to Update: 24

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 07/26/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Varies

Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 12/10/2012
Next Scheduled EDR Contact: 03/25/2013
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 11/12/2012
Next Scheduled EDR Contact: 02/25/2013
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 11/12/2012
Next Scheduled EDR Contact: 02/25/2013
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST

A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 09/24/2012
Date Data Arrived at EDR: 09/25/2012
Date Made Active in Reports: 10/23/2012
Number of Days to Update: 28

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 01/07/2013
Next Scheduled EDR Contact: 04/08/2013
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 09/24/2012
Date Data Arrived at EDR: 09/25/2012
Date Made Active in Reports: 11/02/2012
Number of Days to Update: 38

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 11/26/2012
Next Scheduled EDR Contact: 03/11/2013
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 10/17/2012
Date Data Arrived at EDR: 10/19/2012
Date Made Active in Reports: 11/13/2012
Number of Days to Update: 25

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 12/12/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 09/13/2012
Date Data Arrived at EDR: 09/18/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 15

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 12/12/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 12/10/2012
Next Scheduled EDR Contact: 03/11/2013
Data Release Frequency: Varies

SANTA CLARA COUNTY:

HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 09/04/2012
Date Data Arrived at EDR: 09/06/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 27

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 12/03/2012
Next Scheduled EDR Contact: 03/18/2013
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/13/2012
Date Data Arrived at EDR: 11/14/2012
Date Made Active in Reports: 12/03/2012
Number of Days to Update: 19

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 11/12/2012
Next Scheduled EDR Contact: 02/25/2013
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List
CUPA facility listing.

Date of Government Version: 08/23/2012
Date Data Arrived at EDR: 08/28/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 36

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 11/26/2012
Next Scheduled EDR Contact: 03/11/2013
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 08/22/2012
Date Data Arrived at EDR: 08/28/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 36

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 11/26/2012
Next Scheduled EDR Contact: 03/11/2013
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 09/14/2012
Date Data Arrived at EDR: 10/05/2012
Date Made Active in Reports: 10/23/2012
Number of Days to Update: 18

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 12/12/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 09/14/2012
Date Data Arrived at EDR: 10/09/2012
Date Made Active in Reports: 10/23/2012
Number of Days to Update: 14

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 12/12/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Quarterly

SONOMA COUNTY:

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 10/02/2012
Date Data Arrived at EDR: 10/03/2012
Date Made Active in Reports: 10/23/2012
Number of Days to Update: 20

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 12/28/2012
Next Scheduled EDR Contact: 04/15/2013
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks

Underground storage tank sites located in Sutter county.

Date of Government Version: 09/06/2012
Date Data Arrived at EDR: 09/11/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 22

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 12/10/2012
Next Scheduled EDR Contact: 03/25/2013
Data Release Frequency: Semi-Annually

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 03/30/2012
Date Data Arrived at EDR: 05/25/2012
Date Made Active in Reports: 07/06/2012
Number of Days to Update: 42

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 11/21/2012
Next Scheduled EDR Contact: 03/04/2013
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/07/2013
Next Scheduled EDR Contact: 04/22/2013
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 11/15/2012
Next Scheduled EDR Contact: 03/04/2013
Data Release Frequency: Quarterly

Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 10/29/2012
Date Data Arrived at EDR: 11/06/2012
Date Made Active in Reports: 12/03/2012
Number of Days to Update: 27

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 11/01/2012
Next Scheduled EDR Contact: 02/11/2013
Data Release Frequency: Quarterly

Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 08/27/2012
Date Data Arrived at EDR: 09/20/2012
Date Made Active in Reports: 10/23/2012
Number of Days to Update: 33

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/17/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 10/02/2012
Date Data Arrived at EDR: 10/04/2012
Date Made Active in Reports: 10/23/2012
Number of Days to Update: 19

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 12/18/2012
Next Scheduled EDR Contact: 04/08/2013
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 08/16/2012
Date Data Arrived at EDR: 08/16/2012
Date Made Active in Reports: 10/03/2012
Number of Days to Update: 48

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 11/05/2012
Next Scheduled EDR Contact: 02/18/2013
Data Release Frequency: Varies

**OTHER DATABASE(S)**

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 11/19/2012
Date Data Arrived at EDR: 11/19/2012
Date Made Active in Reports: 01/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 11/19/2012
Next Scheduled EDR Contact: 03/04/2013
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/19/2012
Date Made Active in Reports: 08/28/2012
Number of Days to Update: 40

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 10/16/2012
Next Scheduled EDR Contact: 01/28/2013
Data Release Frequency: Annually

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 11/01/2012
Date Data Arrived at EDR: 11/07/2012
Date Made Active in Reports: 12/11/2012
Number of Days to Update: 34

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 11/07/2012
Next Scheduled EDR Contact: 02/18/2013
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/23/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 57

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 10/22/2012
Next Scheduled EDR Contact: 02/04/2013
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 06/22/2012
Date Made Active in Reports: 07/31/2012
Number of Days to Update: 39

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 11/26/2012
Next Scheduled EDR Contact: 03/11/2013
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/19/2012
Date Made Active in Reports: 09/27/2012
Number of Days to Update: 70

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 12/13/2012
Next Scheduled EDR Contact: 04/01/2013
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: Rextag Strategies Corp.
Telephone: (281) 769-2247
U.S. Electric Transmission and Power Plants Systems Digital GIS Data

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

**STREET AND ADDRESS INFORMATION**

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# GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

**TARGET PROPERTY ADDRESS**

SPIETH & WOHLFORD, INC.
661 BEAR VALLEY PARKWAY
ESCONDIDO, CA 92025

**TARGET PROPERTY COORDINATES**

| | |
|---|---|
| Latitude (North): | 33.0981 - 33° 5' 53.16" |
| Longitude (West): | 117.0574 - 117° 3' 26.64" |
| Universal Tranverse Mercator: | Zone 11 |
| UTM X (Meters): | 494643.8 |
| UTM Y (Meters): | 3661972.5 |
| Elevation: | 618 ft. above sea level |

**USGS TOPOGRAPHIC MAP**

| | |
|---|---|
| Target Property Map: | 33117-A1 ESCONDIDO, CA |
| Most Recent Revision: | 1975 |

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

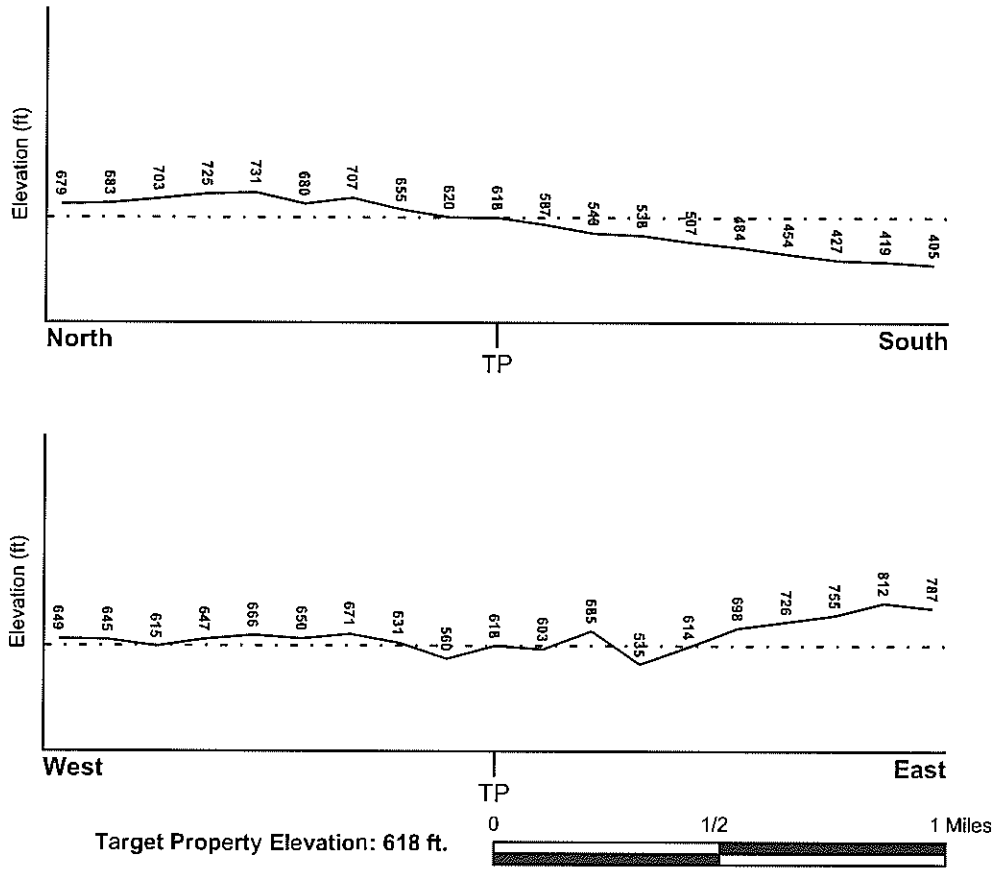
## TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

### TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General South

### SURROUNDING TOPOGRAPHY: ELEVATION PROFILES




Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

### FEMA FLOOD ZONE

| Target Property County | FEMA Flood Electronic Data |
|---|---|
| SAN DIEGO, CA | YES - refer to the Overview Map and Detail Map |

| | |
|---|---|
| Flood Plain Panel at Target Property: | 06073C - FEMA DFIRM Flood data |
| Additional Panels in search area: | Not Reported |

### NATIONAL WETLAND INVENTORY

| NWI Quad at Target Property | NWI Electronic Data Coverage |
|---|---|
| ESCONDIDO | YES - refer to the Overview Map and Detail Map |

## HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

***Site-Specific Hydrogeological Data*:***

| | |
|---|---|
| Search Radius: | 1.25 miles |
| Status: | Not found |

## AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

| MAP ID | LOCATION FROM TP | GENERAL DIRECTION GROUNDWATER FLOW |
|---|---|---|
| 1 | 1/2 - 1 Mile WSW | Varies |

For additional site information, refer to Physical Setting Source Map Findings.

* ©1995 Site-specific hydrogeological data gathered by CERCLIS Alert, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

## GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

**ROCK STRATIGRAPHIC UNIT**

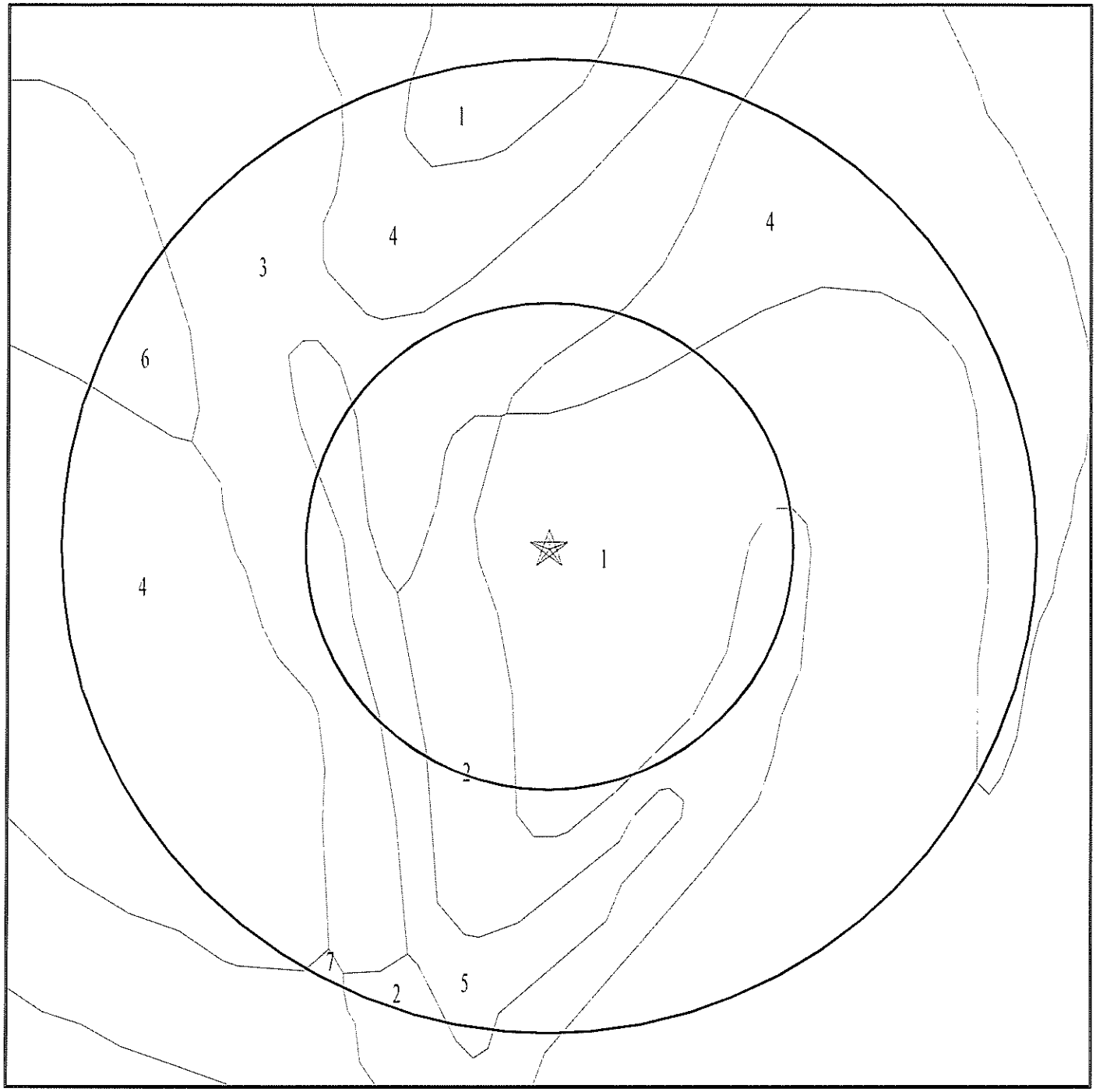
| | |
|---|---|
| Era: | Mesozoic |
| System: | Cretaceous |
| Series: | Cretaceous granitic rocks |
| Code: | Kg *(decoded above as Era, System & Series)* |

**GEOLOGIC AGE IDENTIFICATION**

Category: Plutonic and Intrusive Rocks

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

# SSURGO SOIL MAP - 03491546.2r




☆ Target Property
SSURGO Soil
Water

| | | | |
|---|---|---|---|
| SITE NAME: | Spieth & Wohlford, Inc. | CLIENT: | Vinje & Middleton Engineering |
| ADDRESS: | 661 Bear Valley Parkway<br>Escondido CA 92025 | CONTACT: | Brad Crawshaw |
| | | INQUIRY #: | 03491546.2r |
| LAT/LONG: | 33.0981 / 117.0574 | DATE: | January 09, 2013 6:24 pm |

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# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY**

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

---

**Soil Map ID: 1**

Soil Component Name: FALLBROOK

Soil Surface Texture: sandy loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | Soil Reaction (pH) |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | |
| 1 | 0 inches | 1 inches | sandy loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | Not reported | Max: Min: | Max: Min: |
| 2 | 1 inches | 24 inches | sandy clay loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | Not reported | Max: Min: | Max: Min: |
| 3 | 24 inches | 27 inches | sandy loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | Not reported | Max: Min: | Max: Min: |
| 4 | 27 inches | 31 inches | weathered bedrock | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | Not reported | Max: Min: | Max: Min: |

**Soil Map ID: 2**

Soil Component Name: RAMONA

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

**Soil Layer Information**

| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | Soil Reaction (pH) |
|---|---|---|---|---|---|---|---|
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | |
| 1 | 0 inches | 9 inches | sandy loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. | Max: 4<br>Min: 1.4 | Max: 7.3<br>Min: 6.6 |
| 2 | 9 inches | 59 inches | sandy clay loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. | Max: 4<br>Min: 1.4 | Max: 7.3<br>Min: 6.6 |
| 3 | 59 inches | 74 inches | sandy clay loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. | Max: 4<br>Min: 1.4 | Max: 7.3<br>Min: 6.6 |

**Soil Map ID: 3**

Soil Component Name: RAMONA

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

**Soil Layer Information**

| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | Soil Reaction (pH) |
|---|---|---|---|---|---|---|---|
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | |
| 1 | 0 inches | 16 inches | sandy loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. | Max: 4<br>Min: 1.4 | Max: 7.3<br>Min: 6.6 |
| 2 | 16 inches | 59 inches | sandy clay loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. | Max: 4<br>Min: 1.4 | Max: 7.3<br>Min: 6.6 |
| 3 | 59 inches | 74 inches | sandy clay loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. | Max: 4<br>Min: 1.4 | Max: 7.3<br>Min: 6.6 |

---

**Soil Map ID: 4**

Soil Component Name: FALLBROOK

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | Soil Reaction (pH) |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | |
| 1 | 0 inches | 5 inches | sandy loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | Not reported | Max:<br>Min: | Max: Min: |
| 2 | 5 inches | 11 inches | loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | Not reported | Max:<br>Min: | Max: Min: |
| 3 | 11 inches | 27 inches | sandy clay loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | Not reported | Max:<br>Min: | Max: Min: |
| 4 | 27 inches | 46 inches | loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | Not reported | Max:<br>Min: | Max: Min: |
| 5 | 46 inches | 51 inches | weathered bedrock | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | Not reported | Max:<br>Min: | Max: Min: |

**Soil Map ID: 5**

Soil Component Name: STEEP GULLIED LAND

Soil Surface Texture: variable

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class:
Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | Soil Reaction (pH) |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | |
| 1 | 0 inches | 59 inches | variable | Not reported | Not reported | Max:<br>Min: | Max: Min: |

**Soil Map ID: 6**

Soil Component Name: FALLBROOK

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | Soil Reaction (pH) |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | |
| 1 | 0 inches | 5 inches | sandy loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | Not reported | Max:<br>Min: | Max: Min: |
| 2 | 5 inches | 11 inches | loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | Not reported | Max:<br>Min: | Max: Min: |
| 3 | 11 inches | 27 inches | sandy clay loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | Not reported | Max:<br>Min: | Max: Min: |

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | Soil Reaction (pH) |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | |
| 4 | 27 inches | 46 inches | loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | Not reported | Max:<br>Min: | Max: Min: |
| 5 | 46 inches | 51 inches | weathered bedrock | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | Not reported | Max:<br>Min: | Max: Min: |

**Soil Map ID: 7**

Soil Component Name: RAMONA

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | Soil Reaction (pH) |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | |
| 1 | 0 inches | 9 inches | sandy loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. | Max: 4<br>Min: 1.4 | Max: 7.3<br>Min: 6.6 |

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | Soil Reaction (pH) |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | |
| 2 | 9 inches | 59 inches | sandy clay loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. | Max: 4<br>Min: 1.4 | Max: 7.3<br>Min: 6.6 |
| 3 | 59 inches | 74 inches | sandy clay loam | Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils. | COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. | Max: 4<br>Min: 1.4 | Max: 7.3<br>Min: 6.6 |

## LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

## WELL SEARCH DISTANCE INFORMATION

| DATABASE | SEARCH DISTANCE (miles) |
|---|---|
| Federal USGS | 1.000 |
| Federal FRDS PWS | Nearest PWS within 1 mile |
| State Database | 1.000 |

## FEDERAL USGS WELL INFORMATION

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| No Wells Found | | |

## FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| No PWS System Found | | |

Note: PWS System location is not always the same as well location.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**STATE DATABASE WELL INFORMATION**

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| No Wells Found | | |

# PHYSICAL SETTING SOURCE MAP - 03491546.2r

- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells

| | |
|---|---|
| SITE NAME: Spieth & Wohlford, Inc. | CLIENT: Vinje & Middleton Engineering |
| ADDRESS: 661 Bear Valley Parkway<br>Escondido CA 92025 | CONTACT: Brad Crawshaw |
| LAT/LONG: 33.0981 / 117.0574 | INQUIRY #: 03491546.2r<br>DATE: January 09, 2013 6:23 pm |

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## GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

| Map ID<br>Direction<br>Distance<br>Elevation | | | Database | EDR ID Number |
|---|---|---|---|---|
| **1**<br>**WSW**<br>**1/2 - 1 Mile**<br>**Lower** | Site ID:<br>Groundwater Flow:<br>Shallow Water Depth:<br>Deep Water Depth:<br>Average Water Depth:<br>Date: | Not Reported<br>Varies<br>Not Reported<br>Not Reported<br>40<br>12/1992 | **AQUIFLOW** | **38768** |

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
# RADON

**AREA RADON INFORMATION**

State Database: CA Radon

Radon Test Results

| Zipcode | Num Tests | > 4 pCi/L |
|---|---|---|
| 92025 | 42 | 6 |

Federal EPA Radon Zone for SAN DIEGO County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

---

Federal Area Radon Information for Zip Code: 92025

Number of sites tested: 2

| Area | Average Activity | % <4 pCi/L | % 4-20 pCi/L | % >20 pCi/L |
|---|---|---|---|---|
| Living Area - 1st Floor | 1.000 pCi/L | 100% | 0% | 0% |
| Living Area - 2nd Floor | Not Reported | Not Reported | Not Reported | Not Reported |
| Basement | Not Reported | Not Reported | Not Reported | Not Reported |

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

## HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

## HYDROGEOLOGIC INFORMATION

AQUIFLOW$^{R}$ Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

## GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Health Services
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

## OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

**STREET AND ADDRESS INFORMATION**

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# APPENDIX D

County of San Diego

SEARCH

Your County Government | Community Services | Healthy Kids & Families | Business Resources | environment | Public Safety | Jobs

## Establishment Information

New Search

| | | | |
|---|---|---|---|
| 199458 | **SPIETH & WOHLFORD INC** | Inactive | |
| Establishment Information: | 661 BEAR VALLEY PY<br>ESCONDIDO 92025 -<br><br>Phone: 858-746-5255<br>Census Tract: 207.0 | Inspection Information: | 6/4/1993 by LEGACY<br>Reinspection:<br>Contact: ADRIAN OLQUIN ?<br>Notice Issued:<br>EPA ID#:<br>HIRT Site:<br>BP Acceptance Date: |
| Owner Information: | SPIETH & WOHLFORD INC | | |

No Waste Info | No Inventory Info | No Environmental Assessment Info | No Tank Info

County Departments | Accessibility Policy | Web & Privacy Policies | Help | Visiting San Diego

LISA M. LEONDIS
AGRICULTURAL COMMISSIONER/
SEALER OF WEIGHTS & MEASURES

SAN MARCOS OFFICE
(760) 752-4700
FAX (760) 724-4098

# County of San Diego

DEPARTMENT OF AGRICULTURE, WEIGHTS AND MEASURES
9325 Hazard Way, Suite 100, San Diego, CA 92123-1217
Phone: (858) 694-2739 FAX (858) 467-9697
http://www.sdcawm.org

SANDY PARKS
ASSISTANT DIRECTOR

WEIGHTS & MEASURES
(858) 694-2778
FAX (858) 467-9278

January 22, 2013

Brad Crawshaw
Vinje & Middleton Engineering
2450 Auto Park Way
Escondido, CA 92029

REQUEST FOR PUBLIC INFORMATION NUMBER: **13-RP012**

Dear Mr. Crawshaw:

In response to your request, pesticide use records for 2009 through 2013 were reviewed and no pesticide records for location 661 Bear Valley Parkway, Escondido, CA 92025. (Spieth & Wohlford Inc) was located. Please see the attached request..

Please note our records reflect pesticides used in agricultural settings. No other pesticide uses are required to be reported by site. Therefore, our records only include sites where an agricultural commodity was produced at the site in the last four years, and where pesticide use was reported to this department. Our records do not include information on pesticides used in urban settings.

If you need to determine the presence or absence of pesticide residues at a location, you should contact an approved lab. We can provide a list of approved labs, which would provide such a service.

Sincerely,

Megan Moore

MEGAN MOORE
Deputy Ag Commissioner/Sealer

MM: tmt

COUNTY OF SAN DIEGO
DEPARTMENT OF AGRICULTURE, WEIGHTS AND MEASURES
**REQUEST FOR PUBLIC INFORMATION**

| A. REQUESTOR: | | DATE: |
|---|---|---|
| Brad Crawshaw | | January 10, 2013 |
| COMPANY: | | PHONE NUMBER (DAYTIME): |
| Vinje & Middleton Engineering, Inc. | | 760-743-1214 |
| STREET ADDRESS: | CITY/STATE: | ZIPCODE: |
| 2450 Auto Park Way | Escondido, CA | 92029 |
| MAILING ADDRESS: | CITY/STATE: | ZIPCODE: |
| SAME AS ABOVE | | |

B. I request the following information that is maintained at the County of San Diego, Department of Agriculture, Weights and Measures, located at 5555 Overland Avenue, Suite 3101, San Diego, California 92123-1256 or 1645 Capalina Road, Suite #600, San Marcos, 92069 pertaining to:

[ X ] WEIGHTS/MEASURES [ X ] PESTICIDE REGULATION [ X ] PEST EXCLUSION/NURSERY [ ] Other:

Please indicate if your office has records of Pesticide Use Reports, List of Recent Chemicals Applied at **SPIETH & WOHLFORD, INC., 661 BEAR VALLEY PARKWAY, ESCONDIDO, CA 92025.** Please indicate if your office has any records on the referenced property. Thanks in advance for your attention to this matter.

Please E-mail results to: **vinje.middleton@sbcglobal.net**

(Attach Additional Sheet If Required)

C. I request this information in the following format:

[ ] REVIEW
Hourly rate of supervisor or manager administering records review.

[ ] COPY
$.20 per 8½ x 11 page for first copy; $.30 per copy for subsequent copies of same page.

[ ] DISK
$2.50 per disk; $38.50 per hour.

[ ] CASSETTE TAPE $1.25 per tape; $9.63 per hour.

[ ] FAX No Fee (10 Page Limit)

[ X ] E-MAIL No Fee

D. My request for the review of the identified data, files and/or records is not in any way connected with nor pertaining to Division 3.6 (commencing with Section 810) of Title I of the Government Code regarding pending claims or litigation to which the County is a party to.

I understand that certain records are specifically exempted (under Chapter 1798 of the California Civil Code and Chapter 6250 of the California Government Code) from the general rule of accessibility and that it is the policy of the Department of Agriculture, Weights and Measures that data, files and/or records falling in this category will not be released for my review until specific approval is granted by the Agricultural Commissioner/Sealer of Weights and Measures. On this basis I do hereby specifically request the Agricultural Commissioner/Sealer of Weights and Measures immediate review of this request insofar as it relates to those items that the Department of Agriculture, Weights and Measures feels are classified as exempted materials.

Signature of Requestor: Brad Crawshaw

*Please complete all boxes A - D - Thank-you*

AWM 029 (09/99)

LINK TO THIS MAP

# GEOTRACKER

**LAYERS**

- ☒ SIGNIFIES A CLOSED SITE
- ☑ Leaking Underground Tank (LUST) Cleanup Sites
- ☑ Other Cleanup Sites
- ☑ Land Disposal Sites
- ☑ ☐ Military Sites
- ☑ ☐ WDR Sites
- ☑ Permitted Underground Storage Tank (UST) Facilities
- ☑ Monitoring Wells*

* ZOOM IN TO SEE MWS

- ☑ DTSC Cleanup Sites
- ☑ DTSC Haz Waste Permit

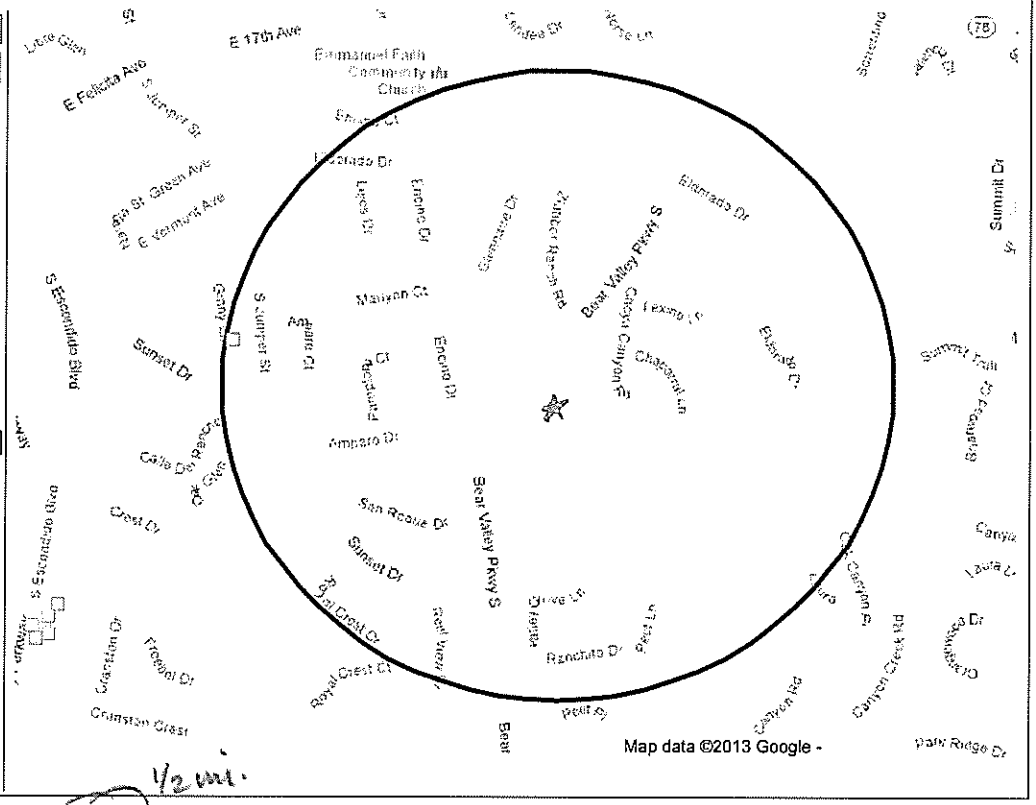
**MAP SIZE**

640x480

**OPTIONS**

☑ Site List - EXPORT TO EXCEL

0 Sites




1/2 mi.

☑ SHOW SITES WITHIN 2640 FEET OF THE FOLLOWING ADDRESS: 661 Bear Valley Parkway, Escondido, CA Go

**SITE LIST**

| SITE NAME | GLOBAL ID | FAC ID | CLEANUP STATUS | ADDRESS | CITY |
|---|---|---|---|---|---|

MAP AN ADDRESS: Go!

# APPENDIX E

PDS 3320

# Chicago Title Company

Builders Services Division
2365 Northside Drive, Suite 500, San Diego, CA 92108 (619) 521-3400

**Title Department:**

Chicago Title Company
Attn: Tom Votel/Ranny Harper
Email: votelt@ctt.com &
ranny.harper@ctt.com
Phone: (619) 521-3673
Fax: (619) 521-3608
Order No.: 830014656-U50

**Customer:**

Dana Wohlford
Attn: Dana Wohlford

## PRELIMINARY REPORT

Property Address: 661 Bear Valley Parkway, CA

Dated as of: May 22, 2008 at 7:30 am

In response to the application for a policy of title insurance referenced herein, Chicago Title Company hereby reports that it is prepared to issue, or cause to be issued, as of the date hereof, a policy or policies of Title Insurance describing the land and the estate or interest therein hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an Exception herein or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations or Conditions of said Policy forms

The printed Exceptions and Exclusion from the coverage and Limitations on Covered Risks of said Policy or Policies are set forth in Attachment One. The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than that se forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. Limitations on Covered Risks applicable to the CLTA and ALTA Homeowner's Policies of Title Insurance which establish a Deductible Amount and a Maximum Dollar Limit of Liability for certain coverages are also set forth in Attachment One Copies of the policy forms should be read They are available from the office which issued this report.

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby. If it is desired that liability be assumed prior to the issuance of a policy of title insurance, a Binder or Commitment should be requested.

The policy(s) of title insurance to be issued hereunder will be policy(s) of Chicago Title Insurance Company

***Please read the exceptions shown or referred to herein and the exceptions and exclusions set forth in Attachment One of this report carefully. The exceptions and exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.***

***It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects, and encumbrances affecting title to the land.***

CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY

# SCHEDULE A

1 The estate or interest in the land hereinafter described or referred to covered by this report is:

A Fee

2. Title to said estate or interest at the date hereof is vested in:

Spieth & Wohlford, Inc., a corporation

3. The land referred to in this report is situated in the State of California, County of San Diego and is described in the Legal Description, attached hereto:

END OF SCHEDULE A

# LEGAL DESCRIPTION

PARCEL I: APN 237-131-01

LOTS 2, 3 AND 4 IN BLOCK 257 OF THE RANCHO RINCON DEL DIABLO, ACCORDING TO MAP THEREOF NO 648, FILE DON NOVEMBER 20, ~~1990,~~ 1890 IN THE CITY OF ESCONDIDO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

ALSO THAT PORTION OF THE UNNAMED STREET BOUNDED ON THE WEST BY SAID LOTS 2 AND 3 AND ON THE EAST BY SAID LOT 4 IN SAID BLOCK 257, VACATED AND ABANDONED TO PUBLIC USE MAY 29, 1939, BY THE BOARD OF SUPERVISORS OF SAN DIEGO COUNTY.

EXCEPTING THEREFROM THOSE PORTIONS OF SAID LOTS 2 AND 3, LYING NORTHERLY AND WESTERLY OF THE FOLLOWING DESCRIBED LINE:

BEGINNING AT A POINT ON THE SOUTHWESTERLY LINE OF SAID LOT 3 DISTANT THEREON SOUTH 14°15' EAST 853.5 FEET FROM THE MOST WESTERLY CORNER OF SAID LOT 3, RUNNING THENCE NORTH 75°45' EAST 163.0 FEET; THENCE NORTH 3°32' EAST 247.6 FEET; THENCE NORTH 37°41' EAST 277.3 FEET; THENCE NORTH 52°07' EAST 293 FEET TO A POINT ON THE SOUTHEASTERLY LINE OF SAID LOT 2 WHICH IS DISTANT THEREON SOUTH 40°5' WEST 1157 FEET FROM THE ANGLE POINT IN SAID SOUTHEASTERLY LINE LYING IMMEDIATELY WEST OF THE MOST NORTHERLY CORNER OF LOT 4 IN SAID BLOCK 257.

ALSO EXCEPTING THEREFROM THOSE PORTIONS OF SAID LOTS 3 AND 4 AND OF THE SAID VACATED STREET LYING BETWEEN SAID LOTS, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEASTERLY CORNER OF SAID LOT 4; THENCE NORTH 8°39' EAST ALONG THE EASTERLY LINE OF SAID LOT 4, 1120 FEET; THENCE NORTH 79°37' WEST 352.9 FEET; THENCE SOUTH 34°5' WEST 331.7 FEET; THENCE SOUTH 50°49' WEST 104.3 FEET; THENCE SOUTH 34°58' WEST 592.1 FEET TO A POINT ON THE SOUTHWESTERLY LINE OF SAID LOT 3; THENCE SOUTH 14°15' EAST ALONG THE SOUTHWESTERLY LINE OF LOT 3 AND ALONG THE SOUTHWESTERLY LINE OF THE VACATED UNNAMED STREET ABOVE REFERRED TO 184.2 FEET TO THE SOUTHWESTERLY CORNER OF SAID LOT 4; THENCE SOUTHEASTERLY ALONG THE SOUTHERLY LINE OF SAID LOT 4 TO THE POINT OF BEGINNING

PARCEL II: APN 237-131-02

THOSE PORTIONS OF LOTS 3 AND 4 IN BLOCK 257 OF RANCHO RINCON DEL DIABLO, ACCORDING TO MAP THEREOF NO. 648, FILED ON NOVEMBER 20, 190, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, AND OF THE UNNAMED STREET LYING BETWEEN SAID LOTS 3 AND 4, VACATED AND ABANDONED TO PUBLIC USE MAY 29, 1939, BY THE BOARD OF SUPERVISORS OF SAN DIEGO COUNTY DESCRIBED AS FOLLOWS:

# LEGAL DESCRIPTION
(continued)

BEGINNING AT THE SOUTHEASTERLY CORNER OF SAID LOT 4; THENCE NORTH 8°39' EAST ALONG THE EASTERLY LINE OF SAID LOT 4 , 1120 FEET; THENCE NORTH 79°37' WEST 352.9 FEET; THENCE SOUTH 34°52' WEST, 331.7 FEET; THENCE SOUTH 50°49' WEST 104.3 FEET; THENCE SOUTH 34°58' WEST, 591.1 FEET TO A POINT ON THE SOUTHWESTERLY LINE OF SAID LOT 3; THENCE SOUTH 14°15' EAST ALONG THE SOUTHWESTERLY LINE OF SAID LOT 3 AND ALONG THE SOUTHWESTERLY LINE OF THE VACATED UNNAMED STREET ABOVE REFERRED TO 184.2 FEET TO THE SOUTHWESTERLY CORNER OF SAID LOT 4; THENCE SOUTHEASTERLY ALONG THE SOUTHERLY LINE OF SAID LOT 4 TO THE POINT OF COMMENCEMENT.

EXCEPTING THEREFROM THAT PORTION OF SAID LAND AS GRANTED TO THE COUNTY OF SAN DIEGO BY DOCUMENT RECORDED OCTOBER 29, 1969 AS DOCUMENT NUMBER 198728 OF OFFICIAL RECORDS.

END OF LEGAL DESCRIPTION

# SCHEDULE B

At the date hereof, items to be considered and exceptions to coverage in addition to the printed Exceptions and Exclusions in said policy form would be as follows:

1. Property taxes, including any assessments collected with taxes, for the fiscal year 2008 - 2009 that are a lien not yet due

2 The lien of supplemental taxes, if any, assessed pursuant to the provisions of Chapter 3.5 (commencing with Section 75) of the revenue and taxation code of the State of California

3. Water rights, claims or title to water, whether or not shown by the public records.

4. An easement for the purpose shown below and rights incidental thereto as set forth in a document.

| | |
|---|---|
| Granted To: | Escondido Irrigation District |
| Purpose: | pipelines and ditches |
| Recorded: | In Book 238, page 390 of Deeds July 1, 1892 |
| Affects: | The exact location and extent of said easement is not disclosed of record |

5. An easement for the purpose shown below and rights incidental thereto as set forth in a document.

| | |
|---|---|
| Purpose: | public road purposes |
| Recorded: | April 13, 1939 in Book 887, page 317 of Official Records |
| Affects: | The route thereof affects a portion of said land and is more fully described in said document. |

Said instrument additionally contains the privilege and right to extend drainage structures and excavation and embankment slopes beyond the limits where required for the construction and maintenance thereof

6. An easement for the purpose shown below and rights incidental thereto as set forth in a document.

| | |
|---|---|
| Granted To: | San Diego Gas and Electric Company |
| Purpose: | public utilities, ingress, egress |
| Recorded: | August 20, 1962 as Instrument No. 142011 of Official Records |
| Affects: | The route thereof affects a portion of said land and is more fully described in said document. |

7. An easement for the purpose shown below and rights incidental thereto as reserved in a document

| | |
|---|---|
| Purpose: | public utilities and incidental purposes |
| Recorded: | April 1, 1963 as Instrument No. 54933, of Official Records |
| Affects: | The route thereof affects a portion of said land and is more fully described in said document. |

8. An easement for the purpose shown below and rights incidental thereto as reserved in a document.

# SCHEDULE B
(continued)

| | |
|---|---|
| Purpose: | public utilities and incidental purposes |
| Recorded: | October 28, 1968 as Instrument No. 188636 of Official Records |
| Affects: | The route thereof affects a portion of said land and is more fully described in said document |

9. The privilege and right to extend drainage structures and excavation and embankment slopes beyond the limits of said land, where required for the construction and maintenance thereof, as contained in the deed recorded October 29, 1969 as Instrument No. 198728 of Official Records.

10. An easement for the purpose shown below and rights incidental thereto as set forth in a document.

| | |
|---|---|
| Granted To: | San Diego Gas and Electric Company |
| Purpose: | public utilities, ingress, egress |
| Recorded: | September 30, 1975 as Instrument No. 75-267031 of Official Records |
| Affects: | The route thereof affects a portion of said land and is more fully described in said document |

11. Matters which may be disclosed by an inspection and/or by a correct ALTA/ACSM Land Title Survey of said land that is satisfactory to this Company, and/or by inquiry of the parties in possession thereof

This office must be notified at least 7 business days prior to the scheduled closing in order to arrange for an inspection of the land; upon completion of this inspection you will be notified of the removal of specific coverage exceptions and/or additional exceptions to coverage.

12. Any rights of parties in possession of said land, based on any unrecorded lease, or leases

This Company will require a full copy of any unrecorded lease, together with all supplements, assignments, and amendments for review.

END OF SCHEDULE B

# INFORMATIONAL NOTES

Note No. 1: The policy of title insurance will include an arbitration provision. The Company or the insured may demand arbitration. Arbitrable matters may include, but are not limited to, any controversy or claim between the Company and the insured arising out of or relating to this policy, any service of the Company in connection with its issuance or the breach of a policy provision or other obligation. Please ask your escrow or title officer for a sample copy of the policy to be issued if you wish to review the arbitration provisions and any other provisions pertaining to your Title Insurance coverage

Note No. 2: The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than the amount, if any, set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties

Note No 3: This Company will require the following in order to insure title in, or a conveyance from, the entity named below.

Name: Spieth & Wohlford, Inc., a corporation

(A) A copy of the By-Laws or Articles of Association (sometimes known as the "agreement" or "charter").

(B) A copy of a Resolution of the Association approving the present transaction and identifying the subject land. The resolution should also state that the transaction is necessary for the business purposes of the association and should name the parties who are authorized to execute documents for the association.

Note No 4: Property taxes, for the fiscal year 2007 - 2008 are paid For information purposes the amounts are:

| | |
|---|---|
| 1st Installment: | $2,425.76 Paid |
| 2nd Installment: | $2,425.76 Paid |
| Exemption: | $None |
| Code Area: | 04296 |

Assessors Parcel Number: 237-131-01

GP

# INFORMATIONAL NOTES
(continued)

ATTACHMENT ONE

PRIVACY STATEMENT

**IMPORTANT INFORMATION:**

**For those of you receiving this report by electronic delivery the Privacy Statement and Exclusions From Coverage are linked to this report. Please review this information by selecting the link. For those of you who are receiving a hard copy of this report, a copy of this information has been submitted for your review.**

# CHICAGO TITLE INSURANCE COMPANY

## Fidelity National Financial Group of Companies' Privacy Statement

July 1, 2001

We recognize and respect the privacy of today's consumers and the requirements of applicable federal and state privacy laws We believe that making you aware of how we use your non-public personal information ("Personal Information"), and to whom it is disclosed, will form the basis for a relationship of trust between us and the public that we serve This Privacy Statement provides that explanation We reserve the right to change this Privacy Statement from time to time consistent with applicable privacy laws

**In the course of our business, we may collect Personal Information about you from the following sources:**

- From applications or other forms we receive from you or your authorized representative;
- From your transactions with, or from the services being performed by, us, our affiliates or others;
- From our Internet web sites;
- From the public records maintained by government entities that we either obtain directly from those entities, or from our affiliates or others; and
- From consumer or other reporting agencies

**Our Policies Regarding The Protection Of The Confidentiality And Security Of Your Personal Information**

We maintain physical, electronic and procedural safeguards to protect your Personal Information from unauthorized access or intrusion We limit access to the Personal Information only to those employees who need such access in connection with providing products or services to you or for other legitimate business purposes

**Our Policies and Practices Regarding the Sharing of Your Personal Information**

We may share your Personal Information with our affiliates, such as insurance companies, agents, and other real estate settlement service providers. We may also disclose your Personal Information:

- to agents, brokers or representatives to provide you with services you have requested;
- to third-party contractors or service providers who provide services or perform marketing or other functions on our behalf; and
- to others with whom we enter into joint marketing agreements for products or services that we believe you may find of interest

In addition, we will disclose your Personal Information when you direct or give us permission, when we are required by law to do so, or when we suspect fraudulent or criminal activities. We also may disclose your Personal Information when otherwise permitted by applicable privacy laws such as, for example, when disclosure is needed to enforce our rights arising out of any agreement, transaction or relationship with you.

One of the important responsibilities of some of our affiliated companies is to record documents in the public domain. Such documents may contain your Personal Information.

**Right To Access Your Personal Information And Ability To Correct Errors Or Request Change Or Deletion**

Certain states afford you the right to access your Personal Information and, under certain circumstances, to find out to whom your Personal Information has been disclosed. Also, certain states afford you the right to request correction, amendment or deletion of your Personal Information. We reserve the right, where permitted by law, to charge a reasonable fee to cover the costs incurred in responding to such requests.

All requests must be made in writing to the following address:

Privacy Compliance Officer
Fidelity National Financial, Inc
601 Riverside Drive
Jacksonville, FL 32204

**Multiple Products or Services:**

If we provide you with more than one financial product or service, you may receive more that one privacy notice from us We apologize for any inconvenience this may cause you

# ATTACHMENT ONE

## AMERICAN LAND TITLE ASSOCIATION
## RESIDENTIAL TITLE INSURANCE POLICY (6-1-87)
## EXCLUSIONS

In addition to the Exceptions in Schedule B, you are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1 Governmental police power and the existence or violation of any law or government regulation. This includes building and zoning ordinances and also laws and regulations concerning:

- land use
- improvements on the land
- land division
- environmental protection

This exclusion does not apply to violations or the enforcement of these matters which appear in the public records at Policy Date

This exclusion does not limit the zoning coverage described in Items 12 and 13 of Covered Title Risks

2 The right to take the land by condemning it, unless:

- a notice of exercising the right appears in the public records on the Policy Date
- the taking happened prior to the Policy Date and is binding on you if you bought the land without knowing of the taking

3 Title Risks:

- that are created, allowed, or agreed to by you
- that are known to you, but not to us, on the Policy Date – unless they appeared in the public records
- that result in no loss to you
- that first affect your title after the Policy Date – this does not limit the labor and material lien coverage in Item 8 of Covered Title Risks

4 Failure to pay value for your title

5 Lack of a right:

- to any land outside the area specifically described and referred to in Item 3 of Schedule A

  OR
- in streets, alleys, or waterways that touch your land

This exclusion does not limit the access coverage in Item 5 of Covered Title Risks

In addition to the Exclusions you are not insured against loss, costs, attorneys' fees and the expenses resulting from:

1 Any right, interests, or claims of parties in possession of the land not shown by the public records

2 Any easements or liens not shown by the public records. This does not limit the lien coverage in Item 8 of Covered Title Risks

3 Any facts about the land which a correct survey would disclose and which are not shown by the public records. This does not limit the forced removal coverage in Item 12 of Covered Title Risks

4 Any water rights or claims or title to water in or under the land whether or not shown by the public records

## CALIFORNIA LAND TITLE ASSOCIATION STANDARD COVERAGE POLICY - 1990
## EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1 (a) Any law, ordinance or governmental regulation (including but not limited to building or zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien, or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy

(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy

2 Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge

3 Defects, liens, encumbrances, adverse claims or other matters:

(a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;

(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;

(c) resulting in no loss or damage to the insured claimant;

(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy

4 Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable doing business laws of the state in which the land is situated

5 Invalidity or unenforceability of the lien of the insured mortgage or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law

6 Any claim, which arises out of the transaction vesting in the insured the estate of interest insured by this policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws

## SCHEDULE B, PART I
## EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1 Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records

2 Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.

3 Easements, liens or encumbrances, or claims thereof, which are not shown by the public records

4 Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records

5 (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a) (b) or (c) are shown by the public records

## ATTACHMENT ONE
## (CONTINUED)

### AMERICAN LAND TITLE ASSOCIATION LOAN POLICY (10-17-92)
### WITH ALTA ENDORSEMENT-FORM 1 COVERAGE
### EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage costs attorneys' fees or expenses which arise by reason of:

1 (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy

(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy

2 Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge

3 Defects, liens, encumbrances, adverse claims or other matters:

(a) created suffered, assumed or agreed to by the insured claimant;

(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;

(c) resulting in no loss or damage to the insured claimant;

(d) attaching or created subsequent to Date of Policy (except to the extent that this policy insures the priority of the lien of the insured mortgage over any statutory lien for services, labor or material or to the extent insurance is afforded herein as to assessments for street improvements under construction or completed at Date of Policy); or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage

4 Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable doing business laws of the state in which the land is situated

5 Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law

6 Any statutory lien for services, labor or materials (or the claim of priority of any statutory lien for services, labor or materials over the lien of the insured mortgage) arising from an improvement or work related to the land which is contracted for and commenced subsequent to Date of Policy and is not financed in whole or in part by proceeds of the indebtedness secured by the insured mortgage which at Date of Policy the insured has advanced or is obligated to advance

7 Any claim, which arises out of the transaction creating the interest of the mortgagee insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:

(i) the transaction creating the interest of the insured mortgagee being deemed a fraudulent conveyance or fraudulent transfer; or

(ii) the subordination of the interest of the insured mortgagee as a result of the application of the doctrine or equitable subordination; or

(iii) the transaction creating the interest of the insured mortgagee being deemed a preferential transfer except where the preferential transfer results from the failure:

(a) to timely record the instrument of transfer; or

(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

### EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs attorneys fees or expenses) which arise by reason of:

1 Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records

2 Any facts, rights, interests or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof

3 Easements, liens or encumbrances, or claims thereof which are not shown by the public records

4 Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records

5 (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights claims or title to water whether or not the matters excepted under (a) (b) or (c) are shown by the public records

### 2006 ALTA LOAN POLICY (06-17-06)
### EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1 (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating prohibiting or relating to

(i) the occupancy, use, or enjoyment of the Land;

(ii) the character, dimensions, or location of any improvement erected on the Land;

(iii) the subdivision of land; or

(iv) environmental protection;

or the effect of any violation of these laws, ordinances, or governmental regulations This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5

(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6

2 Rights of eminent domain This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8

3 Defects, liens, encumbrances, adverse claims, or other matters

(a) created, suffered, assumed or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage

4 Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated

5 Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law

6 Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

(a) a fraudulent conveyance or fraudulent transfer or

(b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy

7 Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b)

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

## EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) that arise by reason of:

1 (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records;

(b) Proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records

2 Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land

3 Easements, liens or encumbrances, or claims thereof, not shown by the Public Records

4 Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records

5 (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b) or (c) are shown by the Public Records

## AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY (10-17-92)
## EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1 (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating prohibiting or relating to (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy

(b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy

2 Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge

3 Defects, liens encumbrances adverse claims or other matters:

(a) created, suffered, assumed or agreed to by the insured claimant;

(b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;

(c) resulting in no loss or damage to the insured claimant;

(d) attaching or created subsequent to Date of Policy; or

(e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the estate or interest insured by this policy

4 Any claim, which arises out of the transaction vesting in the insured the estate or interest insured by this policy, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that is based on:

(i) the transaction creating the estate or interest insured by this policy being deemed a fraudulent conveyance or fraudulent transfer; or

(ii) the transaction creating the estate or interest insured by this policy being deemed a preferential transfer except where the preferential transfer results from the failure:

(a) to timely record the instrument of transfer; or

(b) of such recordation to impart notice to a purchaser for value or a judgment or lien creditor

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage Policy will also include the following Exceptions from Coverage:

## EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1 Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records. Proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records

2 Any facts, rights, interests or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof

3 Easements, liens or encumbrances or claims thereof, which are not shown by the public records

4 Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records

5 (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b) or (c) are shown by the public records

## ATTACHMENT ONE (CONTINUED)

### 2006 ALTA OWNER'S POLICY (06-17-06) EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage costs attorneys' fees or expenses that arise by reason of:

1 (a) Any law ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating prohibiting or relating to

(i) the occupancy, use or enjoyment of the Land;

(ii) the character, dimensions, or location of any improvement erected on the Land;

(iii) the subdivision of land; or

(iv) environmental protection;

or the effect of any violation of these laws, ordinances, or governmental regulations This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5

(b) Any governmental police power This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6

2 Rights of eminent domain This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8

3 Defects liens encumbrances adverse claims or other matters

(a) created, suffered assumed or agreed to by the Insured Claimant;

(b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

(c) resulting in no loss or damage to the Insured Claimant;

(d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 9 and 10); or

(e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title

4 Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction vesting the Title as shown in Schedule A is

(a) a fraudulent conveyance or fraudulent transfer; or

(b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy

5 Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

### EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) that arise by reason of:

1 (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records

2 Any facts, rights, interests, or claims that are not shown in the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land

3 Easements, liens or encumbrances or claims thereof, not shown by the Public Records

4 Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and that are not shown by the Public Records

5 (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights claims or title to water whether or not the matters excepted under (a), (b) or (c) are shown by the Public Records

### CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE (10-22-03) ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE (10-22-03) EXCLUSIONS

In addition to the Exceptions in Schedule B, You are not insured against loss costs attorneys' fees and expenses resulting from:

1 Governmental police power, and the existence or violation of any law or government regulation This includes ordinances laws and regulations concerning:

a building

b zoning

c Land use

d improvements on the Land

e Land division

f environmental protection

This Exclusion does not apply to violations or the enforcement of these matters if notice of the violation or enforcement appears in the Public Records at the Policy Date

This Exclusion does not limit the coverage described in Covered Risk 14, 15, 16, 17 or 24

2 The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes This Exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at the Policy Date

3 The right to take the Land by condemning it, unless:

a a notice of exercising the right appears in the Public Records at the Policy Date; or

b the taking happened before the Policy Date and is binding on You if You bought the Land without Knowing of the taking

4 Risks:

a that are created, allowed, or agreed to by You, whether or not they appear in the Public Records;

b that are Known to You at the Policy Date, but not to Us, unless they appear in the Public Records at the Policy Date;

c that result in no loss to You; or

d that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.d, 22, 23, 24 or 25

5 Failure to pay value for Your Title

6 Lack of a right:

a to any Land outside the area specifically described and referred to in paragraph 3 of Schedule A; and

b in streets, alleys, or waterways that touch the Land

This Exclusion does not limit the coverage described in Covered Risk 11 or 18

## ATTACHMENT ONE
## (CONTINUED)

### LIMITATIONS ON COVERED RISKS

Your insurance for the following Covered Risks is limited on the Owner's Coverage Statement as follows:

- For Covered Risk 14, 15, 16 and 18, Your Deductible Amount and Our Maximum Dollar Limit of Liability shown in Schedule A

The deductible amounts and maximum dollar limits shown on Schedule A are as follows:

| | Your Deductible Amount | Our Maximum Dollar Limit of Liability |
|---|---|---|
| Covered Risk 14: | 1.00% of Policy Amount or $ 2,500.00 (whichever is less) | $ 10,000.00 |
| Covered Risk 15: | 1.00% of Policy Amount or $ 5,000.00 (whichever is less) | $ 25,000.00 |
| Covered Risk 16: | 1.00% of Policy Amount or $ 5,000.00 (whichever is less) | $ 25,000.00 |
| Covered Risk 18: | 1.00% of Policy Amount or $ 2,500.00 (whichever is less) | $ 5,000.00 |

### ALTA EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (10/13/01)
### EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating to (i) the occupancy, use, or enjoyment of the Land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the Land; (iii) a separation in ownership or a change in the dimensions or areas of the Land or any parcel of which the Land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the Land has been recorded in the Public Records at Date of Policy. This exclusion does not limit the coverage provided under Covered Risks 12, 13, 14, and 16 of this policy.

   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or a notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the Land has been recorded in the Public Records at Date of Policy. This exclusion does not limit the coverage provided under Covered Risks 12, 13, 14, and 16 of this policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the Public Records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without Knowledge.

3. Defects, liens, encumbrances, adverse claims or other matters:

   (a) created, suffered, assumed or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (this paragraph does not limit the coverage provided under Covered Risks 8, 16, 18, 19, 20, 21, 22, 23, 24, 25 and 26); or

   (e) resulting in loss or damage which would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of the Insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with applicable doing business laws of the state in which the Land is situated.

5. Invalidity or unenforceability of the lien of the Insured Mortgage, or claim thereof, which arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, except as provided in Covered Risk 27, or any consumer credit protection or truth in lending law.

6. Real property taxes or assessments of any governmental authority which become a lien on the Land subsequent to Date of Policy. This exclusion does not limit the coverage provided under Covered Risks 7, 8(c) and 26.

7. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This exclusion does not limit the coverage provided in Covered Risk 8.

8. Lack of priority of the lien of the Insured Mortgage as to each and every advance made after Date of Policy, and all interest charged thereon, over liens, encumbrances and other matters affecting the title, the existence of which are Known to the Insured at:

   (a) The time of the advance; or

   (b) The time a modification is made to the terms of the Insured Mortgage which changes the rate of interest charged, if the rate of interest is greater as a result of the modification than it would have been before the modification. This exclusion does not limit the coverage provided in Covered Risk 8.

9. The failure of the residential structure, or any portion thereof to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This exclusion does not apply to violations of building codes if notice of the violation appears in the Public Records at Date of Policy.

(4)

135.340

BOOK 238

391

Recorded at Request of A C Koppen Aug 1 1950 9 min past 8 o'clock A.M.
Jno P. Conway Recorder.
By C.A. Wallace Deputy Recorder

Escondido Land and Town Co
to
Escondido Irrigation District.
Right of Way.

The Escondido Land and Town Company, a Corporation, of the County of San Diego, State of California, for value received, do hereby grant unto the Escondido Irrigation District of the County aforesaid, its successors and assigns forever, a right of way not exceeding Ten Certain width in one pipe lines, over and through and across the lands of the Grantor and to feet in width for all ditch lines, as shown upon the right of way map prepared by E. F. Tabor Chief Engineer of said District, and on file in the office of said District, for the use and maintenance of water ditches, pipe lines, conduits and aqueducts for the conveyance of water, by or for the said Escondido Irrigation District in over and through said lands above referred to being situated in the Rancho Rincon del Diablo, in said County of San Diego, State of California.

And the Grantor further grants the right to the Grantee to from time to time lay out and construct and maintain all necessary pipe lines, conduits and ditches across and over said lands, but no improvements thereon shall be damaged without just compensation being made therefor; and whenever the Grantee ceases to use any portion of said right of way, that portion thereof shall revert to the Grantor or its successors. The Grantor retains the right to cultivate so much of said right of way as is not actually occupied or used by the Grantee for ditch or pipe line.

In Witness Whereof, the said party of the first part has hereunto caused its corporate name to be affixed, and these presents to be executed by its Vice President and its Secretary, duly authorized by a resolution of its Board of Directors, this 1st day of August, 1950.

The Escondido Land and Town Co.
By [illegible] Vice President.
By [illegible] Secretary.

State of California, County of San Diego, ss.

On this 1st day of August, 1950, before me, Jacob Schaetzel Jr. Notary Public in and for said County, personally appeared [illegible] known to me to be the person whose name is subscribed to the within instrument as a witness thereto, who being by me duly sworn, deposes and says that he resides in the City of San Diego, California; that he was present and saw the within and foregoing instrument duly executed by the Escondido Land and Town Co. a corporation, and that he knows the corporate seal of said corporation; that the seal affixed to said instrument is the corporate seal of said corporation; that said corporation executed said instrument freely and voluntarily and for the uses and purposes therein mentioned; and that affiant subscribed his name to said instrument as a witness at the request of said corporation.

Jacob Schaetzel Jr.
Notary Public in and for the County of San Diego, State of California.

Recorded at Request of A C Koppen Aug 1 1950 9 min past 8 o'clock A.M.
Jno P. Conway Recorder.
By C.A. Wallace Deputy Recorder

Escondido Land and Town Co
to
Escondido Irrigation District.
Right of Way.

The Escondido Land and Town Company, a Corporation, of the County of San Diego, State of California, for value received, do hereby grant unto the Escondido Irrigation District of the County aforesaid, its successors and assigns forever, a right of way not exceeding Ten Certain width in one pipe lines, over and through and across the lands of the Grantor and to feet in width for all ditch lines, as shown upon the right of way map prepared by E. F. Tabor Chief Engineer of said District, and on file in the office of said District, for the use and maintenance of water ditches, pipe lines, conduits and aqueducts for the conveyance of water, by or for the said Escondido Irrigation District in over and through said lands above referred to being situated in the Rancho Rincon del Diablo, in said County of San Diego, State of California.

And the Grantor further grants the right to the Grantee to from time to time lay out and construct and maintain all necessary pipe lines, conduits and ditches across and over said lands, but no improvements thereon shall be damaged without just compensation being made therefor; and whenever the Grantee ceases to use any portion of said right of way, that portion thereof shall revert to the Grantor or its successors. The Grantor retains the right to cultivate so much of said right of way as is not actually occupied or used by the Grantee for ditch or pipe line.

In Witness Whereof, the said party of the first part has hereunto caused its corporate name to be affixed, and these presents to be executed by its Vice President and its Secretary, duly authorized by a resolution of its Board of Directors, this 1st day of August, 1950.

The Escondido Land and Town Co.
By [illegible] Vice President.
By [illegible] Secretary.

State of California, County of San Diego, ss.

On this 1st day of August, 1950, before me, Jacob Schaetzel Jr. Notary Public in and for said County, personally appeared [illegible] known to me to be the person whose name is subscribed to the within instrument as a witness thereto, who being by me duly sworn, deposes and says that he resides in the City of San Diego, California; that he was present and saw the within and foregoing instrument duly executed by the Escondido Land and Town Co. a corporation, and that he knows the corporate seal of said corporation; that the seal affixed to said instrument is the corporate seal of said corporation; that said corporation executed said instrument freely and voluntarily and for the uses and purposes therein mentioned; and that affiant subscribed his name to said instrument as a witness at the request of said corporation.

Jacob Schaetzel Jr.
Notary Public in and for the County of San Diego, State of California.

Recorded at Request, Aug. 1, 1950, 9 min. past 8 o'clock A.M.
Jno. P. Conway, Recorder.
By C.A. Wallace, Deputy Recorder.

391

State of California }ss.
County of San Diego } On this 1st day of July one thousand eight hundred and ninety five, before me, D. H. Knoff a Notary Public in and for said County of San Diego, personally appeared Jerry Toles and J. D. Haydon personally known to me to be the Vice President and Asst. Secretary of the Corporation that executed the within Instrument and acknowledged to me that such Corporation executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal, the day and year in this Certificate first above written.

D. H. Knoff
Notary Public
In and for San Diego County, State of California

Recorded at Request of C. J. Norden Aug 1, 1895 at 35 min past 3 o'clock P.M.
Jno. P. Howard Recorder.
B. C. Wallace, Deputy Recorder

Escondido Land and Town Co
To
The Escondido Irrigation District

This deed made this First day of July, A.D. 1895, between the Escondido Land and Town Company, a corporation, Grantor, and the Escondido Irrigation District, a public Corporation, Grantee, both of said parties being incorporated under the laws of the State of California, Witnesseth,

That the said Grantor, for and in consideration of Nine Hundred Dollars in Bonds of the said District at their par value to it in hand paid, the receipt whereof is hereby acknowledged, does by these presents grant, bargain and sell, convey, warrant, and confirm unto the said Grantee and to its successors and assigns forever, all those certain lots, pieces or parcels of land lying and being in the County of San Diego, State of California, and particularly described as follows, to-wit:

Lots Nine (9), Ten (10), Eleven (11), Twelve (12) and Thirteen (13) in Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Thirteen (13) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Twelve (12) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Eleven (11) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Ten (10) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Nine (9) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Eight (8) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Seven (7) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Six (6) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Five (5) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Four (4) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Three (3) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Two (2) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot One (1) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Sixteen (16) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Fifteen (15) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Fourteen (14) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Thirteen (13) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Twelve (12) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Eleven (11) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Ten (10) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Nine (9) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Eight (8) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Seven (7) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Six (6) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Five (5) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Four (4) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Three (3) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot Two (2) of Block Two Hundred (200) of Lot Eight (8); the South Eastern Twenty (20) feet of Lot One (1) of Block Two Hundred (200) of Lot Eight (8);

Photographed By C. Toy, Deputy Recorder

(5)



WITNESS our hands this 6th day of April, 1939. 317

Signed and Executed in Presence of
Esther Kudner
Charles G. Goodman

Price Swinney
Trula Swinney

State of California, } ss.
County of Los Angeles }

On this 6th day of April, 1939 before me, Charles G.Goodman a Notary Public in and for said County and State, residing therein, duly commissioned and sworn, personally appeared Price Swinney and Trula Swinney, known to me to be the persons whose names are subscribed to the within instrument and acknowledged to me that they executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official Seal, at my office, in said County and State, the day and year in this certificate first above written.

Charles G.Goodman
Notary Public in and for said County and State.
My Commission expires April 13th, 1942.

Recorded at request of Southern Title & Trust Co.Apr. 13,1939 at 9 A.M.

Roger H. Howe,County Recorder
By Deputy E.Zerpas

1 .00/3 COMP. 2 16304

---000---

EASEMENT FOR COUNTY HIGHWAY
Road Survey 765

KNOW ALL MEN BY THESE PRESENTS: LAWRENCE O. SPIETH and HELEN N. SPIETH, his wife, Burnet C. Wohlford and Mildred F. Wohlford, his wife, Grantors, of Shaker Heights, County of Cuyahoga State of Ohio, owners of the hereinafter described lands,for and in consideration of_ Dollars ($_), to us in hand paid by the County of San Diego,State of California, or on its behalf, the receipt whereof is hereby acknowledged, and the benefits to accrue to us by reason of the location and establishment by the County of San Diego,State of California of a public highway upon, over and across said lands,we do hereby signify our approval of and consent to the location, establishment and construction of such highway thereon and we do, by these presents hereby grant, convey and dedicate to the County of San Diego,State of California, grantee, the right of way and incidents thereto for such public highway upon, over and across the said lands, hereinafter described, lying and being in the County of San Diego,State of California, and particularly described as follows, to-wit:

Lots 2 and 3 in Block 257 of Rancho Rincon del Diablo, according to map thereof No. 725, records of said County.

OK
J.N.Cole
3/17/39

Said highway right of way hereby granted,conveyed and dedicated is more particularly described as follows,to-wit:

That portion of said Lots 2 and 3 in Block 257, included within a strip of land 66 feet wide, 33 feet each side of the following described center line:

Beginning at the intersection of the southerly prolongation of the center line of unnamed street lying between Lots 3 and 4 in said Block 257 with the southerly line of said Rancho Rincon del Diablo; thence N. 8° 37' 30" E., to and along said center line, 1357.40 feet to an angle point therein; thence N. 27° 49' 15" E. continuing along said center line, 171.00 feet to the true point of beginning; thence leaving said center line, S 40° 58' 15" E. 236.15 feet to the beginning of a curve to the left having a radius of 500 feet; thence along said curve through a central angle of 23° 28' a distance of 204.78 feet; thence S. 17° 28' 15" W. 694.09 feet to a point in the center line of the unnamed street lying westerly of said Block 257, distant thereon N. 14° 17' 30" W. 587.57 feet from the intersection of said center line and its southerly prolongation with the said southerly line of Rancho Rincon del Diablo.

It is understood that the undersigned grantors grant only that portion of the above described right of way to which they hold title and in which they are interested.

Said right of way above described consists of_ acre more or less.

For the consideration named above we hereby grant to the County of San Diego the

privilege and right to extend drainage structures and excavation and embankment slopes beyond the limits of the above described right of way where required for the construction and maintenance of said County Highway.

And we, the said grantors, do hereby waive all claim for compensation for any and all damages on account of the location, establishment and construction of said highway; and do hereby grant to the County of San Diego, State of California, all trees, growths (growing or that may hereafter grow) and roadbuilding materials within said right of way, together with the right to use the same in such manner and at such locations as said grantee may deem proper, needful or necessary in the construction, reconstruction and maintenance of said highway.

IN WITNESS WHEREOF Lawrence O.Spieth and Helen N.Spieth have set their hands and seal, this 13th day of February, 1939.

Signed, sealed and delivered in the presence of J. E.Splittorf
L.A.O'Neil
As subscribing witness

Lawrence O.Spieth (Seal)
Helen N.Spieth (Seal)
Burnet C.Wohlford (Seal)
Mildred F.Wohlford (Seal)

State of Ohio, } ss.
County of Cuyahoga, }

On this 13th day of February, Nineteen Hundred and thirty-Nine, before me, J.E.Splittorf, a Notary Public in and for said County and State, residing therein, duly commissioned and sworn personally appeared LAWRENCE O. SPIETH and HELEN N. SPIETH, his wife, known to me to be the persons described in and whose names are subscribed to the within instrument and acknowledged to me that they executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal, at my office in said County of Cuyahoga, State of Ohio, the day and year in this certificate first above written.

J.E. Splittorf
Notarial Seal,
Cuyahoga County

J.E. Splittorf
Notary Public in and for the County of Cuyahoga, State of Ohio.

THE STATE OF OHIO, } ss.
CUYAHOGA COUNTY, }

I, JOHN J. BUSHER, Clerk of the Court of Common Pleas, a Court of Record of Cuyahoga County, aforesaid, DO HEREBY CERTIFY THAT, J.E.Splittorf before whom the annexed acknowledgment, oath, affidavit, was taken, was at the date thereof a NOTARY PUBLIC, in and for said County, duly authorized by the laws of Ohio to take the same, also to make acknowledgments, affidavits and proofs, of deeds or conveyances for land, tenements or hereditaments situated and lying in said State of Ohio, and further that I am well acquainted with his handwriting and believe his signature thereto is genuine, and that the annexed instrument is executed according to the laws of the State of Ohio.

Commission expires July 8, 1941.

IN TESTIMONY WHEREOF, I hereunto subscribe my name and affix the seal of said Court, at Cleveland, Ohio, this 13 day of February A.D. 1939.

John J.Busher Clerk

No. L 6079

Common Pleas Court
Cuyahoga County,
Ohio

STATE OF CALIFORNIA, } ss.
County of San Diego }

On this 25th day of March in the year 1939, before me, J.B.McLean, County Clerk and ex-officio Clerk of the Superior Court in and for said County, which is a court of record having a seal, personally appeared BURNET C. WOHLFORD and MILDRED F. WOHLFORD known to me to be the persons described in and whose names are subscribed to and who executed the annexed instrument, and acknowledged to me that they executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of said Court at my office in the County of San Diego, the day and year in this Certificate first above written.

J.B.McLean, County Clerk and ex-officio Clerk of the Superior Court
By Albert W. Daniels Deputy

In the Matter of Accepting }
Easement for Road Survey 765.) (Unnamed Street in the Rancho Rincon Del Diablo)

ON MOTION of Supervisor Faddis, seconded by Supervisor Hart, the following Resolution is adopted by the Board of Supervisors:

WHEREAS, LAWRENCE O. SPIETH AND HELEN N. SPIETH, husband and wife; and BURNET C. WOHLFORD AND MILDRED F. WOHLFORD, husband and wife, have tendered to this Board a deed dated February 13, 1939, conveying to the County of San Diego, an easement for a public highway, across and over the following-described property:

Lots 2 and 3 in Block 257 of Rancho Rincon del Diablo, according to map thereof No. 725, records of said County.

NOW, THEREFORE, THE BOARD OF SUPERVISORS OF SAN DIEGO COUNTY, CALIFORNIA, HEREBY RESOLVES AS FOLLOWS:

RECORDED BY BURNETT R. DEPUTY RECORDER

That the said deed be, and the same is hereby accepted, and the Clerk of this Board is hereby ordered and directed to cause the same to be recorded in the office of the County Recorder of the County of San Diego, State of California.

Passed and adopted by the Board of Supervisors of the County of San Diego, State of California, this 10th day of April, 1939, by the following vote, to wit:

AYES: Supervisors Bolton, Richards, Peddis, Warner and Hart.

NOES: Supervisors None

ABSENT: Supervisors None

STATE OF CALIFORNIA } ss
County of San Diego }

I, J.B.McLoss, do hereby certify that I am the County Clerk of the County of San Diego, State of California, and ex officio Clerk of the Board of Supervisors of said County; that the foregoing resolution was passed and adopted by the Board of Supervisors at a regular meeting thereof, at the time and by the vote above stated.

J.B.McLoss, County Clerk
and ex officio Clerk of the Board of Supervisors.

Board of Supervisors
San Diego County,
California

By L. O'Kennedy Deputy

Document No. 507
Filed Board of Supervisors
Apr 5 10:48 AM 1939
J.B.McLoss, Co. Clerk
By H. Klecknar Deputy Ap 10,1939

Recorded at request of County Board of Supervisors Apr 13, 1939 25 min. past 10 A.M.

Roger H. Howe, County Recorder
By Deputy D.Cole

xx/14

16481

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Date of Instrument 10/4/40. Time Received [illegible] in this Year Book. No. 5768 Official Records Book No. 1691 Page 426

THIS DEED OF TRUST, made this 6th day of April, 1939

BETWEEN THOMAS MOOSIOS Also known as Tom Moosios and BERTHA MOOSIOS, husband and wife, hereinafter called the TRUSTOR, UNION TITLE INSURANCE AND TRUST COMPANY, a corporation, of San Diego, California, hereinafter called the TRUSTEE; and JOHN C. WEISS hereinafter called the BENEFICIARY;

WITNESSETH: That, Whereas, the makers of the note hereinafter mentioned are indebted to the Beneficiary in the sum of FOUR HUNDRED TWENTY-FIVE AND NO/100 Dollars, and have agreed to pay the same, with interest, according to the terms of one certain Promissory Note in words and figures as follows:

$425.00 San Diego, California, April 6th, 1939.

In installments and at the time hereinafter stated, for value received I promise to pay to JOHN C. WEISS or order, at San Diego, California the principal sum of Four Hundred Twenty-Five and no/100 Dollars, with interest from date on the amounts of principal remaining from time to time unpaid, until said principal sum is paid, at the rate of six per cent. per annum. Principal and interest payable in monthly installments of Fifteen and no/100 Dollars, or more each, on the 6th day of each and every month, beginning May 6th, 1939, and continuing monthly to and including Oct. 6th, 1940, on which date I promise to pay entire balance of principal and accrued interest then remaining unpaid.

Each of said payments shall be credited as follows: First on the interest then due; and the remainder on the principal sum; and interest shall thereupon cease upon the amount so credited on the said principal sum. Should the interest not be so paid it shall, at the option of the holder of this note, become a part of the principal and thereafter bear like interest as the principal. Should default be made in the payment of any of said installments when due, then the whole sum of principal and interest shall become immediately due and payable at the option of the holder of this note. Should suit be commenced or an attorney employed to enforce payment of this note, the undersigned agrees to pay in addition, a reasonable sum as attorney's fees. Principal and interest payable in lawful money of the United States. This note is secured by a certain Deed of Trust to the UNION TITLE INSURANCE AND TRUST COMPANY, a corporation.

TOM MOOSIOS
BERTHA MOOSIOS

198728

FILE/PAGE NO.
RECORDER, REQUESTED

Clerk, Board of Supervisors
San Diego County Administration Center
1600 Pacific Highway
San Diego, California 92101

(9)

County Board of Supervisors

OCT 23 9 28 AM '69

SERIES 10 BOOK 969
OFFICIAL RECORDS
SAN DIEGO COUNTY, CALIF.
A. S. GRAY, RECORDER
NO FEE

SPACE ABOVE FOR RECORDER'S USE ONLY

Coord 338-1751

# GRANT DEED

TRANSFER TAX PAID
A. S. GRAY, COUNTY RECORDER

Road Survey No. 1791-1
Parcel No. 68527

TRANSFER TAX 4.95
UNINCORPORATED AREA

Spieth & Wohlford, Inc., a corporation

for a valuable consideration do hereby

GRANT to the COUNTY OF SAN DIEGO all that real property in the County of San Diego, State of California, described as follows:

Those portions of Lots 2, 3 and 4 in Block 257 of the Rancho Rincon del Diablo according to Map thereof No. 648 filed in the Office of the County Recorder of the County of San Diego, together with that portion of the unnamed street bounded on the West by said Lots 2 and 3 and on the East by said Lot 4 vacated to public use May 29, 1939 by the Board of Supervisors of San Diego County, all described in Deed to Spieth & Wohlford, Inc., recorded December 28, 1967 as Document No. 204198 of Official Records in said Office of the County Recorder lying within a strip of land 60 feet wide, 30 feet on each side of the following described center line:

COMMENCING at a point in the easterly line of Greenacres Estates Unit No. 1 according to Map thereof No. 3036 filed in said Office of the County Recorder distant thereon S.5°03'E. 680.57 feet from the northeast corner of said Subdivision (S.4°37'16"E. per California Coordinate System Zone 6) said point being the intersection of said easterly line with the tangent portion of the center line of Sunset Drive prolonged southeasterly as shown on said Map; thence along bearings and distances based on said California Coordinate System Zone 6 as follows: N.50°18'16"W. along said prolongation and said tangent portion of the center line of Sunset Drive, a distance of 145.28 feet; thence N.87°32'24"E. 91.06 feet to the TRUE POINT OF BEGINNING of the herein described center line, said point having coordinates N=338,289.51 and E=1,752,527.48 of the California Coordinate System Grid Zone 6; thence along bearings and distances based on said Zone 6 as follows: N.2°27'36"W. 397.30 feet to the beginning of a tangent curve to the Left having a radius of 2500 feet; thence northerly along said curve through a central angle of 11°21'37" a distance of 495.68 feet; thence tangent to said curve N.13°49'13"W. 88.34 feet to the beginning of a tangent curve to the Right having a radius of 1000 feet; thence northerly and northeasterly along said curve through a central angle of 54°50'18" a distance of 957.11 feet; thence tangent to said curve N.41°01'05"E. 1519.69 feet to the beginning of a tangent curve to the Left having a radius of 1000 feet; thence northeasterly along said curve through a central angle of

No.

17°19'33" a distance of 302.39 feet; thence tangent to said curve N.23°41'32"E. 206.84 feet to the beginning of a tangent curve to the Right having a radius of 1000 feet; thence northeasterly along said curve through a central angle of 27°16'46" a distance of 476.12 feet; thence tangent to said curve N.50°58'18"E. 518.74 feet to the beginning of a tangent curve to the Left having a radius of 2000 feet; thence northeasterly and northerly along said curve through a central angle of 53°29'11" a distance of 1867.03 feet to a point of tangency in the center line of Bear Valley Road 66 feet wide as shown on Map No. 725 of Rancho Rincon del Diablo filed in the Office of the County Recorder of San Diego County, said point bearing N.25°02'44"E. 794.33 feet from a 5/8 inch pin marking the northeast corner of Lot 4 in Block 188 of said Rancho Rincon del Diablo. Said point of tangency has coordinates N=344,090.57 and E=1,755,304.76 of said California Coordinate System Grid Zone 6.

Also that portion of said Lot 3 lying westerly of the westerly line of the herein-before described 60 foot strip of land and southerly of that certain course in the northerly and westerly boundary so described in said Deed to Spieth & Wohlford having a bearing of N.75°45'E. and a length of 163.8 feet.

ALSO granting to the County of San Diego the privilege and right to extend drainage structures and excavation and embankment slopes where required for the construction and maintenance of said County highway over that portion of said Lot 3 lying easterly of the above described 60 foot strip of land and lying within an area not to exceed 30 feet easterly of said 60 foot strip of land.

We also grant to the County of San Diego the privilege and right to extend drainage structures and excavation and embankment slopes over and across that portion of Lot 4 in Block 257 of the Rancho Rincon del Diablo, according to Map thereof No. 648 filed in the Office of the County Recorder of the County of San Diego lying within the following described parcel of land: COMMENCING at the southwesterly terminus of that certain center line course herein before described having a bearing of N.41°01'05"E. and a length of 1519.69 feet; thence N.41°01'05"E. along said center line a distance of 445 feet; thence at right angles S.48°58'55"E. 35 feet to the TRUE POINT OF BEGINNING; thence retracing N.48°58'55"W. 35 feet to said center line; thence S.41°01'05"W. along said center line and its southwesterly prolongation, a distance of 515 feet; thence at right angles S.48°58'55"E. to a point on a line that is parallel with and distant 40 feet at right angles southeasterly from said prolongation and said center line; thence N.41°01'05"E. along said parallel line a distance of 360 feet; thence northeasterly in a straight line to the TRUE POINT OF BEGINNING.

The grantor further understands that the present intention of the grantee is to construct and maintain a public highway o the lands hereby conveyed in fee and the grantor, for himself, his successors and assigns, hereby waives any claims for any an all damages to grantor's remaining property contiguous to the property hereby conveyed by reason of the location, construction landscaping or maintenance of said highway.

(As used above, the term "grantor" shall include the plural as well as the singular number and the words "himself" and "his" sha include the feminine gender as the case may be.)

Dated this 2 ND day of OCT 1969

Smith & Wohlford, Inc., a Corporation

SEAL June 13, 1967 CALIFORNIA

E. C. Wohlford, President

E. F. Wohlford, Secretary

STATE OF CALIFORNIA, County of San Diego } ss.

On this ..... day of ..... in the year 19....., before me, R. B. JAMES, County Cle and ex-officio Clerk of the Superior Court in and for said County, which is a court of record having a seal, personally appear

known to me to be the person ..... described in and whose name ..... subscribed to and who executed the annex instrument, and acknowledged to me that ..... he ..... executed the same.

In Witness Whereof, I have hereunto set my hand and affixed the seal of said Court at my office in the County of San Dieg the day and year in this Certificate first above written.

R. B. JAMES, County Clerk and ex-officio Clerk of the Superior Court

By ....., Depu

This is to certify that the interest in real property conveyed by the foregoing deed or grant to the County of San Dieg a political corporation, is hereby accepted by order of the Board of Supervisors on 10-27-69 # 38 a said County consents to recordation thereof by its duly authorized officer.

Dated 10-27-69

PORTER D. CREMANS, Clerk of the Board of Supervisors

By Shanna McKinley, Depu

FOR CLERK OF THE BOARD

120170
RECORDS
ED
1 42 PM '69

FOR COUNTY ENGINEER

NO.

APPROVED

FOR COUNTY COUN

APPROVED AS TO FORM:
BERTRAM McLEES, JR.
County Counsel

By William C. Dee
Deputy

STATE OF CALIFORNIA,
County of San Diego, } ss.

On this 2nd day of October, in the year One Thousand Nine Hundred and sixty nine, before me, R. B. JAMES, County Clerk and ex-officio Clerk of the Superior Court, in and for said County, which is a court of record having a seal, personally appeared B. C. Wohlford known to me to be the President and B. F. Wohlford known to me to be the Secretary of the Corporation that executed the within instrument, known to me to be the persons who executed the within instrument on behalf of the Corporation therein named, and acknowledged to me that such Corporation executed the within instrument pursuant to its by-laws or a resolution of its board of directors.

R. B. JAMES,
County Clerk and Ex-Officio Clerk of the Superior Court.

By Harry I. Saunders Deputy
HARRY I. SAUNDERS

1M-8/56 Pioneer

(b)

1B

807

FILE/PAGE NO. 75-267031
BOOK 1976
RECORDED REQUEST OF
SAN DIEGO GAS & ELECTRIC CO.
SEP 30 9 48 AM '75
OFFICIAL RECORDS
SAN DIEGO COUNTY, CALIF.
HARLEY F. SLOOM
RECORDER

TRANSFER TAX NONE
SAN DIEGO GAS & ELECTRIC CO.
SIGNATURE Lee Blanes

MAIL TO
SAN DIEGO GAS & ELECTRIC CO.
P. O. BOX 1831
SAN DIEGO, CALIFORNIA, 92112
ATTN. OF J. C. KENNEDY

99568

RIGHT OF WAY

$6.00

SPIETH & WOHLFORD, INC., a corporation

_____, hereinafter called "Grantor", for valuable consideration grant(s) to San Diego Gas & Electric Company, a corporation, hereinafter called "Grantee", an easement and right of way upon, over, under and across the lands hereinafter described, to erect, construct, reconstruct, replace, repair, maintain and use, a line of poles with wires suspended thereon and all necessary and proper guys, anchorage, crossarms, braces and other fixtures for use in connection therewith, for the transmission and distribution of ELECTRICITY for all purposes for which it may be used, at such locations and elevations upon, along and over the hereinafter described easement and right of way as Grantee may now or hereafter deem convenient and necessary at any time and from time to time, together with the right of ingress thereto and egress therefrom, to and along said line, over and across the Grantor's land situated in the County of San Diego, State of California, and more particularly described as follows:

Lots 2, 3 and 4 in Block 257 of Rancho Rincon del Diablo, according to Map thereof No. 648, filed in the office of the County Recorder of said County November 20, 1890, together with that portion of the unnamed street bounded on the West by said Lots 2 and 3 and on the East by said Lot 4, vacated and abandoned to public use May 29, 1939, by the Board of Supervisors of said County, all being described in Deed recorded December 28, 1967 at Recorder's File/Page No. 204198 of Official Records of said County.

The said easement and right of way in the aforesaid lands is particularly described as follows:

75-267031

PARCEL 1:

That certain strip of land 12.00 feet in width being 6.00 feet on each side of the following described center line:

Beginning at a point on the Easterly line of Lot 8 of Rancho Vista Verde Unit No. 1, according to Map thereof No. 4748, filed in the office of the County Recorder of said County, distant thereon South 14° 13' 56" East, 66.54 feet from the Northeast corner thereof; thence from said POINT OF BEGINNING North 75° 46' 04" East, 16.30 feet; thence North 71° 14' 28" East, 258.00 feet.

PARCEL 2:

That certain strip of land 4.00 feet in width being 2.00 feet on each side of the following described center line:

Beginning at the Southeast corner of Lot 4 of said Rancho Vista Verde Unit No. 1, which corner bears South 14° 13' 56" East from the Northeast corner thereof; thence North 9° 36' 49" East, 44.74 feet; thence North 77° 02' 31" East, 96.00 feet.

PARCEL 3:

That certain portion of said Lot 4 in Block 257 of Rancho Rincon del Diablo, described as follows:

Beginning at the most Northerly corner of said Lot 4; thence along the Easterly line thereof South 9° 08' 54" West, 23.55 feet; thence North 48° 58' 55" West, 12.43 feet to a point on the Southeasterly line of Bear Valley Parkway, which point bears South 41° 01' 05" West from the point of beginning; thence North 41° 01' 05" East along said Southeasterly line 20.00 feet to the point of beginning.



75-267031

Grantor grants to Grantee the right to erect and maintain on the above described lands of the Grantor adjacent to said easement and right of way such anchorage as may be necessary at any time and from time to time to properly guy said line of poles.

Grantor shall not erect, place or construct, nor permit to be erected, placed or constructed, any building or other structure; plant any tree; drill or dig any well, within the limits of said easement and right of way.

Grantee shall have the right, but not the duty, to trim or remove trees and brush along or adjacent to said easement and right of way whenever Grantee deems it necessary. Said right shall not relieve Grantor of the duty as owner to trim or remove trees and brush to prevent danger or hazard to property or persons.

The terms, covenants and conditions of this easement and right of way shall be binding upon and inure to the benefit of my heirs, executors, administrators, permittees, licensees, agents or assigns of Grantor and the successors and assigns of Grantee.

IN WITNESS WHEREOF, the Grantor _____ executed this instrument this 18 day of Sept, 19 75.

Executed in the Presence of:

_____
Witness

SPIETH & WOHLFORD, INC.,
a corporation

By _____

By _____

DRAWN...Bickley.....
CHECKED .....
SKETCH NO. S-3333-85-2
DATE...8/13/74.....
HOPAG NO. 51994-01.
(B)



75-267031

CORPORATION FORM

STATE OF _____)
ss.

STATE OF CALIFORNIA,
County of San Diego } ss.

ON THIS 18th day of September A.D., 19 75, before me, the undersigned, a Notary Public in and for said County and State, residing therein, duly commissioned and sworn, personally appeared Keith Lyle Little known to me to be the person whose name is subscribed to the within Instrument, as a Witness thereto, who being by me duly sworn, deposes and says: That he resides in San Diego, California and that he was present and saw Burnet C. Wohlford known to him to be the President and Burnet F. Wohlford known to him to be the Vice President of the Corporation named in said Instrument, execute and deliver the same, and they acknowledged to said affiant that they executed the same on behalf of the Corporation therein named, and that said affiant subscribed his name thereto as a Witness.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate above written.

LEE BLANAS
NOTARY PUBLIC
Principal Office: San Diego Co. Calif.
My Commission Expires November 5, 1976

(Seal) Lee Blanas
Notary Public in and for said County and State

CORPORATION WITNESS FORM

FORM 113-1340

75-267031

# APPENDIX F

**Spieth & Wohlford, Inc.**
661 Bear Valley Parkway
Escondido, CA 92025

Inquiry Number: 3491546.4
January 11, 2013

# The EDR Aerial Photo Decade Package

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

# EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

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***Thank you for your business.***
Please contact EDR at 1-800-352-0050
with any questions or comments.


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## Date EDR Searched Historical Sources:

Aerial Photography January 11, 2013

## Target Property:

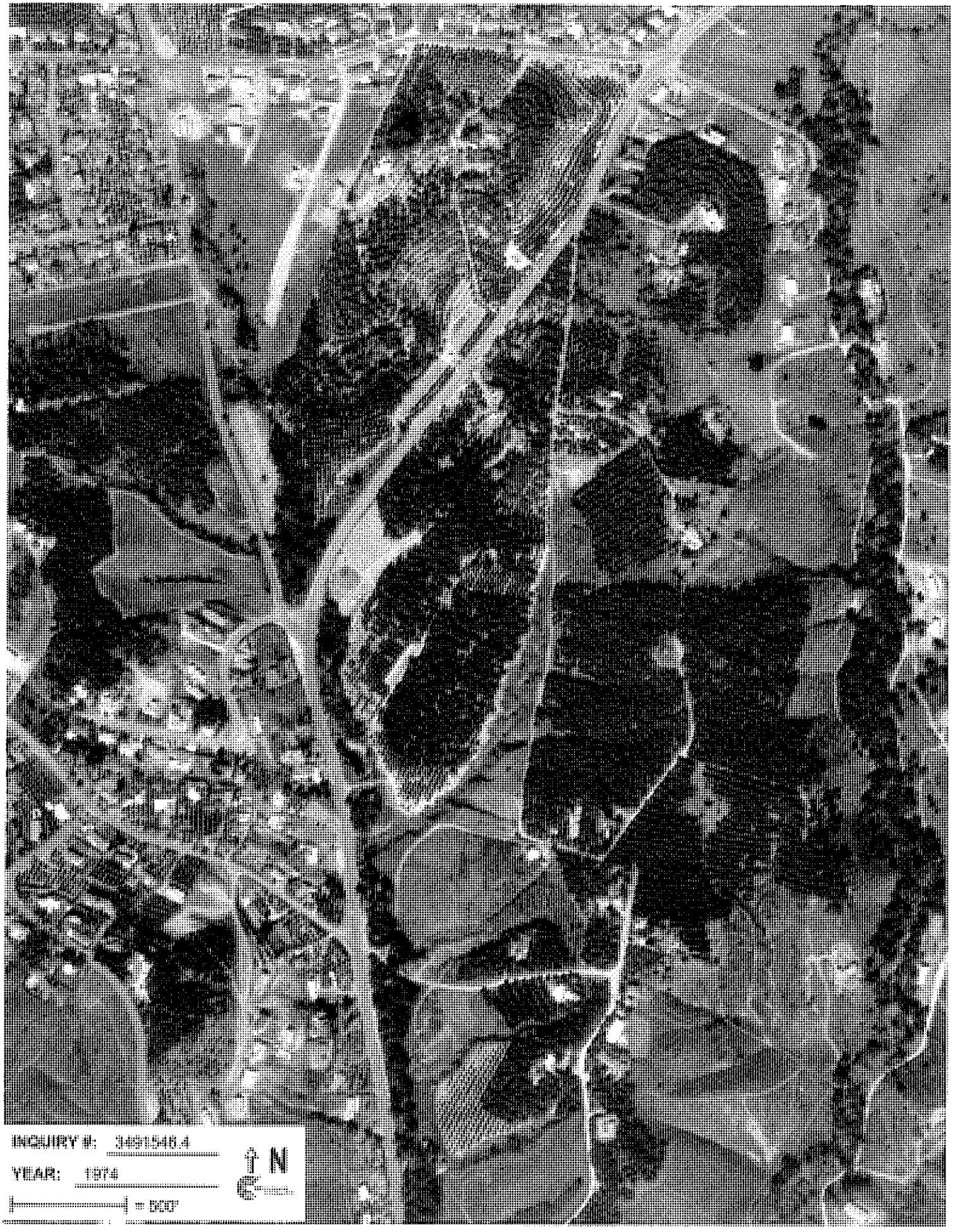
661 Bear Valley Parkway
Escondido, CA 92025

| *Year* | *Scale* | *Details* | *Source* |
|---|---|---|---|
| 1947 | Aerial Photograph. Scale: 1"=500' | Flight Year: 1947 | Jack Ammann |
| 1953 | Aerial Photograph. Scale: 1"=500' | Flight Year: 1953 | Park |
| 1963 | Aerial Photograph. Scale: 1"=500' | Flight Year: 1963 | Cartwright |
| 1974 | Aerial Photograph. Scale: 1"=500' | Flight Year: 1974 | AMI |
| 1980 | Aerial Photograph. Scale: 1"=500' | Flight Year: 1980 | AMI |
| 1990 | Aerial Photograph. Scale: 1"=500' | Flight Year: 1990 | AMI |
| 1995 | Aerial Photograph. Scale: 1"=500' | /DOQQ - acquisition dates: 1995 | EDR |
| 2005 | Aerial Photograph. Scale: 1"=500' | Flight Year: 2005 | EDR |

INQUIRY #: 3451548.4
YEAR: 1947
= 500'
N

ENQUIRY #: 3481645.4
YEAR: 1953
= 500'
N

ENQUIRY #: 3491548.4
YEAR: 1963
= 500'
N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YEAR: 1974
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INQUIRY #: 3491646.4
YEAR: 1990
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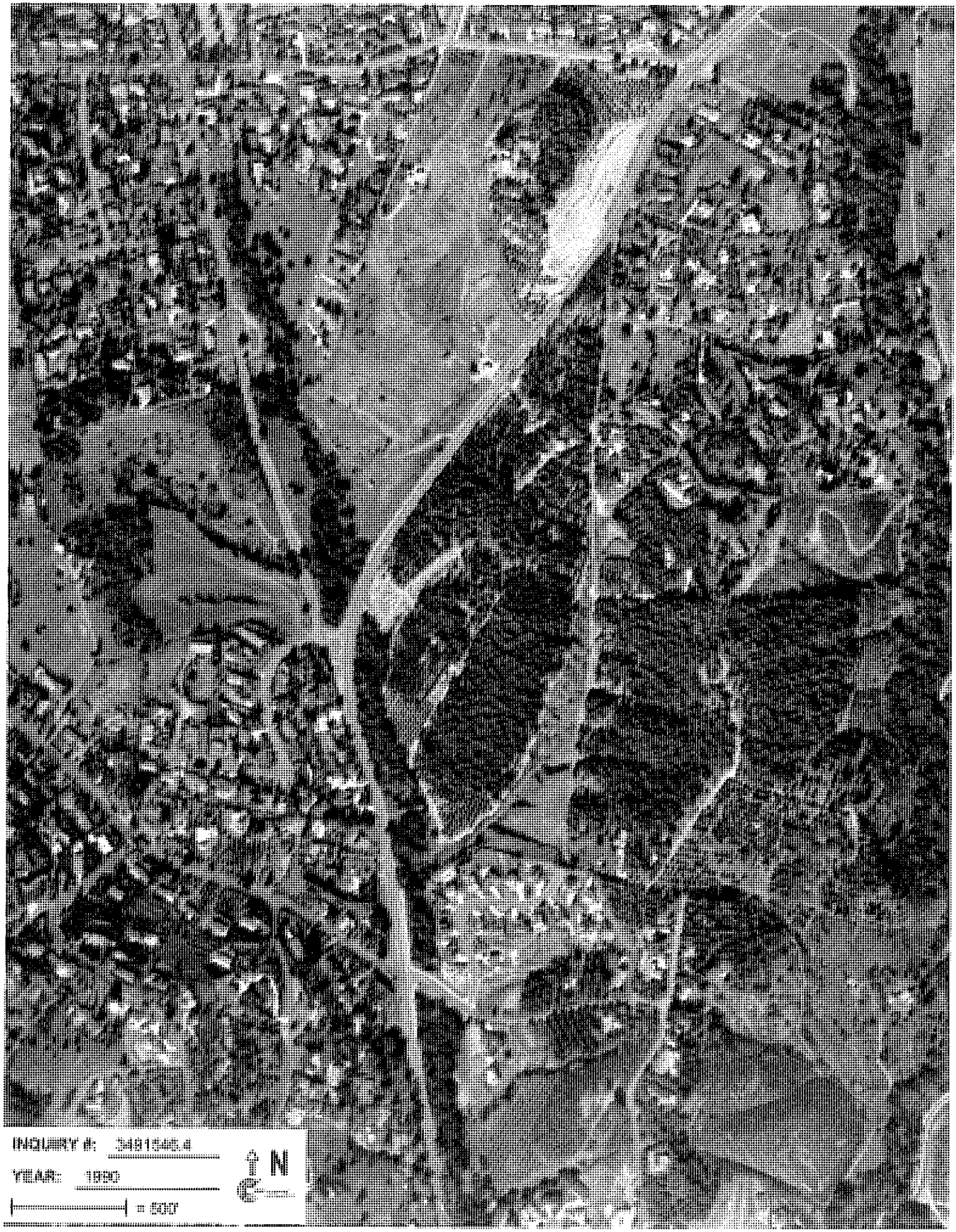
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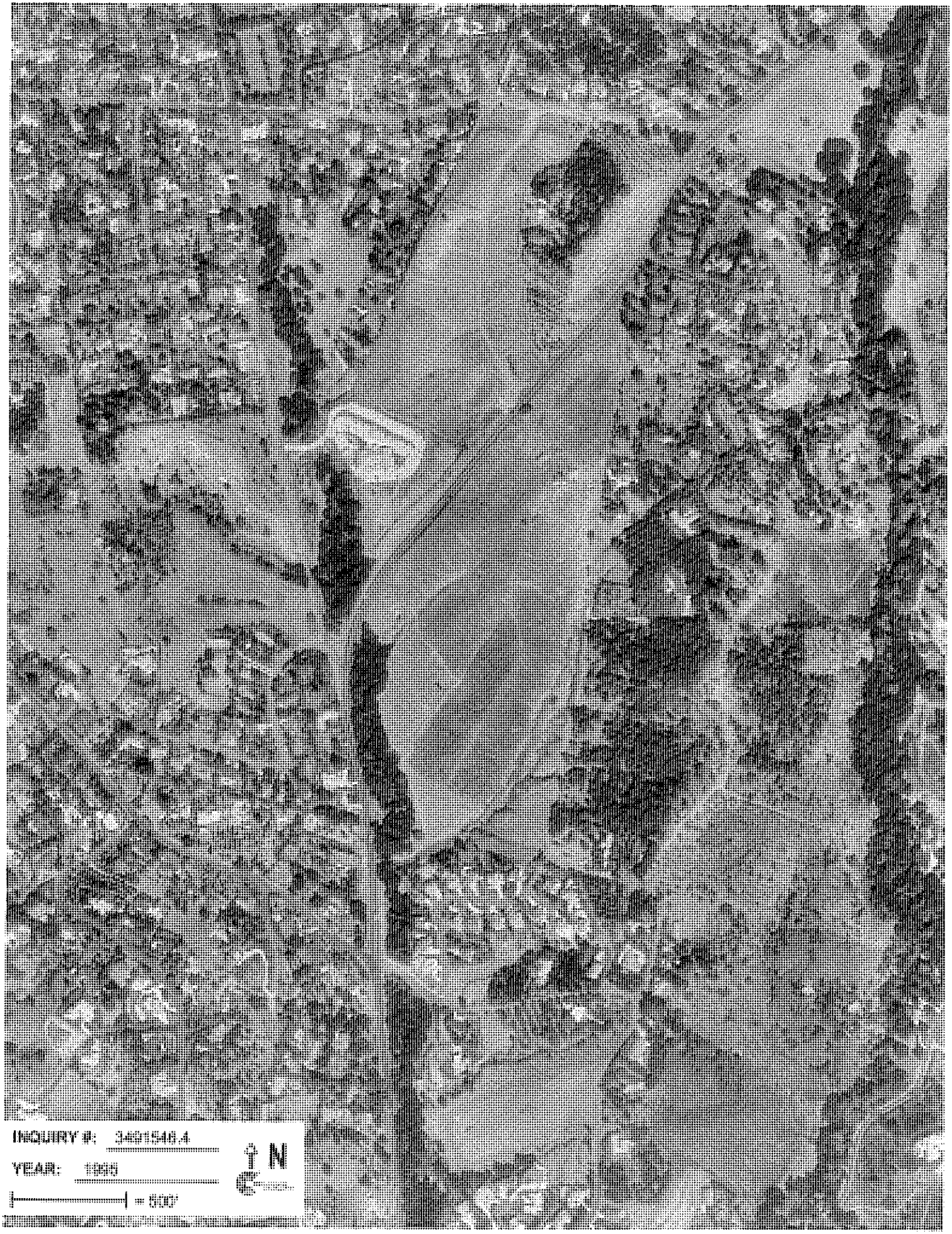
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YEAR: 1965
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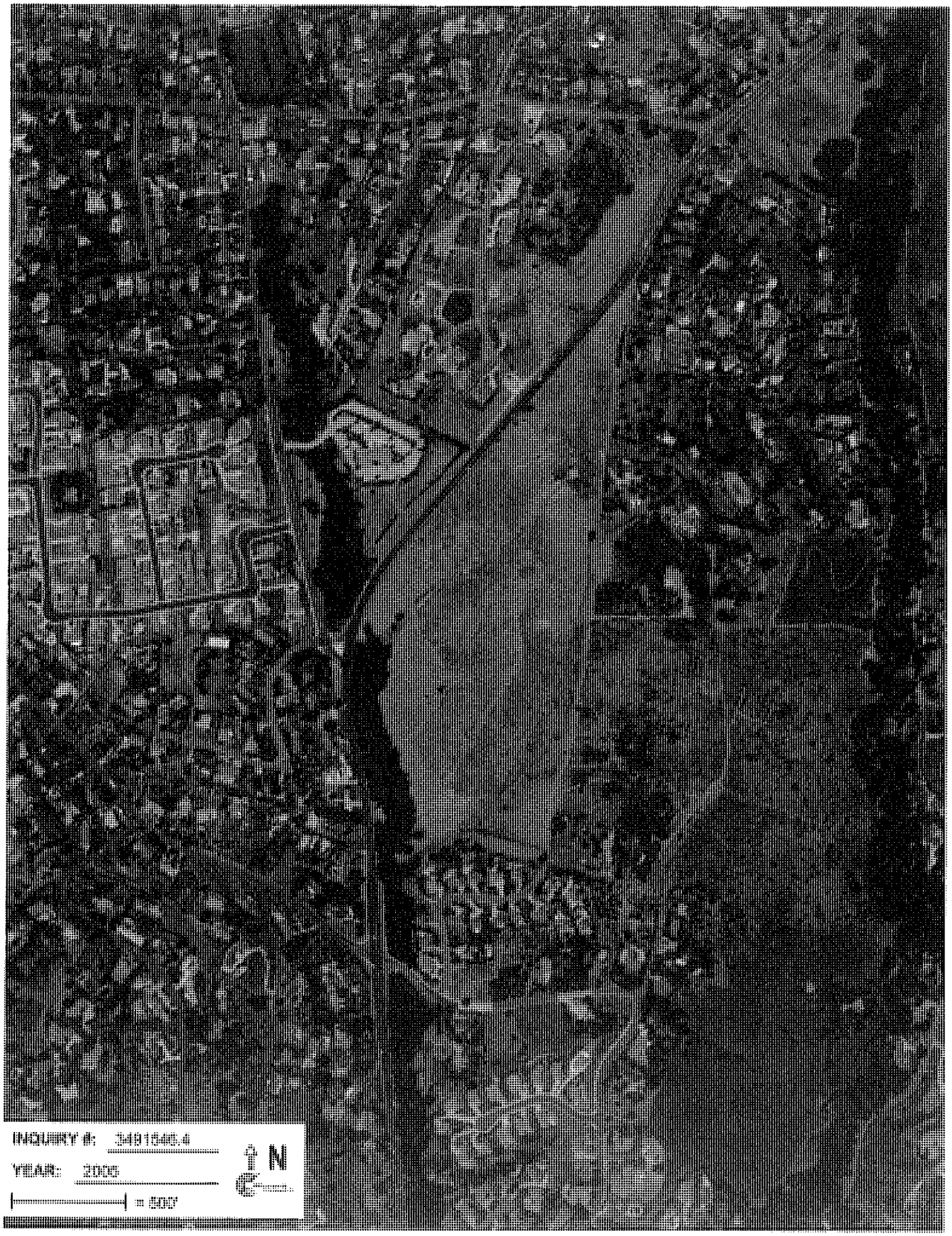
INQUIRY #: 3491540.4
YEAR: 2005
= 500'
N

# APPENDIX G

**Spieth & Wohlford, Inc.**
661 Bear Valley Parkway
Escondido, CA 92025

Inquiry Number: 3491546.3
January 09, 2013

# Certified Sanborn® Map Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

# Certified Sanborn® Map Report

1/09/13

**Site Name:**
Spieth & Wohlford, Inc.
661 Bear Valley Parkway
Escondido, CA 92025

**Client Name:**
Vinje & Middleton Engineering
2450 Auto Park Way
Escondido, CA 92029

EDR® Environmental Data Resources Inc

EDR Inquiry # 3491546.3

Contact: Brad Crawshaw

The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by Vinje & Middleton Engineering were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

***Certified Sanborn Results:***

**Site Name:** Spieth & Wohlford, Inc.
**Address:** 661 Bear Valley Parkway
**City, State, Zip:** Escondido, CA 92025
**Cross Street:**
**P.O. #** NA
**Project:** 13-118-H
**Certification #** 5B2E-46FB-B3EE

Sanborn® Library search results
Certification # 5B2E-46FB-B3EE

## UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✓ Library of Congress
- ✓ University Publications of America
- ✓ EDR Private Collection

*The Sanborn Library LLC Since 1866™*

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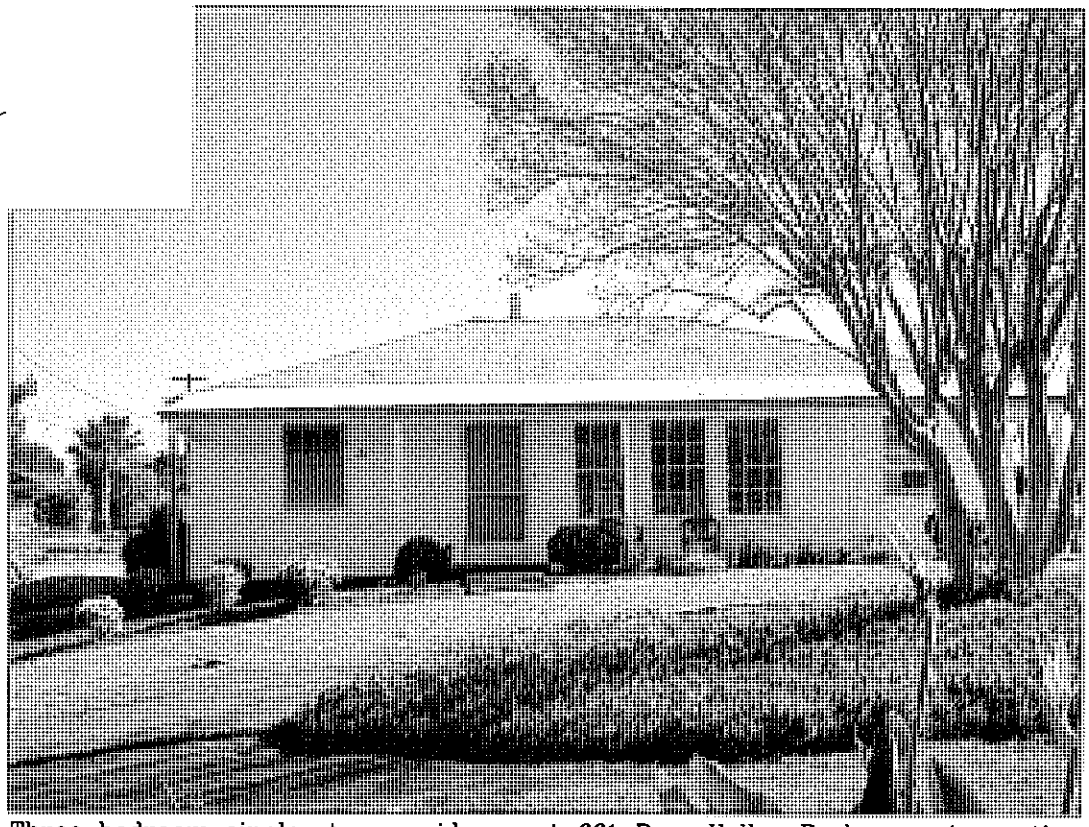
# APPENDIX H

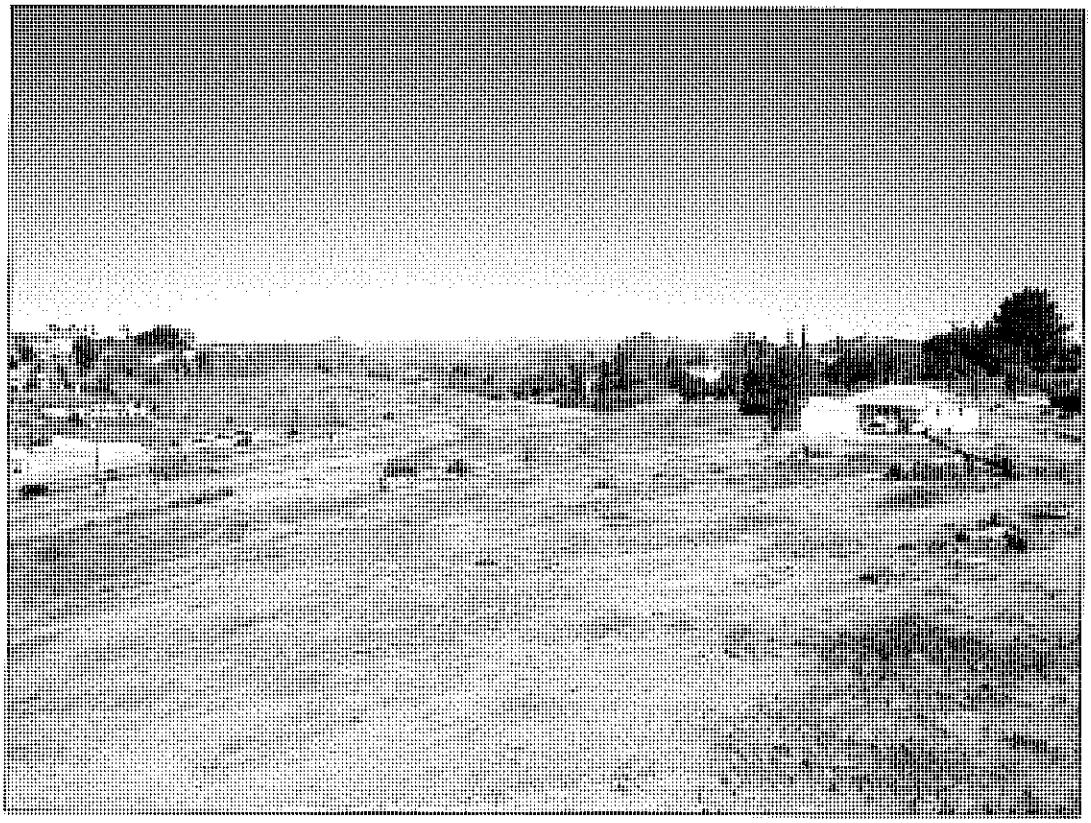
H



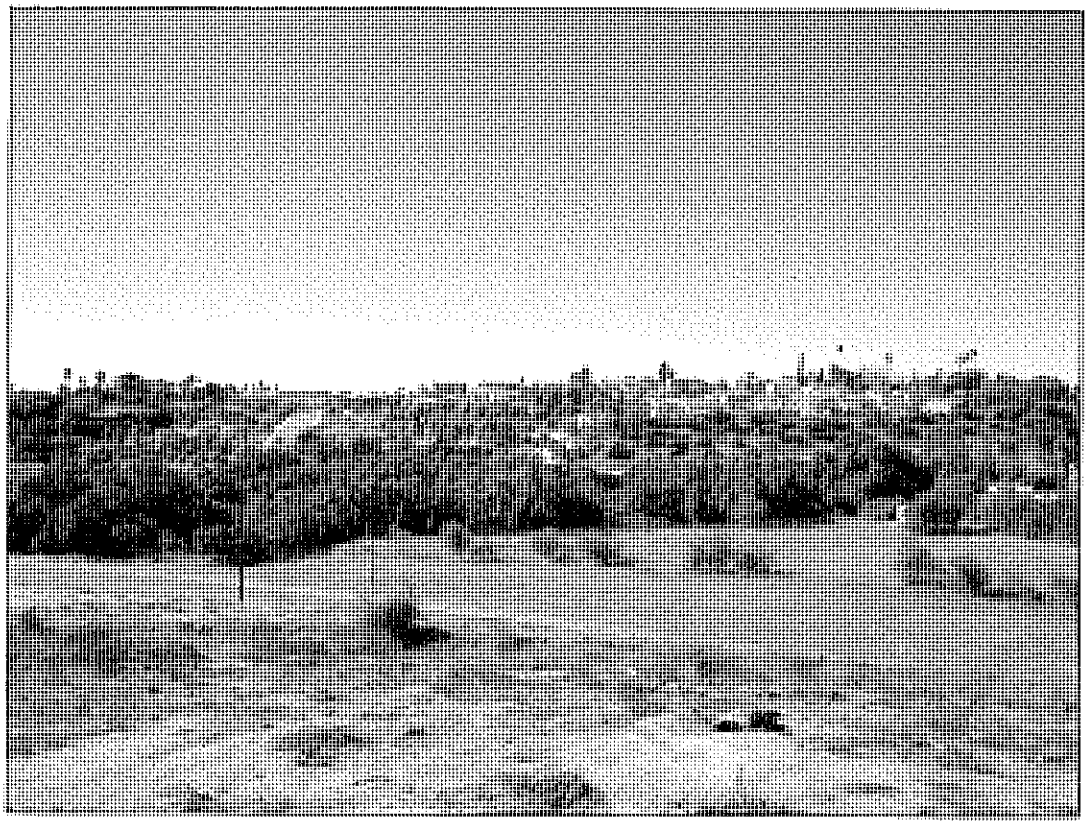
Three bedroom single story residence at 661 Bear Valley Parkway. Age estimated at 60 years. Escondido Building Department has no record of construction.

Detached single car garage located approximately 45-feet southwest of house.

Northeast view along Bear Valley Parkway on the Subject Properties west boundary.

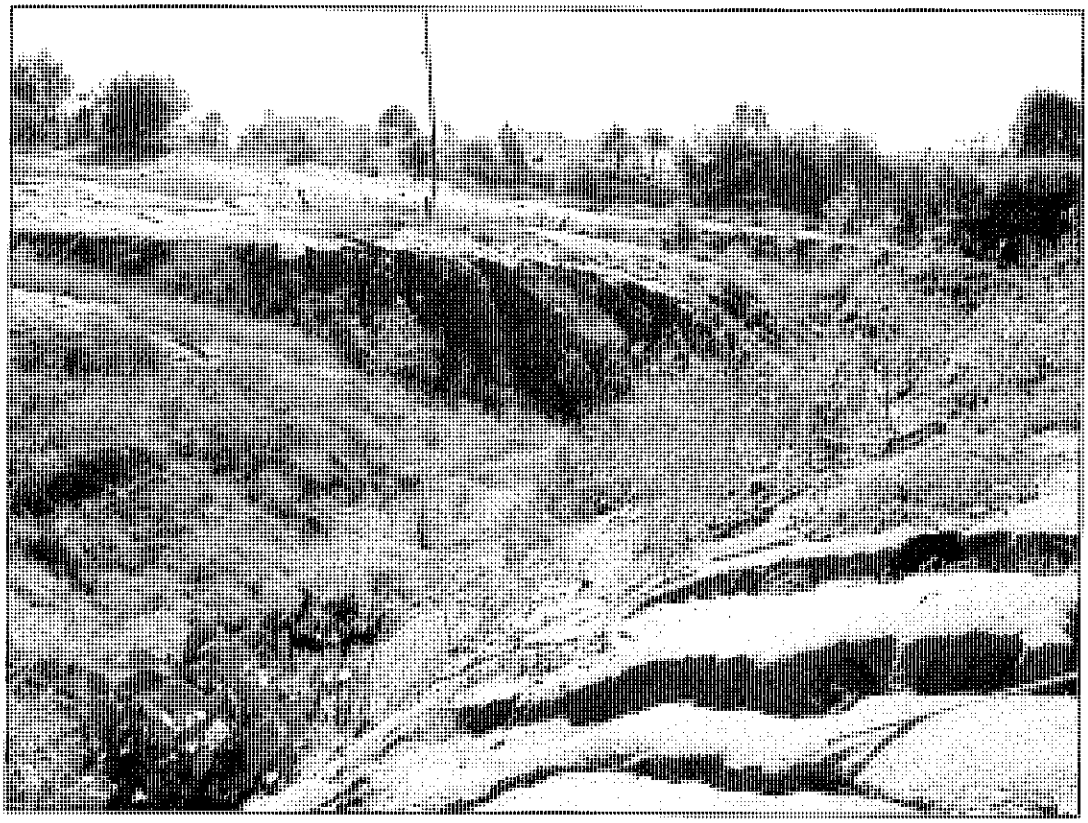


North view from high elevation on the Site. House and garage (661 Bear Valley Parkway) are in photo center right. Adjacent properties north and west are single family residential properties.

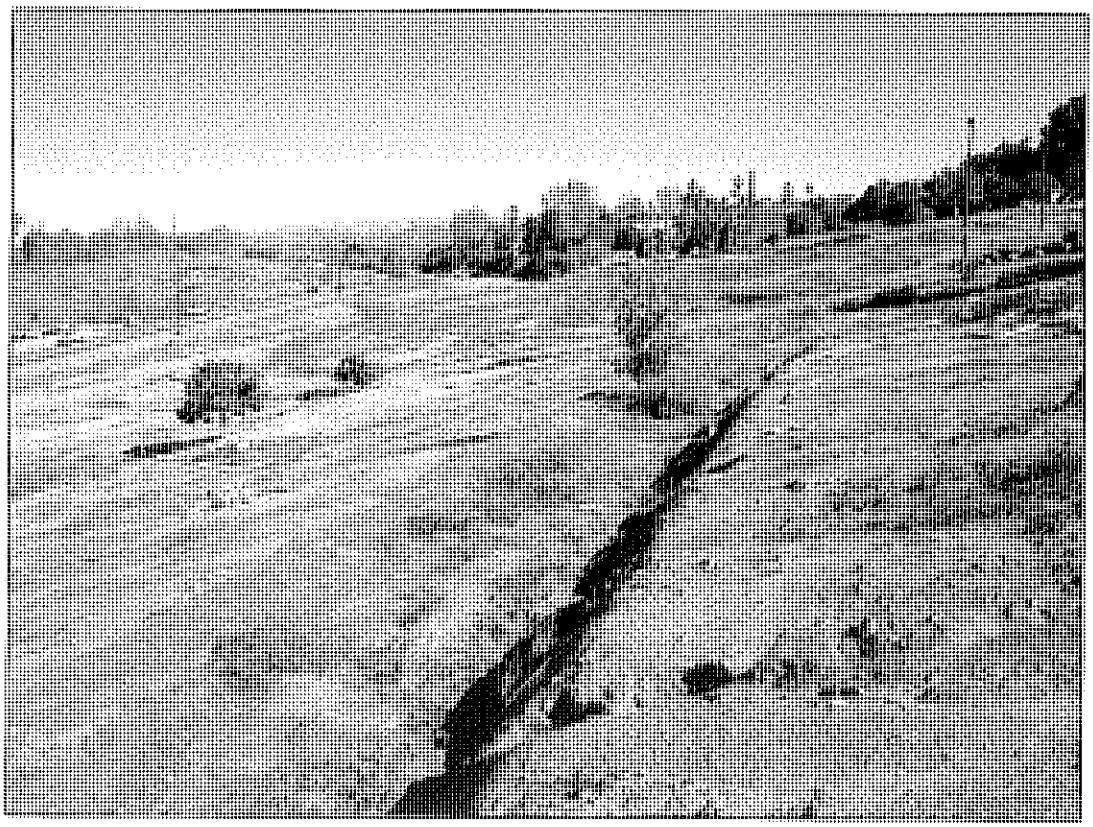


Southwest view from hilltop. Vacant lot opposite Bear Valley Parkway and residential properties in background.

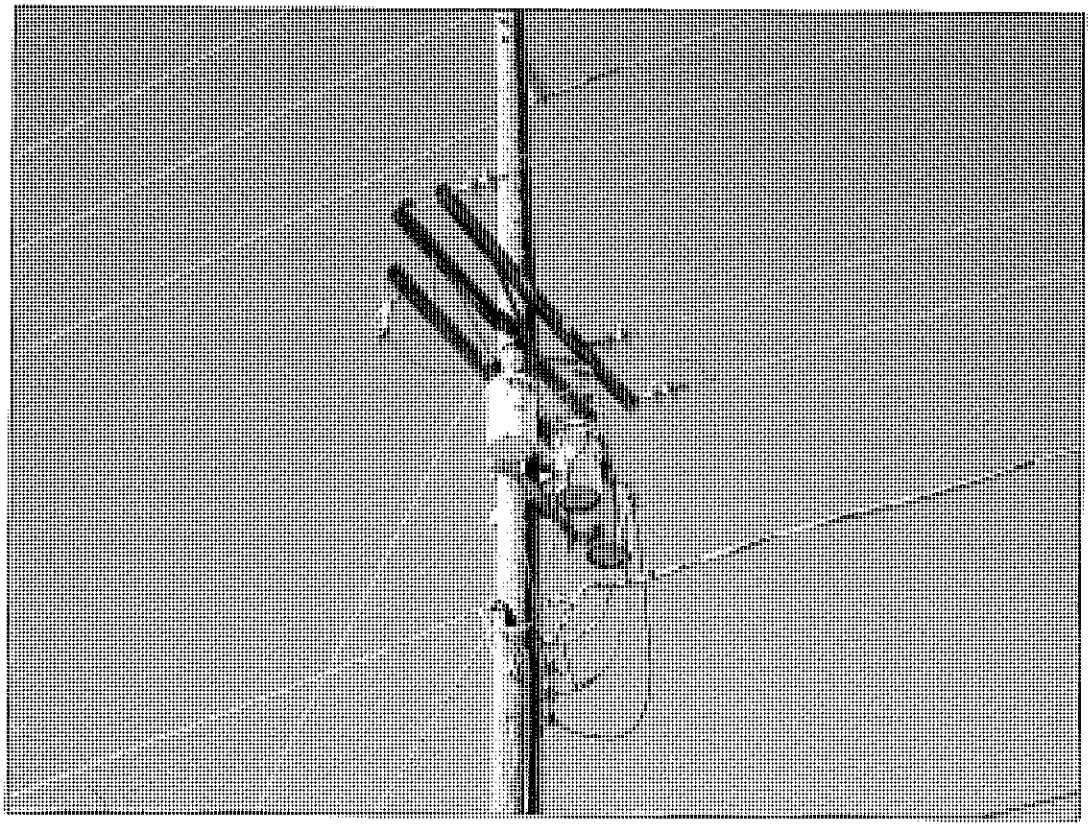
East view from ridgetop. Adjacent properties separated by Choya Canyon Rd. and south trending drainage swale. Asphalt driveway becomes dirt road as elevation drops to the right. Former entrance at southwest corner of property.



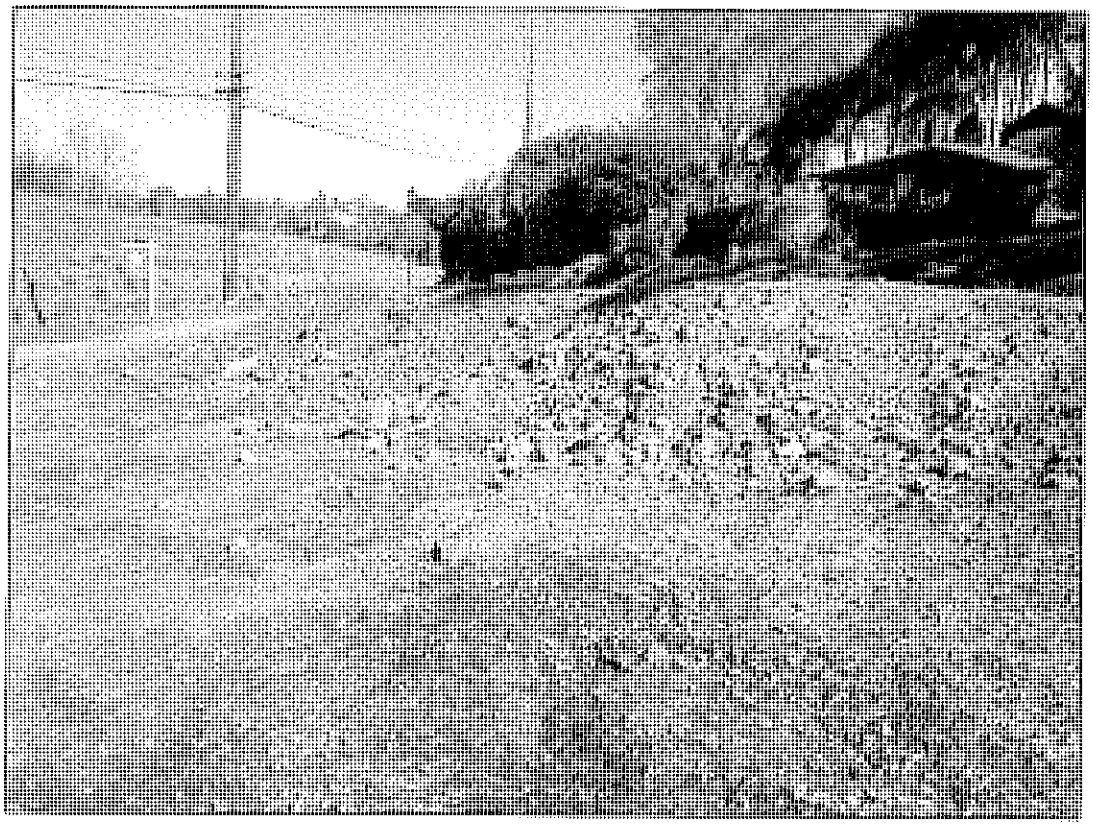
Deep erosional gully in subject properties southeast corner.



Man-made erosion control terrace on contour. This practice is in evidence in historic photographs throughout the project area.

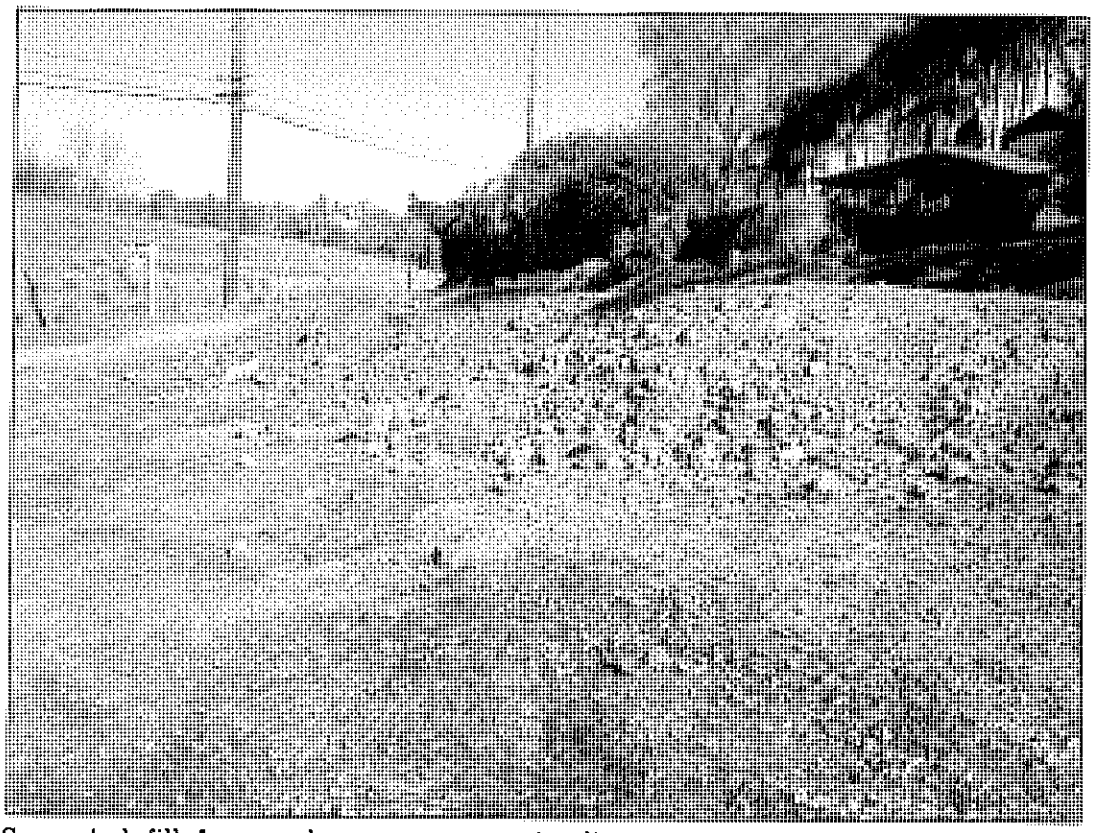


Three pole mounted 10 kilivolt-amp electrical transformers. Viewed in good general condition. No soil stains below transformers. Potential source for PCB contamination.

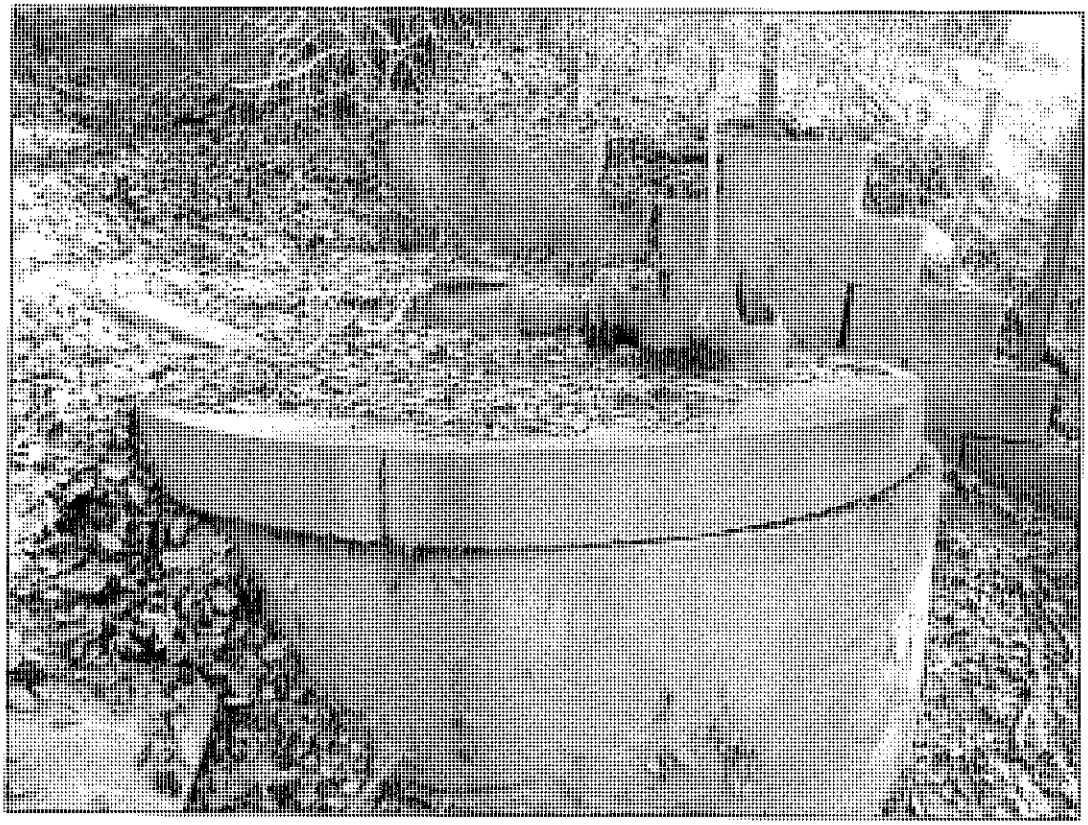


Dump fill over edge of Choya Canyon Road at Subject Properties northern intersection with Bear Valley Parkway.

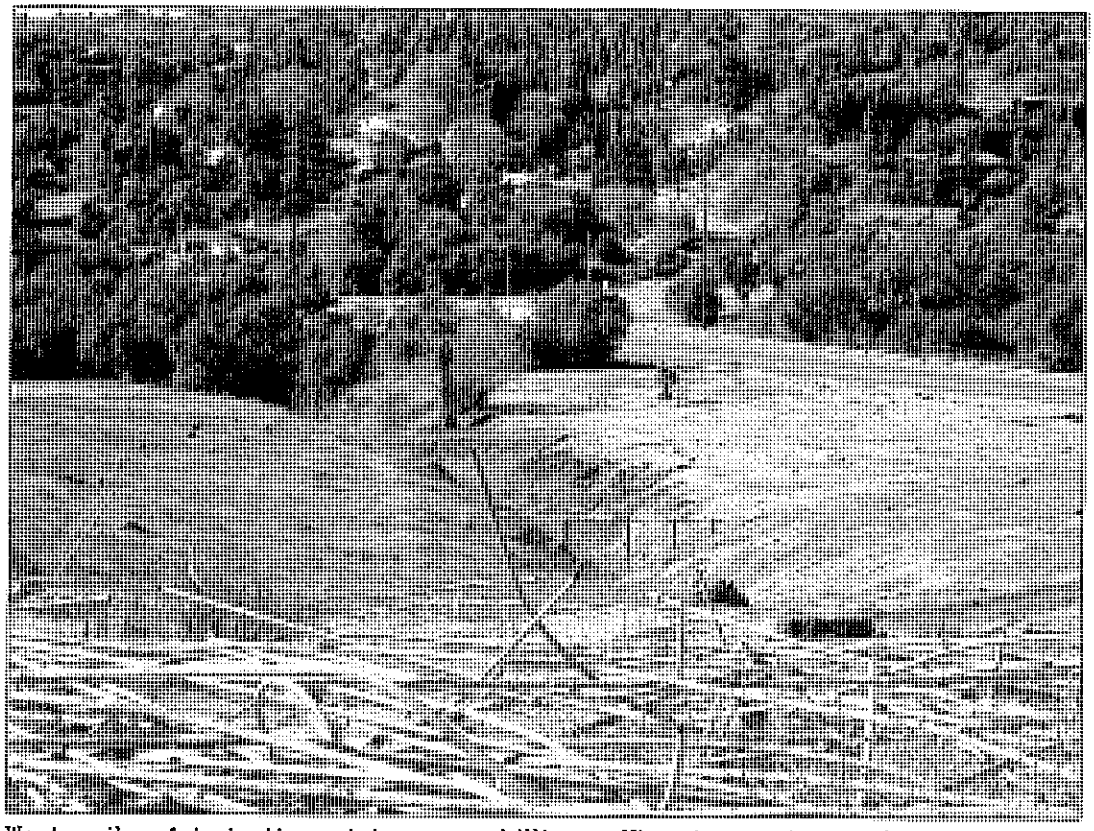
Example of stained soil spots ('3-feet diameter) resulting from diesel spills associated with smudge pots. Not discolored soil where disturbed.



Suspected fill from unknown source extending over west berm of Choya Canyon Road at subject properties northern extent.



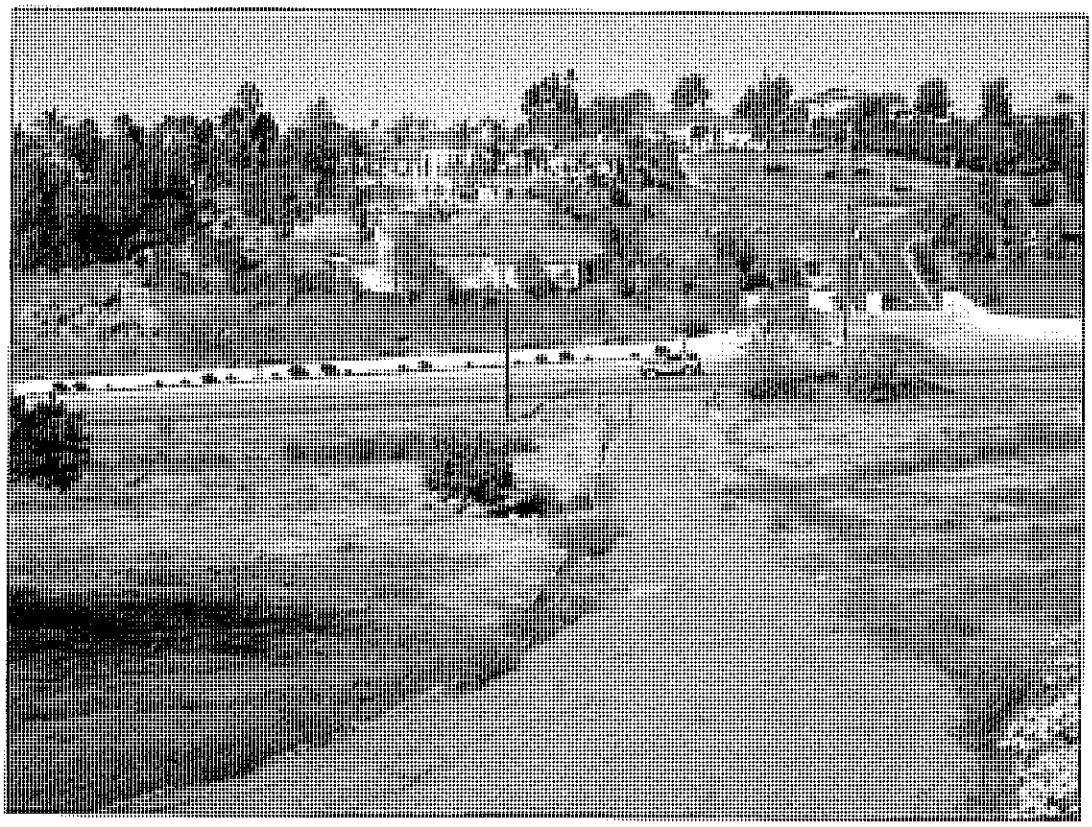
One of three on-site wells. This is one of two wells located in the trees by the flowing stream in southwest portion of the site adjacent Bear Valley Pkwy.



Waste pile of irrigation piping near hilltop. View in southwest direction.

Typical deep surface erosion at isolated locations.

Note little erosion in background and severe abrupt erosion of same drainage.



Driveway entrance off Bear Valley Parkway. Gated private development entrance across from Subject Property is Zlatibor Ranch Road (Czech name meaning 'Golden Grove Ranch Road').

Concrete slab with remnant steel ring reportedly the location of a storage tank used to contain Oil. Dimensions 8' h x 12' diameter.

# APPENDIX I

## REFERENCES


California Division of Mines and Geology, Geologic Map of the Escondido 7.5' Quadrangle, San Diego County, California, Siang S. Tan and Michael P. Kennedy, 1999.

California Environmental Protection Agency, San Diego Regional Water Quality Control Board, San Diego - Basin Plan, April 4, 2011.

County of San Diego Department of Environmental Health-Site Assessment & Mitigation Division, Inventory Detail Information, Web-site Database, January 10, 2013.

Chicago Title Company, Preliminary Report, 661 Bear Valley Parkway, CA, May 22, 2008.

Environmental Data Resources, Inc., EDR Radius Map Report with GeoCheck, Spieth & Wohlford, Inc., 661 Bear Valley Parkway, Escondido, CA 902025, January 9, 2013.

Environmental Data Resources, Inc., Sanborn Map Report, Spieth & Wohlford, Inc., 661 Bear Valley Parkway, Escondido, CA 902025, January 9, 2013.

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EXTOXNET, Extension Toxicology Network-Pesticide Information Profiles, National Agricultural Pesticide Impact Assessment Program, University of California at Davis, Revised 1996.

Personal Communication, Mr. Jack Henthorn January 8, 10, & 16, 2013, (760) 438-4090.

Personal Communication, Ms. Lee Scott, January 11, 2013, On-site interview.

Personal Communication, Mr. Adrian Olquin, Property Manager, Heritage Grove Management, Inc., January 14, 2013, (760) 455-3289, and on-site interview.

Personal Communication, Mr. Burnet Wohlford, Owner Heritage Grove Management, Inc. And Property Owner, (760) 455-3286, January 16, 2013.

Personal Communication, Mr. Tigg Wohlford, (760) 753-5252, January 17, 2013.

Personal Communication, Mr. Don Belding, Attempt Unsuccessful, (760) 745-9068, January 25, 2013.

The Gold Mining Days of Escondido and San Diego County, Escondido Historical Society, Frank Lorey III, 2000.

United States Geological Survey, Escondido 7.5' Quadrangle California-San Diego County, 1967.

Win2Data, Assessors Parcel Maps & Ownership Records, San Diego County Assessors Map Book 237 Page 13.

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APPENDIX I


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California Environmental Protection Agency, San Diego Regional Water Quality Control Board, San Diego - Basin Plan, April 4, 2011.

County of San Diego Department of Environmental Health-Site Assessment & Mitigation Division, Inventory Detail Information, Web-site Database, January 10, 2013.

Chicago Title Company, Preliminary Report, 661 Bear Valley Parkway, CA, May 22, 2008.

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United States Geological Survey, Escondido 7.5' Quadrangle California-San Diego County, 1967.

Win2Data, Assessors Parcel Maps & Ownership Records, San Diego County Assessors Map Book 237 Page 13.

# Appendix L-2 Phase I ESA Addendum (March 2016)

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VINJE & MIDDLETON ENGINEERING, INC.

2450 Auto Park Way
Escondido, California 92029-1229

Phone (760) 743-1214
Fax (760) 739-0343

March 30, 2016

Spieth & Wohlford Inc.
PO Box 5005
Rancho Santa Fe, CA 92067

Re: Addendum to Phase I Environmental Site Assessment
661 Bear Valley Road
County of San Diego Assessor's Parcel Numbers 237-131-01 and -02
Escondido, California 92025

To Whom It May Concern:

This letter serves as an addendum to the above referenced Phase I Environmental Site Assessment report dated February 14, 2013 prepared by Vinje & Middleton Engineering, Inc. (VM). This addendum was prepared to address questions pertaining to the report provided in a letter from Harris & Associates dated March 7, 2016. The questions posed in the letter are presented below with responses in italicized font.

***Site Description***

Page 4, Paragraph 4. The site is zoned RE-20 (Residential Estates) by the City of Escondido. Please clarify what code identifies the site as the "Avocado Grove" zone or revise.

*This appears to be an error in the Phase I ESA document and VM acknowledges that the site is zoned RE-20 (Residential Estates). The zoning designation of the site does not alter VM's conclusions and recommendations regarding the site.*

***Records Review***

Page 7, Paragraph 1. This paragraph states that the study site was not identified on any database reviewed; however, several sites are identified in the Database Records Reviewed table and in Section 3.2, Results of the Database Search. Please clarify.

*The subject site is not listed on any of the standard ASTM regulatory databases. The site is listed on two non-ASTM regulatory databases (Hazardous Materials Management Division and Haznet) as described on Page 12 of the Phase I ESA report.*

Page 12, Paragraph 5. Please provide a brief summary of each of the three off-site records, including hazard, case status, and applicable reasons the individual site is not a concern (proximity to site and/or case status).

*The three off-site properties mapped between one-half to one mile from the site are identified as Lift Station 3 (2045 S. Escondido Boulevard), Brotherton Plaza (2250 S.*

*Escondido Boulevard) and Arco Gasoline Station (2306 S. Escondido Boulevard). No unauthorized releases of hazardous substances or petroleum products are referenced for the Lift Station 3 and Arco Gasoline Station. These properties are references on the database for the storage of hazardous materials and/or generation of hazardous waste. The Brotherton Plaza property is listed for a release of hazardous substances to the soil only. These properties are not considered to be concerns to the Site. This opinion is based on several factors including the nature of the regulatory database listings, distance of the off-site listed properties from the Site, orientation of the listed properties relative to the site, interpreted direction of groundwater flow, and/or regulatory case status information for the various properties as described in the database report.*

**Site Reconnaissance**

Page 26, Paragraph 1. Please briefly describe why the on-site septic system, propane tank, and annual application of herbicides for fire suppression are not potential RECs. Additionally, hazards related to the mine shafts are identified on page 19. Please clarify if this safety hazard falls outside of the definition of an REC, or add it to the list of potential concerns.

*Septic systems associated with residential structures are not of environmental concern relative to potential subsurface impacts and are not considered to be RECs. In addition, there is no mechanism for a propane tank to result in an adverse impact to the subsurface and therefore is also not a REC. The former application of pesticides/herbicides has been addressed during the completion of the Phase II Environmental Site Assessment. Mine shafts and associated potential safety hazards fall outside of the definition of a REC.*

**Recommendations**

Page 30, Paragraph 1. The provided recommendations do not contain adequate information to support the preparation of CEQA mitigation measures. The first recommendation related to the ASTs, agricultural use, smudge pots, and mining residue is further covered by the Phase II Limited Site Assessment. The asbestos and lead issue can be covered utilizing a standard mitigation measure. However, additional detail is needed to cover the risks related to the irrigation wells and the undocumented fill soil. The recommendations should detail what further actions are needed to reduce potential risks to a less than significant level. Please clarify how the irrigation water wells should be removed to avoid potential hazards.

*The water supply/irrigation wells at the property are not of significant environmental concern to the site. However, any water supply wells that are not intended to be utilized in the future should be properly abandoned in accordance with County of San Diego regulations. Undocumented fill soil has been addressed by way of additional assessment and completion of a soil removal action at the site.*

**Limitations**

Page 31, Paragraph 1. The limitations state that the Phase I is recommended for use for only one year from the date of the report. As the Phase I and Phase II were both completed in 2013, it appears that an update is necessary.

*VM can complete an update of the Phase I ESA at the request of the client.*

We appreciate the opportunity to be of continued service to you on this project. If you should have any questions regarding this document, or if we can be of further assistance, please contact us at (760) 743-1214.

Sincerely,

***Vinje & Middleton Engineering, Inc.***

REGISTERED PROFESSIONAL ENGINEER
RALPH MALCOLM VINJE
No. 25115
Exp. 12-31-17
CIVIL
STATE OF CALIFORNIA

Ralph M. Vinje
Principal Engineer
RCE #25115

Daniel Weis
Associate Environmental Scientist

Attachment:

Harris & Associates Comment Letter

March 7, 2016

Ann Dolmage, Associate Planner
City of Escondido, Planning Division
201 North Broadway
Escondido, CA 92026

**Subject: EIR-Level Review of Phase I Environmental Site Assessment, 661 Bear Valley Parkway, Escondido, CA 92025, Assessor's Parcel Numbers: 237-131-01 & -02.**

Dear Ms. Dolmage:

The following presents the results of Harris & Associates' (Harris) review of the Phase I Environmental Site Assessment (ESA) prepared by Vinje & Middleton Engineering, Inc., dated February 14, 2013. Harris reviewed the report for project description consistency with the draft Tentative Map submitted on September 14, 2015; apparent discrepancies in reported data; and adequate analysis of all applicable California Environmental Quality Act (CEQA) Appendix G issues, including identification of a significance threshold, a significance conclusion, evidence to support the conclusion, and mitigation measures, if necessary. Harris did not perform a technical peer-review of the report. As such, comments do not reflect a full quality control review and Harris did not independently confirm any report results or methodology. Harris respectfully requests a response to following questions and comments for preparation of the hazards and hazardous materials analysis of the 661 Bear Valley Parkway Residential Project Environmental Impact Report (EIR).

**Site Description**

1. **Page 4, Paragraph 4.** The site is zoned RE-20 (Residential Estates) by the City of Escondido. Please clarify what code identifies the site as the "Avocado Grove" zone or revise.

**Records Review**

2. **Page 7, Paragraph 1.** This paragraph states that the study site was not identified on any database reviewed; however, several sites are identified in the Database Records Reviewed table and in Section 3.2, Results of the Database Search. Please clarify.
3. **Page 12, Paragraph 5.** Please provide a brief summary of each of the three off-site records, including hazard, case status, and applicable reasons the individual site is not a concern (proximity to site and/or case status).

**Site Reconnaissance**

4. **Page 26, Paragraph 1.** Please briefly describe why the on-site septic system, propane tank, and annual application of herbicides for fire suppression are not potential RECs. Additionally, hazards related to the mine shafts are identified on page 19. Please clarify if this safety hazard falls outside of the definition of an REC, or add it to the list of potential concerns.

**Recommendations**

5. **Page 30, Paragraph 1.** The provided recommendations do not contain adequate information to support the preparation of CEQA mitigation measures. The first recommendation related to the ASTs, agricultural use, smudge pots, and mining residue is further covered by the Phase II Limited Site Assessment. The asbestos and lead issue can be covered utilizing a standard mitigation measure. However, additional detail is needed to cover the risks related to the irrigation wells and the undocumented fill soil. The recommendations should detail what further actions are needed to reduce potential risks to a less than significant level. Please clarify how the irrigation water wells should be removed to avoid potential hazards.

**Limitations**

6. **Page 31, Paragraph 1.** The limitations state that the Phase I is recommended for use for only one year from the date of the report. As the Phase I and Phase II were both completed in 2013, it appears that an update is necessary.

Should you have any questions regarding this review, please contact me at 619.236.1778, ext. 2528 or Sharon.Toland@weareharris.com.

Sincerely,
**Harris & Associates**

Sharon Toland
Project Manager

# Appendix L-3 Additional Phase I ESA (April 2016)

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# PHASE I ENVIRONMENTAL SITE ASSESSMENT

661 Bear Valley Parkway
Escondido, California 92025

April 19, 2016

*Prepared for*:

Spieth & Wohlford Inc.
PO Box 5005
Rancho Santa Fe, California 92067

*Prepared by*:

Vinje & Middleton Engineering, Inc.
2450 Auto Park Way
Escondido, California 92029

VINJE & MIDDLETON ENGINEERING, INC.

2450 Auto Park Way
Escondido, California 92029-1229

Phone (760) 743-1214
Fax (760) 739-0343

April 19, 2016

Spieth & Wohlford Inc.
PO Box 5005
Rancho Santa Fe, California 92067

Subject: **Phase I Environmental Site Assessment**
**661 Bear Valley Parkway**
**Escondido, California 92025**

To Whom It May Concern:

Vinje & Middleton Engineering, Inc. (VM) has performed a Phase I Environmental Site Assessment (ESA) in conformance with the scope and limitations of American Society for Testing and Materials Practice (ASTM) E 1527-13 and 40 Code of Federal Regulations (CFR) Part 312, of the above-referenced property. This ESA included public environmental agency and historical record reviews, interviews, site observations, and report preparation. This report includes VM's findings, conclusions, and supporting documentation.

We appreciate the opportunity to be of service to you on this project. If you should have any questions regarding this report, or if we can be of further assistance, please contact us at (760) 743-1214.

Sincerely,

***Vinje & Middleton Engineering, Inc.***

Ralph M. Vinje
Principal Engineer
RCE #25115

Daniel Weis
Associate Environmental Scientist

# TABLE OF CONTENTS

**1.0 EXECUTIVE SUMMARY ..... 1**

1.1 SUMMARY AND FINDINGS ..... 1
1.2 CONCLUSIONS ..... 2

**2.0 INTRODUCTION ..... 3**

2.1 PURPOSE ..... 3
2.2 DETAILED SCOPE OF SERVICES ..... 4
2.3 SIGNIFICANT ASSUMPTIONS ..... 5
2.4 LIMITATIONS AND EXCEPTIONS ..... 5
2.5 SPECIAL TERMS AND CONDITIONS ..... 6
2.6 USER RELIANCE ..... 6

**3.0 SITE DESCRIPTION ..... 7**

3.1 LOCATION AND LEGAL DESCRIPTION ..... 7
3.2 SITE AND VICINITY GENERAL CHARACTERISTICS ..... 7
3.3 CURRENT USE OF THE SITE ..... 7
3.4 DESCRIPTION OF STRUCTURES, ROADS, OTHER IMPROVEMENTS ON THE SITE ..... 7
3.5 CURRENT USES OF THE ADJOINING PROPERTIES ..... 7

**4.0 USER PROVIDED INFORMATION ..... 8**

4.1 TITLE RECORDS ..... 8
4.2 ENVIRONMENTAL LIENS OR ACTIVITY AND USE LIMITATIONS ..... 8
4.3 SPECIALIZED KNOWLEDGE ..... 8
4.4 COMMONLY KNOWN OR REASONABLY ASCERTAINABLE INFORMATION ..... 8
4.5 VALUATION REDUCTION FOR ENVIRONMENTAL ISSUES ..... 8
4.6 OWNER, PROPERTY MANAGER, AND OCCUPANT INFORMATION ..... 8
4.7 REASON FOR PERFORMING PHASE I ESA ..... 8
4.8 OTHER ..... 8

**5.0 RECORDS REVIEW ..... 11**

5.1 STANDARD ENVIRONMENTAL RECORD SOURCES ..... 11
5.2 ADDITIONAL ENVIRONMENTAL RECORD SOURCES ..... 14
5.3 PHYSICAL SETTING SOURCES ..... 15
5.3.1 TOPOGRAPHY AND HYDROLOGY ..... 15
5.3.2 GEOLOGY ..... 15
5.3.3 HYDROGEOLOGY ..... 16
5.4 HISTORICAL USE INFORMATION ON THE SUBJECT SITE ..... 16
5.4.1 STATE OF CALIFORNIA DIVISION OF OIL AND GAS RECORDS ..... 16
5.5 HISTORICAL USE INFORMATION ON ADJOINING PROPERTIES ..... 16
5.5.1 STATE OF CALIFORNIA DIVISION OF OIL AND GAS RECORDS ..... 17

**6.0 SITE RECONNAISSANCE ..... 18**

6.1 METHODOLOGY AND LIMITING CONDITIONS ..... 18
6.2 GENERAL SITE SETTING ..... 18
6.3 SITE OBSERVATIONS ..... 18

**7.0 INTERVIEW INFORMATION ..... 20**

7.1. INTERVIEW WITH OWNER ..... 20
7.2 INTERVIEW WITH SITE MANAGER ..... 20
7.3 INTERVIEWS WITH OCCUPANTS ..... 20
7.4 INTERVIEW WITH LOCAL GOVERNMENT OFFICIAL ..... 20
7.5 INTERVIEW WITH OTHERS ..... 20

**8.0 FINDINGS, OPINION AND CONCLUSIONS ..... 21**

**9.0 DEVIATIONS AND DATA GAPS ..... 22**

**10.0 ADDITIONAL SERVICES ..... 23**

**11.0 REFERENCES ..... 24**

**12.0 SIGNATURES AND QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS ..... 25**

**13.0 APPENDICES**

13.1 VICINITY MAP AND TOPOGRAPHIC MAP
13.2 SITE PLAN
13.3 SITE PHOTOGRAPHS
13.4 REGULATORY DATABASE REPORT
13.5 HISTORICAL RESOURCES

# 1.0 Executive Summary

## 1.1 Summary and Findings

At the request of the Spieth and Wohlford Inc., Vinje & Middleton Engineering, Inc. (VM) conducted a Phase I Environmental Site Assessment (ESA) in conformance with the scope and limitations of American Society for Testing and Materials (ASTM) Practice E 1527-13 and 40 Code of Federal Regulations (CFR) Part 312, of the property located at 661 Bear Valley Parkway in Escondido, San Diego County, California (hereinafter referred to as "the Site"). The 42.12-acre Site is situated to the east of Bear Valley Parkway, west of Choya Canyon Road, and north of Valley Grove Lane, and is further identified by County of San Diego Assessor's Parcel Numbers (APNs) 237-131-01-00 and -02-00.

The Site is currently developed with a single-family home and a detached garage surrounded by vacant land. The Site building was reportedly constructed in 1946. Access to the Site is provided by Bear Valley Parkway to the west. The Site is located in an area of Escondido generally comprised of residential land uses. During our Site reconnaissance, a qualified VM representative walked portions of the Site and walked accessible roadways and pedestrian walkways surrounding the Site to identify recognized environmental conditions that may affect the subject Site. No significant environmental concerns were noted during the Site reconnaissance.

Historical resources reviewed during the preparation of this Phase I ESA included aerial photographs, topographic maps, sanborn fire insurance maps, and city directories. An interview with the Site owner representative was also conducted to evaluate the historical uses of the subject Site and nearby properties. According to the interview and the historical resources reviewed, no significant environmental concerns were revealed in connection with the Site. Adjoining and nearby properties have historically been mostly vacant land dating back to the late 1970s. The surrounding area was more fully developed with the current residential structures beginning in the early 1980s.

VM reviewed standard regulatory record sources which included Federal, State and local environmental databases provided by Environmental Data Resources (EDR) for information pertaining to documented and/or suspected releases of regulated hazardous substances and/or petroleum products within specified search distances. The Site is not listed on the standard ASTM regulatory databases. The Site is referenced as Spieth and Wohlford Inc. on the non-ASTM HAZNET and San Diego Co. HMMD databases. The Site is listed on the HAZNET database for the generation of an aqueous solution with total organic residues less than 10 percent. The Site is listed on the San Diego Co. HMMD database with an inactive regulatory status. There are no spills or releases referenced for the Site. Several properties in the Site vicinity also appear on various regulatory databases, but are not considered to be significant concerns to the Site.

A summary of prior environmental assessments (Phase I and II ESA) and a soil removal action of lead impacted soil (undocumented fill material) are described in Section 4.8 of this report. No further assessment or mitigation at the Site is recommended.

## 1.2 Conclusions

This Phase I ESA has revealed no evidence of recognized environmental conditions in connection with the Site. Additional environmental investigation at the Site is not warranted at this time. This summary is provided for convenience and should not be substituted for review of the full report, including all attachments as provided herein.

# 2.0 Introduction

## 2.1 Purpose

The purpose of this Phase I ESA is to provide a professional opinion on the presence of recognized environmental conditions and other suspect environmental conditions in connection with the Site, as they existed on the date of the site inspection, and to recommend whether further investigation is required. ASTM Standard Practice E 1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, specifies minimum requirements for conducting an ESA of a parcel of commercial real estate with respect to the range of contaminants pertinent to the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as well as petroleum products. As such, this ESA is intended to satisfy one of the threshold criteria for satisfying the landowner liability protections to CERCLA liability assuming compliance with other elements of the defense. In other words, this ESA represents one of the practices that constitute “all appropriate inquiry” into the previous ownership and uses of the property consistent with good commercial or customary practice, as defined in 42 USC Section 9601(35)(B) and 40 CFR Part 312.

The goal of the process is to identify recognized environmental conditions, which are defined by the Practice as “the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: 1) due to any release to the environment; 2) under conditions indicative of a release to the environment; or 3) under conditions that pose a material threat of a future release to the environment. The term recognized environmental condition includes hazardous substances or petroleum products even under conditions in compliance with laws. In addition, the term also included historical recognized environmental conditions and controlled recognized environmental conditions. A historical recognized environmental condition is defined by the Practice as “a past release of hazardous substances or petroleum products that has occurred in connection with a property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).” A controlled recognized environmental condition is defined by the Practice as “a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).” The term recognized environmental condition is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

The term "environment" is defined in CERCLA 42 USC 9601(8) as "(A) the navigable waters, the water of the contiguous zone, and the ocean waters of which the natural resources are under the exclusive management authority of the United States under the Magnuson-Stevens Fishery conservation and Management Act, and (B) any other surface water, ground water, drinking water supply, land surface or subsurface strata, or ambient air within the United States or under the jurisdiction of the United States.

The term "release" means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant), but excludes (A) any release which results in exposure to persons solely within a workplace, with respect to a claim which such persons may assert against the employer of such persons, (B) emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine, (C) release of source, byproduct, or special nuclear material from a nuclear incident, as those terms are defined in the Atomic Energy Act of 1954 [42 U.S.C. 2011 et seq.], if such release is subject to requirements with respect to financial protection established by the Nuclear Regulatory Commission under section 170 of such Act [42 U.S.C. 2210], or, for the purposes of 42 USC 9604 or any other response action, any release of source byproduct, or special nuclear material from any processing site designated under section 7912(a)(1) or 7942(a) of this title, and (D) the normal application of fertilizer.

## 2.2 Detailed Scope of Services

The Phase I ESA was conducted in accordance with generally accepted Phase I industry standards using ASTM Standard Practice E 1527-13, 40 CFR Part 312 and VM's Agreement by and between VM and the client. The following services were provided for this assessment:

- A search for environmental liens recorded against the Site.
- An evaluation of standard environmental record sources contained within Federal, State and local environmental databases within specific search distances.
- An evaluation of additional environmental record sources obtained from local regulatory departments/agencies including the County of San Diego Department of Environmental Health (DEH).
- A qualitative evaluation of the physical characteristics of the Site through a review of published topographic, geologic, and hydrogeologic maps; published groundwater data; and area observations to characterize surface water flow in the Site area.
- An evaluation of past Site and adjacent/nearby property uses through a review of historical resources including aerial photographs, topographic maps and city directories.
- A physical inspection of the Site (interior and exterior) conducted to search for conditions indicative of potential environmental concerns including underground storage tanks (USTs), aboveground storage tanks (ASTs), associated tank piping; stained soil or pavement, equipment that may contain or have historically contained polychlorinated biphenyls (PCBs), and other potential environmental concerns as defined in the ASTM-2013 standard.
- A physical assessment of indications of past uses and visual observations of adjacent and surrounding properties (from curbside or public spaces) to assess potential impacts to the Site.
- Interviews completed with the client, the Site owner(s) and local regulatory officials.

- The preparation of this report, which includes the findings of the assessment, our opinion (i.e., conclusions) regarding their respective levels of significance, and recommendations, as appropriate.

## 2.3 Significant Assumptions

This Phase I ESA was conducted in accordance with ASTM guidelines and the terms and conditions of the aforementioned Agreement between VM and the client. No other warranty, express or implied, is made by VM. VM's evaluations, analyses, and opinions should not be taken as representations regarding subsurface conditions or the actual value of the Site. Subsurface conditions may differ from the conditions implied by the surficial observations and the data resources reviewed, and can only be reliably evaluated through intrusive techniques.

Documentation and data provided by the client, designated representatives of the client, other interested third parties, or from the public domain, and referred to in the preparation of this assessment, are assumed to be complete and correct and have been used and referenced with the understanding that VM assumes no responsibility or liability for their accuracy. VM's conclusions are based upon such information and documentation and on our observations of Site conditions, as they existed on the date of the site inspection. Because Site conditions may change significantly over a short period of time and additional data may become available, data reported and conclusions drawn in this report are limited to current conditions and should be considered less reliable with passing time.

## 2.4 Limitations and Exceptions

Reasonable efforts have been made during this assessment to uncover evidence of USTs, ASTs, ancillary equipment associated with such tanks, and other subsurface structures. "Reasonable efforts" are limited to information gained from visual observation of unobstructed areas, recorded database information held in public record, and available information gathered from interviews. Such methods may not identify subsurface equipment that may have been hidden from view due to paving, construction or debris pile storage, or incorrect information from sources.

This investigation was not an environmental compliance audit. While some observations and discussion in this report may address conditions and/or operations that may be regulated, the regulatory compliance of those conditions and/or operations is outside the scope of this investigation. Nothing in this report constitutes a legal opinion or legal advice. For information regarding specific individual or organizational liability, VM recommends consultation with independent legal counsel.

According to 40 CFR Part 312, Standards and Practices for All Appropriate Inquiry: Final Rule, CERCLA liability rests with the owner or operator of a property and not with an environmental professional hired by the prospective landowner and who is not involved with the ownership or operation of the property. This report meets the requirements set forth in 40 CFR Part 312 Standards and Practices for All Appropriate Inquiries; Final Rule. However, in order to qualify for certain landowner liability protections under CERCLA, "Bona Fide Prospective Purchasers, Contiguous Property Owners, and/or Innocent Landowners" must meet additional requirements of CERCLA (42 U.S.C. 9601 (35)(B)).

This ESA does not address non-scope ASTM considerations including asbestos containing materials, radon, lead-based paint, lead in drinking water, wetlands, protected environments and

habitat, industrial hygiene concerns, indoor air quality (unrelated to releases of hazardous substances or petroleum products into the environment) and high voltage power lines.

## 2.5 Special Terms and Conditions

No special terms and conditions between VM pertinent to the findings of this ESA or methodology used to complete this assessment are noted. In addition, VM does not have a financial interest in the Site.

## 2.6 User Reliance

This report was prepared for the sole and exclusive use of the client and its financing partners for this project and is not for the use or benefit of, nor may it be relied upon by, any other person or entity for any purpose without the advance written consent of VM and the client. VM makes no representation to any third party except that it has used the degree of care and skill ordinarily exercised by a reasonable prudent environmental professional in the same community and in the same time frame given the same or similar facts and circumstances. No other use or disclosure is intended or authorized by VM. In the preparation of this ESA, VM has used the degree of care and skill ordinarily exercised by a reasonably prudent environmental professional in the same community and in the same time frame given the same or similar facts and circumstances. No other warranties are made, express or implied.

# 3.0 Site Description

## 3.1 Location and Legal Description

The Site is 42.12-acres in size and consists of two legal parcels located at 661 Bear Valley Parkway in Escondido, San Diego County, California. The Site is situated to the east of Bear Valley Parkway, west of Choya Canyon Road, and north of Valley Grove Lane, and is further identified by County of San Diego APNs 237-131-01-00 and -02-00. A Vicinity Map and Topographic Map depicting the general location of the Site are included in Section 13.1.

## 3.2 Site and Vicinity General Characteristics

The Site is currently developed with a single-family home and a detached garage surrounded by vacant land. The Site building was reportedly constructed in 1946. The Site is located in an area of Escondido generally comprised of residential land uses. Additional details pertaining to the Site and its adjoining properties are provided in the sections below.

## 3.3 Current Use of the Site

The Site is currently developed with a single-family home with a detached garage surrounded by vacant land totaling 42.12 acres.

## 3.4 Description of Structures, Roads, Other Improvements on the Site

As stated previously, the Site is currently developed with a single-family home surrounded by vacant land. The Site can be accessed from the west by Bear Valley Parkway. Potable water and sewer services in the area are provided by the City of Escondido. Electrical and natural gas service in the area are provided by SDG&E. A Site Plan is included in Section 13.2. Photographs taken of the Site are included in Section 13.3.

## 3.5 Current Uses of the Adjoining Properties

The area surrounding the Site consists of public roadways and residential properties. VM performed a visual inspection of adjoining properties from adjacent sidewalks and public right-of-ways. The following table identifies the adjacent property uses:

| General Direction | Adjoining Property Use |
|---|---|
| **North** | Intersection of Bear Valley Parkway and Choya Canyon Road, then residential properties |
| **South** | Residential properties and Valley Grove Lane |
| **East** | Choya Canyon Road and vacant land, then residential properties |
| **West** | Bear Valley Parkway, then residential properties |

None of the adjoining properties were observed to be of significant environmental concern to the Site based on VM's visual inspection from public right-of-ways.

# 4.0 User Provided Information

## 4.1 Title Records

No environmentally related liens, deed restrictions or activity and use limitations pertaining to the Site were noted during research completed with the County of San Diego Tax Assessor and a review of a title report pertaining to the Site provided by the client. In addition, the client is unaware of such encumbrances recorded against the Site.

## 4.2 Environmental Liens or Activity and Use Limitations

The client reportedly has no knowledge of any environmental related liens or activity and use limitations (i.e. engineering or institutional controls) that are related to potential environmental issues at the Site.

## 4.3 Specialized Knowledge

The client is unaware of specialized knowledge pertinent to potential recognized environmental conditions at the Site.

## 4.4 Commonly Known or Reasonably Ascertainable Information

The client is unaware of commonly known or reasonably ascertainable information pertinent to potential recognized environmental conditions at the Site.

## 4.5 Valuation Reduction for Environmental Issues

As of the date of this report, the client reportedly has no information pertaining to the estimated fair market value of the property that might indicate that significant contamination exists.

## 4.6 Owner, Property Manager, and Occupant Information

The Site is currently vested in the Spieth and Wohlford Inc. This entity is also considered the Site manager. The Site is currently developed with a single-family home surrounded by vacant land.

## 4.7 Reason for Performing Phase I ESA

VM, as an independent consultancy, has been retained to conduct this Phase I ESA to identify environmental issues that may be present and to comply with 40 CFR Part 312.

## 4.8 Other

The client provided AEC with multiple environmental reports pertaining to the Site which is summarized below.

*Phase I Environmental Site Assessment, 661 Bear Valley Parkway, Escondido, California, Assessor's Parcel Numbers 237-131-01 & -02, prepared by Vinje & Middleton Engineering, dated February 14, 2013.*

Due to the historical use of the property for agricultural purposes, a Phase II ESA was recommended.

*Limited Phase II Environmental Site Assessment, 661 Bear Valley Parkway, Escondido, California, Assessor's Parcel Numbers 237-131-01 & -02, prepared by Vinje & Middleton Engineering, dated May 24, 2013.*

Due to the Site's historical uses as a potential mine near the turn of the 20th century and as a citrus and avocado grove between the years 1947 and 1998, a limited Phase II Site Assessment was conducted by VM. Soil sampling and analysis was conducted during the Phase II ESA of the overall 42 acre Site (28 sample locations). Organochlorine pesticides (OCPs) were the primary target analytes of potential concern and were not detected at or above the analytical laboratory reporting limits. In addition, what were considered to be minor concentrations of the metals arsenic and/or mercury were detected in three soil samples. In addition, minor concentrations of petroleum hydrocarbons were detected in two soil samples. The concentrations of such constituents were below actionable levels relative to a proposed residential land use. As such, no additional assessment was recommended. In addition, no mitigation of Site soils was recommended.

*Report of Soil Removal Action, 661 Bear Valley Road, Escondido, California, prepared by Vinje & Middleton Engineering, dated July 21, 2015.*

As a result of a project approval related comment from the City of Escondido regarding apparent undocumented fill soils along the northeastern edge of the Site, VM collected soil samples from this area. A summary of the work completed is as follows:

- On April 9, 2015, an initial two soil borings were advanced using a hand auger (identified as B1 and B2) to a depth of eighteen inches below existing grades in an area of debris laden fill material at the Site. VM field personnel placed the soil samples in to analytical laboratory provided four ounce glass jars. Soil samples were then placed on ice at the time of collection and during delivery to the analytical laboratory. The samples were analyzed for total petroleum hydrocarbons (TPH) in the gasoline, diesel and oil ranges by United States Environmental Agency (EPA) test Method 8015B by Baseline On-Site Analysis, a State-certified environmental laboratory located in Huntington Beach, California. The samples were also analyzed for OCPs by United States EPA test Method 8081A, Title 22 Metals by United States EPA test methods 6010B/7000CAM, and SVOCs by United States EPA test method 8270C by American Environmental Testing Laboratory Inc., a State-certified environmental laboratory located in Burbank, California.

- On May 7, 2015, an additional fifteen soil borings (identified as B3 through B17) were advanced by hand auger to depths of eighteen inches below existing grades and sampled. The fifteen soil samples were analyzed for total lead by United States EPA test method 6010B.

- Based on the results of the sampling events described above, an area of lead impacted soil was delineated (approximately 15-feet long x 5-feet wide) and removed from the face of the slope of fill material on June 12, 2015. The material was then stockpiled on-Site pending waste characterization. Upon removal, four confirmation soil samples identified

as B18 through B21 were obtained from the soil removal action area and analyzed for total lead. Four stockpile soil samples identified as S1 through S4 were obtained and analyzed for total lead, soluble lead, TPH and/or Title 22 Metals.

- The stockpiled material was covered with plastic sheeting pending removal from the Site. A total of 15.73 tons (approximately 10 cubic yards) of lead impacted soil was transported to Philadelphia Recycling Mine in Mira Loma, California on July 6, 2015 for disposal as a non-hazardous waste.

Conclusions and recommendations of the report were as follows:

- The soil sampling and analysis completed at the Site allowed VM to delineate an area of impacted soil containing lead that was subsequently removed from the Site.

- A total of 15.73 tons (approximately 10 cubic yards) of lead impacted soil was transported to Philadelphia Recycling Mine in Mira Loma, California on July 6, 2015 for disposal as a non-hazardous waste.

- Confirmation soil samples revealed total lead concentrations below the residential screening level.

- No other contaminants of concern were identified at the Site.

- No further assessment or soil removal actions at the Site are considered to be warranted.

# 5.0 Records Review

## 5.1 Standard Environmental Record Sources

VM reviewed Federal and State environmental databases provided by Environmental Data Resources, Inc. (EDR) of Shelton, Connecticut for information pertaining to documented and/or suspected releases of regulated hazardous substances and/or petroleum products within specified search distances. A copy of the EDR report is included in Section 13.4.

VM also reviewed unmappable sites listed in the environmental database report by cross-referencing addresses and site names. Unmappable sites are sites that cannot be plotted with confidence, but can be located by zip code or city name. In general, a site cannot be mapped because of inaccurate or missing location information in the record provided by the regulatory agency. Any unmappable sites that VM identifies within the specified search radii were evaluated as part of the preparation of this report.

The following Federal databases related to potential on-site and off-site sources of contamination were reviewed and interpreted by VM:

| Federal Databases | Search Distance From Site |
|---|---|
| National Priorities List (NPL) | One mile |
| Delisted NPL | One mile |
| Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) | One-half mile |
| CERCLIS No Further Remedial Action Planned (NFRAP) | One-half mile |
| Resource Conservation and Recovery Act (RCRA) CORRACTS Hazardous Waste Treatment, Storage and Disposal (TSD) Facilities | One mile |
| Resource Conservation and Recovery Act (RCRA) NON-CORRACTS Hazardous Waste TSD Facilities | One-half mile |
| RCRA Hazardous Waste Generators (RCRA GEN) | One-eighth mile |
| Emergency Response Notification System (ERNS) | One-eighth mile |
| Facility Index Systems (FINDS) | One-eighth mile |
| Federal Institutional/Engineering Control Registries (IC/EC) | One-half mile |

The following State/local databases related to potential on-site and off-site sources of contamination were also searched and reviewed:

| State/Local Databases | Search Distance From Site |
|---|---|
| State Equivalent NPL and CERCLIS (RESPONSE and Envirostor) | One mile |
| State Voluntary Cleanup Sites (VCP) | One-half mile |
| State/Local Brownfield Sites and Institutional/Engineering Control Registries | One-half mile |
| Inactive, Active, and/or Permitted Solid Waste/Landfill Facilities (SWL) | One-half mile |
| Leaking Underground Storage Tanks (LUST) | One-half mile |
| Spills, Leaks, Investigations and cleanup (SLIC) | One-half mile |
| Registered Underground and Aboveground Storage Tanks (UST/AST) | One-eighth mile |
| San Diego County DEH Site Assessment and Mitigation (SAM) | One-half mile |

Descriptions/sources of each of the above referenced regulatory databases and the dates these databases were last updated by the applicable regulatory agencies are included in the EDR report.

***Subject Site***

The Site is not listed on any of the standard databases searched by EDR.

***Adjoining and Nearby Properties***

One listing was identified in the standard regulatory databases mapped within a one-mile of the subject Site. The following table presents a summary of the listed property and an opinion regarding the potential impact to the Site.

| Listed Property and Address | Database(s) | Mapped Distance and Direction From Site | Details | Significant Concern To Site? |
|---|---|---|---|---|
| Brotherton Plaza 2250 S Escondido Boulevard | ENVIROSTOR | 0.721-mile WSW | Referenced with a "Refer: 1248 Local Agency" status as of March 2001. | No |

As shown in the table above, the property mapped within a one-mile radius of the Site is not considered to be of significant environmental concern to the Site. This opinion is based on several factors including the nature of the regulatory database listing, distance of the off-Site listed property from the Site, orientation of the listed property relative to the Site, interpreted direction of groundwater flow, and/or regulatory case status information for the property as described in the database.

***Non-ASTM Database Reviews***

Below is a list of non-ASTM databases searched by EDR and reviewed by VM during the preparation of this assessment. The descriptions of each database and their data release frequency are included in the EDR report, included in Section 13.4.

Local Brownfield Lists
US BROWNFIELDS - A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites
DEBRIS REGION 9 - Torres Martinez Reservation Illegal Dump Site Locations
ODI - Open Dump Inventory
WMUDS/SWAT - Waste Management Unit Database
SWRCY - Recycler Database
HAULERS - Registered Waste Tire Haulers Listing

Local Lists of Hazardous Waste / Contaminated Sites
US CDL - Clandestine Drug Labs
HIST Cal-Sites - Historical Calsites Database

SCH - School Property Evaluation Program
Toxic Pits - Toxic Pits Cleanup Act Sites
CDL - Clandestine Drug Labs
US HIST CDL - National Clandestine Laboratory Register
San Diego Co. HMMD

Local Lists of Registered Storage Tanks
SWEEPS UST – SWEEPS UST Listing
HIST UST – Hazardous Substance Storage Container Database
CA FID UST – Facility Inventory Database

Local Land Records
LIENS 2 - CERCLA Lien Information
LIENS - Environmental Liens Listing
DEED - Deed Restriction Listing

Records of Emergency Release Reports
HMIRS - Hazardous Materials Information Reporting System
CHMIRS - California Hazardous Material Incident Report System
LDS - Land Disposal Sites Listing
MCS - Military Cleanup Sites Listing
SPILLS 90 – SPILLS 90 data from FirstSearch

Other Ascertainable Records
RCRA-NonGen - RCRA - Non Generators
DOT OPS - Incident and Accident Data
DOD - Department of Defense Sites
FUDS - Formerly Used Defense Sites
CONSENT - Superfund (CERCLA) Consent Decrees
ROD - Records Of Decision
UMTRA - Uranium Mill Tailings Sites
MINES - Mines Master Index File
TRIS - Toxic Chemical Release Inventory System
TSCA - Toxic Substances Control Act
FTTS – FIFRA/TSCA Tracking System – FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS - FIFRA/TSCA Tracking System Administrative Case Listing
SSTS - Section 7 Tracking Systems
ICIS - Integrated Compliance Information System
PADS - PCB Activity Database System
MLTS - Material Licensing Tracking System
RADINFO - Radiation Information Database
FINDS - Facility Index System/Facility Registry System
RAATS - RCRA Administrative Action Tracking System
RMP - Risk Management Plans
CA BOND EXP. PLAN - Bond Expenditure Plan
UIC - UIC Listing
NPDES - NPDES Permits Listing
Cortese - "Cortese" Hazardous Waste & Substances Sites List
HIST CORTESE - Hazardous Waste & Substance Site List
CUPA Listings - CUPA Resources List
Notify 65 - Proposition 65 Records

DRYCLEANERS - Cleaner Facilities
WIP - Well Investigation Program Case List
ENF - Enforcement Action List
HAZNET - Facility and Manifest Data
EMI - Emissions Inventory Data
INDIAN RESERV - Indian Reservations
SCRD DRYCLEANERS - State Coalition for Remediation of Drycleaners Listing
MWMP - Medical Waste Management Program Listing
COAL ASDH DOE – Sleam Electric Plan Operation Data Listing
COAL ASH EPA – Coal Combustion Residues Surface Impoundments List
HWT - Registered Hazardous Waste Transporter Database
HWP - Envirostor Permitted Facilities List
FINANCIAL ASSURANCE - Financial Assurance Information Listing
LEAD SMELTERS - Lead Smelter Sites
2020 COR ACTION - 2020 Corrective Action Program List
US AIRS - Aerometric Information Retrieval System Facility Subsystem
PRP - Potentially Responsible Parties
WDS - Waste Discharge System
EPA WATCH LIST - EPA WATCH LIST
US FIN ASSUR - Financial Assurance Information
PCB TRANSFORMER - PCB Transformer Registration Database
PROC - Certified Processors Database
FUSRAP - Formerly Utilized Sites Remedial Action Program
US MINES – Mines Master Index File
PEST LIC – Pesticide Regulation Licenses Listing
WASTEWATER PITS – Oil Wastewater Pits Listing
ECHO – Enforcement and Compliance History Information
FUELS PROGRAM – EPA Fuels Program Registered Listing

The Site is referenced as Spieth and Wohlford Inc. on the non-ASTM HAZNET and San Diego Co. HMMD databases. The Site is listed on the HAZNET database for the generation of an aqueous solution with total organic residues less than 10 percent. The Site is listed on the San Diego Co. HMMD database with an inactive regulatory status. There are no spills or releases referenced for the Site.

One off-Site property mapped within one-eighth mile of the Site is listed on the CHMIRS non-ASTM regulatory databases searched by EDR. This non-ASTM database listing is not expected to have adversely impacted the Site. This opinion is based on several factors including the nature of the regulatory database listing, distance of the off-Site listed property from the Site, orientation of the listed property relative to the Site, interpreted direction of groundwater flow and/or regulatory case status information for the property as described in the database.

## 5.2 Additional Environmental Record Sources

### State Water Resources Control Board (SWRCB)

VM searched the California State Water Resources Control Board (SWRCB) maintained Geotracker database for information regarding past or present environmental regulatory cases and/or hazardous material releases in connection with the Site or its adjacent and nearby properties. No environmental regulatory or release cases for the Site were identified in the Geotracker database search. Information included in the SWRCB Geotracker database regarding

the nearby properties is consistent with the information found in the EDR regulatory database report.

**San Diego County Department of Environmental Health (DEH)**

San Diego County DEH records were searched for the Site. Records pertaining to the Site were not found in DEH files. No other records searches with local or State regulatory agencies were deemed warranted.

## 5.3 Physical Setting Sources

The following physical setting sources were reviewed to provide information about the topographic, hydrologic, geologic and/or hydrogeologic characteristics of the Site.

### 5.3.1 Topography and Hydrology

***USGS Topographic Quadrangle***

The Site is depicted on the 2015 USGS topographic map for the Escondido, California 7.5 minute quadrangle, which ranges in elevation of approximately 570 to 650 feet above mean sea level. No features of environmental concern are noted on the map.

***Hydrology/Storm Water Management***

The Site slopes to the southwest towards an unnamed creek. The Site does not appear to receive significant drainage from off-Site properties.

### 5.3.2 Geology

The Site lies within the coastal section of the Peninsular Ranges Geomorphic Province; one of 11 physiographic provinces in California recognized by defining features based on geology, faults, topography, and climate. The Peninsular Ranges Province is dominated by a series of northwest-oriented mountain ranges extending from the Baja California peninsula in the south to the Transverse Ranges in the north. The series of mountain ranges are separated by northwest trending valleys, subparallel to faults branching from the San Andreas Fault System. Igneous, metamorphic, and sedimentary rocks are all found within the Peninsular Ranges Province. Plutonic (igneous) rocks of the Peninsular Ranges batholith are predominant throughout much of the Province. The batholithic rocks were emplaced during Cretaceous-age orogenic events, and uplifted into the present mountain ranges during the late Tertiary and Quaternary. The coastal section of the Province is underlain by a thick sequence of marine- and terrestrial-derived sedimentary rock units that unconformably overlie basement rocks. Nearly flat marine terraces lie at different elevations throughout the coastal section of the Province as a result of sea floor erosion during marine standstills and subsequent Quaternary faulting and uplift. According to geologic map sources, the Site is underlain at depth by old paralic deposits that is mostly poorly sorted, moderately permeable, reddish-brown, interfingered strandline, beach, estuarine and colluvial deposits composed of siltstone, sandstone and conglomerate (CGS 2010). The Site, as is all of Southern California, is an active seismic area. However, no faults appear to be mapped across the Site.

### 5.3.3 Hydrogeology

The Site is situated within the Hodges Hydrologic Area of the San Dieguito Hydrologic Unit. Groundwater in the Hodges Hydrologic Area has existing beneficial use designations for municipal, agricultural, and industrial supply purposes. Static groundwater beneath the Site is likely present at a depth of greater than 20 feet below the ground surface with an estimated flow direction toward the southwest.

## 5.4 Historical Use Information on the Subject Site

VM reviewed several historical sources (as described in the following sections) to develop a history of the previous uses of the Site, in order to help identify the likelihood of past uses having led to recognized environmental conditions in connection with the Site. Copies of historical resources are included in Section 13.5.

***Aerial Photographs***

VM reviewed historical aerial photographs from the years 1947, 1953, 1964, 1968, 1980, 1989, 1995, 2002, 2009 and 2012 via online resources. In the aerial photographs from 1947 through 1989, the Site appears to be developed as a citrus and avocado grove and with the single-family home. In the photographs from 1995 through 2012, the Site appears to be in its current configuration as a residence and vacant land.

***Topographic Maps***

VM reviewed historical topographic maps from the years 1893, 1897, 1901, 1906, 1921, 1929, 1937, 1946, 1949, 1958, 1963, 1970, 1971, 1988 and 2001 via online resources. The Site is depicted with a structure on the northern portion on the topographic maps from 1949 through 2001.

***Historic Fire Insurance Maps***

VM requested Sanborn maps from EDR for the Site. EDR indicated that the area is unmapped and Sanborn map coverage is not available for the Site.

***City Directories***

VM reviewed city directories from 1971 to 2006 provided by EDR. The Site is listed as residential properties (i.e. personal names) in all of the directories.

### 5.4.1 State of California Division of Oil and Gas Records

According to online resources provided by the California Department of Conservation, Division of Oil, Gas and Geothermal Resources, there are no oil, gas or geothermal wells located on the Site.

## 5.5 Historical Use Information on Adjoining Properties

VM also reviewed several historical sources (as described in the following sections) to develop a history of the previous uses of adjoining properties and the surrounding area, in order to help identify the likelihood of past uses having led to recognized environmental conditions in connection with the Site.

***Aerial Photographs***

As stated previously, VM reviewed historical aerial photographs from the years 1947, 1953, 1964, 1968, 1980, 1989, 1995, 2002, 2009 and 2012 via online resources. In the aerial photographs from 1947 to 1968, the surrounding area is comprised of mostly citrus and avocado groves. Residential properties begin to develop in the 1980 aerial photograph. Bear Valley Parkway is shown in its current configuration in the 1980 aerial photograph. The adjacent properties appear in their current configurations in the 2002 through the 2012 aerial photographs.

***Topographic Maps***

VM reviewed historical topographic maps from the years 1893, 1897, 1901, 1906, 1921, 1929, 1937, 1946, 1949, 1958, 1963, 1970, 1971, 1988 and 2001 via online resources. The surrounding area is depicted as vacant and undeveloped on the maps reviewed from 1893 to 1963. The surrounding area is depicted with scattered structures on the maps reviewed from 1970 to 2001. Bear Valley Parkway is in its current configuration on the maps reviewed from 1978 to 2001. The surrounding area is shaded red (indicating urban development) on the map reviewed from 2000.

***Historic Fire Insurance Maps***

VM requested Sanborn maps from EDR for the Site. EDR indicated that the area was unmapped and did not have Sanborn map coverage.

***City Directories***

VM reviewed city directories from 1971 to 2013 provided by EDR. The adjoining properties are listed as residential properties in all directories reviewed.

### 5.5.1 State of California Division of Oil and Gas Records

According to online resources provided by the California Department of Conservation, Division of Oil, Gas and Geothermal Resources, there are no oil, gas or geothermal wells located on adjoining properties of the Site.

# 6.0 Site Reconnaissance

The objective of the Site reconnaissance was to obtain information indicating the likelihood of recognized environmental conditions in connection with the Site. The reconnaissance was conducted on April 15, 2016 by VM. VM was unaccompanied during the Site reconnaissance.

## 6.1 Methodology and Limiting Conditions

The Site reconnaissance consisted of inspecting the Site and walking accessible roads surrounding the Site. VM was not granted access into the single-family home and the detached garage. The lack of access to such structures does not alter VM's conclusions and recommendations regarding the Site. As stated previously, a Site Plan is included in Section 13.2. Photographs of the Site were taken to document existing Site conditions and several are included and described in Section 13.3.

## 6.2 General Site Setting

As stated previously, the Site is currently developed with a single-family home and a detached garage surrounded by vacant land. The Site is located in an area of Escondido generally comprised of residential land uses.

## 6.3 Site Observations

VM examined accessible areas of the Site for evidence of the following potential environmental concerns:

| Conditions | Not Observed or Noted | Observed or Noted | Significant Concern? |
|---|---|---|---|
| Hazardous Substances/Petroleum Products | X | | -- |
| Waste Generation/Storage/Disposal | X | | -- |
| ASTs | | X | No |
| USTs | X | | -- |
| PCB Containing Equipment | | X | No |
| Chemical/Petroleum Odors | X | | -- |
| Pools of Liquid | X | | -- |
| Floor Drains/Sumps/Wells | X | | -- |
| Drums | X | | -- |
| Stains or Corrosion | X | | -- |
| Unidentified Substance Containers | X | | -- |
| Stained Soil or Pavement | X | | -- |
| Stressed Vegetation | X | | -- |
| Pits, Ponds or Lagoons | X | | -- |
| Wastewater Discharges/Disposal Systems | X | | -- |
| Septic Systems/Cesspools | | X | No |
| Non-Hazardous Solid Waste Disposal Areas | X | | -- |
| Drinking Water Systems/Water Wells/Other Wells | X | | -- |

The noted items in the table above are discussed below.

***ASTs***

A 250-gallon propane AST was observed adjacent to the on-Site residence. The AST appeared to be in fair condition with no evidence of a release.

***PCB Containing Equipment***

A pole mounted electrical transformer was noted on the northern portion area adjacent to the driveway. The transformer is utility owned (SDG&E) and is not labeled with respect to PCB content. There were no indications of releases from the transformer.

***Septic Systems/Cesspools***

The on-Site residence is likely serviced by a septic system.

# 7.0 Interview Information

## 7.1. Interview With Owner

As stated previously, the Site is currently vested in Spieth and Wohlford Inc. The Site owner is unaware of significant environmental concerns in connection with the Site.

## 7.2 Interview With Site Manager

The Site owner is also considered to be the Site Manager. Please refer to Section 7.1 above.

## 7.3 Interviews With Occupants

No interviews with occupants were conducted as a part of this assessment. The lack of an interview with Site occupants does not alter AEC's conclusions and recommendations regarding the Site.

## 7.4 Interview With Local Government Official

During the preparation of this assessment, multiple governmental agency representatives were interviewed regarding the availability of public records pertaining to the Site.

## 7.5 Interview With Others

No other interviews were conducted as a part of this assessment.

# 8.0 Findings, Opinion and Conclusions

VM has performed a Phase I Environmental Site Assessment, in conformance with the scope and limitations of ASTM Practice E 1527-13 and 40 CFR Part 312 of the property located at 661 Bear Valley Parkway in Escondido, California (County of San Diego APNs 237-131-01-00 and -02-00). Any exceptions to, or deletions from, this practice are described in Section 9.0 of this report.

This assessment has revealed no evidence of recognized environmental conditions in connection with the Site. Additional environmental investigation at the Site is not considered to be warranted at this time.

## 9.0 Deviations and Data Gaps

No deviations or significant data gaps as defined in the ASTM-2013 standard were noted during the preparation of this assessment.

## 10.0 Additional Services

No additional services were completed by VM during the preparation of this assessment.

## 11.0 References

"All Appropriate Inquiry" as necessary to satisfy the defenses available under 42 U.S.C. §§ 9607(b)(3), 9607(r)(1), and 9607(q), relying on definitions provided at 42 U.S.C. §§ 9601(35)(B); and as further explained in 40 CFR §§ 312.1 – 312.31.

ASTM International, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process," ASTM Designation E 1527-13, Published November 2013.

California Geological Survey, 2010 Geologic Map of California, Compilation by: Jennings, Charles W.;

California State Water Resources Control Board, GeoTracker online database: http://www.geotracker.swrcb.ca.gov;

California State Water Resources Control Board, Water Quality Control Plan for the San Diego Basin (9), San Diego, California, Published 1994;

Environmental Data Resources Services, City Directories Report Dated April 15, 2016;

Environmental Data Resources Services, Regulatory Database Report Dated April 14, 2016;

Environmental Data Resources Services, Sanborn Report Dated April 14, 2016;

NETROnline, Historical aerial photographs;

State of California Department of Conservation, Division of Oil and Gas and Geothermal Resources: http://www.consrv.ca.gov/DOG/maps/index_map.htm;

USGS topographic map, Escondido, California Quadrangle, 2015.

## 12.0 Signatures and Qualifications of Environmental Professionals

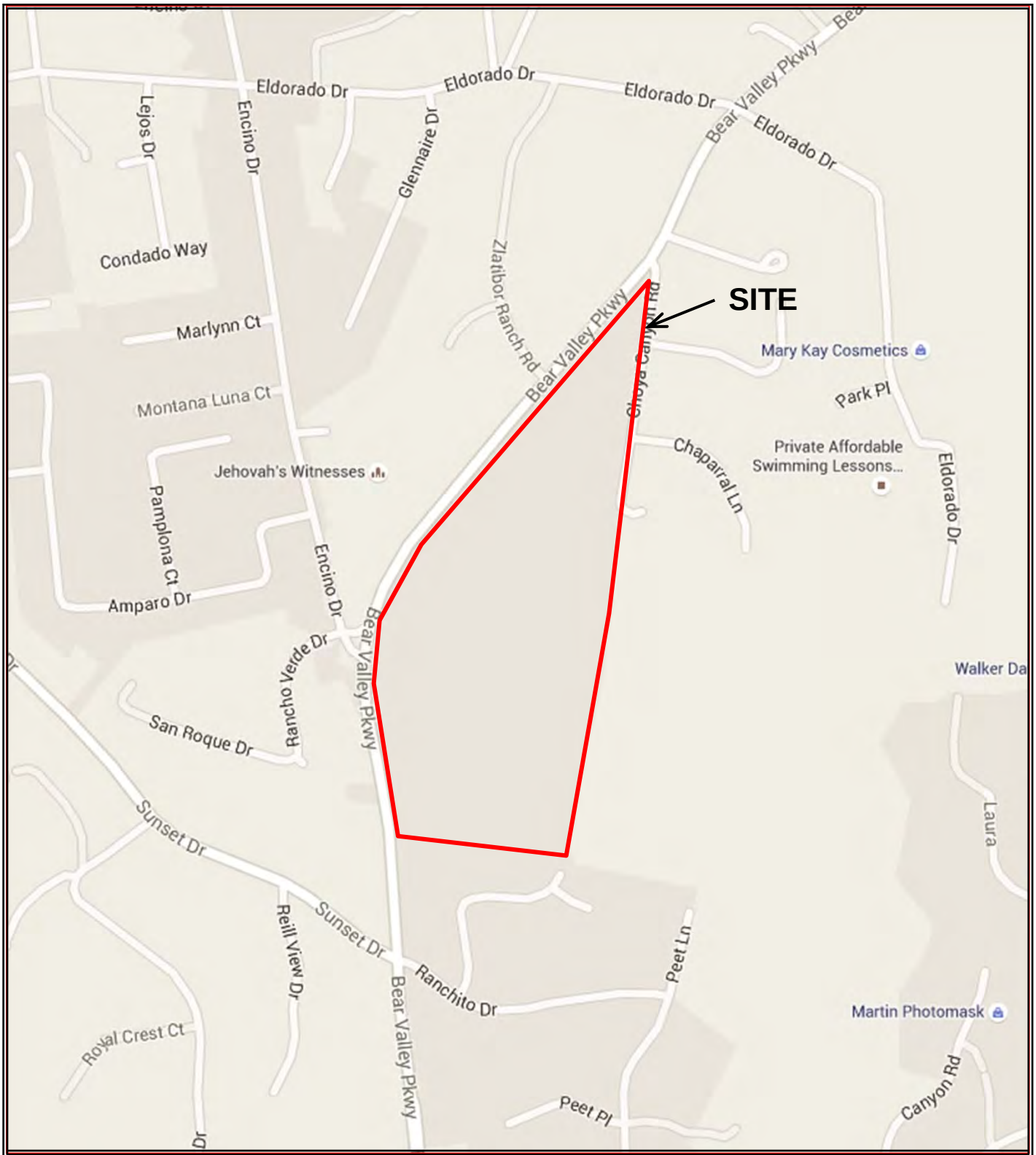
We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in 40 CFR 312.10. We have the specific qualifications based on education, training and experience to assess a property of the nature, history and setting of the subject Site. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Ralph M. Vinje
Principal Engineer
RCE #25115

Daniel Weis
Associate Environmental Scientist

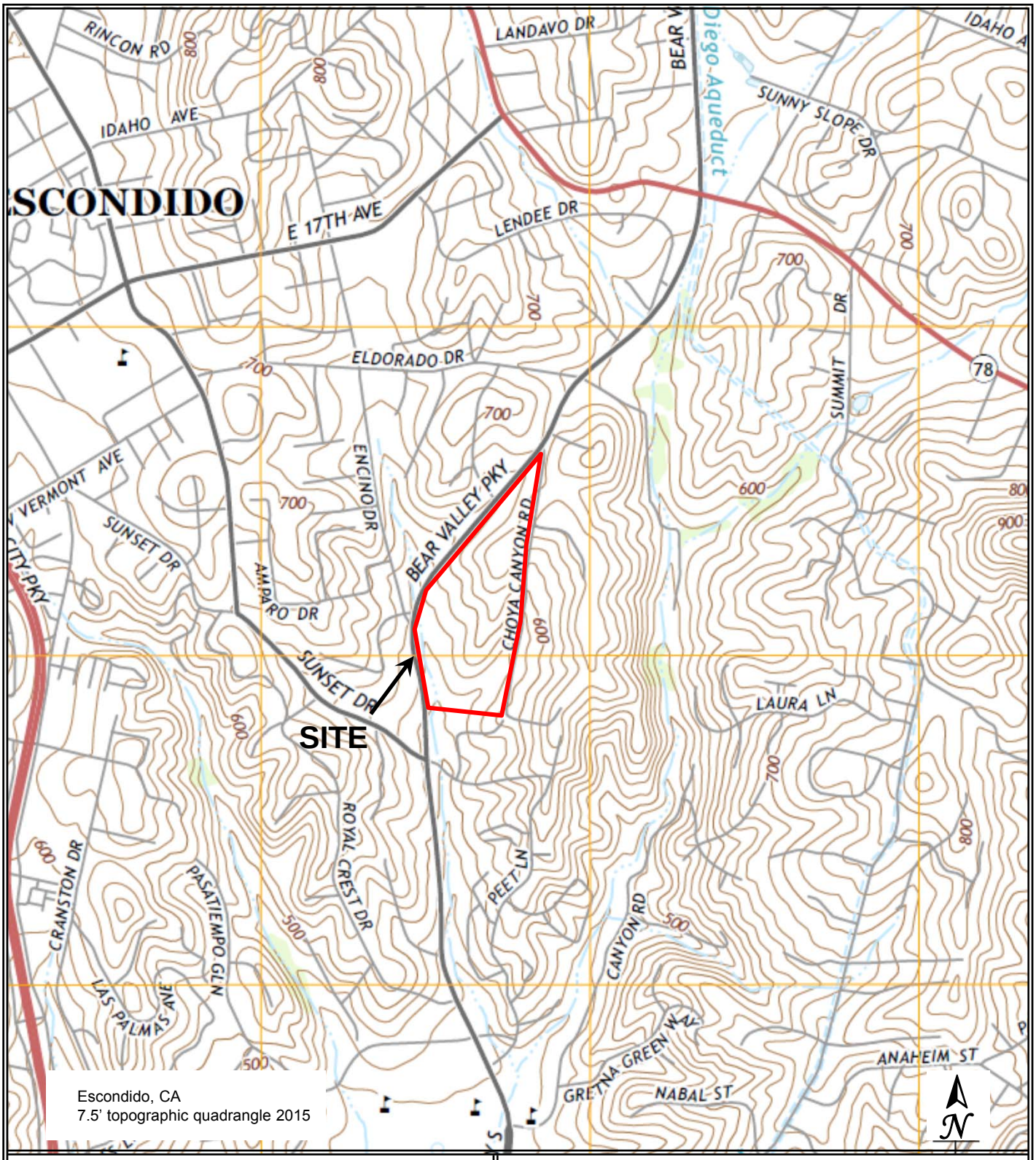
# 13.0 Appendices

## 13.1 Vicinity Map and Topographic Map




Vinje & Middleton Engineering, Inc.
2450 Auto Park Way
Escondido, California 92029

**Vicinity Map**
661 Bear Valley Parkway
Escondido, California




Vinje & Middleton Engineering, Inc.
2450 Auto Park Way
Escondido, California 92029

**Topographic Map**
661 Bear Valley Parkway
Escondido, California

## 13.2 Site Plan

| | |
|---|---|
| Vinje & Middleton Engineering, Inc.<br>2450 Auto Park Way<br>Escondido, California 92029 | **Site Plan**<br>661 Bear Valley Parkway<br>Escondido, California |

## 13.3 Site Photographs

1. View of the on-Site driveway facing east.

2. View of the northern portion of the Site.

3. View of the eastern portion of the Site.

4. View of the western portion of the Site.

5. View of the southern portion of the Site.

6. View of the on-Site residential building.

7. View of the on-Site detached garage.

8. View of Bear Valley Parkway and western adjacent properties.

9. View of the eastern adjacent property.

10. View of the AST located adjacent to the single-family home.

11. View of the pole-mounted transformer located adjacent to Bear Valley Parkway

12. View of a drainage line located adjacent to the driveway.

## 13.4 Regulatory Database Report

**Bear Valley**
661 Bear Valley Parkway
Escondido, CA 92025

Inquiry Number: 4592434.1s
April 14, 2016

# The EDR Radius Map™ Report

Environmental Data Resources Inc

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

# TABLE OF CONTENTS


| SECTION | PAGE |
|---|---|
| Executive Summary | ES1 |
| Overview Map | 2 |
| Detail Map | 3 |
| Map Findings Summary | 4 |
| Map Findings | 8 |
| Orphan Summary | 12 |
| Government Records Searched/Data Currency Tracking | GR-1 |

**GEOCHECK ADDENDUM**

**GeoCheck - Not Requested**


***Thank you for your business.***
Please contact EDR at 1-800-352-0050
with any questions or comments.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# EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

## TARGET PROPERTY INFORMATION

### ADDRESS

661 BEAR VALLEY PARKWAY
ESCONDIDO, CA 92025

### COORDINATES

| | |
|---|---|
| Latitude (North): | 33.0991060 - 33° 5' 56.78'' |
| Longitude (West): | 117.0570110 - 117° 3' 25.23'' |
| Universal Tranverse Mercator: | Zone 11 |
| UTM X (Meters): | 494680.1 |
| UTM Y (Meters): | 3662084.0 |
| Elevation: | 660 ft. above sea level |

### USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

| | |
|---|---|
| Target Property Map: | 5641298 ESCONDIDO, CA |
| Version Date: | 2012 |

### AERIAL PHOTOGRAPHY IN THIS REPORT

| | |
|---|---|
| Portions of Photo from: | 20120519, 20120510 |
| Source: | USDA |

## MAPPED SITES SUMMARY

Target Property Address:
661 BEAR VALLEY PARKWAY
ESCONDIDO, CA 92025

Click on Map ID to see full detail.

| MAP ID | SITE NAME | ADDRESS | DATABASE ACRONYMS | RELATIVE ELEVATION | DIST (ft. & mi.) DIRECTION |
|---|---|---|---|---|---|
| A1 | SPIETH AND WOHLFORD | 661 BEAR VALLEY PKWY | HAZNET | | TP |
| A2 | SPIETH & WOHLFORD IN | 661 BEAR VALLEY PY | San Diego Co. HMMD | | TP |
| 3 | | AMPARO DRIVE & ENCIN | CHMIRS | Lower | 453, 0.086, West |
| 4 | INTERCAL EQUITIES | 2021 GINNY LANE | RGA LUST | Higher | 2528, 0.479, WNW |
| 5 | BROTHERTON PLAZA | 2250 S ESCONDIDO BL | ENVIROSTOR | Lower | 3805, 0.721, WSW |

# EXECUTIVE SUMMARY

## TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

| Site | Database(s) | EPA ID |
|---|---|---|
| SPIETH AND WOHLFORD<br>661 BEAR VALLEY PKWY<br>ESCONDIDO, CA 92025 | HAZNET<br>GEPAID: CAC001482952 | N/A |
| SPIETH & WOHLFORD IN<br>661 BEAR VALLEY PY<br>ESCONDIDO, CA 92025 | San Diego Co. HMMD<br>Facility ID: 199458 | N/A |

## DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

## STANDARD ENVIRONMENTAL RECORDS

### *Federal NPL site list*

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

### *Federal Delisted NPL site list*

Delisted NPL ---------- National Priority List Deletions

### *Federal CERCLIS list*

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

### *Federal CERCLIS NFRAP site list*

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

### *Federal RCRA CORRACTS facilities list*

CORRACTS ---------- Corrective Action Report

### *Federal RCRA non-CORRACTS TSD facilities list*

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

# EXECUTIVE SUMMARY

***Federal RCRA generators list***

RCRA-LQG ---- RCRA - Large Quantity Generators
RCRA-SQG ---- RCRA - Small Quantity Generators
RCRA-CESQG ---- RCRA - Conditionally Exempt Small Quantity Generator

***Federal institutional controls / engineering controls registries***

LUCIS ---- Land Use Control Information System
US ENG CONTROLS ---- Engineering Controls Sites List
US INST CONTROL ---- Sites with Institutional Controls

***Federal ERNS list***

ERNS ---- Emergency Response Notification System

***State- and tribal - equivalent NPL***

RESPONSE ---- State Response Sites

***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF ---- Solid Waste Information System

***State and tribal leaking storage tank lists***

LUST ---- Geotracker's Leaking Underground Fuel Tank Report
SAN DIEGO CO. SAM ---- Environmental Case Listing
INDIAN LUST ---- Leaking Underground Storage Tanks on Indian Land
SLIC ---- Statewide SLIC Cases

***State and tribal registered storage tank lists***

FEMA UST ---- Underground Storage Tank Listing
UST ---- Active UST Facilities
AST ---- Aboveground Petroleum Storage Tank Facilities
INDIAN UST ---- Underground Storage Tanks on Indian Land

***State and tribal voluntary cleanup sites***

VCP ---- Voluntary Cleanup Program Properties
INDIAN VCP ---- Voluntary Cleanup Priority Listing

***State and tribal Brownfields sites***

BROWNFIELDS ---- Considered Brownfieds Sites Listing

**ADDITIONAL ENVIRONMENTAL RECORDS**

***Local Brownfield lists***

US BROWNFIELDS ---- A Listing of Brownfields Sites

***Local Lists of Landfill / Solid Waste Disposal Sites***

WMUDS/SWAT ---- Waste Management Unit Database

SWRCY Recycler Database
HAULERS Registered Waste Tire Haulers Listing
ODI Open Dump Inventory
DEBRIS REGION 9 Torres Martinez Reservation Illegal Dump Site Locations

***Local Lists of Hazardous waste / Contaminated Sites***

US HIST CDL Delisted National Clandestine Laboratory Register
HIST Cal-Sites Historical Calsites Database
SCH School Property Evaluation Program
CDL Clandestine Drug Labs
Toxic Pits Toxic Pits Cleanup Act Sites
US CDL National Clandestine Laboratory Register

***Local Lists of Registered Storage Tanks***

SWEEPS UST SWEEPS UST Listing
HIST UST Hazardous Substance Storage Container Database
CA FID UST Facility Inventory Database

***Local Land Records***

LIENS Environmental Liens Listing
LIENS 2 CERCLA Lien Information
DEED Deed Restriction Listing

***Records of Emergency Release Reports***

HMIRS Hazardous Materials Information Reporting System
LDS Land Disposal Sites Listing
MCS Military Cleanup Sites Listing
SPILLS 90 SPILLS 90 data from FirstSearch

***Other Ascertainable Records***

RCRA NonGen / NLR RCRA - Non Generators / No Longer Regulated
FUDS Formerly Used Defense Sites
DOD Department of Defense Sites
SCRD DRYCLEANERS State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR Financial Assurance Information
EPA WATCH LIST EPA WATCH LIST
2020 COR ACTION 2020 Corrective Action Program List
TSCA Toxic Substances Control Act
TRIS Toxic Chemical Release Inventory System
SSTS Section 7 Tracking Systems
ROD Records Of Decision
RMP Risk Management Plans
RAATS RCRA Administrative Action Tracking System
PRP Potentially Responsible Parties
PADS PCB Activity Database System
ICIS Integrated Compliance Information System
FTTS FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS Material Licensing Tracking System
COAL ASH DOE Steam-Electric Plant Operation Data

COAL ASH EPA ---- Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ---- PCB Transformer Registration Database
RADINFO ---- Radiation Information Database
HIST FTTS ---- FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS ---- Incident and Accident Data
CONSENT ---- Superfund (CERCLA) Consent Decrees
INDIAN RESERV ---- Indian Reservations
FUSRAP ---- Formerly Utilized Sites Remedial Action Program
UMTRA ---- Uranium Mill Tailings Sites
LEAD SMELTERS ---- Lead Smelter Sites
US AIRS ---- Aerometric Information Retrieval System Facility Subsystem
US MINES ---- Mines Master Index File
FINDS ---- Facility Index System/Facility Registry System
CA BOND EXP. PLAN ---- Bond Expenditure Plan
Cortese ---- "Cortese" Hazardous Waste & Substances Sites List
CUPA Listings ---- CUPA Resources List
DRYCLEANERS ---- Cleaner Facilities
EMI ---- Emissions Inventory Data
ENF ---- Enforcement Action Listing
Financial Assurance ---- Financial Assurance Information Listing
HIST CORTESE ---- Hazardous Waste & Substance Site List
HWP ---- EnviroStor Permitted Facilities Listing
HWT ---- Registered Hazardous Waste Transporter Database
MINES ---- Mines Site Location Listing
MWMP ---- Medical Waste Management Program Listing
NPDES ---- NPDES Permits Listing
PEST LIC ---- Pesticide Regulation Licenses Listing
PROC ---- Certified Processors Database
Notify 65 ---- Proposition 65 Records
UIC ---- UIC Listing
WASTEWATER PITS ---- Oil Wastewater Pits Listing
WDS ---- Waste Discharge System
WIP ---- Well Investigation Program Case List
FUELS PROGRAM ---- EPA Fuels Program Registered Listing
ECHO ---- Enforcement & Compliance History Information

**EDR RECOVERED GOVERNMENT ARCHIVES**

***Exclusive Recovered Govt. Archives***

RGA LF ---- Recovered Government Archive Solid Waste Facilities List

**SURROUNDING SITES: SEARCH RESULTS**

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

# EXECUTIVE SUMMARY

## STANDARD ENVIRONMENTAL RECORDS

### *State- and tribal - equivalent CERCLIS*

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 02/01/2016 has revealed that there is 1 ENVIROSTOR site within approximately 1 mile of the target property.

| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| ***BROTHERTON PLAZA*** | ***2250 S ESCONDIDO BL*** | ***WSW 1/2 - 1 (0.721 mi.)*** | ***5*** | ***10*** |
| Facility Id: 37000025 | | | | |
| Status: Refer: 1248 Local Agency | | | | |

## ADDITIONAL ENVIRONMENTAL RECORDS

### *Records of Emergency Release Reports*

CHMIRS: The California Hazardous Material Incident Report System contains information on reported hazardous material incidents, i.e., accidental releases or spills. The source is the California Office of Emergency Services.

A review of the CHMIRS list, as provided by EDR, and dated 12/16/2015 has revealed that there is 1 CHMIRS site within approximately 0.125 miles of the target property.

| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| Not reported | AMPARO DRIVE & ENCIN | W 0 - 1/8 (0.086 mi.) | 3 | 9 |
| OES Incident Number: 3-6258 | | | | |

## EDR RECOVERED GOVERNMENT ARCHIVES

### *Exclusive Recovered Govt. Archives*

RGA LUST: The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

A review of the RGA LUST list, as provided by EDR, has revealed that there is 1 RGA LUST site within

approximately 0.5 miles of the target property.

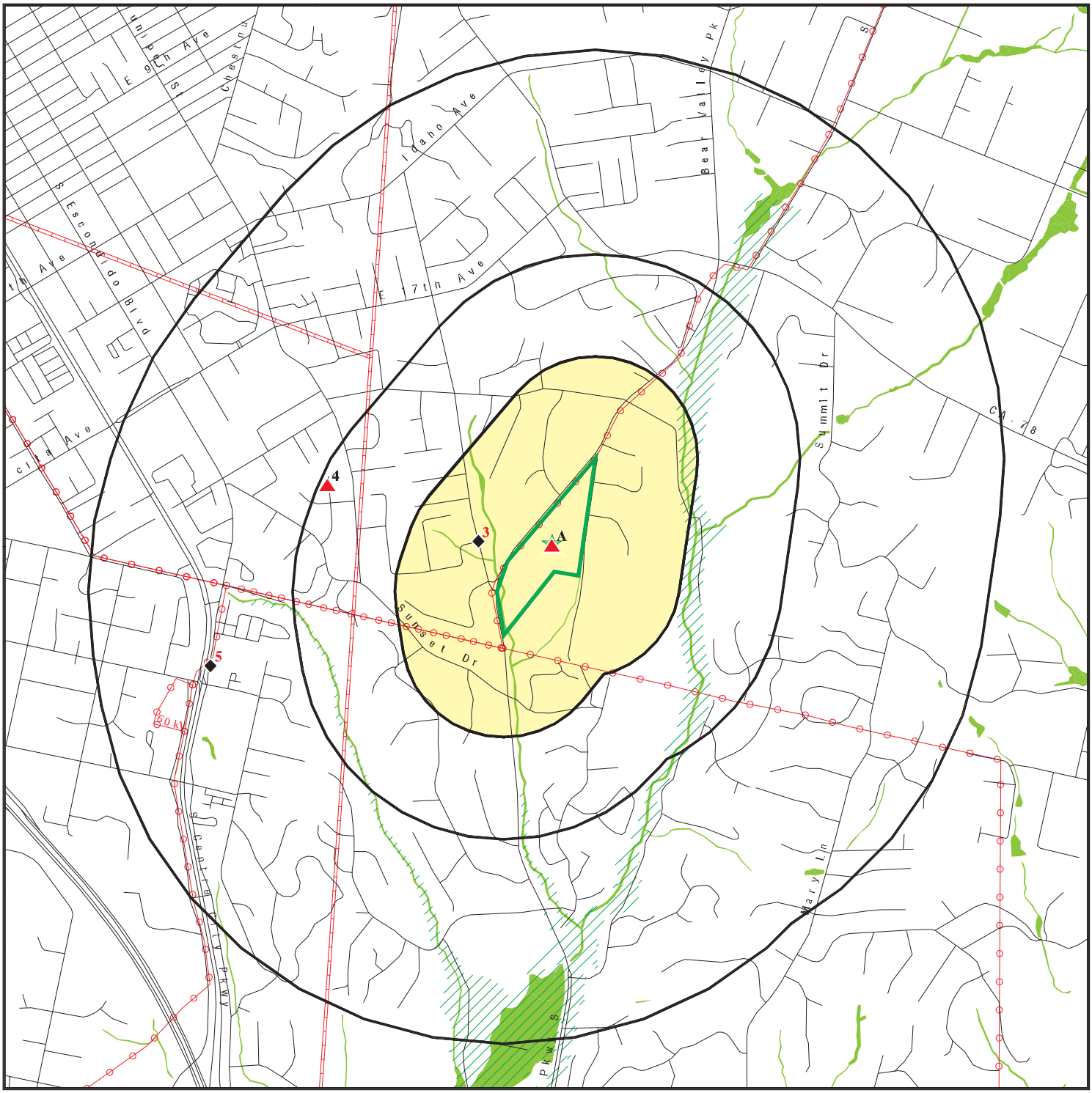
| Equal/Higher Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| INTERCAL EQUITIES | 2021 GINNY LANE | WNW 1/4 - 1/2 (0.479 mi.) | 4 | 10 |

# EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 3 records.

| Site Name | Database(s) |
|---|---|
| BEAR VALLEY PKWY SAN PASQUAL | NPDES |
| BEAR VALLEY PARKWAY | NPDES |
| INTERCAL EQUITIES INC | SAN DIEGO CO. SAM, San Diego Co. HMMD |

# OVERVIEW MAP - 4592434.1S




Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

Power transmission lines

Pipelines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

| | | | |
|---|---|---|---|
| SITE NAME: | Bear Valley | CLIENT: | Advantage Env. Consultants LLC |
| ADDRESS: | 661 Bear Valley Parkway<br>Escondido CA 92025 | CONTACT: | Natalie Norberg |
| LAT/LONG: | 33.099106 / 117.057011 | INQUIRY #: | 4592434.1s |
| | | DATE: | April 14, 2016 2:19 pm |

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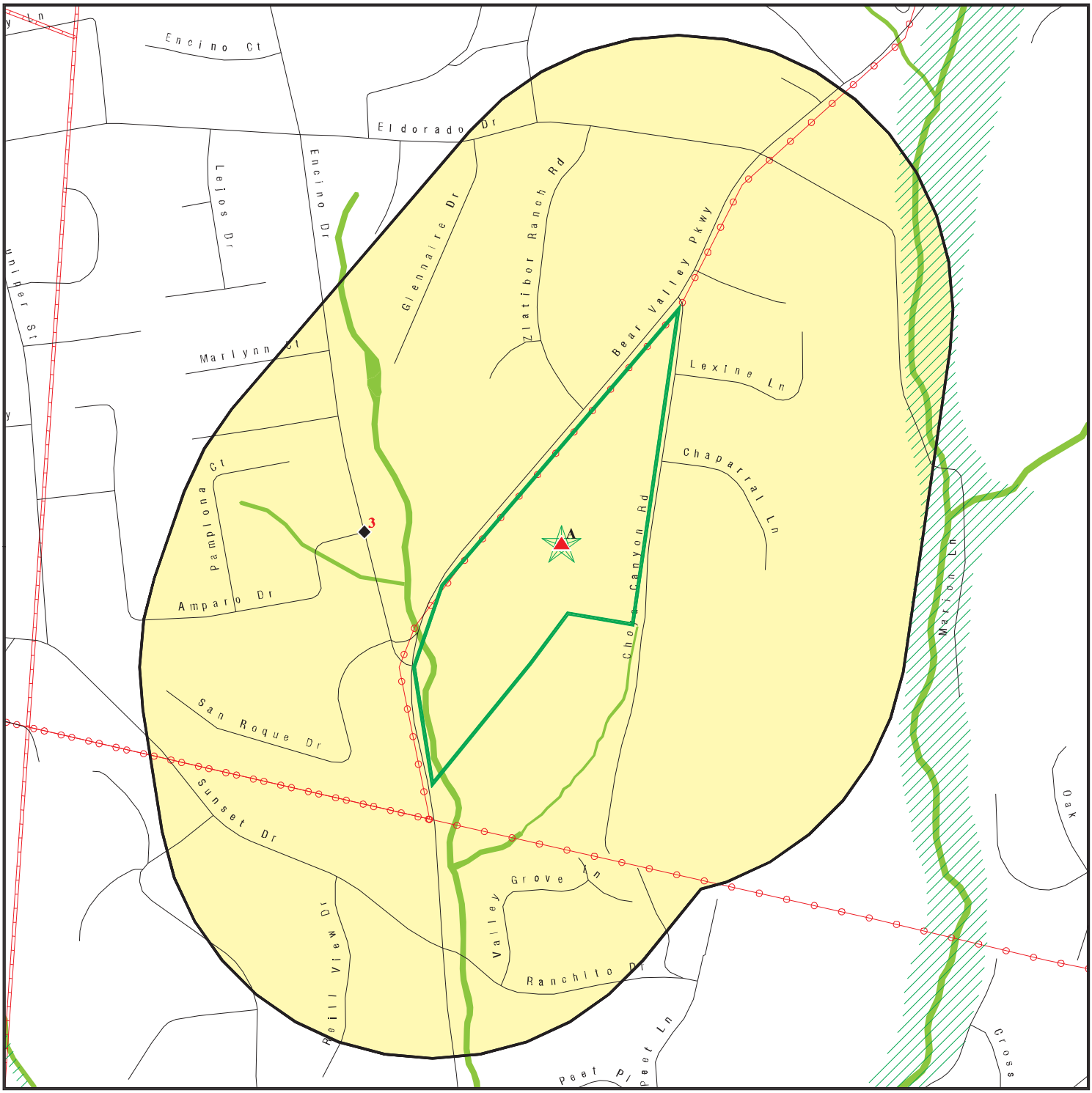
# DETAIL MAP - 4592434.1S




- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Pipelines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Areas of Concern

0 1/8 1/4 1/2 Miles

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

| | |
|---|---|
| SITE NAME: Bear Valley | CLIENT: Advantage Env. Consultants LLC |
| ADDRESS: 661 Bear Valley Parkway<br>Escondido CA 92025 | CONTACT: Natalie Norberg |
| LAT/LONG: 33.099106 / 117.057011 | INQUIRY #: 4592434.1s<br>DATE: April 14, 2016 2:20 pm |

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# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| **STANDARD ENVIRONMENTAL RECORDS** | | | | | | | | |
| ***Federal NPL site list*** | | | | | | | | |
| NPL | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| Proposed NPL | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| NPL LIENS | TP | | NR | NR | NR | NR | NR | 0 |
| ***Federal Delisted NPL site list*** | | | | | | | | |
| Delisted NPL | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***Federal CERCLIS list*** | | | | | | | | |
| FEDERAL FACILITY | TP | | NR | NR | NR | NR | NR | 0 |
| SEMS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal CERCLIS NFRAP site list*** | | | | | | | | |
| SEMS-ARCHIVE | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal RCRA CORRACTS facilities list*** | | | | | | | | |
| CORRACTS | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***Federal RCRA non-CORRACTS TSD facilities list*** | | | | | | | | |
| RCRA-TSDF | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal RCRA generators list*** | | | | | | | | |
| RCRA-LQG | 0.125 | | 0 | NR | NR | NR | NR | 0 |
| RCRA-SQG | 0.125 | | 0 | NR | NR | NR | NR | 0 |
| RCRA-CESQG | 0.125 | | 0 | NR | NR | NR | NR | 0 |
| ***Federal institutional controls / engineering controls registries*** | | | | | | | | |
| LUCIS | TP | | NR | NR | NR | NR | NR | 0 |
| US ENG CONTROLS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| US INST CONTROL | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal ERNS list*** | | | | | | | | |
| ERNS | 0.125 | | 0 | NR | NR | NR | NR | 0 |
| ***State- and tribal - equivalent NPL*** | | | | | | | | |
| RESPONSE | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***State- and tribal - equivalent CERCLIS*** | | | | | | | | |
| ENVIROSTOR | 1.000 | | 0 | 0 | 0 | 1 | NR | 1 |
| ***State and tribal landfill and/or solid waste disposal site lists*** | | | | | | | | |
| SWF/LF | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***State and tribal leaking storage tank lists*** | | | | | | | | |
| LUST | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| SAN DIEGO CO. SAM | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| INDIAN LUST | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| SLIC | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***State and tribal registered storage tank lists*** | | | | | | | | |
| FEMA UST | TP | | NR | NR | NR | NR | NR | 0 |
| UST | 0.125 | | 0 | NR | NR | NR | NR | 0 |
| AST | 0.125 | | 0 | NR | NR | NR | NR | 0 |
| INDIAN UST | 0.125 | | 0 | NR | NR | NR | NR | 0 |
| ***State and tribal voluntary cleanup sites*** | | | | | | | | |
| VCP | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| INDIAN VCP | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***State and tribal Brownfields sites*** | | | | | | | | |
| BROWNFIELDS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| **ADDITIONAL ENVIRONMENTAL RECORDS** | | | | | | | | |
| ***Local Brownfield lists*** | | | | | | | | |
| US BROWNFIELDS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Local Lists of Landfill / Solid Waste Disposal Sites*** | | | | | | | | |
| WMUDS/SWAT | TP | | NR | NR | NR | NR | NR | 0 |
| SWRCY | TP | | NR | NR | NR | NR | NR | 0 |
| HAULERS | TP | | NR | NR | NR | NR | NR | 0 |
| ODI | TP | | NR | NR | NR | NR | NR | 0 |
| DEBRIS REGION 9 | TP | | NR | NR | NR | NR | NR | 0 |
| ***Local Lists of Hazardous waste / Contaminated Sites*** | | | | | | | | |
| US HIST CDL | TP | | NR | NR | NR | NR | NR | 0 |
| HIST Cal-Sites | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| SCH | TP | | NR | NR | NR | NR | NR | 0 |
| CDL | TP | | NR | NR | NR | NR | NR | 0 |
| San Diego Co. HMMD | 0.125 | 1 | 0 | NR | NR | NR | NR | 1 |
| Toxic Pits | TP | | NR | NR | NR | NR | NR | 0 |
| US CDL | TP | | NR | NR | NR | NR | NR | 0 |
| ***Local Lists of Registered Storage Tanks*** | | | | | | | | |
| SWEEPS UST | 0.125 | | 0 | NR | NR | NR | NR | 0 |
| HIST UST | 0.125 | | 0 | NR | NR | NR | NR | 0 |
| CA FID UST | 0.125 | | 0 | NR | NR | NR | NR | 0 |
| ***Local Land Records*** | | | | | | | | |
| LIENS | TP | | NR | NR | NR | NR | NR | 0 |
| LIENS 2 | TP | | NR | NR | NR | NR | NR | 0 |
| DEED | TP | | NR | NR | NR | NR | NR | 0 |
| ***Records of Emergency Release Reports*** | | | | | | | | |
| HMIRS | TP | | NR | NR | NR | NR | NR | 0 |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| CHMIRS | 0.125 | | 1 | NR | NR | NR | NR | 1 |
| LDS | TP | | NR | NR | NR | NR | NR | 0 |
| MCS | TP | | NR | NR | NR | NR | NR | 0 |
| SPILLS 90 | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Other Ascertainable Records*** | | | | | | | | |
| RCRA NonGen / NLR | 0.125 | | 0 | NR | NR | NR | NR | 0 |
| FUDS | TP | | NR | NR | NR | NR | NR | 0 |
| DOD | TP | | NR | NR | NR | NR | NR | 0 |
| SCRD DRYCLEANERS | TP | | NR | NR | NR | NR | NR | 0 |
| US FIN ASSUR | TP | | NR | NR | NR | NR | NR | 0 |
| EPA WATCH LIST | TP | | NR | NR | NR | NR | NR | 0 |
| 2020 COR ACTION | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| TSCA | TP | | NR | NR | NR | NR | NR | 0 |
| TRIS | TP | | NR | NR | NR | NR | NR | 0 |
| SSTS | TP | | NR | NR | NR | NR | NR | 0 |
| ROD | TP | | NR | NR | NR | NR | NR | 0 |
| RMP | TP | | NR | NR | NR | NR | NR | 0 |
| RAATS | TP | | NR | NR | NR | NR | NR | 0 |
| PRP | TP | | NR | NR | NR | NR | NR | 0 |
| PADS | TP | | NR | NR | NR | NR | NR | 0 |
| ICIS | TP | | NR | NR | NR | NR | NR | 0 |
| FTTS | TP | | NR | NR | NR | NR | NR | 0 |
| MLTS | TP | | NR | NR | NR | NR | NR | 0 |
| COAL ASH DOE | TP | | NR | NR | NR | NR | NR | 0 |
| COAL ASH EPA | TP | | NR | NR | NR | NR | NR | 0 |
| PCB TRANSFORMER | TP | | NR | NR | NR | NR | NR | 0 |
| RADINFO | TP | | NR | NR | NR | NR | NR | 0 |
| HIST FTTS | TP | | NR | NR | NR | NR | NR | 0 |
| DOT OPS | TP | | NR | NR | NR | NR | NR | 0 |
| CONSENT | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| INDIAN RESERV | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| FUSRAP | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| UMTRA | TP | | NR | NR | NR | NR | NR | 0 |
| LEAD SMELTERS | TP | | NR | NR | NR | NR | NR | 0 |
| US AIRS | TP | | NR | NR | NR | NR | NR | 0 |
| US MINES | TP | | NR | NR | NR | NR | NR | 0 |
| FINDS | TP | | NR | NR | NR | NR | NR | 0 |
| CA BOND EXP. PLAN | TP | | NR | NR | NR | NR | NR | 0 |
| Cortese | TP | | NR | NR | NR | NR | NR | 0 |
| CUPA Listings | 0.125 | | 0 | NR | NR | NR | NR | 0 |
| DRYCLEANERS | TP | | NR | NR | NR | NR | NR | 0 |
| EMI | TP | | NR | NR | NR | NR | NR | 0 |
| ENF | TP | | NR | NR | NR | NR | NR | 0 |
| Financial Assurance | TP | | NR | NR | NR | NR | NR | 0 |
| HAZNET | TP | 1 | NR | NR | NR | NR | NR | 1 |
| HIST CORTESE | TP | | NR | NR | NR | NR | NR | 0 |
| HWP | TP | | NR | NR | NR | NR | NR | 0 |
| HWT | TP | | NR | NR | NR | NR | NR | 0 |
| MINES | TP | | NR | NR | NR | NR | NR | 0 |
| MWMP | TP | | NR | NR | NR | NR | NR | 0 |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| NPDES | TP | | NR | NR | NR | NR | NR | 0 |
| PEST LIC | TP | | NR | NR | NR | NR | NR | 0 |
| PROC | TP | | NR | NR | NR | NR | NR | 0 |
| Notify 65 | TP | | NR | NR | NR | NR | NR | 0 |
| UIC | TP | | NR | NR | NR | NR | NR | 0 |
| WASTEWATER PITS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| WDS | TP | | NR | NR | NR | NR | NR | 0 |
| WIP | TP | | NR | NR | NR | NR | NR | 0 |
| FUELS PROGRAM | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ECHO | TP | | NR | NR | NR | NR | NR | 0 |
| **EDR RECOVERED GOVERNMENT ARCHIVES** | | | | | | | | |
| ***Exclusive Recovered Govt. Archives*** | | | | | | | | |
| RGA LF | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| RGA LUST | 0.500 | | 0 | 0 | 1 | NR | NR | 1 |
| - Totals -- | | 2 | 1 | 0 | 1 | 1 | 0 | 5 |

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

**A1** **SPIETH AND WOHLFORD INC.** **HAZNET** **S112894788**
**Target** **661 BEAR VALLEY PKWY.** **N/A**
**Property** **ESCONDIDO, CA 92025**

**Site 1 of 2 in cluster A**

**Actual:**
**660 ft.**

HAZNET:

| | |
|---|---|
| envid: | S112894788 |
| Year: | 1998 |
| GEPAID: | CAC001482952 |
| Contact: | BURNET F WOHLFORD |
| Telephone: | 7607455255 |
| Mailing Name: | Not reported |
| Mailing Address: | 3355 EAST VALLEY PKWY. |
| Mailing City,St,Zip: | ESCONDIDO, CA 920270000 |
| Gen County: | Not reported |
| TSD EPA ID: | CAT080025711 |
| TSD County: | Not reported |
| Waste Category: | Aqueous solution with total organic residues less than 10 percent |
| Disposal Method: | Recycler |
| Tons: | 4.1700 |
| Cat Decode: | Aqueous solution with total organic residues less than 10 percent |
| Method Decode: | Recycler |
| Facility County: | San Diego |

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**A2** **SPIETH & WOHLFORD INC** **San Diego Co. HMMD** **S104761447**
**Target** **661 BEAR VALLEY PY** **N/A**
**Property** **ESCONDIDO, CA 92025**

**Site 2 of 2 in cluster A**

**Actual:**
**660 ft.**

SAN DIEGO CO. HMMD:

| | |
|---|---|
| Facility Id: | 199458 |
| Business Type: | 6HKAG |
| EPA Id Number: | Not reported |
| APN: | 237-131-01-00 |
| Last HMMD Inspection: | 06/04/1993 |
| Permit Status: | INAC |
| Permit Expiration: | 06/04/1993 |
| Facility Owner: | SPIETH & WOHLFORD INC |
| Facility Address: | 661 BEAR VALLEY PY |
| Facility City: | ESCONDIDO |
| Facility State: | CA |
| Facility Zip: | 92025-6701 |
| UST Owner: | Not reported |
| Handle Regulated Hazmat: | Not reported |
| Own Or Operate UST: | Not reported |
| Subject To APSA: | Not reported |
| Generate Haz Waste: | Not reported |
| Treat Haz Waste: | Not reported |
| Generate Medical Waste: | Not reported |

**3**
**West**
**< 1/8**
**0.086 mi.**
**453 ft.**

**Relative:**
**Lower**

**Actual:**
**597 ft.**

**AMPARO DRIVE & ENCINO DRIVE**
**ESCONDIDO, CA**

**CHMIRS** **S106398381**
**N/A**

CHMIRS:

| | |
|---|---|
| OES Incident Number: | 3-6258 |
| OES notification: | 12/04/2003 |
| OES Date: | Not reported |
| OES Time: | Not reported |
| **Date Completed:** | **Not reported** |
| Property Use: | Not reported |
| Agency Id Number: | Not reported |
| Agency Incident Number: | Not reported |
| Time Notified: | Not reported |
| Time Completed: | Not reported |
| Surrounding Area: | Not reported |
| Estimated Temperature: | Not reported |
| Property Management: | Not reported |
| More Than Two Substances Involved?: | Not reported |
| Resp Agncy Personel # Of Decontaminated: | Not reported |
| Responding Agency Personel # Of Injuries: | Not reported |
| Responding Agency Personel # Of Fatalities: | Not reported |
| Others Number Of Decontaminated: | Not reported |
| Others Number Of Injuries: | Not reported |
| Others Number Of Fatalities: | Not reported |
| Vehicle Make/year: | Not reported |
| Vehicle License Number: | Not reported |
| Vehicle State: | Not reported |
| Vehicle Id Number: | Not reported |
| CA DOT PUC/ICC Number: | Not reported |
| Company Name: | Not reported |
| Reporting Officer Name/ID: | Not reported |
| Report Date: | Not reported |
| Facility Telephone: | Not reported |
| Waterway Involved: | Not reported |
| Waterway: | Not reported |
| Spill Site: | Not reported |
| Cleanup By: | Reporting Party |
| Containment: | Not reported |
| What Happened: | Not reported |
| Type: | Not reported |
| Measure: | Not reported |
| Other: | Not reported |
| Date/Time: | Not reported |
| Year: | 2003 |
| Agency: | Escondido FD |
| Incident Date: | 12/4/200312:00:00 AM |
| Admin Agency: | San Diego County Health Services Dept. |
| Amount: | Not reported |
| Contained: | Yes |
| Site Type: | Road |
| E Date: | Not reported |
| Substance: | Natural Gas |
| Gallons: | 0.000000 |
| Unknown: | 0 |
| Substance #2: | Not reported |
| Substance #3: | Not reported |

**(Continued)** **S106398381**

| | |
|---|---|
| Evacuations: | 0 |
| Number of Injuries: | 0 |
| Number of Fatalities: | 0 |
| #1 Pipeline: | Not reported |
| #2 Pipeline: | Not reported |
| #3 Pipeline: | Not reported |
| #1 Vessel >= 300 Tons: | Not reported |
| #2 Vessel >= 300 Tons: | Not reported |
| #3 Vessel >= 300 Tons: | Not reported |
| Evacs: | Not reported |
| Injuries: | Not reported |
| Fatals: | Not reported |
| Comments: | Not reported |
| Description: | Construction backhoe struck a gas main, causing a release for approximately an hour at about a 3' hole in the main. |

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**4** **INTERCAL EQUITIES** **RGA LUST** **S114635386**
**WNW** **2021 GINNY LANE** **N/A**
**1/4-1/2** **ESCONDIDO, CA**
**0.479 mi.**
**2528 ft.**

**Relative:** RGA LUST:
**Higher**

| | | | |
|---|---|---|---|
| 1992 | INTERCAL EQUITIES | 2021 GINNY LANE | |

**Actual:**
**725 ft.**

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**5** **BROTHERTON PLAZA** **ENVIROSTOR** **S106065979**
**WSW** **2250 S ESCONDIDO BL** **N/A**
**1/2-1** **ESCONDIDO, CA 92025**
**0.721 mi.**
**3805 ft.**

**Relative:** ENVIROSTOR:
**Lower**

**Actual:**
**613 ft.**

| | |
|---|---|
| Facility ID: | 37000025 |
| Status: | Refer: 1248 Local Agency |
| Status Date: | 03/07/2001 |
| Site Code: | Not reported |
| Site Type: | Evaluation |
| Site Type Detailed: | Evaluation |
| Acres: | Not reported |
| NPL: | NO |
| Regulatory Agencies: | NONE SPECIFIED |
| Lead Agency: | NONE SPECIFIED |
| Program Manager: | Not reported |
| Supervisor: | Referred - Not Assigned |
| Division Branch: | Cleanup Cypress |
| Assembly: | 75 |
| Senate: | 38 |
| Special Program: | Not reported |
| Restricted Use: | NO |
| Site Mgmt Req: | NONE SPECIFIED |
| Funding: | Not Applicable |
| Latitude: | 33.09456 |
| Longitude: | -117.0711 |
| APN: | NONE SPECIFIED |
| Past Use: | NONE SPECIFIED |

**BROTHERTON PLAZA (Continued)** **S106065979**

Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: T0608141457
Alias Type: GeoTracker Global ID
Alias Name: 37000025
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: SB 1248 Notification
Completed Date: 03/07/2001
Comments: SB 1248 San Diego County

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

Count: 3 records. ORPHAN SUMMARY

| City | EDR ID | Site Name | Site Address | Zip | Database(s) |
|---|---|---|---|---|---|
| ESCONDIDO | S117695550 | BEAR VALLEY PKWY SAN PASQUAL | BEAR VALLEY PKWY SAN PASQUAL | 92025 | NPDES |
| ESCONDIDO | S117347741 | BEAR VALLEY PARKWAY | BEAR VALLEY PARKWAY AND SR78 | 92027 | NPDES |
| ESCONDIDO | S104750573 | INTERCAL EQUITIES INC | 2021 HELEN WY | 92025 | SAN DIEGO CO. SAM, San Diego Co. HMMD |

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Number of Days to Update:** Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

**STANDARD ENVIRONMENTAL RECORDS**

***Federal NPL site list***

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 10/30/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: EPA
Telephone: N/A
Last EDR Contact: 04/05/2016
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 10/30/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: EPA
Telephone: N/A
Last EDR Contact: 04/05/2016
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

***Federal Delisted NPL site list***

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 10/30/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: EPA
Telephone: N/A
Last EDR Contact: 04/05/2016
Next Scheduled EDR Contact: 04/18/2016
Data Release Frequency: Quarterly

***Federal CERCLIS list***

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 03/26/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 04/08/2016
Next Scheduled EDR Contact: 07/18/2016
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 01/11/2016
Date Data Arrived at EDR: 01/22/2016
Date Made Active in Reports: 03/18/2016
Number of Days to Update: 56

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 04/05/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

***Federal CERCLIS NFRAP site list***

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 01/11/2016
Date Data Arrived at EDR: 01/22/2016
Date Made Active in Reports: 03/18/2016
Number of Days to Update: 56

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 04/05/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

***Federal RCRA CORRACTS facilities list***

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Quarterly

***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Quarterly

***Federal RCRA generators list***

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Varies

***Federal institutional controls / engineering controls registries***

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/28/2015
Date Data Arrived at EDR: 05/29/2015
Date Made Active in Reports: 06/11/2015
Number of Days to Update: 13

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/16/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 09/10/2015
Date Data Arrived at EDR: 09/11/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 53

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 09/10/2015
Date Data Arrived at EDR: 09/11/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 53

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

***Federal ERNS list***

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 06/22/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 82

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Annually

***State- and tribal - equivalent NPL***

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 02/01/2016
Date Data Arrived at EDR: 02/03/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/03/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Quarterly

***State- and tribal - equivalent CERCLIS***

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 02/01/2016
Date Data Arrived at EDR: 02/03/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/03/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Quarterly

***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 02/15/2016
Date Data Arrived at EDR: 02/17/2016
Date Made Active in Reports: 04/01/2016
Number of Days to Update: 44

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/17/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Quarterly

***State and tribal leaking storage tank lists***

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 56

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Quarterly

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 01/08/2015
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/27/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/13/2015
Date Data Arrived at EDR: 10/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 118

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 04/28/2015
Date Made Active in Reports: 06/22/2015
Number of Days to Update: 55

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 08/20/2015
Date Data Arrived at EDR: 10/30/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 111

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 11/24/2015
Date Data Arrived at EDR: 12/01/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 34

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Semi-Annually

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/27/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 11/04/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 52

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

SLIC: Statewide SLIC Cases

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 56

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

***State and tribal registered storage tank lists***

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 04/11/2016
Next Scheduled EDR Contact: 07/25/2016
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 56

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 08/01/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 03/11/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 12/14/2014
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 28

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/27/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 10/13/2015
Date Data Arrived at EDR: 10/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 118

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 08/20/2015
Date Data Arrived at EDR: 10/30/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 111

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/29/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 67

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 11/24/2015
Date Data Arrived at EDR: 12/01/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 34

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 11/05/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 52

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 01/07/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 41

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

***State and tribal voluntary cleanup sites***

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 02/01/2016
Date Data Arrived at EDR: 02/03/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/03/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Quarterly

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 04/01/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Varies

***State and tribal Brownfields sites***

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 12/04/2015
Date Data Arrived at EDR: 12/08/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 44

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 03/07/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

**ADDITIONAL ENVIRONMENTAL RECORDS**

***Local Brownfield lists***

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/22/2015
Date Data Arrived at EDR: 12/23/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/22/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Semi-Annually

***Local Lists of Landfill / Solid Waste Disposal Sites***

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/17/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 53

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 11/23/2015
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 58

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 02/14/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

***Local Lists of Hazardous waste / Contaminated Sites***

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 09/17/2015
Date Data Arrived at EDR: 12/04/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 76

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/01/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database
The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program
This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 02/01/2016
Date Data Arrived at EDR: 02/03/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/03/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 09/30/2015
Date Data Arrived at EDR: 01/19/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 63

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 04/11/2016
Next Scheduled EDR Contact: 07/25/2016
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/17/2015
Date Data Arrived at EDR: 12/04/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 76

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/01/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Quarterly

***Local Lists of Registered Storage Tanks***

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 11/25/2015
Date Data Arrived at EDR: 12/01/2015
Date Made Active in Reports: 12/17/2015
Number of Days to Update: 16

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 03/28/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

***Local Land Records***

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 12/17/2015
Date Data Arrived at EDR: 12/22/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 48

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/07/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 03/11/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 12/07/2015
Date Data Arrived at EDR: 12/08/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 44

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Semi-Annually

***Records of Emergency Release Reports***

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 06/24/2015
Date Data Arrived at EDR: 06/26/2015
Date Made Active in Reports: 09/02/2015
Number of Days to Update: 68

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Annually

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/16/2015
Date Data Arrived at EDR: 01/27/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 55

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 01/27/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 56

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 56

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

***Other Ascertainable Records***

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 03/02/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 34

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Varies

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 03/11/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 01/15/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 01/15/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/19/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 09/01/2015
Date Data Arrived at EDR: 09/03/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 02/16/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 02/09/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/12/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 03/24/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 133

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/24/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 08/01/2015
Date Data Arrived at EDR: 08/26/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 69

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 02/12/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 10/15/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 33

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/12/2016
Next Scheduled EDR Contact: 07/25/2016
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/06/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 04/08/2016
Next Scheduled EDR Contact: 07/25/2016
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 06/26/2015
Date Data Arrived at EDR: 07/10/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 95

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 01/13/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 03/11/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 01/29/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/07/2015
Date Data Arrived at EDR: 07/09/2015
Date Made Active in Reports: 09/16/2015
Number of Days to Update: 69
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 04/08/2016
Next Scheduled EDR Contact: 07/18/2016
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42
Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 02/03/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/02/2015
Number of Days to Update: 46

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 03/24/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 09/30/2015
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/26/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/15/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 11/23/2015
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 86

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 03/28/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 11/25/2014
Date Data Arrived at EDR: 11/26/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 04/07/2016
Next Scheduled EDR Contact: 07/18/2016
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 03/24/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/20/2015
Date Data Arrived at EDR: 10/27/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 69

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 03/24/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/18/2015
Date Data Arrived at EDR: 09/01/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 125

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 03/02/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/04/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/04/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/20/2015
Date Data Arrived at EDR: 09/09/2015
Date Made Active in Reports: 11/03/2015
Number of Days to Update: 55

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 12/28/2015
Date Data Arrived at EDR: 12/29/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 23

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 03/30/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Quarterly

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 02/08/2016
Date Data Arrived at EDR: 02/24/2016
Date Made Active in Reports: 04/01/2016
Number of Days to Update: 37

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 02/05/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 09/25/2015
Date Made Active in Reports: 11/05/2015
Number of Days to Update: 41

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 03/22/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 01/26/2016
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 53

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 01/28/2016
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 53

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 02/17/2016
Date Data Arrived at EDR: 02/23/2016
Date Made Active in Reports: 04/01/2016
Number of Days to Update: 38

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/16/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 10/14/2015
Date Made Active in Reports: 12/11/2015
Number of Days to Update: 58

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 01/11/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Annually

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 02/22/2016
Date Data Arrived at EDR: 02/24/2016
Date Made Active in Reports: 04/01/2016
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/24/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 01/11/2016
Date Data Arrived at EDR: 01/13/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 40

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 04/12/2016
Next Scheduled EDR Contact: 07/25/2016
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing

A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/17/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 53

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Varies

MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 11/10/2015
Date Data Arrived at EDR: 12/08/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 44

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 02/16/2016
Date Data Arrived at EDR: 02/17/2016
Date Made Active in Reports: 04/01/2016
Number of Days to Update: 44

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/17/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing

A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 12/07/2015
Date Data Arrived at EDR: 12/08/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 44

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 03/08/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Quarterly

PROC: Certified Processors Database

A listing of certified processors.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/17/2015
Date Made Active in Reports: 03/01/2016
Number of Days to Update: 75

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 09/10/2015
Date Data Arrived at EDR: 01/05/2016
Date Made Active in Reports: 02/12/2016
Number of Days to Update: 38

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 04/04/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: No Update Planned

UIC: UIC Listing

A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 07/23/2015
Date Data Arrived at EDR: 09/15/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 28

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 03/16/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing

Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water board?s review found that more than one-third of the region?s active disposal pits are operating without permission.

Date of Government Version: 04/15/2015
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/23/2015
Number of Days to Update: 67

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 01/15/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Varies

WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 02/19/2016
Next Scheduled EDR Contact: 06/16/2016
Data Release Frequency: Quarterly

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 03/28/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/20/2015
Date Data Arrived at EDR: 09/23/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 103

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 03/23/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Quarterly

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 11/23/2015
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 86

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 02/24/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Quarterly

**EDR RECOVERED GOVERNMENT ARCHIVES**

***Exclusive Recovered Govt. Archives***

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

**COUNTY RECORDS**

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/11/2016
Date Data Arrived at EDR: 01/12/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 41

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 04/11/2016
Next Scheduled EDR Contact: 07/25/2016
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 01/11/2016
Date Data Arrived at EDR: 01/14/2016
Date Made Active in Reports: 03/01/2016
Number of Days to Update: 47

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 04/11/2016
Next Scheduled EDR Contact: 07/25/2016
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List
Cupa Facility List

Date of Government Version: 11/16/2015
Date Data Arrived at EDR: 12/10/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 42

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 03/21/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing
Cupa facility list.

Date of Government Version: 02/19/2016
Date Data Arrived at EDR: 02/23/2016
Date Made Active in Reports: 04/01/2016
Number of Days to Update: 38

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 04/11/2016
Next Scheduled EDR Contact: 07/25/2016
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 02/02/2016
Date Data Arrived at EDR: 02/04/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 18

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 03/28/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 02/22/2016
Date Data Arrived at EDR: 02/24/2016
Date Made Active in Reports: 04/01/2016
Number of Days to Update: 37

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Varies

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 02/24/2016
Date Data Arrived at EDR: 02/26/2016
Date Made Active in Reports: 04/01/2016
Number of Days to Update: 35

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 02/01/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 01/22/2016
Date Data Arrived at EDR: 02/05/2016
Date Made Active in Reports: 03/07/2016
Number of Days to Update: 31

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 02/01/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 02/22/2016
Date Data Arrived at EDR: 02/24/2016
Date Made Active in Reports: 04/01/2016
Number of Days to Update: 37

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 02/01/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 01/05/2016
Date Data Arrived at EDR: 01/08/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 45

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 04/04/2016
Next Scheduled EDR Contact: 07/18/2016
Data Release Frequency: Semi-Annually

HUMBOLDT COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 12/02/2015
Date Data Arrived at EDR: 12/04/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 48

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 01/25/2016
Date Data Arrived at EDR: 01/27/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 26

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 33

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 05/19/2015
Date Data Arrived at EDR: 06/18/2015
Date Made Active in Reports: 07/22/2015
Number of Days to Update: 34

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 02/23/2016
Date Data Arrived at EDR: 02/25/2016
Date Made Active in Reports: 04/01/2016
Number of Days to Update: 36

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 02/09/2016
Date Data Arrived at EDR: 02/12/2016
Date Made Active in Reports: 04/01/2016
Number of Days to Update: 49

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 01/19/2016
Next Scheduled EDR Contact: 05/02/2016
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 03/21/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 11/24/2014
Date Data Arrived at EDR: 01/30/2015
Date Made Active in Reports: 03/04/2015
Number of Days to Update: 33
Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 04/01/2016
Next Scheduled EDR Contact: 07/25/2016
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 01/19/2016
Date Data Arrived at EDR: 01/20/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 62
Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 01/20/2016
Next Scheduled EDR Contact: 05/02/2016
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2016
Date Data Arrived at EDR: 01/26/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 56
Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 01/19/2016
Next Scheduled EDR Contact: 05/02/2016
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/15/2015
Date Data Arrived at EDR: 01/29/2015
Date Made Active in Reports: 03/10/2015
Number of Days to Update: 40
Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 03/28/2016
Next Scheduled EDR Contact: 05/02/2016
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 04/02/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 11
Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 02/16/2016
Next Scheduled EDR Contact: 05/02/2016
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 11/04/2015
Date Data Arrived at EDR: 11/13/2015
Date Made Active in Reports: 12/17/2015
Number of Days to Update: 34
Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 01/12/2016
Date Data Arrived at EDR: 01/15/2016
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 24
Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 01/11/2016
Next Scheduled EDR Contact: 04/25/2016
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 12/11/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 03/07/2016
Number of Days to Update: 84

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites

Currently permitted USTs in Marin County.

Date of Government Version: 10/05/2015
Date Data Arrived at EDR: 10/08/2015
Date Made Active in Reports: 10/15/2015
Number of Days to Update: 7

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 04/04/2016
Next Scheduled EDR Contact: 07/18/2016
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/18/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 34

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List

CUPA Facility List

Date of Government Version: 11/24/2015
Date Data Arrived at EDR: 12/01/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 51

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing

CUPA Program listing from the Environmental Health Division.

Date of Government Version: 12/10/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/12/2016
Number of Days to Update: 60

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 01/27/2016
Date Data Arrived at EDR: 02/04/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 18

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 02/01/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 02/01/2016
Date Data Arrived at EDR: 02/12/2016
Date Made Active in Reports: 04/01/2016
Number of Days to Update: 49

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/09/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 02/01/2016
Date Data Arrived at EDR: 02/12/2016
Date Made Active in Reports: 04/01/2016
Number of Days to Update: 49

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/09/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 02/01/2016
Date Data Arrived at EDR: 02/10/2016
Date Made Active in Reports: 04/01/2016
Number of Days to Update: 51

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/10/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 12/11/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 41
Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 03/07/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 01/20/2016
Date Data Arrived at EDR: 01/22/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 60
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/21/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 01/20/2016
Date Data Arrived at EDR: 01/22/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 60
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/21/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 11/02/2015
Date Data Arrived at EDR: 01/05/2016
Date Made Active in Reports: 02/12/2016
Number of Days to Update: 38
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/06/2016
Next Scheduled EDR Contact: 07/18/2016
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 11/02/2015
Date Data Arrived at EDR: 01/05/2016
Date Made Active in Reports: 02/12/2016
Number of Days to Update: 38
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/06/2016
Next Scheduled EDR Contact: 07/18/2016
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/18/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 52

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 09/23/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 23

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 03/07/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 03/03/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 12/18/2015
Date Data Arrived at EDR: 12/22/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 48
Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 04/04/2016
Next Scheduled EDR Contact: 07/04/2016
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 02/22/2016
Date Data Arrived at EDR: 02/24/2016
Date Made Active in Reports: 04/01/2016
Number of Days to Update: 37
Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/21/2016
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 10/14/2015
Date Data Arrived at EDR: 10/15/2015
Date Made Active in Reports: 11/16/2015
Number of Days to Update: 32
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/28/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 12/17/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 53
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/14/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28
Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 11/18/2015
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 12/11/2015
Number of Days to Update: 17

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

HIST LUST - Fuel Leak Site Activity Report

A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing

A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 02/29/2016
Next Scheduled EDR Contact: 06/13/2016
Data Release Frequency: Annually

Hazardous Material Facilities

Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 02/05/2016
Date Data Arrived at EDR: 02/10/2016
Date Made Active in Reports: 04/01/2016
Number of Days to Update: 51

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 02/08/2016
Next Scheduled EDR Contact: 05/23/2016
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List

CUPA facility listing.

Date of Government Version: 11/18/2015
Date Data Arrived at EDR: 11/23/2015
Date Made Active in Reports: 12/11/2015
Number of Days to Update: 18

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List

Cupa Facility List.

Date of Government Version: 12/09/2015
Date Data Arrived at EDR: 12/10/2015
Date Made Active in Reports: 01/21/2016
Number of Days to Update: 42

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 02/22/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 10/30/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 56

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/14/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 10/30/2015
Date Data Arrived at EDR: 12/14/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 56

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/14/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 01/11/2016
Date Data Arrived at EDR: 01/14/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 39

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 03/28/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 01/05/2016
Date Data Arrived at EDR: 01/07/2016
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 32

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 03/28/2016
Next Scheduled EDR Contact: 07/11/2016
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 12/07/2015
Date Data Arrived at EDR: 12/08/2015
Date Made Active in Reports: 12/17/2015
Number of Days to Update: 9

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 03/07/2016
Next Scheduled EDR Contact: 06/20/2016
Data Release Frequency: Semi-Annually

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 10/29/2015
Date Data Arrived at EDR: 10/30/2015
Date Made Active in Reports: 12/11/2015
Number of Days to Update: 42

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 03/04/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Varies

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 12/28/2015
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 53

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 04/04/2016
Next Scheduled EDR Contact: 07/18/2016
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/14/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: Quarterly

Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 12/28/2015
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 53

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 01/25/2016
Next Scheduled EDR Contact: 05/09/2016
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 11/30/2015
Date Data Arrived at EDR: 12/17/2015
Date Made Active in Reports: 02/08/2016
Number of Days to Update: 53

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/17/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 02/01/2016
Date Data Arrived at EDR: 02/05/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 46

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 04/04/2016
Next Scheduled EDR Contact: 07/18/2016
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 02/01/2016
Date Data Arrived at EDR: 02/05/2016
Date Made Active in Reports: 02/22/2016
Number of Days to Update: 17

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 02/01/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Varies

**OTHER DATABASE(S)**

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/18/2016
Next Scheduled EDR Contact: 05/30/2016
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/17/2015
Date Made Active in Reports: 08/12/2015
Number of Days to Update: 26

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/12/2016
Next Scheduled EDR Contact: 07/25/2016
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 02/01/2016
Date Data Arrived at EDR: 02/03/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 48

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 02/03/2016
Next Scheduled EDR Contact: 05/16/2016
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/24/2015
Date Made Active in Reports: 08/18/2015
Number of Days to Update: 25

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 01/19/2016
Next Scheduled EDR Contact: 05/02/2016
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/19/2015
Date Made Active in Reports: 07/15/2015
Number of Days to Update: 26

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 03/21/2016
Next Scheduled EDR Contact: 06/06/2016
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 03/19/2015
Date Made Active in Reports: 04/07/2015
Number of Days to Update: 19

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 03/14/2016
Next Scheduled EDR Contact: 06/27/2016
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish & Game
Telephone: 916-445-0411

# GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

**STREET AND ADDRESS INFORMATION**

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## 13.5 Historical Resources

# Certified Sanborn® Map Report

04/14/16

**Site Name:**

Bear Valley
661 Bear Valley Parkway
Escondido, CA 92025
EDR Inquiry # 4592434.2

**Client Name:**

Advantage Env. Consultants LLC
145 Vallecitos De Oro
San Marcos, CA 92069
Contact: Natalie Norberg

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Advantage Env. Consultants LLC were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

## *Certified Sanborn Results:*

**Certification #** B63C-41B4-9D09

**PO #** NA

**Project** 16-109SD

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: B63C-41B4-9D09

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

*The Sanborn Library LLC Since 1866™*

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**Bear Valley**
661 Bear Valley Parkway
Escondido, CA 92025

Inquiry Number: 4592434.4
April 15, 2016

# The EDR-City Directory Abstract

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

# TABLE OF CONTENTS

## SECTION

**Executive Summary**

**Findings**

**City Directory Images**

***Thank you for your business.***
Please contact EDR at 1-800-352-0050
with any questions or comments.

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# EXECUTIVE SUMMARY

## DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1903 through 2013. This report compiles information gathered in this review by geocoding the latitude and longitude of properties identified and gathering information about properties within 660 feet of the target property.

A summary of the information obtained is provided in the text of this report.

## RECORD SOURCES

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## RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

| Year | Source | TP | Adjoining | Text Abstract | Source Image |
|---|---|---|---|---|---|
| 2013 | Cole Information Services | - | - | - | - |
| 2008 | Cole Information Services | - | - | - | - |
| 2006 | Haines Company, Inc. | - | X | X | X |
| | Haines Company, Inc. | X | X | X | X |
| 2000 | Haines Company, Inc. | - | X | X | - |
| | Haines Company, Inc. | X | X | X | - |
| 1995 | PACIFIC BELL WHITE PAGES | - | X | X | - |
| 1992 | PACIFIC BELL WHITE PAGES | - | X | X | - |
| 1991 | PACIFIC BELL WHITE PAGES | - | X | X | - |
| | PACIFIC BELL WHITE PAGES | X | X | X | - |
| 1989 | Pacific Bell | - | X | X | - |
| 1985 | PACIFIC BELL WHITE PAGES | - | X | X | - |
| 1984 | R. L. Polk & Co. | - | - | - | - |
| 1980 | Pacific Telephone | - | - | - | - |
| 1976 | Luskey Brothers & Co., Inc. | - | - | - | - |

# EXECUTIVE SUMMARY

| Year | Source | TP | Adjoining | Text Abstract | Source Image |
|---|---|---|---|---|---|
| 1975 | R. L. Polk Co. | - | - | - | - |
| 1971 | Community Directory Co. | - | X | X | - |
| | Community Directory Co. | X | X | X | - |
| 1970 | John M. Ducy | - | - | - | - |
| 1966 | R. L. Polk Co. | - | - | - | - |
| 1965 | Luskey Brothers Co., Inc. | - | - | - | - |
| 1962 | Community Directory Co. | - | - | - | - |
| 1961 | R. L. Polk & Co. | - | - | - | - |
| 1960 | The Pacific Telephone Telegraph Co. | - | - | - | - |
| 1956 | R. L. Polk & Co. | - | - | - | - |
| 1955 | The Pacific Telephone & Telegraph Co. | - | - | - | - |
| 1952 | R. L. Polk Co. of California | - | - | - | - |
| 1950 | The Pacific Telephone Telegraph Co. | - | - | - | - |
| 1948 | San Diego Directory Co. | - | - | - | - |
| 1945 | San Diego Directory Co. | - | - | - | - |
| 1943 | San Diego Directory Co. | - | - | - | - |
| 1940 | San Diego Directory Co. | - | - | - | - |
| 1938 | San Diego Directory Co. | - | - | - | - |
| 1933 | San Diego Directory Co. | - | - | - | - |
| 1927 | San Diego Directory Co. | - | - | - | - |
| 1921 | San Diego Directory Co. Inc. | - | - | - | - |
| 1907 | San Diego Directory Co. | - | - | - | - |
| 1903 | San Diego Directory Co. | - | - | - | - |

# FINDINGS

## TARGET PROPERTY INFORMATION

### ADDRESS

661 Bear Valley Parkway
Escondido, CA 92025

### FINDINGS DETAIL

Target Property research detail.

### BEAR VALLEY PKY

**661 BEAR VALLEY PKY**

| *Year* | *Uses* | *Source* | |
|---|---|---|---|
| 2006 | XXXX | Haines Company, Inc. | Image pg. A1 |
| 2000 | XXXX | Haines Company, Inc. | |
| 1991 | Gutierrez Wally | PACIFIC BELL WHITE PAGES | |

### BEAR VALLEY RD

**661 BEAR VALLEY RD**

| *Year* | *Uses* | *Source* |
|---|---|---|
| 1971 | Davis Braxton B Ova L ranch formn h | Community Directory Co. |

# FINDINGS

## ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

## BEAR VALLEY PKY

### 666 BEAR VALLEY PKY

| Year | Uses | Source |
|---|---|---|
| 2000 | XXXX | Haines Company, Inc. |
| 1995 | Botta R .. ..... .... | PACIFIC BELL WHITE PAGES |
| | Botshekan Hedayatulah | PACIFIC BELL WHITE PAGES |
| | Boltte Michael J MD UCS O Medical Center | PACIFIC BELL WHITE PAGES |
| 1991 | Botshekan Hedayatulah | PACIFIC BELL WHITE PAGES |
| 1985 | BOTSHEKAN HEDAYATULAH | PACIFIC BELL WHITE PAGES |

## CHOYA CANYON RD

### 2204 CHOYA CANYON RD

| Year | Uses | Source |
|---|---|---|
| 2000 | SUECHTING Egon | Haines Company, Inc. |
| 1971 | Hitney Gene C h | Community Directory Co. |

### 2271 CHOYA CANYON RD

| Year | Uses | Source | |
|---|---|---|---|
| 2006 | PEASE Carter D | Haines Company, Inc. | Image pg. A2 |
| 2000 | PEASE Carter D | Haines Company, Inc. | |
| 1992 | Snodgrass Clayton W Cdr US N Ret | PACIFIC BELL WHITE PAGES | |
| 1991 | Snodgrass Clayton W Cdr US N Ret | PACIFIC BELL WHITE PAGES | |
| 1989 | Snodgrass Clayton W Cdr USN Ret | Pacific Bell | |
| 1985 | SNODGRASS CLAYTON W CDR USN RET | PACIFIC BELL WHITE PAGES | |

# FINDINGS

## TARGET PROPERTY: ADDRESS NOT IDENTIFIED IN RESEARCH SOURCE

The following Target Property addresses were researched for this report, and the addresses were not identified in the research source.

| Address Researched | Address Not Identified in Research Source |
|---|---|
| 661 Bear Valley Parkway | 2013, 2008, 1995, 1992, 1989, 1985, 1984, 1980, 1976, 1975, 1970, 1966, 1965, 1962, 1961, 1960, 1956, 1955, 1952, 1950, 1948, 1945, 1943, 1940, 1938, 1933, 1927, 1921, 1907, 1903 |

## ADJOINING PROPERTY: ADDRESSES NOT IDENTIFIED IN RESEARCH SOURCE

The following Adjoining Property addresses were researched for this report, and the addresses were not identified in research source.

| Address Researched | Address Not Identified in Research Source |
|---|---|
| 2204 CHOYA CANYON RD | 2013, 2008, 2006, 1995, 1992, 1991, 1989, 1985, 1984, 1980, 1976, 1975, 1970, 1966, 1965, 1962, 1961, 1960, 1956, 1955, 1952, 1950, 1948, 1945, 1943, 1940, 1938, 1933, 1927, 1921, 1907, 1903 |
| 2271 CHOYA CANYON RD | 2013, 2008, 1995, 1984, 1980, 1976, 1975, 1971, 1970, 1966, 1965, 1962, 1961, 1960, 1956, 1955, 1952, 1950, 1948, 1945, 1943, 1940, 1938, 1933, 1927, 1921, 1907, 1903 |
| 666 BEAR VALLEY PKY | 2013, 2008, 2006, 1992, 1989, 1984, 1980, 1976, 1975, 1971, 1970, 1966, 1965, 1962, 1961, 1960, 1956, 1955, 1952, 1950, 1948, 1945, 1943, 1940, 1938, 1933, 1927, 1921, 1907, 1903 |

# Appendix M-1 Limited Phase II ESA (May 2013)

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# LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT
# 661 BEAR VALLEY PARKWAY
# ESCONDIDO, CALIFORNIA

## ASSESSORS PARCEL NO. 237-131-01 & -02

**Prepared For:**

**Spieth & Wohlford, Inc.**
**c/o Henthorn & Associates**
**P.O. Box 237**
**Carlsbad, California 92018**

**Prepared By:**

**Vinje & Middleton Engineering, Inc.**
**2450 Auto Park Way**
**Escondido, California 92029**

**Job # 13-118-$H_2$**

May 24, 2013

# TABLE OF CONTENTS


1.0 INTRODUCTION . . . . . 1
1.1 Purpose . . . . . 1
1.2 Limiting Conditions . . . . . 1

2.0 BACKGROUND . . . . . 1
2.1 Site History/Development/Usage . . . . . 1
2.2 Proposed Use/Legal Description . . . . . 2
2.3 Physical Setting . . . . . 3
2.3.1 Topography . . . . . 3
2.3.2 Geology . . . . . 3
2.3.3 Hydrology . . . . . 4
2.4 Adjacent Land Use . . . . . 4

3.0 PHASE II ACTIVITIES . . . . . 4
3.1 Sample Collection and Handling . . . . . 4
3.2 Chemical Analyses . . . . . 5

4.0 EVALUATION OF RESULTS . . . . . 6

5.0 CONCLUSIONS . . . . . 9

6.0 LIMITATIONS . . . . . 9

FIGURES:

1. REGIONAL INDEX MAP
2. SITE PLAN MAP
3. ORGANOCHLORINE PESTICIDE SAMPLE LOCATION WITH RESULTS
4. ARSENIC SAMPLE LOCATION WITH RESULTS
5. TOTAL PETROLEUM HYDROCARBON SAMPLE LOCATION WITH RESULTS
6. MERCURY & CYANIDE SAMPLE LOCATION WITH RESULTS

APPENDICES:

A. FIELD PROCEDURES
B. TEST AMERICA, INC. LABORATORY REPORT
C. REFERENCES

# 1.0 INTRODUCTION

## 1.1 Purpose

This Limited Phase II Environmental Site Assessment (ESA) is performed in response to identified environmental concerns associated with the Sites past land uses, as identified in Vinje & Middleton Engineering, Inc. (Vinje & Middleton) ***Phase I Environmental Site Assessment, 661 Bear Valley Parkway, Escondido, CA 92025***, dated February 14, 2013. Subject property is located in north San Diego County within the incorporated City of Escondido, State of California. Regional depiction of the Sites location in San Diego County is presented on the attached **Figure 1**.

Subject property consists of 42.12 acres of land occupied by one 3-bedroom, 1-bath, single story residence with a detached single car garage. Access is provided off Bear Valley Parkway. Subject property is further identified by Assessors parcel Numbers (APN's) 237-131-01 and -02.

Focus of this limited Phase II ESA is the condition of near surface soil potentially impacted by past land use activities. Vinje & Middleton performed the below described work under contract with the property owner, Spieth & Wohlford, Inc., executed April 18, 2013.

## 1.2 Limiting Conditions

The basis for this work was specifically identified in above referenced Phase I ESA. Determination of groundwater quality and depth below the surface was not addressed in the above referenced report. Determination of the depth and quality of groundwater was not within the scope of this Limited Phase II ESA investigation.

Sample locations, collection depths, and chosen laboratory analyses were based on our experience and knowledge of contaminants of concern associated with agricultural property within San Diego County and testimony by interviewed persons familiar with historical land use (please see Phase I ESA Report).

# 2.0 BACKGROUND

## 2.1 Site History/Development/Usage

Above referenced Phase I Environmental Site Assessment (ESA) report identified the Site was viewed as a citrus/avocado grove between the years 1947 - 1990. Specific information about the land use was not disclosed. According to interviews and historical research of land in the near vicinity, the subject property was evaluated near the turn of the 20$^{th}$ century for gold and silver potential due to its close proximity to actively mined properties on west side of Bear Valley Parkway in late 1800's. Several mine shafts and adit locations were identified on the Subject Property.

The site has not been farmed since approximately 1995. This time period was confirmed by interview responses from ownership representatives and review of historical aerial photographs.

The agricultural land use in addition to the storage of oil and diesel fuels in above ground storage tanks (ASTs) represent potential environmental concerns. No evidence of mining activity was seen in the historical photographs reviewed. Historically, all mining activity in Escondido was discontinued by 1926 and occurred on west side of Bear Valley Parkway. Earliest historical photography covering the Site was 1946.

Services provided to the Site include: water by the City of Escondido; electricity provided by San Diego Gas & Electric; gas provided by a 250-gallon propane storage tank on the southwest corner of the residence, and sewage is processed in an on-site septic system.

Site configuration illustrating project boundaries, and street orientation is shown on the attached Site Plan Map attached as **Figure 2**.

Easements on, over, under, and bordering the project was not identified to represent any recognized environmental concerns.

### 2.2 Proposed Use/Legal Description

Property owner plans to convert the former agricultural property into a residential subdivision.

Legal Description: Parcel 1, A.P.N.: 237-131-01

Lots 2, 3 and 4 in Block 257 of Rancho Rincon Del Diablo, according to Map thereof No. 648, filed on November 20, 1890, in the City of Escondido, County of San Diego, Sate of California, in the office of the County Recorder of Said County.

Legal Description: Parcel 2, A.P.N.: 237-131-02

Those portions of Lots 3 and 4 in Block 257 of Rancho Rincon Del Diablo, according to Map thereof No. 648, filed on November 20, 1890, in the Office of the County Recorder of said County, and the unnamed street lying between said Lots 3 and 4, vacated and abandoned to public use May 29, 1939, by the board of supervisors of San Diego County.

## 2.3 Physical Setting

### 2.3.1 Topography

Topographically, the site is marked by a northeast/southwest trending ridge dissected by southwest trending erosional gullies/ravines cut into the gentle to moderate sloping hillside terrain (14% - 31% gradient). Significant surface erosion has occurred in the southeast corner of the property resulting in a steep drainage channel (up to 45% gradient). Site elevations range between 516 - 678 feet above sea level (Figure 2).

Subject property is equal in elevation to west adjacent property, lower in elevation than north and east adjacent properties, and higher than the south adjacent properties.

### 2.3.2 Geology

Regionally, San Diego County is located within the Peninsula Range Geomorphic Province of California. Typified by prominent northwest-trending mountains which include from north to south, the Santa Ana, Agua Tibia, Palomar, Volcan, Cuyamaca and Laguna mountains. The region exhibits gently sloping dissected western surfaces and a steep eastern slope separated from the Colorado River area by abrupt fault scarps.

The San Diego Region is divided into a coastal plain area, a central mountain-valley area, and an eastern mountain valley area. The western edge of the Peninsular Ranges province corresponds with the gently sloping dissected western hills and mountains (Site locale).

Subject property is underlain by late Cretaceous undifferentiated granodiorite with minor tonalite locally intruded by quartz rich pegmatite veins (1999, Tan & Kennedy). This igneous basement complex weathers into top soils identified as the Fallbrook and Ramona Loams, both sandy loams are well draining with fine to coarse grains.

Stream and low elevation drainage are mapped as Quaternary young Holocene colluvial and alluvial stream deposits consisting of silty sand with clay and gravel.

### 2.3.3 Hydrology

The Site is located within the Las Lomas Muertas Hydrologic Sub-Area (905.32), within the San Pasqual Hydrologic Area (905.30), within the San Dieguito Hydrologic Unit (905.00). Groundwater within the Las Lomas Muertas Hydrologic Sub-Area currently has existing beneficial uses designated for municipal, agricultural, and industrial supply purposes.

Surface waters within the 5.32 Hydrologic Sub-Area also have beneficial use designations for municipal, agricultural, industrial process supply, recreation 2, warm fresh water habitat, wildlife habitat, and rare species habitats.

A south trending flow line exists in the southwest corner of the Site and is marked by dense foliage (Figure 2). Three water wells, and a water weir were observed during the site reconnaissance of the west/southwest property boundary.

Depth to groundwater below the Site was not determined within this scope of work; however, it is estimated to be shallow in the lower elevations of the Site.

### 2.4 Adjacent Land Use

Adjacent land use was viewed as residential to the north, northeast, south and west. Vacant land exists adjacent the southeast property boundary line.

## 3.0 PHASE II ACTIVITIES

On May 1, 2013, Vinje & Middleton conducted limited field sampling of surficial soils at twenty-eight (28) locations on the referenced site. Weather conditions were sunny, and mild. Soil sample locations are illustrated on the attached Site Plan Map (**Figure 2**).

### 3.1 Sample Collection and Handling

All soil samples were collected from depths ranging between 0.5 feet to 1 foot below the surface. All hand tools were cleaned prior to use. Precautionary measures were taken to preserve sample integrity. A description of steps involved in sampling, equipment decontamination, documentation, preservation, and laboratory delivery are described in 'Field Procedures' provided herein as **Appendix A**.

### 3.2 Chemical Analyses

Ten (10) soil samples were collected for analysis of organochlorine pesticides (OCPs) using Environmental Protection Agency (EPA) Method 8081A in former grove areas of the property. Ten (10) samples were collected and analyzed for Arsenic metals content using EPA Method 6010B in the former grove areas. A total of five (5) soil samples were collected and analyzed for total petroleum hydrocarbons in the diesel and oil ranges using EPA Method 8015B adjacent to two former above ground storage tanks (ASTs) locations, and three former smudge pot locations in the grove. And three (3) soil samples were collected and analyzed for Mercury using method7471A and Cyanide using Method 9014, in areas of former mine shafts. Tests were performed by State Certified Analytical Laboratory, Test America, Inc., in their Irvine, California facility.

The organochlorine pesticides (OCPs) were evaluated due to this category of pesticides persistence in the environment, long half-life, and water insolubility. Other classes of pesticide (i.e. Carbamates, and Organophosphorus) break down quickly to inert compounds in the environment, and were eliminated from consideration as potential environmental concerns due to their short toxic duration. Often found in agricultural soils in San Diego County, several OCPs have been banned from use in the United States since the 1970's and are suspected human carcinogens.

Arsenic is both a naturally occurring metal and used in herbicide formulations. Naturally occurring arsenic concentrations in southern California typically exceed the low California Human Health Screening Level (CHHSL) for soil in a residential setting (0.07 mg/kg).

Petroleum hydrocarbons were evaluated in the soil due to known former AST locations and surface stains in areas of former smudge pot locations in grove areas.

No recorded evidence nor interview testimony by property owner(s) could verify whether gold/silver production was ever conducted on the subject property. **A total of six (6) shafts of unknown depth and length were identified in a Preliminary Geotechnical report by this firm.** Based on this information, Vinje & Middleton collected soil samples within close proximity of three former shaft locations for analysis of hazardous chemicals (Mercury and Cyanide) used in precious metals amalgamation and separation.

## 4.0 EVALUATION OF RESULTS

Soil samples, SS-1 through SS-10, were collected in native soil within former grove areas and analyzed for Organochlorine Pesticides (OCPs). **Table 4-1** provides sample ID, sample depth, sample result, and/or equipment detection limits. All soil sample results were below the laboratory reporting limit or non-detectable. OCPs do not represent a human exposure concern at the subject property based on this limited assessment of former grove soil.

Soil samples, SS-11 through SS-20, were collected in native soil within former grove areas and analyzed for Arsenic. **Table 4-2** provides the Arsenic results. Arsenic concentrations ranged between non-detectable and 3.5 ug/kg which exceed the California Human Health Screening Level (CHHSL) for the metal (0.07 ug/kg).

However, a Department of Toxic Substance Control (DTSC) evaluation of potential school sites in southern California (Los Angeles County, Orange County, Riverside County and San Diego County) determined the upper range of average Arsenic in soil is 12 mg/kg and the study suggests this concentration be used as the screening level for soil in southern California where residential land use is planned. The on-site soil concentrations are well below this DTSC screening level and deemed to be within the naturally occurring concentrations in soil and not the result of a spill or the result of legally applied herbicides. Arsenic concentrations are within the natural background range for southern California soil and mitigation is not warranted.

Results of soil samples analyzed for Petroleum Hydrocarbons (SS-21 through SS-25) are posted in **Table 4-3**. Diesel concentrations ranged between less than equipment detection limits (<5.0 mg/kg) to 260 mg/kg. Oil concentrations ranged between <5.0 and 91 mg/kg. In San Diego County it is recommended that mitigation efforts be implemented if diesel and/or oil concentrations exceeding 1,000 mg/kg in soil. It is our judgement these representative samples indicate that spills surrounding former smudge pot locations do not represent either a human or environmental concern and represent a weathered fuel occurrence at concentrations that do not warrant mitigation efforts. In addition, they occur within 9-inches of the surface and have not migrated vertically in the soil horizon to an extent that would threaten groundwater.

Results of soil samples analyzed for Mercury and Cyanide (SS-26 through SS-28) are posted on **Table 4-4**. Mercury concentrations ranged between non-detectable and 0.039 mg/kg. The CHHSL for Mercury in residential soil is 18 mg/kg. Cyanide was not detected in the three soil samples analyzed. Neither Mercury nor Cyanide was found at the Site in sufficient quantity to represent a human exposure concern. Test America, Inc. official laboratory report is attached as **Appendix B**.

## Table 4-1

Organochlorine Pesticide Results
661 Bear Valley Parkway
Escondido, CA

| Sample No. | SS-1 | SS-2 | SS-3 | SS-4 | SS-5 | SS-6 | SS-7 | SS-8 | SS-9 | SS-10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Depth (Ft.) | 1.0 | 0.75 | 0.5 | 1.0 | 0.75 | 0.5 | 1.0 | 0.75 | 0.5 | 1.0 |
| OCP Compound | Units: ug/kg | | | | | | | | | |
| Aldrin | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| alpha-BHC | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| beta-BHC | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| Chlordane | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 | <50.0 |
| 4,4'-DDD | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| 4,4'-DDE | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| 4,4'-DDT | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| delta-BHC | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Dieldrin | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| Endosulfan I | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| Endosulfan II | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| Endosulfan sulfate | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| Endrin | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| Endrin aldehyde | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| Endrin ketone | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| gamma-BHC (Lindane) | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| Heptachlor | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| Heptachlor epoxide | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| Methoxychlor | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| Toxaphene | <200. | <200. | <200. | <200. | <200. | <200. | <200. | <200. | <200. | <200. |

Notes: <5, <10, <50, <200, indicates the laboratory results are less than the posted equipment detection limit. Otherwise, not detectable (ND).

## Table 4-2

Arsenic Metals Content
661 Bear Valley Parkway
Escondido, CA

| Sample ID | Depth (ft.) | Arsenic Conc. (ug/kg) | CHHSL (ug/kg) |
|---|---|---|---|
| SS-11 | 1.0 | <2.0 | 0.07 |
| SS-12 | 0.75 | <2.0 | 0.07 |
| SS-13 | 0.5 | <2.0 | 0.07 |
| SS-14 | 1.0 | **2.0** | 0.07 |
| SS-15 | 0.75 | <2.0 | 0.07 |
| SS-16 | 0.5 | <2.0 | 0.07 |
| SS-17 | 1.0 | **3.5** | 0.07 |
| SS-18 | 0.75 | <2.0 | 0.07 |
| SS-19 | 0.5 | <2.0 | 0.07 |
| SS-20 | 1.0 | <2.0 | 0.07 |

Notes: <2.0, indicates the laboratory results are less than the posted equipment detection limit. Otherwise, not detectable (ND).

## Table 4-3

Petroleum Hydrocarbons C13 - C40 Results
661 Bear Valley Parkway
Escondido, CA
Units: mg/kg

| Sample I.D. | Depth (ft.) | EFH (C13 - C40) | DRO (C13 - C22) | ORO (C23 - C32) | ORO (C33 - C40) |
|---|---|---|---|---|---|
| SS-21 | 1.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| SS-22 | 0.5 | <5.0 | <5.0 | <5.0 | <5.0 |
| SS-23 | 0.75 | <5.0 | <5.0 | <5.0 | <5.0 |
| SS-24 | 1.0 | **370** | **260** | **91** | <25 |
| SS-25 | 0.75 | **9.0** | <5.0 | <5.0 | <5.0 |

Notes: Indicates the laboratory results are less than the equipment detection limit (<5.0 mg/kg, <25 mg/kg). C13 - C40 is Extractable Fuel Hydrocarbons (EFH); DRO (C13 - C22) Diesel Range Organics; ORO (C23 - C32)Light Oil Range Organics; ORO (C33 - C40) Heavy Oil Range Organics

**Table 4-4**

Mercury and Cyanide Results
661 Bear Valley Parkway
Escondido, CA

| Sample ID | Depth (ft.) | Mercury (mg/kg) | Cyanide (mg/kg) |
|---|---|---|---|
| SS-26 | | <0.020 | <0.50 |
| SS-27 | | <0.020 | <0.50 |
| SS-28 | | **0.039** | <0.50 |
| CHHSL | ---- | 18.0* | 22.0 ** |

Notes: <0.020, <0.50, indicates the laboratory results are less than the respective equipment detection limit. Otherwise, not detectable (ND). * - from CHHSL Table. ** - from Regional Screening Levels Residential Soil Table November 2012.

## 5.0 CONCLUSIONS

This limited Phase II Environmental Site Assessment has been performed in response to recognized environmental concerns identified in Vinje & Middleton Engineering, Inc. ***Phase I Environmental Site Assessment, 661 Bear Valley Parkway, Escondido, California 92025***, dated February 14, 2013, and was deemed necessary due to the properties' past land uses and proposed conversion to a residential subdivision.

Vinje & Middleton has completed a limited Phase II Environmental Site Assessment of near surface soil for the presence of chlorinated pesticides, Arsenic, petroleum hydrocarbons, Mercury and Cyanide at 661 Bear Valley Parkway, Escondido, California. The findings and opinions presented in this report result from review of our referenced Phase I ESA report, and collection/analysis of twenty-eight near surface soil samples. This limited Phase II environmental assessment has revealed no evidence of recognized environmental concerns associated with the properties past land use. In our professional opinion, further assessment of this property is not warranted.

## 6.0 LIMITATIONS

This report was prepared for the exclusive use by our client, Spieth & Wohlford, Inc., and their designated representative(s) and only for the purposes stated within a reasonable time from its issuance, *but in no event later than 1 year from the date of the report.* It should be noted that changes within the condition of a site can occur with time due to natural or man created conditions, either on-site or from adjacent properties. In addition, changes in the standard-of-practice and/or government codes and regulations may occur. Findings and opinions can be considered valid only as of the date of the Site visit.

In performance of our professional services, we comply with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions. The client recognizes that conditions often change and that our conclusions are based upon observations and available information. We will not be liable for conditions or consequences arising from relevant facts of information either incorrect, concealed, withheld or not fully disclosed from other sources.

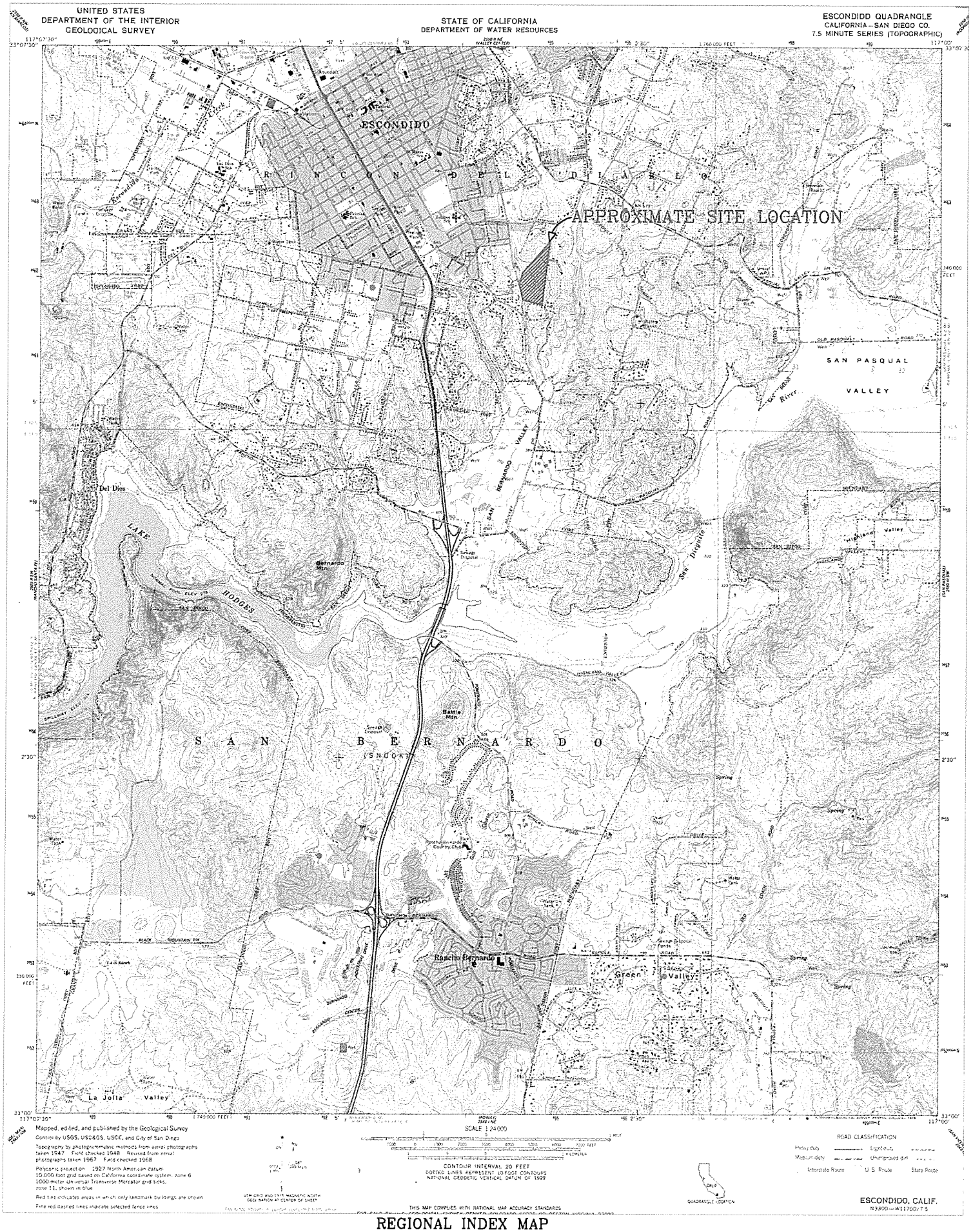
We appreciate your choosing Vinje & Middleton for your environmental needs. If we may be of further assistance on this or any other project, please contact us at (760) 743-1214.

**VINJE & MIDDLETON ENGINEERING, INC.**

Ralph M. Vinje
Principal Engineer
RCE #25115

Bradley W. Crawshaw Jr.
Project Manager
PG #7888

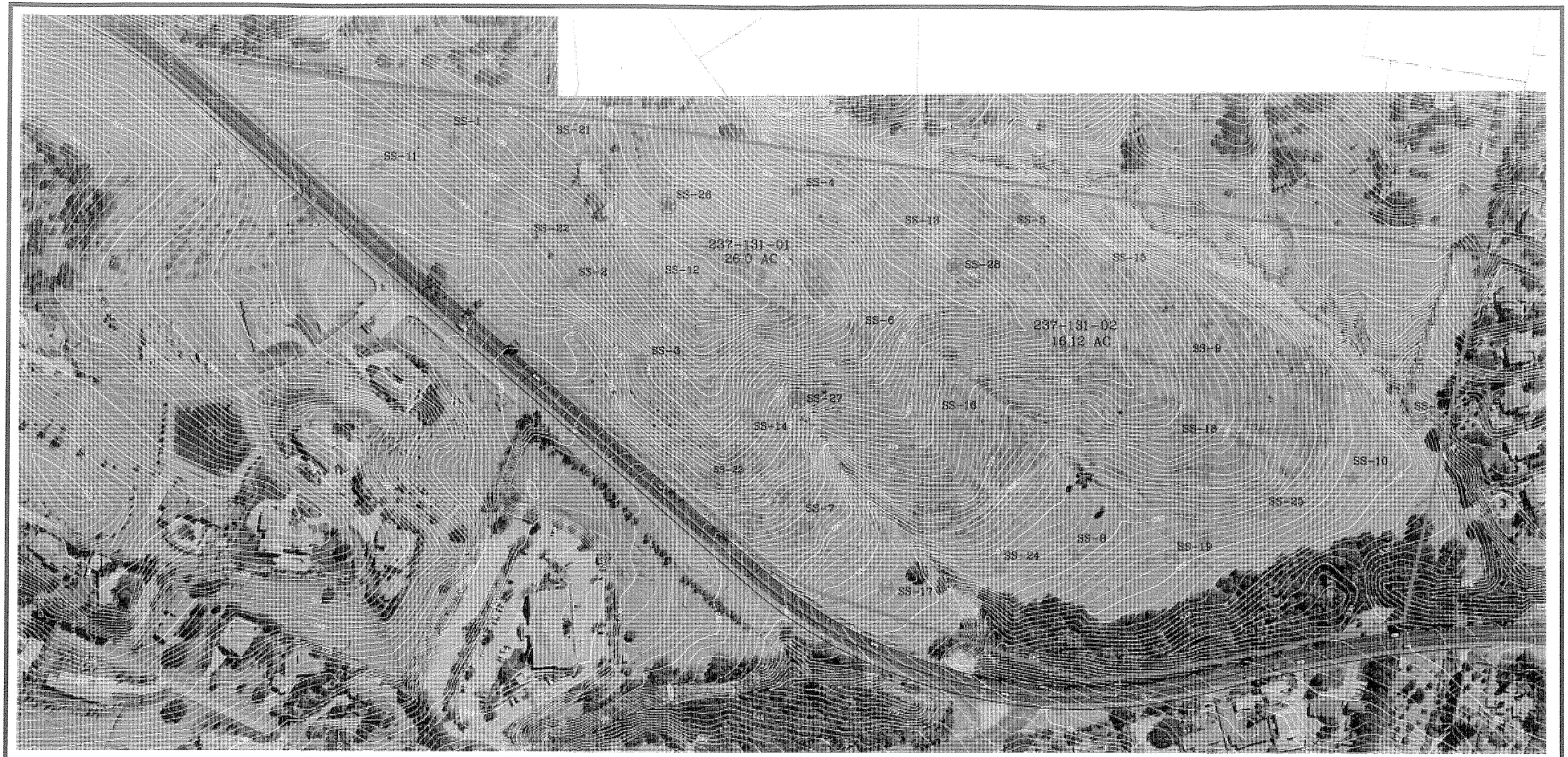
Distribution: Addressee (3)




# REGIONAL INDEX MAP

**SPIETH & WOHLFORD, INC.**
**661 BEAR VALLEY PARKWAY**
**ESCONDIDO, CALIFORNIA 92025**

FIGURE 1




# SITE PLAN MAP

VINJE & MIDDLETON ENGINEERING, INC.
2450 Auto Park Way
Escondido, CA 92029-1229
760-743-1214

LEGEND

- Property Boundary Line
- Parcel Line
- SS-1 thru SS-10 — Organochlorine Pesticide Sample Location with ID
- SS-11 thru SS-20 — Arsenic Sample Location with ID
- SS-21 thru SS-25 — TPH Salmple Location with ID
- SS-26 thru SS-28 — Mercury & Cyanide Sample Location with ID

Spieth & Wohlford, Inc.
661 Bear Valley Parkway
Escondido, California 92025

VME Job # 13-118-H

0 100 200 300 400
GRAPHIC SCALE

FIGURE 2

# ORGANOCHLORINE PESTICIDE SAMPLE LOCATION WITH RESULTS

VINJE & MIDDLETON ENGINEERING, INC.
2450 Auto Park Way
Escondido, CA 92029-1229
760-743-1214

## LEGEND

Property Boundary Line

Parcel Line

SS-3 Organochlorine Pesticide (OCP) Sample Location with ID

| OCP Analyte | Depth (ft.) | Result (ug/kg) |
|---|---|---|
| All | 0.5 | ND |

OCP Aalytes = 20 total, see lab results for individual compound names
ND = Not Detected within equipment reporting limit.

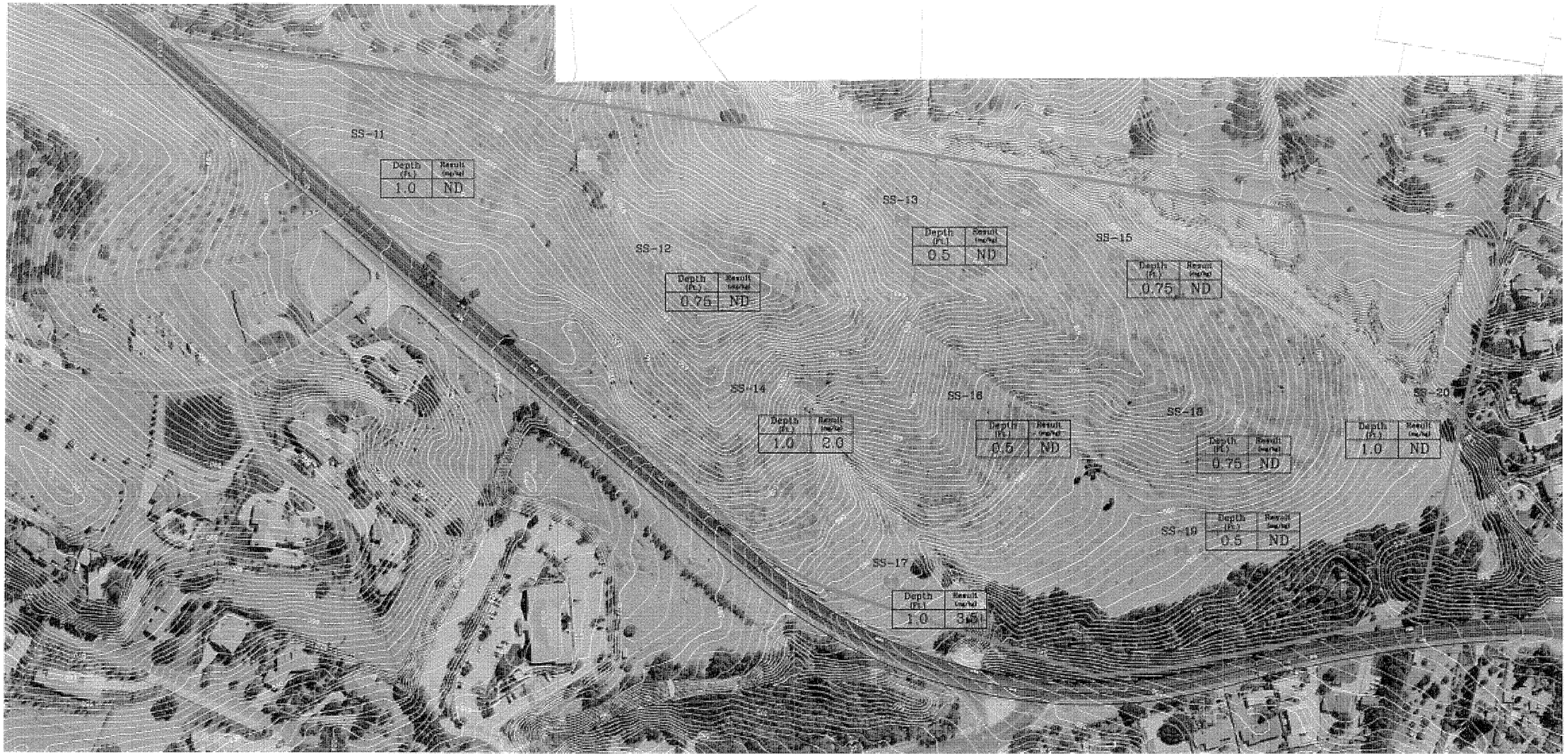
Spieth & Wohlford, Inc.
661 Bear Valley Parkway
Escondido, California 92025

VME Job # 13-118-H

0 100 200 300 400

GRAPHIC SCALE

FIGURE 3




# ARSENIC SAMPLE LOCATION WITH RESULTS

VINJE & MIDDLETON ENGINEERING, INC.
2450 Auto Park Way
Escondido, CA 92029-1229
760-743-1214

## LEGEND

Property Boundary Line

Parcel Line

SS-12 Arsenic Sample Location with ID

| Depth (Ft.) | Result (mg/kg) |
|---|---|
| 0.75 | ND |

Arsenic results reported in milligrams arsenic per kilogram soil
ND - Not Detected at equipment reporting limit.

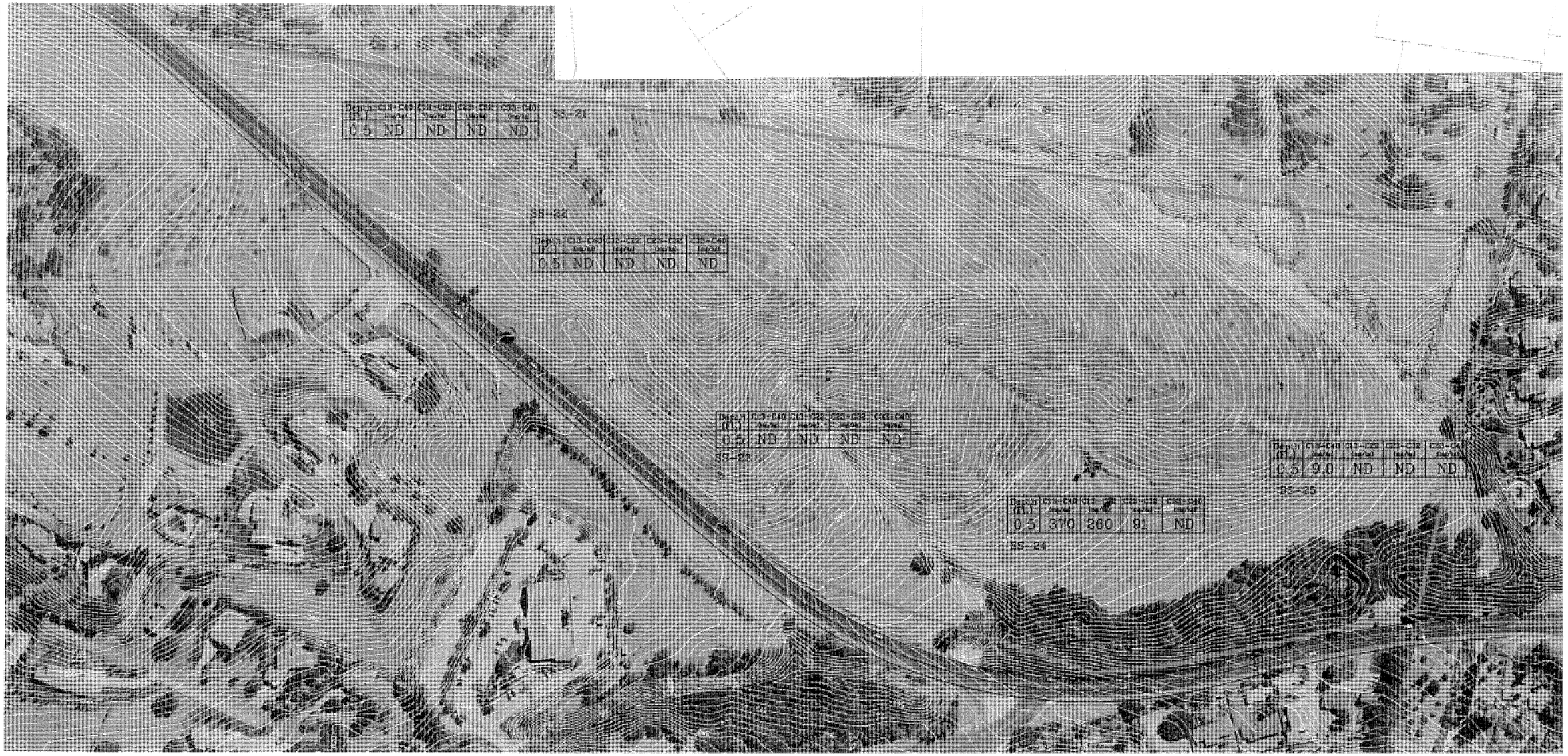
Spieth & Wohlford, Inc.
661 Bear Valley Parkway
Escondido, California 92025

VME Job # 13-118-H

0 100 200 300 400

GRAPHIC SCALE

FIGURE 4




# TOTAL PETROLEUM HYDROCARBON SAMPLE LOCATION WITH RESULTS

VINJE & MIDDLETON ENGINEERING, INC.
2450 Auto Park Way
Escondido, CA 92029-1229
760-743-1214

SS-22

| Depth (Ft.) | C13-C40 (mg/kg) | C13-C22 (mg/kg) | C23-C32 (mg/kg) | C33-C40 (mg/kg) |
|---|---|---|---|---|
| 0.5 | ND | ND | ND | ND |

## LEGEND

Property Boundary Line

Parcel Line

TPH Salmple Location with ID

ND - Not Detected at equipment reporting limit.

C13-C40 - Total Extractable Fuel Hydrocarbons,

C13-C22 - Diesel Range Organics

C23-C32 - Light Oil Range Organics

C33-C40 - Heavy Oil Range Organics

Spieth & Wohlford, Inc.
661 Bear Valley Parkway
Escondido, California 92025

VME Job # 13-118-H

0 100 200 300 400

GRAPHIC SCALE

FIGURE 5

# MERCURY & CYANIDE SAMPLE LOCATION WITH RESULTS

VINJE & MIDDLETON ENGINEERING, INC.
2450 Auto Park Way
Escondido, CA 92029-1229
760-743-1214

## LEGEND

Property Boundary Line

Parcel Line

SS-27 Mercury & Cyanide Sample Location with ID

| Depth (Ft.) | Mercury (mg/kg) | Cyanide (mg/kg) |
|---|---|---|
| 0.5 | ND | ND |

ND - Not Detected at equipment reporting limit.
mg/kg - milligram of contaminant per kilogram of soil or parts per million.

Spieth & Wohlford, Inc.
661 Bear Valley Parkway
Escondido, California 92025

VME Job # 13-118-H

0 100 200 300 400
GRAPHIC SCALE

FIGURE 6

# APPENDIX A

# FIELD PROCEDURES

Vinje & Middleton conducted field sampling at the on May 1, 2013. The following procedures were used in sample collection, sample documentation, sample preservation, and documentation until delivery to receiving laboratory.

- All hand tools used in sample collection (i.e. shovel, digging bar, hand trowel) were washed before and after each sampling event in a soapy water solution, tap water rinsed, followed by a second rinse in de-ionized water. This procedure commonly referred to as the 'triple bucket method' is used to assure no cross-contamination between sample sites and preserves sample integrity.

- Representative soil samples were transferred into laboratory provided 4 oz. glass jars, sealed with a Teflon lined lid and custody seal with date sampled and samplers signature, a label applied to the jar indicating project no., sample I.D., time and date sample was collected, analysis to be performed, and samplers name.

- Individual sample jars were placed in sealable plastic bags, bubble wrapped, and placed in a cooler on ice during transport under required chain-of-custody documentation by a laboratory provided courier service. A copy of the chain-of-custody is provided in the analytical report.

- All soils were properly disposed of by the analytical laboratory.

- Sample results issued in this report were provided by e-mail correspondence to the Consultant and included in this report as Appendix B.

# APPENDIX B

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

# ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

TestAmerica Job ID: 440-45387-1
Client Project/Site: 13-118-H2

For:
Vinje & Middleton Engineering Inc
2450 Auto Park Way #102
Escondido, California 92029

Attn: Mr. Brad Crawshaw

*Authorized for release by:*
*5/16/2013 8:17:47 PM*

Sushmitha Reddy, Project Manager I
sushmitha.reddy@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized bythe signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

# Table of Contents

Cover Page . . . . . 1
Table of Contents . . . . . 2
Sample Summary . . . . . 3
Case Narrative . . . . . 4
Client Sample Results . . . . . 5
Method Summary . . . . . 15
Chronicle . . . . . 16
QC Sample Results . . . . . 21
QC Association . . . . . 29
Definitions . . . . . 32
Certification Summary . . . . . 33
Chain of Custody . . . . . 34
Receipt Checklists . . . . . 36

# Sample Summary

Client: Vinje & Middleton Engineering Inc
Project/Site: 13-118-H2

TestAmerica Job ID: 440-45387-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 440-45387-1 | SS-1 | Solid | 05/01/13 12:10 | 05/02/13 17:45 |
| 440-45387-2 | SS-2 | Solid | 05/01/13 12:41 | 05/02/13 17:45 |
| 440-45387-3 | SS-3 | Solid | 05/01/13 12:47 | 05/02/13 17:45 |
| 440-45387-4 | SS-4 | Solid | 05/01/13 13:12 | 05/02/13 17:45 |
| 440-45387-5 | SS-5 | Solid | 05/01/13 16:02 | 05/02/13 17:45 |
| 440-45387-6 | SS-6 | Solid | 05/01/13 13:30 | 05/02/13 17:45 |
| 440-45387-7 | SS-7 | Solid | 05/01/13 14:08 | 05/02/13 17:45 |
| 440-45387-8 | SS-8 | Solid | 05/01/13 14:36 | 05/02/13 17:45 |
| 440-45387-9 | SS-9 | Solid | 05/01/13 15:27 | 05/02/13 17:45 |
| 440-45387-10 | SS-10 | Solid | 05/01/13 15:02 | 05/02/13 17:45 |
| 440-45387-11 | SS-11 | Solid | 05/01/13 12:20 | 05/02/13 17:45 |
| 440-45387-12 | SS-12 | Solid | 05/01/13 13:02 | 05/02/13 17:45 |
| 440-45387-13 | SS-13 | Solid | 05/01/13 16:08 | 05/02/13 17:45 |
| 440-45387-14 | SS-14 | Solid | 05/01/13 14:00 | 05/02/13 17:45 |
| 440-45387-15 | SS-15 | Solid | 05/01/13 15:38 | 05/02/13 17:45 |
| 440-45387-16 | SS-16 | Solid | 05/01/13 15:48 | 05/02/13 17:45 |
| 440-45387-17 | SS-17 | Solid | 05/01/13 14:18 | 05/02/13 17:45 |
| 440-45387-18 | SS-18 | Solid | 05/01/13 15:20 | 05/02/13 17:45 |
| 440-45387-19 | SS-19 | Solid | 05/01/13 14:42 | 05/02/13 17:45 |
| 440-45387-20 | SS-20 | Solid | 05/01/13 15:10 | 05/02/13 17:45 |
| 440-45387-21 | SS-21 | Solid | 05/01/13 12:00 | 05/02/13 17:45 |
| 440-45387-22 | SS-22 | Solid | 05/01/13 12:32 | 05/02/13 17:45 |
| 440-45387-23 | SS-23 | Solid | 05/01/13 13:53 | 05/02/13 17:45 |
| 440-45387-24 | SS-24 | Solid | 05/01/13 14:27 | 05/02/13 17:45 |
| 440-45387-25 | SS-25 | Solid | 05/01/13 14:52 | 05/02/13 17:45 |
| 440-45387-26 | SS-26 | Solid | 05/01/13 00:01 | 05/02/13 17:45 |
| 440-45387-27 | SS-27 | Solid | 05/01/13 00:01 | 05/02/13 17:45 |
| 440-45387-28 | SS-28 | Solid | 05/01/13 00:01 | 05/02/13 17:45 |

## Job ID: 440-45387-1

**Laboratory: TestAmerica Irvine**

**Narrative**

**Job Narrative**
**440-45387-1**

**Comments**
No additional comments.

**Receipt**
The samples were received on 5/2/2013 5:45 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4° C.

**GC Semi VOA**
Method(s) 8015B: The matrix spike percent recovery was outside control limits and the matrix spike / matrix spike duplicate (MS/MSD) precision for batch 103032 was outside control limits. Non-homogeneity of the sample matrix is suspected. The associated laboratory control sample (LCS) met acceptance criteria.

Method(s) 8015B: The following samples required a dilution due to the nature of the sample matrix: SS-24 (440-45387-24). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method(s) 8081A: The continuing calibration verification (CCV) associated with batch 103185 recovered above the upper control limit for endosulfan sulfate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: (CCV 440-103185/20), SS-10 (440-45387-10), SS-7 (440-45387-7), SS-8 (440-45387-8), SS-9 (440-45387-9), TimberSIL GlassWood (440-45434-1).

Method(s) 8081A: The continuing calibration verification (CCV) associated with batch 103273 recovered above the upper control limit for delta BHC, 4,4 DDE, and endosulfan sulfate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: (440-45387-5 MS), (440-45387-5 MSD), (CCV 440-103273/36), SS-1 (440-45387-1), SS-2 (440-45387-2), SS-3 (440-45387-3), SS-4 (440-45387-4), SS-5 (440-45387-5), SS-6 (440-45387-6).

No other analytical or quality issues were noted.

**Metals**
No analytical or quality issues were noted.

**General Chemistry**
No analytical or quality issues were noted.

**Organic Prep**
No analytical or quality issues were noted.

**Client Sample ID: SS-1**
**Date Collected: 05/01/13 12:10**
**Date Received: 05/02/13 17:45**

**Lab Sample ID: 440-45387-1**
**Matrix: Solid**

5

**Method: 8081A - Organochlorine Pesticides (GC)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aldrin | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:49 | 1 |
| alpha-BHC | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:49 | 1 |
| beta-BHC | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:49 | 1 |
| Chlordane (technical) | ND | | 50 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:49 | 1 |
| 4,4'-DDD | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:49 | 1 |
| 4,4'-DDE | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:49 | 1 |
| 4,4'-DDT | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:49 | 1 |
| delta-BHC | ND | | 10 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:49 | 1 |
| Dieldrin | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:49 | 1 |
| Endosulfan I | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:49 | 1 |
| Endosulfan II | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:49 | 1 |
| Endosulfan sulfate | ND | | 10 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:49 | 1 |
| Endrin | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:49 | 1 |
| Endrin aldehyde | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:49 | 1 |
| Endrin ketone | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:49 | 1 |
| gamma-BHC (Lindane) | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:49 | 1 |
| Heptachlor | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:49 | 1 |
| Heptachlor epoxide | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:49 | 1 |
| Methoxychlor | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:49 | 1 |
| Toxaphene | ND | | 200 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:49 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl (Surr)* | *64* | | *45 - 120* | *05/09/13 08:54* | *05/09/13 19:49* | *1* |
| *Tetrachloro-m-xylene* | *61* | | *35 - 115* | *05/09/13 08:54* | *05/09/13 19:49* | *1* |

**Client Sample ID: SS-2**
**Date Collected: 05/01/13 12:41**
**Date Received: 05/02/13 17:45**

**Lab Sample ID: 440-45387-2**
**Matrix: Solid**

**Method: 8081A - Organochlorine Pesticides (GC)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aldrin | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:04 | 1 |
| alpha-BHC | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:04 | 1 |
| beta-BHC | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:04 | 1 |
| Chlordane (technical) | ND | | 50 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:04 | 1 |
| 4,4'-DDD | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:04 | 1 |
| 4,4'-DDE | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:04 | 1 |
| 4,4'-DDT | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:04 | 1 |
| delta-BHC | ND | | 10 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:04 | 1 |
| Dieldrin | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:04 | 1 |
| Endosulfan I | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:04 | 1 |
| Endosulfan II | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:04 | 1 |
| Endosulfan sulfate | ND | | 10 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:04 | 1 |
| Endrin | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:04 | 1 |
| Endrin aldehyde | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:04 | 1 |
| Endrin ketone | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:04 | 1 |
| gamma-BHC (Lindane) | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:04 | 1 |
| Heptachlor | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:04 | 1 |
| Heptachlor epoxide | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:04 | 1 |
| Methoxychlor | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:04 | 1 |

## Client Sample ID: SS-2

**Lab Sample ID: 440-45387-2**

**Date Collected: 05/01/13 12:41**

**Matrix: Solid**

**Date Received: 05/02/13 17:45**

5

### Method: 8081A - Organochlorine Pesticides (GC) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Toxaphene | ND | | 200 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:04 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl (Surr)* | *75* | | *45 - 120* | *05/09/13 08:54* | *05/09/13 20:04* | *1* |
| *Tetrachloro-m-xylene* | *75* | | *35 - 115* | *05/09/13 08:54* | *05/09/13 20:04* | *1* |

## Client Sample ID: SS-3

**Lab Sample ID: 440-45387-3**

**Date Collected: 05/01/13 12:47**

**Matrix: Solid**

**Date Received: 05/02/13 17:45**

### Method: 8081A - Organochlorine Pesticides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aldrin | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:18 | 1 |
| alpha-BHC | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:18 | 1 |
| beta-BHC | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:18 | 1 |
| Chlordane (technical) | ND | | 50 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:18 | 1 |
| 4,4'-DDD | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:18 | 1 |
| 4,4'-DDE | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:18 | 1 |
| 4,4'-DDT | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:18 | 1 |
| delta-BHC | ND | | 10 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:18 | 1 |
| Dieldrin | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:18 | 1 |
| Endosulfan I | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:18 | 1 |
| Endosulfan II | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:18 | 1 |
| Endosulfan sulfate | ND | | 10 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:18 | 1 |
| Endrin | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:18 | 1 |
| Endrin aldehyde | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:18 | 1 |
| Endrin ketone | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:18 | 1 |
| gamma-BHC (Lindane) | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:18 | 1 |
| Heptachlor | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:18 | 1 |
| Heptachlor epoxide | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:18 | 1 |
| Methoxychlor | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:18 | 1 |
| Toxaphene | ND | | 200 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:18 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl (Surr)* | *59* | | *45 - 120* | *05/09/13 08:54* | *05/09/13 20:18* | *1* |
| *Tetrachloro-m-xylene* | *57* | | *35 - 115* | *05/09/13 08:54* | *05/09/13 20:18* | *1* |

## Client Sample ID: SS-4

**Lab Sample ID: 440-45387-4**

**Date Collected: 05/01/13 13:12**

**Matrix: Solid**

**Date Received: 05/02/13 17:45**

### Method: 8081A - Organochlorine Pesticides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aldrin | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:33 | 1 |
| alpha-BHC | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:33 | 1 |
| beta-BHC | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:33 | 1 |
| Chlordane (technical) | ND | | 50 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:33 | 1 |
| 4,4'-DDD | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:33 | 1 |
| 4,4'-DDE | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:33 | 1 |
| 4,4'-DDT | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:33 | 1 |

**Client Sample ID: SS-4**
**Date Collected: 05/01/13 13:12**
**Date Received: 05/02/13 17:45**

**Lab Sample ID: 440-45387-4**
**Matrix: Solid**

5

**Method: 8081A - Organochlorine Pesticides (GC) (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| delta-BHC | ND | | 10 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:33 | 1 |
| Dieldrin | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:33 | 1 |
| Endosulfan I | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:33 | 1 |
| Endosulfan II | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:33 | 1 |
| Endosulfan sulfate | ND | | 10 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:33 | 1 |
| Endrin | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:33 | 1 |
| Endrin aldehyde | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:33 | 1 |
| Endrin ketone | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:33 | 1 |
| gamma-BHC (Lindane) | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:33 | 1 |
| Heptachlor | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:33 | 1 |
| Heptachlor epoxide | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:33 | 1 |
| Methoxychlor | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:33 | 1 |
| Toxaphene | ND | | 200 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:33 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl (Surr)* | *70* | | *45 - 120* | *05/09/13 08:54* | *05/09/13 20:33* | *1* |
| *Tetrachloro-m-xylene* | *66* | | *35 - 115* | *05/09/13 08:54* | *05/09/13 20:33* | *1* |

**Client Sample ID: SS-5**
**Date Collected: 05/01/13 16:02**
**Date Received: 05/02/13 17:45**

**Lab Sample ID: 440-45387-5**
**Matrix: Solid**

**Method: 8081A - Organochlorine Pesticides (GC)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aldrin | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:48 | 1 |
| alpha-BHC | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:48 | 1 |
| beta-BHC | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:48 | 1 |
| Chlordane (technical) | ND | | 50 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:48 | 1 |
| 4,4'-DDD | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:48 | 1 |
| 4,4'-DDE | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:48 | 1 |
| 4,4'-DDT | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:48 | 1 |
| delta-BHC | ND | | 10 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:48 | 1 |
| Dieldrin | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:48 | 1 |
| Endosulfan I | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:48 | 1 |
| Endosulfan II | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:48 | 1 |
| Endosulfan sulfate | ND | | 10 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:48 | 1 |
| Endrin | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:48 | 1 |
| Endrin aldehyde | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:48 | 1 |
| Endrin ketone | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:48 | 1 |
| gamma-BHC (Lindane) | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:48 | 1 |
| Heptachlor | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:48 | 1 |
| Heptachlor epoxide | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:48 | 1 |
| Methoxychlor | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:48 | 1 |
| Toxaphene | ND | | 200 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 20:48 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl (Surr)* | *72* | | *45 - 120* | *05/09/13 08:54* | *05/09/13 20:48* | *1* |
| *Tetrachloro-m-xylene* | *69* | | *35 - 115* | *05/09/13 08:54* | *05/09/13 20:48* | *1* |

**Client Sample ID: SS-6**
**Date Collected: 05/01/13 13:30**
**Date Received: 05/02/13 17:45**

**Lab Sample ID: 440-45387-6**
**Matrix: Solid**

5

**Method: 8081A - Organochlorine Pesticides (GC)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aldrin | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 21:32 | 1 |
| alpha-BHC | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 21:32 | 1 |
| beta-BHC | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 21:32 | 1 |
| Chlordane (technical) | ND | | 50 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 21:32 | 1 |
| 4,4'-DDD | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 21:32 | 1 |
| 4,4'-DDE | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 21:32 | 1 |
| 4,4'-DDT | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 21:32 | 1 |
| delta-BHC | ND | | 10 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 21:32 | 1 |
| Dieldrin | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 21:32 | 1 |
| Endosulfan I | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 21:32 | 1 |
| Endosulfan II | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 21:32 | 1 |
| Endosulfan sulfate | ND | | 10 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 21:32 | 1 |
| Endrin | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 21:32 | 1 |
| Endrin aldehyde | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 21:32 | 1 |
| Endrin ketone | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 21:32 | 1 |
| gamma-BHC (Lindane) | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 21:32 | 1 |
| Heptachlor | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 21:32 | 1 |
| Heptachlor epoxide | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 21:32 | 1 |
| Methoxychlor | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 21:32 | 1 |
| Toxaphene | ND | | 200 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 21:32 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl (Surr)* | *67* | | *45 - 120* | *05/09/13 08:54* | *05/09/13 21:32* | *1* |
| *Tetrachloro-m-xylene* | *66* | | *35 - 115* | *05/09/13 08:54* | *05/09/13 21:32* | *1* |

**Client Sample ID: SS-7**
**Date Collected: 05/01/13 14:08**
**Date Received: 05/02/13 17:45**

**Lab Sample ID: 440-45387-7**
**Matrix: Solid**

**Method: 8081A - Organochlorine Pesticides (GC)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aldrin | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 22:51 | 1 |
| alpha-BHC | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 22:51 | 1 |
| beta-BHC | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 22:51 | 1 |
| Chlordane (technical) | ND | | 50 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 22:51 | 1 |
| 4,4'-DDD | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 22:51 | 1 |
| 4,4'-DDE | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 22:51 | 1 |
| 4,4'-DDT | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 22:51 | 1 |
| delta-BHC | ND | | 10 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 22:51 | 1 |
| Dieldrin | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 22:51 | 1 |
| Endosulfan I | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 22:51 | 1 |
| Endosulfan II | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 22:51 | 1 |
| Endosulfan sulfate | ND | | 10 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 22:51 | 1 |
| Endrin | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 22:51 | 1 |
| Endrin aldehyde | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 22:51 | 1 |
| Endrin ketone | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 22:51 | 1 |
| gamma-BHC (Lindane) | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 22:51 | 1 |
| Heptachlor | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 22:51 | 1 |
| Heptachlor epoxide | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 22:51 | 1 |
| Methoxychlor | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 22:51 | 1 |

**Client Sample ID: SS-7**
**Date Collected: 05/01/13 14:08**
**Date Received: 05/02/13 17:45**

**Lab Sample ID: 440-45387-7**
**Matrix: Solid**

5

**Method: 8081A - Organochlorine Pesticides (GC) (Continued)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Toxaphene | ND | | 200 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 22:51 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl (Surr)* | *57* | | *45 - 120* | *05/08/13 11:54* | *05/08/13 22:51* | *1* |
| *Tetrachloro-m-xylene* | *45* | | *35 - 115* | *05/08/13 11:54* | *05/08/13 22:51* | *1* |

**Client Sample ID: SS-8**
**Date Collected: 05/01/13 14:36**
**Date Received: 05/02/13 17:45**

**Lab Sample ID: 440-45387-8**
**Matrix: Solid**

**Method: 8081A - Organochlorine Pesticides (GC)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aldrin | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:06 | 1 |
| alpha-BHC | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:06 | 1 |
| beta-BHC | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:06 | 1 |
| Chlordane (technical) | ND | | 50 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:06 | 1 |
| 4,4'-DDD | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:06 | 1 |
| 4,4'-DDE | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:06 | 1 |
| 4,4'-DDT | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:06 | 1 |
| delta-BHC | ND | | 10 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:06 | 1 |
| Dieldrin | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:06 | 1 |
| Endosulfan I | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:06 | 1 |
| Endosulfan II | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:06 | 1 |
| Endosulfan sulfate | ND | | 10 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:06 | 1 |
| Endrin | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:06 | 1 |
| Endrin aldehyde | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:06 | 1 |
| Endrin ketone | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:06 | 1 |
| gamma-BHC (Lindane) | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:06 | 1 |
| Heptachlor | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:06 | 1 |
| Heptachlor epoxide | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:06 | 1 |
| Methoxychlor | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:06 | 1 |
| Toxaphene | ND | | 200 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:06 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl (Surr)* | *84* | | *45 - 120* | *05/08/13 11:54* | *05/08/13 23:06* | *1* |
| *Tetrachloro-m-xylene* | *66* | | *35 - 115* | *05/08/13 11:54* | *05/08/13 23:06* | *1* |

**Client Sample ID: SS-9**
**Date Collected: 05/01/13 15:27**
**Date Received: 05/02/13 17:45**

**Lab Sample ID: 440-45387-9**
**Matrix: Solid**

**Method: 8081A - Organochlorine Pesticides (GC)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aldrin | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:20 | 1 |
| alpha-BHC | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:20 | 1 |
| beta-BHC | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:20 | 1 |
| Chlordane (technical) | ND | | 50 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:20 | 1 |
| 4,4'-DDD | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:20 | 1 |
| 4,4'-DDE | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:20 | 1 |
| 4,4'-DDT | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:20 | 1 |

5

## Client Sample ID: SS-9

**Date Collected: 05/01/13 15:27**
**Date Received: 05/02/13 17:45**

**Lab Sample ID: 440-45387-9**
**Matrix: Solid**

### Method: 8081A - Organochlorine Pesticides (GC) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| delta-BHC | ND | | 10 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:20 | 1 |
| Dieldrin | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:20 | 1 |
| Endosulfan I | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:20 | 1 |
| Endosulfan II | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:20 | 1 |
| Endosulfan sulfate | ND | | 10 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:20 | 1 |
| Endrin | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:20 | 1 |
| Endrin aldehyde | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:20 | 1 |
| Endrin ketone | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:20 | 1 |
| gamma-BHC (Lindane) | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:20 | 1 |
| Heptachlor | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:20 | 1 |
| Heptachlor epoxide | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:20 | 1 |
| Methoxychlor | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:20 | 1 |
| Toxaphene | ND | | 200 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:20 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl (Surr)* | *76* | | *45 - 120* | *05/08/13 11:54* | *05/08/13 23:20* | *1* |
| *Tetrachloro-m-xylene* | *60* | | *35 - 115* | *05/08/13 11:54* | *05/08/13 23:20* | *1* |

## Client Sample ID: SS-10

**Date Collected: 05/01/13 15:02**
**Date Received: 05/02/13 17:45**

**Lab Sample ID: 440-45387-10**
**Matrix: Solid**

### Method: 8081A - Organochlorine Pesticides (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aldrin | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:35 | 1 |
| alpha-BHC | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:35 | 1 |
| beta-BHC | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:35 | 1 |
| Chlordane (technical) | ND | | 50 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:35 | 1 |
| 4,4'-DDD | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:35 | 1 |
| 4,4'-DDE | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:35 | 1 |
| 4,4'-DDT | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:35 | 1 |
| delta-BHC | ND | | 10 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:35 | 1 |
| Dieldrin | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:35 | 1 |
| Endosulfan I | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:35 | 1 |
| Endosulfan II | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:35 | 1 |
| Endosulfan sulfate | ND | | 10 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:35 | 1 |
| Endrin | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:35 | 1 |
| Endrin aldehyde | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:35 | 1 |
| Endrin ketone | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:35 | 1 |
| gamma-BHC (Lindane) | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:35 | 1 |
| Heptachlor | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:35 | 1 |
| Heptachlor epoxide | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:35 | 1 |
| Methoxychlor | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:35 | 1 |
| Toxaphene | ND | | 200 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 23:35 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl (Surr)* | *67* | | *45 - 120* | *05/08/13 11:54* | *05/08/13 23:35* | *1* |
| *Tetrachloro-m-xylene* | *60* | | *35 - 115* | *05/08/13 11:54* | *05/08/13 23:35* | *1* |

**Client Sample ID: SS-11** — **Lab Sample ID: 440-45387-11**
Date Collected: 05/01/13 12:20 — Matrix: Solid
Date Received: 05/02/13 17:45

Method: 6010B - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | | 2.0 | | mg/Kg | | 05/07/13 09:07 | 05/08/13 14:10 | 5 |

**Client Sample ID: SS-12** — **Lab Sample ID: 440-45387-12**
Date Collected: 05/01/13 13:02 — Matrix: Solid
Date Received: 05/02/13 17:45

Method: 6010B - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | | 2.0 | | mg/Kg | | 05/07/13 09:07 | 05/08/13 14:12 | 5 |

**Client Sample ID: SS-13** — **Lab Sample ID: 440-45387-13**
Date Collected: 05/01/13 16:08 — Matrix: Solid
Date Received: 05/02/13 17:45

Method: 6010B - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | | 2.0 | | mg/Kg | | 05/07/13 09:07 | 05/08/13 14:14 | 5 |

**Client Sample ID: SS-14** — **Lab Sample ID: 440-45387-14**
Date Collected: 05/01/13 14:00 — Matrix: Solid
Date Received: 05/02/13 17:45

Method: 6010B - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 2.0 | | 2.0 | | mg/Kg | | 05/07/13 09:07 | 05/08/13 14:16 | 5 |

**Client Sample ID: SS-15** — **Lab Sample ID: 440-45387-15**
Date Collected: 05/01/13 15:38 — Matrix: Solid
Date Received: 05/02/13 17:45

Method: 6010B - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | | 2.0 | | mg/Kg | | 05/07/13 09:07 | 05/08/13 14:18 | 5 |

**Client Sample ID: SS-16** — **Lab Sample ID: 440-45387-16**
Date Collected: 05/01/13 15:48 — Matrix: Solid
Date Received: 05/02/13 17:45

Method: 6010B - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | | 2.0 | | mg/Kg | | 05/07/13 09:07 | 05/08/13 14:40 | 5 |

**Client Sample ID: SS-17** — **Lab Sample ID: 440-45387-17**
Date Collected: 05/01/13 14:18 — Matrix: Solid
Date Received: 05/02/13 17:45

Method: 6010B - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 3.5 | | 2.0 | | mg/Kg | | 05/07/13 09:07 | 05/08/13 14:42 | 5 |

**Client Sample ID: SS-18**
Date Collected: 05/01/13 15:20
Date Received: 05/02/13 17:45

**Lab Sample ID: 440-45387-18**
Matrix: Solid

Method: 6010B - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | | 2.0 | | mg/Kg | | 05/07/13 09:07 | 05/08/13 14:44 | 5 |

**Client Sample ID: SS-19**
Date Collected: 05/01/13 14:42
Date Received: 05/02/13 17:45

**Lab Sample ID: 440-45387-19**
Matrix: Solid

Method: 6010B - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | | 2.0 | | mg/Kg | | 05/07/13 09:07 | 05/08/13 14:45 | 5 |

**Client Sample ID: SS-20**
Date Collected: 05/01/13 15:10
Date Received: 05/02/13 17:45

**Lab Sample ID: 440-45387-20**
Matrix: Solid

Method: 6010B - Metals (ICP)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | | 2.0 | | mg/Kg | | 05/07/13 09:07 | 05/08/13 14:47 | 5 |

**Client Sample ID: SS-21**
Date Collected: 05/01/13 12:00
Date Received: 05/02/13 17:45

**Lab Sample ID: 440-45387-21**
Matrix: Solid

Method: 8015B - Diesel Range Organics (DRO) (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| C13 - C40 | ND | | 5.0 | | mg/Kg | | 05/08/13 11:18 | 05/09/13 01:20 | 1 |
| DRO (C13-C22) | ND | | 5.0 | | mg/Kg | | 05/08/13 11:18 | 05/09/13 01:20 | 1 |
| ORO (C23-C32) | ND | | 5.0 | | mg/Kg | | 05/08/13 11:18 | 05/09/13 01:20 | 1 |
| ORO (C33-C40) | ND | | 5.0 | | mg/Kg | | 05/08/13 11:18 | 05/09/13 01:20 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *n-Octacosane* | *74* | | *40 - 140* | *05/08/13 11:18* | *05/09/13 01:20* | *1* |

**Client Sample ID: SS-22**
Date Collected: 05/01/13 12:32
Date Received: 05/02/13 17:45

**Lab Sample ID: 440-45387-22**
Matrix: Solid

Method: 8015B - Diesel Range Organics (DRO) (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| C13 - C40 | ND | | 5.0 | | mg/Kg | | 05/08/13 11:18 | 05/09/13 01:42 | 1 |
| DRO (C13-C22) | ND | | 5.0 | | mg/Kg | | 05/08/13 11:18 | 05/09/13 01:42 | 1 |
| ORO (C23-C32) | ND | | 5.0 | | mg/Kg | | 05/08/13 11:18 | 05/09/13 01:42 | 1 |
| ORO (C33-C40) | ND | | 5.0 | | mg/Kg | | 05/08/13 11:18 | 05/09/13 01:42 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *n-Octacosane* | *78* | | *40 - 140* | *05/08/13 11:18* | *05/09/13 01:42* | *1* |

5

## Client Sample ID: SS-23

Lab Sample ID: 440-45387-23

Date Collected: 05/01/13 13:53
Date Received: 05/02/13 17:45

Matrix: Solid

**Method: 8015B - Diesel Range Organics (DRO) (GC)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| C13 - C40 | ND | | 5.0 | | mg/Kg | | 05/08/13 11:18 | 05/09/13 02:05 | 1 |
| DRO (C13-C22) | ND | | 5.0 | | mg/Kg | | 05/08/13 11:18 | 05/09/13 02:05 | 1 |
| ORO (C23-C32) | ND | | 5.0 | | mg/Kg | | 05/08/13 11:18 | 05/09/13 02:05 | 1 |
| ORO (C33-C40) | ND | | 5.0 | | mg/Kg | | 05/08/13 11:18 | 05/09/13 02:05 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *n-Octacosane* | *80* | | *40 - 140* | *05/08/13 11:18* | *05/09/13 02:05* | *1* |

## Client Sample ID: SS-24

Lab Sample ID: 440-45387-24

Date Collected: 05/01/13 14:27
Date Received: 05/02/13 17:45

Matrix: Solid

**Method: 8015B - Diesel Range Organics (DRO) (GC)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **C13 - C40** | **370** | | 25 | | mg/Kg | | 05/08/13 11:18 | 05/10/13 00:44 | 5 |
| **DRO (C13-C22)** | **260** | | 25 | | mg/Kg | | 05/08/13 11:18 | 05/10/13 00:44 | 5 |
| **ORO (C23-C32)** | **91** | | 25 | | mg/Kg | | 05/08/13 11:18 | 05/10/13 00:44 | 5 |
| ORO (C33-C40) | ND | | 25 | | mg/Kg | | 05/08/13 11:18 | 05/10/13 00:44 | 5 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *n-Octacosane* | *80* | | *40 - 140* | *05/08/13 11:18* | *05/10/13 00:44* | *5* |

## Client Sample ID: SS-25

Lab Sample ID: 440-45387-25

Date Collected: 05/01/13 14:52
Date Received: 05/02/13 17:45

Matrix: Solid

**Method: 8015B - Diesel Range Organics (DRO) (GC)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **C13 - C40** | **9.0** | | 5.0 | | mg/Kg | | 05/08/13 11:18 | 05/09/13 02:27 | 1 |
| DRO (C13-C22) | ND | | 5.0 | | mg/Kg | | 05/08/13 11:18 | 05/09/13 02:27 | 1 |
| ORO (C23-C32) | ND | | 5.0 | | mg/Kg | | 05/08/13 11:18 | 05/09/13 02:27 | 1 |
| ORO (C33-C40) | ND | | 5.0 | | mg/Kg | | 05/08/13 11:18 | 05/09/13 02:27 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *n-Octacosane* | *74* | | *40 - 140* | *05/08/13 11:18* | *05/09/13 02:27* | *1* |

## Client Sample ID: SS-26

Lab Sample ID: 440-45387-26

Date Collected: 05/01/13 00:01
Date Received: 05/02/13 17:45

Matrix: Solid

**Method: 7471A - Mercury (CVAA)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | ND | | 0.020 | | mg/Kg | | 05/13/13 17:57 | 05/13/13 19:48 | 1 |

**General Chemistry**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cyanide, Total | ND | | 0.50 | | mg/Kg | | 05/14/13 15:16 | 05/14/13 19:27 | 1 |

**Client Sample ID: SS-27** — **Lab Sample ID: 440-45387-27**
Date Collected: 05/01/13 00:01 — Matrix: Solid
Date Received: 05/02/13 17:45

**Method: 7471A - Mercury (CVAA)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | ND | | 0.020 | | mg/Kg | | 05/13/13 17:57 | 05/13/13 19:51 | 1 |

**General Chemistry**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cyanide, Total | ND | | 0.50 | | mg/Kg | | 05/14/13 15:16 | 05/14/13 19:27 | 1 |

**Client Sample ID: SS-28** — **Lab Sample ID: 440-45387-28**
Date Collected: 05/01/13 00:01 — Matrix: Solid
Date Received: 05/02/13 17:45

**Method: 7471A - Mercury (CVAA)**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.039 | | 0.020 | | mg/Kg | | 05/13/13 17:57 | 05/13/13 19:53 | 1 |

**General Chemistry**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cyanide, Total | ND | | 0.50 | | mg/Kg | | 05/14/13 15:16 | 05/14/13 19:27 | 1 |

# Method Summary

Client: Vinje & Middleton Engineering Inc
Project/Site: 13-118-H2

TestAmerica Job ID: 440-45387-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 8015B | Diesel Range Organics (DRO) (GC) | SW846 | TAL IRV |
| 8081A | Organochlorine Pesticides (GC) | SW846 | TAL IRV |
| 6010B | Metals (ICP) | SW846 | TAL IRV |
| 7471A | Mercury (CVAA) | SW846 | TAL IRV |
| 9014 | Cyanide | SW846 | TAL IRV |

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

**Client Sample ID: SS-1** — **Lab Sample ID: 440-45387-1**
Date Collected: 05/01/13 12:10 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3546 | | | 15.02 g | 2 mL | 103267 | 05/09/13 08:54 | | TAL IRV |
| Total/NA | Analysis | 8081A | | 1 | | | 103273 | 05/09/13 19:49 | KS | TAL IRV |

**Client Sample ID: SS-2** — **Lab Sample ID: 440-45387-2**
Date Collected: 05/01/13 12:41 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3546 | | | 15.00 g | 2 mL | 103267 | 05/09/13 08:54 | | TAL IRV |
| Total/NA | Analysis | 8081A | | 1 | | | 103273 | 05/09/13 20:04 | KS | TAL IRV |

**Client Sample ID: SS-3** — **Lab Sample ID: 440-45387-3**
Date Collected: 05/01/13 12:47 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3546 | | | 15.00 g | 2 mL | 103267 | 05/09/13 08:54 | | TAL IRV |
| Total/NA | Analysis | 8081A | | 1 | | | 103273 | 05/09/13 20:18 | KS | TAL IRV |

**Client Sample ID: SS-4** — **Lab Sample ID: 440-45387-4**
Date Collected: 05/01/13 13:12 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3546 | | | 15.01 g | 2 mL | 103267 | 05/09/13 08:54 | | TAL IRV |
| Total/NA | Analysis | 8081A | | 1 | | | 103273 | 05/09/13 20:33 | KS | TAL IRV |

**Client Sample ID: SS-5** — **Lab Sample ID: 440-45387-5**
Date Collected: 05/01/13 16:02 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3546 | | | 15.03 g | 2 mL | 103267 | 05/09/13 08:54 | | TAL IRV |
| Total/NA | Analysis | 8081A | | 1 | | | 103273 | 05/09/13 20:48 | KS | TAL IRV |

**Client Sample ID: SS-6** — **Lab Sample ID: 440-45387-6**
Date Collected: 05/01/13 13:30 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3546 | | | 15.02 g | 2 mL | 103267 | 05/09/13 08:54 | | TAL IRV |
| Total/NA | Analysis | 8081A | | 1 | | | 103273 | 05/09/13 21:32 | KS | TAL IRV |

**Client Sample ID: SS-7** — **Lab Sample ID: 440-45387-7**
Date Collected: 05/01/13 14:08 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3546 | | | 15.00 g | 2 mL | 103040 | 05/08/13 11:54 | AB | TAL IRV |
| Total/NA | Analysis | 8081A | | 1 | | | 103185 | 05/08/13 22:51 | KS | TAL IRV |

**Client Sample ID: SS-8** — **Lab Sample ID: 440-45387-8**
Date Collected: 05/01/13 14:36 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3546 | | | 15.03 g | 2 mL | 103040 | 05/08/13 11:54 | AB | TAL IRV |
| Total/NA | Analysis | 8081A | | 1 | | | 103185 | 05/08/13 23:06 | KS | TAL IRV |

**Client Sample ID: SS-9** — **Lab Sample ID: 440-45387-9**
Date Collected: 05/01/13 15:27 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3546 | | | 15.06 g | 2 mL | 103040 | 05/08/13 11:54 | AB | TAL IRV |
| Total/NA | Analysis | 8081A | | 1 | | | 103185 | 05/08/13 23:20 | KS | TAL IRV |

**Client Sample ID: SS-10** — **Lab Sample ID: 440-45387-10**
Date Collected: 05/01/13 15:02 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3546 | | | 15.01 g | 2 mL | 103040 | 05/08/13 11:54 | AB | TAL IRV |
| Total/NA | Analysis | 8081A | | 1 | | | 103185 | 05/08/13 23:35 | KS | TAL IRV |

**Client Sample ID: SS-11** — **Lab Sample ID: 440-45387-11**
Date Collected: 05/01/13 12:20 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3050B | | | 2.03 g | 50 mL | 102693 | 05/07/13 09:07 | DT | TAL IRV |
| Total/NA | Analysis | 6010B | | 5 | | | 103112 | 05/08/13 14:10 | TK | TAL IRV |

**Client Sample ID: SS-12** — **Lab Sample ID: 440-45387-12**
Date Collected: 05/01/13 13:02 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3050B | | | 2.02 g | 50 mL | 102693 | 05/07/13 09:07 | DT | TAL IRV |
| Total/NA | Analysis | 6010B | | 5 | | | 103112 | 05/08/13 14:12 | TK | TAL IRV |

**Client Sample ID: SS-13** — **Lab Sample ID: 440-45387-13**
Date Collected: 05/01/13 16:08 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3050B | | | 2.03 g | 50 mL | 102693 | 05/07/13 09:07 | DT | TAL IRV |
| Total/NA | Analysis | 6010B | | 5 | | | 103112 | 05/08/13 14:14 | TK | TAL IRV |

**Client Sample ID: SS-14** — **Lab Sample ID: 440-45387-14**
Date Collected: 05/01/13 14:00 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3050B | | | 2.02 g | 50 mL | 102693 | 05/07/13 09:07 | DT | TAL IRV |
| Total/NA | Analysis | 6010B | | 5 | | | 103112 | 05/08/13 14:16 | TK | TAL IRV |

**Client Sample ID: SS-15** — **Lab Sample ID: 440-45387-15**
Date Collected: 05/01/13 15:38 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3050B | | | 2.02 g | 50 mL | 102693 | 05/07/13 09:07 | DT | TAL IRV |
| Total/NA | Analysis | 6010B | | 5 | | | 103112 | 05/08/13 14:18 | TK | TAL IRV |

**Client Sample ID: SS-16** — **Lab Sample ID: 440-45387-16**
Date Collected: 05/01/13 15:48 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3050B | | | 2.02 g | 50 mL | 102693 | 05/07/13 09:07 | DT | TAL IRV |
| Total/NA | Analysis | 6010B | | 5 | | | 103112 | 05/08/13 14:40 | TK | TAL IRV |

**Client Sample ID: SS-17** — **Lab Sample ID: 440-45387-17**
Date Collected: 05/01/13 14:18 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3050B | | | 2.03 g | 50 mL | 102693 | 05/07/13 09:07 | DT | TAL IRV |
| Total/NA | Analysis | 6010B | | 5 | | | 103112 | 05/08/13 14:42 | TK | TAL IRV |

**Client Sample ID: SS-18** — **Lab Sample ID: 440-45387-18**
Date Collected: 05/01/13 15:20 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3050B | | | 2.01 g | 50 mL | 102693 | 05/07/13 09:07 | DT | TAL IRV |
| Total/NA | Analysis | 6010B | | 5 | | | 103112 | 05/08/13 14:44 | TK | TAL IRV |

**Client Sample ID: SS-19** — **Lab Sample ID: 440-45387-19**
Date Collected: 05/01/13 14:42 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3050B | | | 2.01 g | 50 mL | 102693 | 05/07/13 09:07 | DT | TAL IRV |
| Total/NA | Analysis | 6010B | | 5 | | | 103112 | 05/08/13 14:45 | TK | TAL IRV |

**Client Sample ID: SS-20** — **Lab Sample ID: 440-45387-20**
Date Collected: 05/01/13 15:10 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 3050B | | | 2.01 g | 50 mL | 102693 | 05/07/13 09:07 | DT | TAL IRV |
| Total/NA | Analysis | 6010B | | 5 | | | 103112 | 05/08/13 14:47 | TK | TAL IRV |

**Client Sample ID: SS-21** — **Lab Sample ID: 440-45387-21**
Date Collected: 05/01/13 12:00 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | CA LUFT | | | 30.01 g | 1 mL | 103032 | 05/08/13 11:18 | A1L | TAL IRV |
| Total/NA | Analysis | 8015B | | 1 | | | 103012 | 05/09/13 01:20 | JR | TAL IRV |

**Client Sample ID: SS-22** — **Lab Sample ID: 440-45387-22**
Date Collected: 05/01/13 12:32 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | CA LUFT | | | 29.99 g | 1 mL | 103032 | 05/08/13 11:18 | A1L | TAL IRV |
| Total/NA | Analysis | 8015B | | 1 | | | 103012 | 05/09/13 01:42 | JR | TAL IRV |

**Client Sample ID: SS-23** — **Lab Sample ID: 440-45387-23**
Date Collected: 05/01/13 13:53 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | CA LUFT | | | 30.00 g | 1 mL | 103032 | 05/08/13 11:18 | A1L | TAL IRV |
| Total/NA | Analysis | 8015B | | 1 | | | 103012 | 05/09/13 02:05 | JR | TAL IRV |

**Client Sample ID: SS-24** — **Lab Sample ID: 440-45387-24**
Date Collected: 05/01/13 14:27 — Matrix: Solid
Date Received: 05/02/13 17:45

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | CA LUFT | | | 29.96 g | 1 mL | 103032 | 05/08/13 11:18 | A1L | TAL IRV |
| Total/NA | Analysis | 8015B | | 5 | | | 103502 | 05/10/13 00:44 | CN | TAL IRV |

# Lab Chronicle

Client: Vinje & Middleton Engineering Inc
Project/Site: 13-118-H2

TestAmerica Job ID: 440-45387-1

## Client Sample ID: SS-25

**Lab Sample ID: 440-45387-25**

Date Collected: 05/01/13 14:52
Date Received: 05/02/13 17:45

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | CA LUFT | | | 30.06 g | 1 mL | 103032 | 05/08/13 11:18 | A1L | TAL IRV |
| Total/NA | Analysis | 8015B | | 1 | | | 103012 | 05/09/13 02:27 | JR | TAL IRV |

## Client Sample ID: SS-26

**Lab Sample ID: 440-45387-26**

Date Collected: 05/01/13 00:01
Date Received: 05/02/13 17:45

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 7471A | | | 0.49 g | 50 mL | 104174 | 05/13/13 17:57 | MM | TAL IRV |
| Total/NA | Analysis | 7471A | | 1 | | | 104222 | 05/13/13 19:48 | DB | TAL IRV |
| Total/NA | Prep | 9010C | | | 2.00 g | 50 mL | 104439 | 05/14/13 15:16 | BS | TAL IRV |
| Total/NA | Analysis | 9014 | | 1 | | | 104531 | 05/14/13 19:27 | BT | TAL IRV |

## Client Sample ID: SS-27

**Lab Sample ID: 440-45387-27**

Date Collected: 05/01/13 00:01
Date Received: 05/02/13 17:45

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 7471A | | | 0.51 g | 50 mL | 104174 | 05/13/13 17:57 | MM | TAL IRV |
| Total/NA | Analysis | 7471A | | 1 | | | 104222 | 05/13/13 19:51 | DB | TAL IRV |
| Total/NA | Prep | 9010C | | | 1.99 g | 50 mL | 104439 | 05/14/13 15:16 | BS | TAL IRV |
| Total/NA | Analysis | 9014 | | 1 | | | 104531 | 05/14/13 19:27 | BT | TAL IRV |

## Client Sample ID: SS-28

**Lab Sample ID: 440-45387-28**

Date Collected: 05/01/13 00:01
Date Received: 05/02/13 17:45

**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 7471A | | | 0.50 g | 50 mL | 104174 | 05/13/13 17:57 | MM | TAL IRV |
| Total/NA | Analysis | 7471A | | 1 | | | 104222 | 05/13/13 19:53 | DB | TAL IRV |
| Total/NA | Prep | 9010C | | | 1.99 g | 50 mL | 104439 | 05/14/13 15:16 | BS | TAL IRV |
| Total/NA | Analysis | 9014 | | 1 | | | 104531 | 05/14/13 19:27 | BT | TAL IRV |

**Laboratory References:**

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

## Method: 8015B - Diesel Range Organics (DRO) (GC)

**Lab Sample ID: MB 440-103032/1-A**
**Matrix: Solid**
**Analysis Batch: 103012**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 103032**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| C13 - C40 | ND | | 5.0 | | mg/Kg | | 05/08/13 11:18 | 05/08/13 19:22 | 1 |
| DRO (C13-C22) | ND | | 5.0 | | mg/Kg | | 05/08/13 11:18 | 05/08/13 19:22 | 1 |
| ORO (C23-C32) | ND | | 5.0 | | mg/Kg | | 05/08/13 11:18 | 05/08/13 19:22 | 1 |
| ORO (C33-C40) | ND | | 5.0 | | mg/Kg | | 05/08/13 11:18 | 05/08/13 19:22 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *n-Octacosane* | *75* | | *40 - 140* | *05/08/13 11:18* | *05/08/13 19:22* | *1* |

**Lab Sample ID: LCS 440-103032/2-A**
**Matrix: Solid**
**Analysis Batch: 103012**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 103032**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| EFH (C10-C28) | 33.3 | 28.6 | | mg/Kg | | 86 | 45 - 115 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *n-Octacosane* | *78* | | *40 - 140* |

**Lab Sample ID: 440-45425-A-1-A MS**
**Matrix: Solid**
**Analysis Batch: 103012**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 103032**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| EFH (C10-C28) | 8.3 | | 33.3 | 20.8 | F | mg/Kg | | 37 | 40 - 120 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *n-Octacosane* | *55* | | *40 - 140* |

**Lab Sample ID: 440-45425-A-1-B MSD**
**Matrix: Solid**
**Analysis Batch: 103012**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 103032**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EFH (C10-C28) | 8.3 | | 33.4 | 33.9 | F | mg/Kg | | 77 | 40 - 120 | 48 | 30 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *n-Octacosane* | *82* | | *40 - 140* |

## Method: 8081A - Organochlorine Pesticides (GC)

**Lab Sample ID: MB 440-103040/1-A**
**Matrix: Solid**
**Analysis Batch: 103185**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 103040**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aldrin | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 21:52 | 1 |
| alpha-BHC | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 21:52 | 1 |

## Method: 8081A - Organochlorine Pesticides (GC) (Continued)

**Lab Sample ID: MB 440-103040/1-A**
**Matrix: Solid**
**Analysis Batch: 103185**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 103040**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| beta-BHC | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 21:52 | 1 |
| Chlordane (technical) | ND | | 50 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 21:52 | 1 |
| 4,4'-DDD | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 21:52 | 1 |
| 4,4'-DDE | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 21:52 | 1 |
| 4,4'-DDT | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 21:52 | 1 |
| delta-BHC | ND | | 10 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 21:52 | 1 |
| Dieldrin | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 21:52 | 1 |
| Endosulfan I | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 21:52 | 1 |
| Endosulfan II | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 21:52 | 1 |
| Endosulfan sulfate | ND | | 10 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 21:52 | 1 |
| Endrin | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 21:52 | 1 |
| Endrin aldehyde | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 21:52 | 1 |
| Endrin ketone | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 21:52 | 1 |
| gamma-BHC (Lindane) | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 21:52 | 1 |
| Heptachlor | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 21:52 | 1 |
| Heptachlor epoxide | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 21:52 | 1 |
| Methoxychlor | ND | | 5.0 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 21:52 | 1 |
| Toxaphene | ND | | 200 | | ug/Kg | | 05/08/13 11:54 | 05/08/13 21:52 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl (Surr)* | *79* | | *45 - 120* | *05/08/13 11:54* | *05/08/13 21:52* | *1* |
| *Tetrachloro-m-xylene* | *57* | | *35 - 115* | *05/08/13 11:54* | *05/08/13 21:52* | *1* |

**Lab Sample ID: LCS 440-103040/2-A**
**Matrix: Solid**
**Analysis Batch: 103185**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 103040**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Aldrin | 33.3 | 27.7 | | ug/Kg | | 83 | 50 - 115 |
| alpha-BHC | 33.3 | 28.6 | | ug/Kg | | 86 | 60 - 115 |
| beta-BHC | 33.3 | 28.3 | | ug/Kg | | 85 | 60 - 115 |
| 4,4'-DDD | 33.3 | 30.9 | | ug/Kg | | 93 | 60 - 120 |
| 4,4'-DDE | 33.3 | 32.1 | | ug/Kg | | 96 | 60 - 120 |
| 4,4'-DDT | 33.3 | 34.2 | | ug/Kg | | 103 | 65 - 120 |
| delta-BHC | 33.3 | 30.6 | | ug/Kg | | 92 | 60 - 115 |
| Dieldrin | 33.3 | 31.4 | | ug/Kg | | 94 | 65 - 115 |
| Endosulfan I | 33.3 | 30.4 | | ug/Kg | | 91 | 40 - 120 |
| Endosulfan II | 33.3 | 30.5 | | ug/Kg | | 91 | 55 - 120 |
| Endosulfan sulfate | 33.3 | 29.1 | | ug/Kg | | 87 | 65 - 115 |
| Endrin | 33.3 | 30.7 | | ug/Kg | | 92 | 55 - 120 |
| Endrin aldehyde | 33.3 | 28.6 | | ug/Kg | | 86 | 55 - 115 |
| Endrin ketone | 33.3 | 32.2 | | ug/Kg | | 97 | 65 - 115 |
| gamma-BHC (Lindane) | 33.3 | 28.8 | | ug/Kg | | 87 | 55 - 115 |
| Heptachlor | 33.3 | 28.8 | | ug/Kg | | 86 | 55 - 115 |
| Heptachlor epoxide | 33.3 | 29.6 | | ug/Kg | | 89 | 55 - 115 |
| Methoxychlor | 33.3 | 30.4 | | ug/Kg | | 91 | 65 - 120 |

## Method: 8081A - Organochlorine Pesticides (GC) (Continued)

**Lab Sample ID: LCS 440-103040/2-A**
**Matrix: Solid**
**Analysis Batch: 103185**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 103040**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| DCB Decachlorobiphenyl (Surr) | 87 | | 45 - 120 |
| Tetrachloro-m-xylene | 70 | | 35 - 115 |

**Lab Sample ID: 440-45434-A-1-F MS**
**Matrix: Solid**
**Analysis Batch: 103185**

**Client Sample ID: Matrix Spike**
**Prep Type: Total/NA**
**Prep Batch: 103040**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Aldrin | ND | | 250 | 215 | | ug/Kg | | 86 | 40 - 115 |
| alpha-BHC | ND | | 250 | 224 | | ug/Kg | | 90 | 40 - 115 |
| beta-BHC | ND | | 250 | 203 | | ug/Kg | | 81 | 40 - 120 |
| 4,4'-DDD | ND | | 250 | 201 | | ug/Kg | | 80 | 40 - 130 |
| 4,4'-DDE | ND | | 250 | 221 | | ug/Kg | | 88 | 35 - 130 |
| 4,4'-DDT | ND | | 250 | 231 | | ug/Kg | | 92 | 35 - 130 |
| delta-BHC | ND | | 250 | 200 | | ug/Kg | | 80 | 45 - 120 |
| Dieldrin | ND | | 250 | 212 | | ug/Kg | | 85 | 40 - 125 |
| Endosulfan I | ND | | 250 | 218 | | ug/Kg | | 87 | 40 - 120 |
| Endosulfan II | ND | | 250 | 214 | | ug/Kg | | 86 | 40 - 125 |
| Endosulfan sulfate | ND | | 250 | 216 | | ug/Kg | | 87 | 45 - 120 |
| Endrin | ND | | 250 | 236 | | ug/Kg | | 94 | 45 - 125 |
| Endrin aldehyde | ND | | 250 | 179 | | ug/Kg | | 71 | 30 - 120 |
| Endrin ketone | ND | | 250 | 234 | | ug/Kg | | 93 | 40 - 120 |
| gamma-BHC (Lindane) | ND | | 250 | 215 | | ug/Kg | | 86 | 40 - 120 |
| Heptachlor | ND | | 250 | 222 | | ug/Kg | | 89 | 40 - 115 |
| Heptachlor epoxide | ND | | 250 | 211 | | ug/Kg | | 85 | 45 - 115 |
| Methoxychlor | ND | | 250 | 241 | | ug/Kg | | 96 | 40 - 135 |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| DCB Decachlorobiphenyl (Surr) | 87 | | 45 - 120 |
| Tetrachloro-m-xylene | 75 | | 35 - 115 |

**Lab Sample ID: 440-45434-A-1-G MSD**
**Matrix: Solid**
**Analysis Batch: 103185**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 103040**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aldrin | ND | | 249 | 210 | | ug/Kg | | 84 | 40 - 115 | NC | 30 |
| alpha-BHC | ND | | 249 | 216 | | ug/Kg | | 87 | 40 - 115 | 4 | 30 |
| beta-BHC | ND | | 249 | 191 | | ug/Kg | | 77 | 40 - 120 | 6 | 30 |
| 4,4'-DDD | ND | | 249 | 191 | | ug/Kg | | 77 | 40 - 130 | 5 | 30 |
| 4,4'-DDE | ND | | 249 | 215 | | ug/Kg | | 87 | 35 - 130 | 9 | 30 |
| 4,4'-DDT | ND | | 249 | 225 | | ug/Kg | | 90 | 35 - 130 | 4 | 30 |
| delta-BHC | ND | | 249 | 192 | | ug/Kg | | 77 | 45 - 120 | 4 | 30 |
| Dieldrin | ND | | 249 | 202 | | ug/Kg | | 81 | 40 - 125 | 8 | 30 |
| Endosulfan I | ND | | 249 | 212 | | ug/Kg | | 85 | 40 - 120 | 8 | 30 |
| Endosulfan II | ND | | 249 | 199 | | ug/Kg | | 80 | 40 - 125 | 8 | 30 |
| Endosulfan sulfate | ND | | 249 | 226 | | ug/Kg | | 91 | 45 - 120 | 5 | 30 |
| Endrin | ND | | 249 | 227 | | ug/Kg | | 91 | 45 - 125 | 4 | 30 |

## Method: 8081A - Organochlorine Pesticides (GC) (Continued)

**Lab Sample ID: 440-45434-A-1-G MSD**
**Matrix: Solid**
**Analysis Batch: 103185**

**Client Sample ID: Matrix Spike Duplicate**
**Prep Type: Total/NA**
**Prep Batch: 103040**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Endrin aldehyde | ND | | 249 | 176 | | ug/Kg | | 71 | 30 - 120 | 1 | 30 |
| Endrin ketone | ND | | 249 | 232 | | ug/Kg | | 93 | 40 - 120 | 14 | 30 |
| gamma-BHC (Lindane) | ND | | 249 | 208 | | ug/Kg | | 84 | 40 - 120 | 9 | 30 |
| Heptachlor | ND | | 249 | 219 | | ug/Kg | | 88 | 40 - 115 | 2 | 30 |
| Heptachlor epoxide | ND | | 249 | 204 | | ug/Kg | | 82 | 45 - 115 | 11 | 30 |
| Methoxychlor | ND | | 249 | 242 | | ug/Kg | | 97 | 40 - 135 | NC | 30 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *DCB Decachlorobiphenyl (Surr)* | *84* | | *45 - 120* |
| *Tetrachloro-m-xylene* | *74* | | *35 - 115* |

**Lab Sample ID: MB 440-103267/1-A**
**Matrix: Solid**
**Analysis Batch: 103273**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 103267**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Aldrin | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:20 | 1 |
| alpha-BHC | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:20 | 1 |
| beta-BHC | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:20 | 1 |
| Chlordane (technical) | ND | | 50 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:20 | 1 |
| 4,4'-DDD | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:20 | 1 |
| 4,4'-DDE | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:20 | 1 |
| 4,4'-DDT | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:20 | 1 |
| delta-BHC | ND | | 10 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:20 | 1 |
| Dieldrin | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:20 | 1 |
| Endosulfan I | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:20 | 1 |
| Endosulfan II | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:20 | 1 |
| Endosulfan sulfate | ND | | 10 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:20 | 1 |
| Endrin | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:20 | 1 |
| Endrin aldehyde | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:20 | 1 |
| Endrin ketone | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:20 | 1 |
| gamma-BHC (Lindane) | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:20 | 1 |
| Heptachlor | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:20 | 1 |
| Heptachlor epoxide | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:20 | 1 |
| Methoxychlor | ND | | 5.0 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:20 | 1 |
| Toxaphene | ND | | 200 | | ug/Kg | | 05/09/13 08:54 | 05/09/13 19:20 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *DCB Decachlorobiphenyl (Surr)* | *85* | | *45 - 120* | *05/09/13 08:54* | *05/09/13 19:20* | *1* |
| *Tetrachloro-m-xylene* | *74* | | *35 - 115* | *05/09/13 08:54* | *05/09/13 19:20* | *1* |

**Lab Sample ID: LCS 440-103267/2-A**
**Matrix: Solid**
**Analysis Batch: 103273**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 103267**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Aldrin | 33.3 | 28.0 | | ug/Kg | | 84 | 50 - 115 |
| alpha-BHC | 33.3 | 29.4 | | ug/Kg | | 88 | 60 - 115 |

## Method: 8081A - Organochlorine Pesticides (GC) (Continued)

**Lab Sample ID: LCS 440-103267/2-A**
**Matrix: Solid**
**Analysis Batch: 103273**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 103267**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| beta-BHC | 33.3 | 30.3 | | ug/Kg | | 91 | 60 - 115 |
| 4,4'-DDD | 33.3 | 29.5 | | ug/Kg | | 89 | 60 - 120 |
| 4,4'-DDE | 33.3 | 30.3 | | ug/Kg | | 91 | 60 - 120 |
| 4,4'-DDT | 33.3 | 31.7 | | ug/Kg | | 95 | 65 - 120 |
| delta-BHC | 33.3 | 31.6 | | ug/Kg | | 95 | 60 - 115 |
| Dieldrin | 33.3 | 30.2 | | ug/Kg | | 91 | 65 - 115 |
| Endosulfan I | 33.3 | 28.8 | | ug/Kg | | 86 | 40 - 120 |
| Endosulfan II | 33.3 | 29.0 | | ug/Kg | | 87 | 55 - 120 |
| Endosulfan sulfate | 33.3 | 32.7 | | ug/Kg | | 98 | 65 - 115 |
| Endrin | 33.3 | 31.0 | | ug/Kg | | 93 | 55 - 120 |
| Endrin aldehyde | 33.3 | 26.2 | | ug/Kg | | 79 | 55 - 115 |
| Endrin ketone | 33.3 | 29.6 | | ug/Kg | | 89 | 65 - 115 |
| gamma-BHC (Lindane) | 33.3 | 29.5 | | ug/Kg | | 89 | 55 - 115 |
| Heptachlor | 33.3 | 30.9 | | ug/Kg | | 93 | 55 - 115 |
| Heptachlor epoxide | 33.3 | 28.7 | | ug/Kg | | 86 | 55 - 115 |
| Methoxychlor | 33.3 | 29.4 | | ug/Kg | | 88 | 65 - 120 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *DCB Decachlorobiphenyl (Surr)* | *86* | | *45 - 120* |
| *Tetrachloro-m-xylene* | *86* | | *35 - 115* |

**Lab Sample ID: 440-45387-5 MS**
**Matrix: Solid**
**Analysis Batch: 103273**

**Client Sample ID: SS-5**
**Prep Type: Total/NA**
**Prep Batch: 103267**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Aldrin | ND | | 33.3 | 25.8 | | ug/Kg | | 77 | 40 - 115 |
| alpha-BHC | ND | | 33.3 | 25.7 | | ug/Kg | | 77 | 40 - 115 |
| beta-BHC | ND | | 33.3 | 27.0 | | ug/Kg | | 81 | 40 - 120 |
| 4,4'-DDD | ND | | 33.3 | 26.5 | | ug/Kg | | 80 | 40 - 130 |
| 4,4'-DDE | ND | | 33.3 | 28.1 | | ug/Kg | | 85 | 35 - 130 |
| 4,4'-DDT | ND | | 33.3 | 29.6 | | ug/Kg | | 89 | 35 - 130 |
| delta-BHC | ND | | 33.3 | 27.9 | | ug/Kg | | 84 | 45 - 120 |
| Dieldrin | ND | | 33.3 | 26.8 | | ug/Kg | | 81 | 40 - 125 |
| Endosulfan I | ND | | 33.3 | 26.3 | | ug/Kg | | 79 | 40 - 120 |
| Endosulfan II | ND | | 33.3 | 26.2 | | ug/Kg | | 79 | 40 - 125 |
| Endosulfan sulfate | ND | | 33.3 | 29.4 | | ug/Kg | | 88 | 45 - 120 |
| Endrin | ND | | 33.3 | 28.0 | | ug/Kg | | 84 | 45 - 125 |
| Endrin aldehyde | ND | | 33.3 | 23.2 | | ug/Kg | | 70 | 30 - 120 |
| Endrin ketone | ND | | 33.3 | 26.6 | | ug/Kg | | 80 | 40 - 120 |
| gamma-BHC (Lindane) | ND | | 33.3 | 25.9 | | ug/Kg | | 78 | 40 - 120 |
| Heptachlor | ND | | 33.3 | 27.3 | | ug/Kg | | 82 | 40 - 115 |
| Heptachlor epoxide | ND | | 33.3 | 26.4 | | ug/Kg | | 79 | 45 - 115 |
| Methoxychlor | ND | | 33.3 | 27.0 | | ug/Kg | | 81 | 40 - 135 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *DCB Decachlorobiphenyl (Surr)* | *79* | | *45 - 120* |

## Method: 8081A - Organochlorine Pesticides (GC) (Continued)

**Lab Sample ID: 440-45387-5 MS**
**Matrix: Solid**
**Analysis Batch: 103273**

**Client Sample ID: SS-5**
**Prep Type: Total/NA**
**Prep Batch: 103267**

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| Tetrachloro-m-xylene | 77 | | 35 - 115 |

**Lab Sample ID: 440-45387-5 MSD**
**Matrix: Solid**
**Analysis Batch: 103273**

**Client Sample ID: SS-5**
**Prep Type: Total/NA**
**Prep Batch: 103267**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aldrin | ND | | 33.3 | 25.1 | | ug/Kg | | 75 | 40 - 115 | 3 | 30 |
| alpha-BHC | ND | | 33.3 | 24.8 | | ug/Kg | | 75 | 40 - 115 | 3 | 30 |
| beta-BHC | ND | | 33.3 | 26.6 | | ug/Kg | | 80 | 40 - 120 | 1 | 30 |
| 4,4'-DDD | ND | | 33.3 | 26.6 | | ug/Kg | | 80 | 40 - 130 | 0 | 30 |
| 4,4'-DDE | ND | | 33.3 | 28.4 | | ug/Kg | | 85 | 35 - 130 | 1 | 30 |
| 4,4'-DDT | ND | | 33.3 | 29.8 | | ug/Kg | | 89 | 35 - 130 | 1 | 30 |
| delta-BHC | ND | | 33.3 | 26.7 | | ug/Kg | | 80 | 45 - 120 | 5 | 30 |
| Dieldrin | ND | | 33.3 | 26.8 | | ug/Kg | | 80 | 40 - 125 | 0 | 30 |
| Endosulfan I | ND | | 33.3 | 26.4 | | ug/Kg | | 79 | 40 - 120 | 0 | 30 |
| Endosulfan II | ND | | 33.3 | 23.5 | | ug/Kg | | 71 | 40 - 125 | 11 | 30 |
| Endosulfan sulfate | ND | | 33.3 | 25.9 | | ug/Kg | | 78 | 45 - 120 | 13 | 30 |
| Endrin | ND | | 33.3 | 28.5 | | ug/Kg | | 86 | 45 - 125 | 2 | 30 |
| Endrin aldehyde | ND | | 33.3 | 22.2 | | ug/Kg | | 67 | 30 - 120 | 4 | 30 |
| Endrin ketone | ND | | 33.3 | 23.8 | | ug/Kg | | 71 | 40 - 120 | 11 | 30 |
| gamma-BHC (Lindane) | ND | | 33.3 | 25.2 | | ug/Kg | | 76 | 40 - 120 | 3 | 30 |
| Heptachlor | ND | | 33.3 | 26.3 | | ug/Kg | | 79 | 40 - 115 | 3 | 30 |
| Heptachlor epoxide | ND | | 33.3 | 26.1 | | ug/Kg | | 78 | 45 - 115 | 1 | 30 |
| Methoxychlor | ND | | 33.3 | 25.3 | | ug/Kg | | 76 | 40 - 135 | 7 | 30 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| DCB Decachlorobiphenyl (Surr) | 80 | | 45 - 120 |
| Tetrachloro-m-xylene | 73 | | 35 - 115 |

## Method: 6010B - Metals (ICP)

**Lab Sample ID: MB 440-102693/1-A ^5**
**Matrix: Solid**
**Analysis Batch: 103112**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 102693**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | | 2.0 | | mg/Kg | | 05/07/13 09:07 | 05/08/13 14:00 | 5 |

**Lab Sample ID: LCS 440-102693/2-A ^5**
**Matrix: Solid**
**Analysis Batch: 103112**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 102693**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Arsenic | 49.5 | 45.9 | | mg/Kg | | 93 | 80 - 120 |

## Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 440-45437-A-1-B MS ^5
Matrix: Solid
Analysis Batch: 103112

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 102693

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 3.8 | | 50.0 | 51.7 | | mg/Kg | | 96 | 75 - 125 |

Lab Sample ID: 440-45437-A-1-C MSD ^5
Matrix: Solid
Analysis Batch: 103112

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 102693

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 3.8 | | 49.5 | 47.1 | | mg/Kg | | 87 | 75 - 125 | 9 | 20 |

## Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 440-104174/1-A
Matrix: Solid
Analysis Batch: 104222

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 104174

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | ND | | 0.020 | | mg/Kg | | 05/13/13 17:57 | 05/13/13 19:10 | 1 |

Lab Sample ID: LCS 440-104174/2-A
Matrix: Solid
Analysis Batch: 104222

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 104174

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Mercury | 0.800 | 0.677 | | mg/Kg | | 85 | 80 - 120 |

Lab Sample ID: 440-46080-A-1-E MS
Matrix: Solid
Analysis Batch: 104222

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 104174

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.19 | | 0.800 | 0.838 | | mg/Kg | | 81 | 70 - 130 |

Lab Sample ID: 440-46080-A-1-F MSD
Matrix: Solid
Analysis Batch: 104222

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 104174

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.19 | | 0.816 | 0.973 | | mg/Kg | | 96 | 70 - 130 | 15 | 20 |

## Method: 9014 - Cyanide

Lab Sample ID: MB 440-104439/1-A
Matrix: Solid
Analysis Batch: 104531

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 104439

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cyanide, Total | ND | | 0.020 | | mg/Kg | | 05/14/13 15:16 | 05/14/13 19:26 | 1 |

## Method: 9014 - Cyanide (Continued)

**Lab Sample ID: LCS 440-104439/2-A**
**Matrix: Solid**
**Analysis Batch: 104531**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 104439**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Cyanide, Total | 0.200 | 0.185 | | mg/Kg | | 93 | 90 - 110 |

**Lab Sample ID: 440-45387-27 MS**
**Matrix: Solid**
**Analysis Batch: 104531**

**Client Sample ID: SS-27**
**Prep Type: Total/NA**
**Prep Batch: 104439**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Cyanide, Total | ND | | 5.03 | 4.36 | | mg/Kg | | 87 | 70 - 115 |

**Lab Sample ID: 440-45387-27 MSD**
**Matrix: Solid**
**Analysis Batch: 104531**

**Client Sample ID: SS-27**
**Prep Type: Total/NA**
**Prep Batch: 104439**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cyanide, Total | ND | | 5.00 | 4.22 | | mg/Kg | | 84 | 70 - 115 | 3 | 15 |

## GC Semi VOA

### Analysis Batch: 103012

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 440-45387-21 | SS-21 | Total/NA | Solid | 8015B | 103032 |
| 440-45387-22 | SS-22 | Total/NA | Solid | 8015B | 103032 |
| 440-45387-23 | SS-23 | Total/NA | Solid | 8015B | 103032 |
| 440-45387-25 | SS-25 | Total/NA | Solid | 8015B | 103032 |
| 440-45425-A-1-A MS | Matrix Spike | Total/NA | Solid | 8015B | 103032 |
| 440-45425-A-1-B MSD | Matrix Spike Duplicate | Total/NA | Solid | 8015B | 103032 |
| LCS 440-103032/2-A | Lab Control Sample | Total/NA | Solid | 8015B | 103032 |
| MB 440-103032/1-A | Method Blank | Total/NA | Solid | 8015B | 103032 |

### Prep Batch: 103032

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 440-45387-21 | SS-21 | Total/NA | Solid | CA LUFT | |
| 440-45387-22 | SS-22 | Total/NA | Solid | CA LUFT | |
| 440-45387-23 | SS-23 | Total/NA | Solid | CA LUFT | |
| 440-45387-24 | SS-24 | Total/NA | Solid | CA LUFT | |
| 440-45387-25 | SS-25 | Total/NA | Solid | CA LUFT | |
| 440-45425-A-1-A MS | Matrix Spike | Total/NA | Solid | CA LUFT | |
| 440-45425-A-1-B MSD | Matrix Spike Duplicate | Total/NA | Solid | CA LUFT | |
| LCS 440-103032/2-A | Lab Control Sample | Total/NA | Solid | CA LUFT | |
| MB 440-103032/1-A | Method Blank | Total/NA | Solid | CA LUFT | |

### Prep Batch: 103040

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 440-45387-7 | SS-7 | Total/NA | Solid | 3546 | |
| 440-45387-8 | SS-8 | Total/NA | Solid | 3546 | |
| 440-45387-9 | SS-9 | Total/NA | Solid | 3546 | |
| 440-45387-10 | SS-10 | Total/NA | Solid | 3546 | |
| 440-45434-A-1-F MS | Matrix Spike | Total/NA | Solid | 3546 | |
| 440-45434-A-1-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 3546 | |
| LCS 440-103040/2-A | Lab Control Sample | Total/NA | Solid | 3546 | |
| MB 440-103040/1-A | Method Blank | Total/NA | Solid | 3546 | |

### Analysis Batch: 103185

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 440-45387-7 | SS-7 | Total/NA | Solid | 8081A | 103040 |
| 440-45387-8 | SS-8 | Total/NA | Solid | 8081A | 103040 |
| 440-45387-9 | SS-9 | Total/NA | Solid | 8081A | 103040 |
| 440-45387-10 | SS-10 | Total/NA | Solid | 8081A | 103040 |
| 440-45434-A-1-F MS | Matrix Spike | Total/NA | Solid | 8081A | 103040 |
| 440-45434-A-1-G MSD | Matrix Spike Duplicate | Total/NA | Solid | 8081A | 103040 |
| LCS 440-103040/2-A | Lab Control Sample | Total/NA | Solid | 8081A | 103040 |
| MB 440-103040/1-A | Method Blank | Total/NA | Solid | 8081A | 103040 |

### Prep Batch: 103267

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 440-45387-1 | SS-1 | Total/NA | Solid | 3546 | |
| 440-45387-2 | SS-2 | Total/NA | Solid | 3546 | |
| 440-45387-3 | SS-3 | Total/NA | Solid | 3546 | |
| 440-45387-4 | SS-4 | Total/NA | Solid | 3546 | |
| 440-45387-5 | SS-5 | Total/NA | Solid | 3546 | |
| 440-45387-5 MS | SS-5 | Total/NA | Solid | 3546 | |

## GC Semi VOA (Continued)

### Prep Batch: 103267 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 440-45387-5 MSD | SS-5 | Total/NA | Solid | 3546 | |
| 440-45387-6 | SS-6 | Total/NA | Solid | 3546 | |
| LCS 440-103267/2-A | Lab Control Sample | Total/NA | Solid | 3546 | |
| MB 440-103267/1-A | Method Blank | Total/NA | Solid | 3546 | |

### Analysis Batch: 103273

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 440-45387-1 | SS-1 | Total/NA | Solid | 8081A | 103267 |
| 440-45387-2 | SS-2 | Total/NA | Solid | 8081A | 103267 |
| 440-45387-3 | SS-3 | Total/NA | Solid | 8081A | 103267 |
| 440-45387-4 | SS-4 | Total/NA | Solid | 8081A | 103267 |
| 440-45387-5 | SS-5 | Total/NA | Solid | 8081A | 103267 |
| 440-45387-5 MS | SS-5 | Total/NA | Solid | 8081A | 103267 |
| 440-45387-5 MSD | SS-5 | Total/NA | Solid | 8081A | 103267 |
| 440-45387-6 | SS-6 | Total/NA | Solid | 8081A | 103267 |
| LCS 440-103267/2-A | Lab Control Sample | Total/NA | Solid | 8081A | 103267 |
| MB 440-103267/1-A | Method Blank | Total/NA | Solid | 8081A | 103267 |

### Analysis Batch: 103502

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 440-45387-24 | SS-24 | Total/NA | Solid | 8015B | 103032 |

## Metals

### Prep Batch: 102693

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 440-45387-11 | SS-11 | Total/NA | Solid | 3050B | |
| 440-45387-12 | SS-12 | Total/NA | Solid | 3050B | |
| 440-45387-13 | SS-13 | Total/NA | Solid | 3050B | |
| 440-45387-14 | SS-14 | Total/NA | Solid | 3050B | |
| 440-45387-15 | SS-15 | Total/NA | Solid | 3050B | |
| 440-45387-16 | SS-16 | Total/NA | Solid | 3050B | |
| 440-45387-17 | SS-17 | Total/NA | Solid | 3050B | |
| 440-45387-18 | SS-18 | Total/NA | Solid | 3050B | |
| 440-45387-19 | SS-19 | Total/NA | Solid | 3050B | |
| 440-45387-20 | SS-20 | Total/NA | Solid | 3050B | |
| 440-45437-A-1-B MS ^5 | Matrix Spike | Total/NA | Solid | 3050B | |
| 440-45437-A-1-C MSD ^5 | Matrix Spike Duplicate | Total/NA | Solid | 3050B | |
| LCS 440-102693/2-A ^5 | Lab Control Sample | Total/NA | Solid | 3050B | |
| MB 440-102693/1-A ^5 | Method Blank | Total/NA | Solid | 3050B | |

### Analysis Batch: 103112

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 440-45387-11 | SS-11 | Total/NA | Solid | 6010B | 102693 |
| 440-45387-12 | SS-12 | Total/NA | Solid | 6010B | 102693 |
| 440-45387-13 | SS-13 | Total/NA | Solid | 6010B | 102693 |
| 440-45387-14 | SS-14 | Total/NA | Solid | 6010B | 102693 |
| 440-45387-15 | SS-15 | Total/NA | Solid | 6010B | 102693 |
| 440-45387-16 | SS-16 | Total/NA | Solid | 6010B | 102693 |
| 440-45387-17 | SS-17 | Total/NA | Solid | 6010B | 102693 |

## Metals (Continued)

### Analysis Batch: 103112 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 440-45387-18 | SS-18 | Total/NA | Solid | 6010B | 102693 |
| 440-45387-19 | SS-19 | Total/NA | Solid | 6010B | 102693 |
| 440-45387-20 | SS-20 | Total/NA | Solid | 6010B | 102693 |
| 440-45437-A-1-B MS ^5 | Matrix Spike | Total/NA | Solid | 6010B | 102693 |
| 440-45437-A-1-C MSD ^5 | Matrix Spike Duplicate | Total/NA | Solid | 6010B | 102693 |
| LCS 440-102693/2-A ^5 | Lab Control Sample | Total/NA | Solid | 6010B | 102693 |
| MB 440-102693/1-A ^5 | Method Blank | Total/NA | Solid | 6010B | 102693 |

### Prep Batch: 104174

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 440-45387-26 | SS-26 | Total/NA | Solid | 7471A | |
| 440-45387-27 | SS-27 | Total/NA | Solid | 7471A | |
| 440-45387-28 | SS-28 | Total/NA | Solid | 7471A | |
| 440-46080-A-1-E MS | Matrix Spike | Total/NA | Solid | 7471A | |
| 440-46080-A-1-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 7471A | |
| LCS 440-104174/2-A | Lab Control Sample | Total/NA | Solid | 7471A | |
| MB 440-104174/1-A | Method Blank | Total/NA | Solid | 7471A | |

### Analysis Batch: 104222

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 440-45387-26 | SS-26 | Total/NA | Solid | 7471A | 104174 |
| 440-45387-27 | SS-27 | Total/NA | Solid | 7471A | 104174 |
| 440-45387-28 | SS-28 | Total/NA | Solid | 7471A | 104174 |
| 440-46080-A-1-E MS | Matrix Spike | Total/NA | Solid | 7471A | 104174 |
| 440-46080-A-1-F MSD | Matrix Spike Duplicate | Total/NA | Solid | 7471A | 104174 |
| LCS 440-104174/2-A | Lab Control Sample | Total/NA | Solid | 7471A | 104174 |
| MB 440-104174/1-A | Method Blank | Total/NA | Solid | 7471A | 104174 |

## General Chemistry

### Prep Batch: 104439

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 440-45387-26 | SS-26 | Total/NA | Solid | 9010C | |
| 440-45387-27 | SS-27 | Total/NA | Solid | 9010C | |
| 440-45387-27 MS | SS-27 | Total/NA | Solid | 9010C | |
| 440-45387-27 MSD | SS-27 | Total/NA | Solid | 9010C | |
| 440-45387-28 | SS-28 | Total/NA | Solid | 9010C | |
| LCS 440-104439/2-A | Lab Control Sample | Total/NA | Solid | 9010C | |
| MB 440-104439/1-A | Method Blank | Total/NA | Solid | 9010C | |

### Analysis Batch: 104531

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 440-45387-26 | SS-26 | Total/NA | Solid | 9014 | 104439 |
| 440-45387-27 | SS-27 | Total/NA | Solid | 9014 | 104439 |
| 440-45387-27 MS | SS-27 | Total/NA | Solid | 9014 | 104439 |
| 440-45387-27 MSD | SS-27 | Total/NA | Solid | 9014 | 104439 |
| 440-45387-28 | SS-28 | Total/NA | Solid | 9014 | 104439 |
| LCS 440-104439/2-A | Lab Control Sample | Total/NA | Solid | 9014 | 104439 |
| MB 440-104439/1-A | Method Blank | Total/NA | Solid | 9014 | 104439 |

## Qualifiers

### GC Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| F | MS or MSD exceeds the control limits |
| F | RPD of the MS and MSD exceeds the control limits |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CNF | Contains no Free Liquid |
| DER | Duplicate error ratio (normalized absolute difference) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision level concentration |
| MDA | Minimum detectable activity |
| EDL | Estimated Detection Limit |
| MDC | Minimum detectable concentration |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| ND | Not detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative error ratio |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

# Certification Summary

Client: Vinje & Middleton Engineering Inc
Project/Site: 13-118-H2

TestAmerica Job ID: 440-45387-1

## Laboratory: TestAmerica Irvine

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

| Authority | Program | EPA Region | Certification ID | Expiration Date |
|---|---|---|---|---|
| Alaska | State Program | 10 | CA01531 | 06-30-13 |
| Arizona | State Program | 9 | AZ0671 | 10-13-13 |
| California | LA Cty Sanitation Districts | 9 | 10256 | 01-31-14 |
| California | NELAP | 9 | 1108CA | 01-31-14 |
| California | State Program | 9 | 2706 | 06-30-14 |
| Guam | State Program | 9 | Cert. No. 12.002r | 03-28-13 * |
| Hawaii | State Program | 9 | N/A | 01-31-14 |
| Nevada | State Program | 9 | CA015312007A | 07-31-13 |
| Northern Mariana Islands | State Program | 9 | MP0002 | 01-31-14 |
| Oregon | NELAP | 10 | 4005 | 09-12-13 |
| USDA | Federal | | P330-09-00080 | 06-06-14 |
| USEPA UCMR | Federal | 1 | CA01531 | 01-31-15 |

* Expired certification is currently pending renewal and is considered valid.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

# CHAIN OF CUSTODY FORM

17461 Derian Ave., #100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

TAL-0018(1007)



Client Name/Address:
Vinje + Middleton Engineering Inc
2450 Auto Park Way
Escondido CA 92029

Project/PO Number:
13-118-H2

Project Manager:
B. Crawshaw

Phone Number:
(760) 743-1214

Sampler:
M. Aller

Fax Number:
(760) 739-0343

| Sample Description | Sample Matrix | Container Type | # of Cont. | Sampling Date | Sampling Time | Preservatives | Analysis Required: TEST, 8081A | Arsenic 6010 | Special Instructions |
|---|---|---|---|---|---|---|---|---|---|
| SS-1 | Soil | GL | 1 | 5-1-13 | 12:10 | — | X | | |
| SS-2 | | | | | 12:41 | — | X | | |
| SS-3 | | | | | 12:47 | — | X | | |
| SS-4 | | | | | 13:12 | — | X | | |
| SS-5 | | | | | 16:02 | — | X | | |
| SS-6 | | | | | 13:30 | — | X | | |
| SS-7 | | | | | 14:08 | — | X | | |
| SS-8 | | | | | 1436 | — | X | | |
| SS-9 | | | | | 1527 | — | X | | |
| SS-10 | | | | | 1502 | — | X | | |
| SS-11 | | | | | 1220 | — | | X | |
| SS-12 | | | | | 1302 | — | | X | |
| SS-13 | | | | | 1608 | — | | X | |
| SS-14 | | | | | 1400 | — | | X | |

Relinquished By: Valene Stenerodden Date/Time: 5/2/13 2:35 PM
Received By: Date/Time: 5/2/13 1435

Relinquished By: Date/Time: 5/2/13 1745
Received By: Date/Time:

Relinquished By: Date/Time:
Received in Lab By: Date/Time: 5/2/13 17:45

Turnaround Time: (Check)
same day ____ 72 hours ____
24 hours ____ 5 days ____
48 hours ____ normal X

Sample Integrity: (Check)
intact ✓ on ice ✓

8.7/2.4°C

Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

# CHAIN OF CUSTODY FORM

17461 Derian Ave., #100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

TAL-0013(1007)



Client Name/Address:
Vinje + Middleton Engineering Inc.
2450 Auto Park Way
Escondido, CA 92029

Project/PO Number:
13-118-H2

Project Manager:
B. Crawsham

Phone Number:
(760) 743-1214

Sampler:
M. Alles

Fax Number:
(760) 739-0343

| Sample Description | Sample Matrix | Container Type | # of Cont. | Sampling Date | Sampling Time | Preservatives | Analysis Required: Arsenic 6010 | TPH d+o 8015M | Mercury | Cyanide | Special Instructions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SS-15 | Soil | GL | 1 | 5-1-13 | 1538 | — | X | | | | |
| SS-16 | | | | | 1548 | — | X | | | | |
| SS-17 | | | | | 1418 | — | X | | | | |
| SS-18 | | | | | 1520 | — | X | | | | |
| SS-19 | | | | | 1442 | — | X | | | | |
| SS-20 | | | | | 1510 | — | X | | | | |
| SS-21 | | | | | 1200 | — | | X | | | Run highest TPH d/o |
| SS-22 | | | | | 1232 | — | | X | | | |
| SS-23 | | | | | 1353 | — | | X | | | For BTEX 8260 and PAH 8270C |
| SS-24 | | | | | 1427 | — | | X | | | |
| SS-25 | | | | | 1452 | — | | X | | | |
| SS-26 | | | | | | — | | | X | X | |
| SS-27 | | | | | | — | | | X | X | |
| SS-28 | | | | | | — | | | X | X | |

Relinquished By: Valerie Stenerodden Date/Time: 5/2/13 2:35 PM
Received By: [signature] Date/Time: 5/2/13 1735
Relinquished By: [signature] Date/Time: 5/2/13 1745
Received By: Date/Time:
Relinquished By: Date/Time:
Received in Lab By: Vin Band Date/Time: 5/2/13 12:45

Turnaround Time: (Check)
same day ____ 72 hours ____
24 hours ____ 5 days ____
48 hours ____ normal X

Sample Integrity: (Check)
intact ✓ on ice ✓

Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 30 days.

2.7/2.4 °C

# Login Sample Receipt Checklist

Client: Vinje & Middleton Engineering Inc

Job Number: 440-45387-1

**Login Number: 45387**
**List Number: 1**
**Creator: Perez, Angel**

**List Source: TestAmerica Irvine**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | N/A | |
| Sample custody seals, if present, are intact. | N/A | |
| The cooler or samples do not appear to have been compromised or tampered with. | N/A | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | M. Alles |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time. | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | N/A | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | N/A | |
| Multiphasic samples are not present. | N/A | |
| Samples do not require splitting or compositing. | N/A | |
| Residual Chlorine Checked. | N/A | |

# APPENDIX C

# REFERENCES


American Society for Testing and Materials ASTM Designation E1903-97; Standard Guide for Environmental Site Assessments: Phase II Process, 1997.

California Division of Mines and Geology, Geologic Map of the Escondido 7.5' Quadrangle, San Diego County, California, Siang S. Tan and Michael P. Kennedy, 1999.

California Environmental Protection Agency, San Diego Regional Water Quality Control Board, San Diego-Basin Plan, April 4, 2011.

California Environmental Protection Agency, Use of California Human Health Screening Levels (CHHSLs) In Evaluation of Contaminated Properties, January 2005.

Test America, Analytical Report, Job ID: 440-45387-1, May 16, 2013.

The Gold Mining Days of Escondido and San Diego County, Escondido Historical Society, Frank Lorey III, 2000.

Vinje & Middleton Engineering, Inc., Phase I Environmental Site Assessment, 661 Bear Valley Parkway, Escondido, California 92025; Assessors Parcel Numbers: 237-131-01 & -02, February 14, 2013.

# Appendix M-2 Limited Phase II ESA Addendum (March 2016)

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VINJE & MIDDLETON ENGINEERING, INC.

2450 Auto Park Way
Escondido, California 92029-1229

Phone (760) 743-1214
Fax (760) 739-0343

March 30, 2016

Spieth & Wohlford Inc.
PO Box 5005
Rancho Santa Fe, CA 92067

Re: Addendum to Limited Phase II Environmental Site Assessment
661 Bear Valley Road
County of San Diego Assessor's Parcel Numbers 237-131-01 and -02
Escondido, California 92025

To Whom It May Concern:

This letter serves as an addendum to the above referenced Limited Phase II Environmental Site Assessment report dated May 24, 2013 prepared by Vinje & Middleton Engineering, Inc. (VM). This addendum was prepared to address questions pertaining to the report provided in a letter from Harris & Associates dated March 7, 2016. The questions posed in the letter are presented below with responses in italicized font.

***Evaluation of Results***

Page 6, Paragraph 3. Please provide a specific citation for the referenced DTSC evaluation, including document title and date. Please clarify if the presence of arsenic in the "natural" background range has potential to result in health risks to future residents.

*The citation for the referenced document is as follows:*

*Determination of a Southern California Regional Background Arsenic Concentration in Soil, G. Chernoff, W. Bosan and D. Oudiz, California DTSC (no publication date).*

*The presence of arsenic in the "natural" background range does not have the potential to result in health risks to future residents at the site.*

***Limitations***

Page 9. The limitations state that the Phase II is recommended for use for only one year from the date of the report. As the Phase II was completed in 2013, it appears that an update is necessary.

*This was a statement made in error. The Phase II ESA does not require updating.*

We appreciate the opportunity to be of continued service to you on this project. If you should have any questions regarding this document, or if we can be of further assistance, please contact us at (760) 743-1214.

Sincerely,

***Vinje & Middleton Engineering, Inc.***

Ralph M. Vinje
Principal Engineer
RCE #25115

Daniel Weis
Associate Environmental Scientist

Attachment:

Harris & Associates Comment Letter

Harris & Associates

March 7, 2016

Ann Dolmage, Associate Planner
City of Escondido, Planning Division
201 North Broadway
Escondido, CA 92026

**Subject: EIR-Level Review of Limited Phase II Environmental Site Assessment, 661 Bear Valley Parkway, Escondido, CA, Assessor's Parcel No. 237-131-01 & -02.**

Dear Ms. Dolmage:

The following presents the results of Harris & Associates' (Harris) review of the Limited Phase II Environmental Site Assessment (ESA) prepared by Vinje & Middleton Engineering, Inc., dated May 24, 2013. Harris reviewed the report for project description consistency with the draft Tentative Map submitted on September 14, 2015; apparent discrepancies in reported data; and adequate analysis of all applicable California Environmental Quality Act (CEQA) Appendix G issues, including identification of a significance threshold, a significance conclusion, evidence to support the conclusion, and mitigation measures, if necessary. Harris did not perform a technical peer-review of the report. As such, comments do not reflect a full quality control review and Harris did not independently confirm any report results or methodology. Harris respectfully requests a response to following questions and comments for preparation of the hazards and hazardous materials analysis of the 661 Bear Valley Parkway Residential Project Environmental Impact Report (EIR).

**Evaluation of Results**

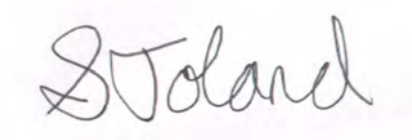
1. **Page 6, Paragraph 3.** Please provide a specific citation for the referenced DTSC evaluation, including document title and date. Please clarify if the presence of arsenic in the "natural background range" has potential to result in health risks to future residents.

**Limitations**

2. **Page 9.** The limitations state that the Phase II is recommended for use for only one year from the date of the report. As the Phase II was completed in 2013, it appears that an update is necessary.

Should you have any questions regarding this review, please contact me at 619.236.1778, ext. 2528 or Sharon.Toland@weareharris.com.

Sincerely,
**Harris & Associates**



Sharon Toland
Project Manager

# Appendix N Report of Soil Removal Action (July 2015)

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VINJE & MIDDLETON ENGINEERING, INC.

2450 Auto Park Way
Escondido, California 92029-1229

Phone (760) 743-1214
Fax (760) 739-0343

July 21, 2015

Spieth & Wohlford Inc.
PO Box 5005
Rancho Santa Fe, CA 92067

Re: Report of Soil Removal Action
661 Bear Valley Road
Escondido, California

To Whom It May Concern:

Vinje & Middleton Engineering, Inc. (VM) has conducted soil sampling and analysis and oversight of a soil removal action at the property located at 661 Bear Valley Road in Escondido, California (Site). The Site consists of one legal parcel identified as San Diego County Assessor's Parcel Numbers (APN) 237-131-01-00. The Site is situated generally along the east side of Bear Valley Road, and south of the intersection of Bear Valley Road and Choya Canyon Road. A Site Plan is included as Figure 1. The work described herein has been completed as part of project approvals for the planned Site development and it is our understanding that this report will be provided to the City of Escondido for its review.

## METHODOLOGY

VM collected and analyzed multiple samples of what appeared to be undocumented fill material from an area along the northeastern edge of the Site. Based on the results of the soil sampling effort, an area of lead impacted soil was identified and was subsequently removed from the Site. The scope of work is presented below.

- All equipment used during the sampling events was inspected, pre-cleaned and decontaminated.

- Sampling personnel reviewed the sampling protocols. In addition, health and safety protocols were reviewed and a project health and safety plan was signed by all field personnel.

- On April 9, 2015, an initial two soil borings were advanced using a hand auger (identified as B1 and B2) to a depth of eighteen inches below existing grades in an area of debris laden fill material at the Site. VM field personnel placed the soil samples in to analytical laboratory provided four ounce glass jars. Soil samples were then placed on ice at the time of collection and during delivery to the analytical laboratory. The samples were analyzed for total petroleum hydrocarbons (TPH) in the gasoline, diesel and oil ranges by United States Environmental Agency (EPA) test Method 8015B by Baseline On-Site Analysis, a

State-certified environmental laboratory located in Huntington Beach, California. The samples were also analyzed for organochlorine pesticides (OCPs) by United States EPA test Method 8081A, Title 22 Metals by United States EPA test methods 6010B/7000CAM, and SVOCs by United States EPA test method 8270C by American Environmental Testing Laboratory Inc., a State-certified environmental laboratory located in Burbank, California.

- On May 7, 2015, an additional fifteen soil borings (identified as B3 through B17) were advanced by hand auger to depths of eighteen inches below existing grades and sampled. The fifteen soil samples were analyzed for total lead by United States EPA test method 6010B.

- Based on the results of the sampling events described above, an area of lead impacted soil was delineated (approximately 15-feet long x 5-feet wide) and removed from the face of the slope of fill material on June 12, 2015. The material was then stockpiled on-Site pending waste characterization. Upon removal, four confirmation soil samples identified as B18 through B21 were obtained from the soil removal action area and analyzed for total lead. Four stockpile soil samples identified as S1 through S4 were obtained and analyzed for total lead, soluble lead, TPH and/or Title 22 Metals.

- The stockpiled material was covered with plastic sheeting pending removal from the Site. A total of 15.73 tons (approximately 10 cubic yards) of lead impacted soil was transported to Philadelphia Recycling Mine in Mira Loma, California on July 6, 2015 for disposal as a non-hazardous waste.

## ANALYTICAL RESULTS

A summary of the analytical laboratory data generated during the sampling and soil removal work is included as Table 1 of this report and is discussed by analyte below. The analytical laboratory reports and chain of custody documentation are also included as attachments to this report.

### *TPH*

TPH were not detected at or above analytical laboratory reporting limits in any of the soil samples analyzed for such constituents.

### *OCPs*

OCPs were detected at or above analytical laboratory reporting limits in one of the two initial soil samples analyzed for such constituents (B1 and B2). Sample B2 had reported concentrations of OCPs of 37.5 µg/kg (4,4'-DDE), 24.6 µg/kg (4,4'-DDT) 15.0 µg/kg (Chlordane). These concentrations are well below State of California and United States EPA screening levels for residential soil and were therefore eliminated as contaminants of concern at the Site.

***Semi-volatile Organic Compounds (SVOCs)***

Various SVOCs were detected at or above analytical laboratory reporting limits in one of the two initial soil samples analyzed for such constituents (B1 and B2). Sample B1 had reported concentrations of SVOCs of 1.23 mg/kg (Benzo(a)anthracene), 1.09 mg/kg Benzo(a)pyrene, 1.13 mg/kg (Benzo(b)fluoranthene), 0.646 mg/kg (Benzo(g,h,i)perylene), 1.12 mg/kg (Benzo(k)fluoranthene), 1.40 mg/kg (Chrysene), 2.16 mg/kg (Fluoranthene), 0.591 mg/kg (Indeno(1,2,3-cd)pyrene), 1.02 mg/kg (Phenanthrene) and 2.24 mg/kg (Pyrene). Such concentrations were considered to be minor relative to waste profiling related activities and such soil was subsequently removed from the Site.

***Total Lead***

The total lead concentration in sample B1 was considered to be elevated above 80 mg/kg (residential screening level). This resulted in the analysis of additional samples of the undocumented fill material for this element (samples B3 through B17). Of these 15 additional soil samples, only one (B4) contained lead above 80 mg/kg. The remaining samples exhibited total lead concentrations ranging from 7.60 mg/kg to 39.1 mg/kg, which are below the residential screening levels of 80 mg/kg. Upon the scraping, removal and off-Site disposal of the 15.73 tons of lead impacted soil from the Site, four confirmation soil samples were obtained from the newly resultant slope face in the area of the soil removal action. The confirmation soil samples (B18 through B21) exhibited lead concentrations ranging from 10.8 mg/kg to 13.1 mg/kg which are below the residential screening level of 80 mg/kg.

***Other Title 22 Metals***

Additional metals detected in the soil samples analyzed for such constituents did not exceed residential screening levels. As such, other metals were eliminated as contaminants of concern at the Site.

## CONCLUSIONS AND RECOMMENDATIONS

Our conclusions and recommendations are as follows:

- The soil sampling and analysis completed at the Site allowed VM to delineate an area of impacted soil containing lead that was subsequently removed from the Site.

- A total of 15.73 tons (approximately 10 cubic yards) of lead impacted soil was transported to Philadelphia Recycling Mine in Mira Loma, California on July 6, 2015 for disposal as a non-hazardous waste.

- Confirmation soil samples revealed total lead concentrations below the residential screening level.

- No other contaminants of concern were identified at the Site.

- No further assessment or soil removal actions at the Site are considered to be warranted.

## CLOSURE

We appreciate the opportunity to be of service to you on this project. If you should have any questions regarding this report, or if we can be of further assistance, please contact us at (760) 743-1214.

Sincerely,

***Vinje & Middleton Engineering, Inc.***

Ralph M. Vinje
Principal Engineer
RCE #25115

Daniel Weis
Associate Environmental Scientist

Attachments:

Figure 1 Site Plan
Table 1 Summary of Soil Analytical Results
Analytical Laboratory Reports and Chain of Custody Documentation
Waste Manifests

| | |
|---|---|
| Vinje & Middleton Engineering, Inc.<br>2450 Auto Park Way<br>Escondido, California 92029 | Site Plan<br>661 Bear Valley Parkway<br>Escondido, California |

**TABLE 1 - Summary of Soil Analytical Results**
**661 Bear Valley Road, Escondido, California**

| Sample ID: | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | B10 | B11 | B12 | B13 | B14 | B15 | B16 | B17 | B18 | B19 | B20 | B21 | S1 | S2 | S3 | S4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Petroleum Hydrocarbons (TPH) (milligrams per kilogram)** | | | | | | | | | | | | | | | | | | | | | | | | | |
| TPH-gas | ND | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | ND | ND | ND | ND |
| TPH-diesel | ND | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | ND | ND | ND | ND |
| TPH-oil | ND | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | ND | ND | ND | ND |
| **Organochlorine Pesticides (OCPs) (micrograms per kilogram)** | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4,4'DDE (DDE) | ND | **37.5** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 4,4'-DDT (DDT) | ND | **24.6** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Chlordane (alpha) | ND | **6.52** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Chlordane (gamma) | ND | **8.44** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Chlordane (total) | ND | **15** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **Metals (milligrams per kilogram)** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Antimony | ND | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | ND | -- | ND |
| Arsenic | ND | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | ND | -- | ND |
| Barium | **160** | **89.9** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **119** | -- | **94.7** |
| Beryllium | ND | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | ND | -- | ND |
| Cadmium | ND | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | ND | -- | ND |
| Chromium | **19.0** | **13.3** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **15.1** | -- | **14.4** |
| Cobalt | **11.0** | **8.52** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **9.44** | -- | **9.65** |
| Copper | **20.8** | **22.1** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **22.3** | -- | **23.3** |
| Lead | **82.9** | **14.4** | **11.4** | **125** | **39.1** | **7.60** | **20.7** | **16** | **11.8** | **15.5** | **13.8** | **11.8** | **16.2** | **9.92** | **10.1** | **9.76** | **13.9** | **13.1** | **11.7** | **11.4** | **10.8** | **94.9** | **42.8** | **28.6** | **27.3** |
| Mercury (By EPA 7471) | ND | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **0.159** | -- | **0.207** |
| Molybdenum | ND | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | ND | -- | ND |
| Nickel | **5.75** | **5.09** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **4.94** | -- | **4.36** |
| Selenium | ND | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | ND | -- | ND |
| Silver | ND | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | ND | -- | ND |
| Thallium | ND | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | ND | -- | ND |
| Vanadium | **59.3** | **54.2** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **53.2** | -- | **63.4** |
| Zinc | **398** | **63.7** | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | **137** | -- | **82.1** |
| **Semi Volatile Organic Compounds (SVOCs) (milligrams per kilogram)** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Benzo(a)anthracene | **1.23** | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzo(a)pyrene | **1.09** | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzo(b)fluoranthene | **1.13** | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzo(g,h,i)perylene | **0.646** | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Benzo(k)fluoranthene | **1.12** | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Chrysene | **1.40** | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Fluoranthene | **2.16** | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Indeno(1,2,3-cd)pyrene | **0.591** | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Phenanthrene | **1.02** | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Pyrene | **2.24** | ND | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

ND = not detected at or above the laboratory method reporting limit

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# Laboratory Report

**Client:** Advantage Environmental Consultants, LLC
**Client Address:** 145 Vallecitos De Oro, Suite 201
San Marcos, California 92069

**Project Name:** 661 Bear Valley Parkway
**Project Address:** 661 Bear Valley Parkway
Escondido, California
**Contact:** Dan Weis

**Report Date:** 4/15/15
**Lab Project Number:** 15222
**Client Project Number:** 15-062SD

**Date(s) Sampled:** 4/9/15
**Date(s) Received:** 4/9/15
**Date(s) Analyzed:** 4/15/15
**Sample Matrix:** Soil

---

**Analyses Requested:**

1. **EPA 8015B – Total Petroleum Hydrocarbons as Gasoline (TPH-G)**
2. **EPA 8015B – Total Petroleum Hydrocarbons as Diesel (TPH-D)**
3. **EPA 8015B – Total Petroleum Hydrocarbons as Waste Oil (TPH-WO)**

*Baseline* received samples collected from the project shown above. A Chain-of-Custody Record (COC) is attached.

The samples were analyzed for the parameters shown above per the COC. In this report, *Baseline* presents the results and a QA/QC summary for this analysis.

Brian K. Kato

Approved
Brian K. Kato, Laboratory Manager

Baseline On-Site Analysis
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Huntington Beach, CA 92647
Toll Free: 888.753.7553
FAX: 714.840.1584

# Laboratory Report

**Client:** Advantage Environmental Consultants, LLC
**Client Address:** 145 Vallecitos De Oro, Suite 201
San Marcos, California 92069

**Project Name:** 661 Bear Valley Parkway
**Project Address:** 661 Bear Valley Parkway
Escondido, California
**Contact:** Dan Weis

**Report Date:** 4/15/15
**Lab Project Number:** 15222
**Client Project Number:** 15-062SD

**Date(s) Sampled:** 4/9/15
**Date(s) Received:** 4/9/15
**Date(s) Analyzed:** 4/15/15
**Sample Matrix:** Soil

---

*Total Petroleum Hydrocarbons as Gasoline (TPH-G), Diesel (TPH-D), and Waste Oil (TPH-WO) Results*

| Constituent: | TPH-G | TPH-D | TPH-WO |
|---|---|---|---|
| Method: | 8015B | 8015B | 8015B |
| Carbon Range: | C4-C12 | C10-C28 | C6-C36 |
| Units: | mg/kg | mg/kg | mg/kg |
| Sample ID | | | |
| B1 | ND<10 | ND<10 | ND<10 |
| B2 | ND<10 | ND<10 | ND<10 |
| | | | |
| Method Blank | ND<10 | ND<10 | ND<10 |

TPH-G: Total Petroleum Hydrocarbons as Gasoline
TPH-D: Total Petroleum Hydrocarbons as Diesel
TPH-WO: Total Petroleum Hydrocarbons as Waste Oil
ND: Not detected at the indicated Method Detection Limit (MDL)

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# Laboratory Report

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**Client Address:** 145 Vallecitos De Oro, Suite 201
San Marcos, California 92069

**Project Name:** 661 Bear Valley Parkway
**Project Address:** 661 Bear Valley Parkway
Escondido, California
**Contact:** Dan Weis

**Report Date:** 4/15/15
**Lab Project Number:** 15222
**Client Project Number:** 15-062SD

**Date(s) Sampled:** 4/9/15
**Date(s) Received:** 4/9/15
**Date(s) Analyzed:** 4/15/15
**Sample Matrix:** Soil

## Quality Control Summary

| Analytes | MS Recovery (%) | MSD Recovery (%) | RPD (%) | QC Sample |
|---|---|---|---|---|
| | | | | |
| *8015B* | | | | |
| TPH-C6-C36 | 90 | 95 | 5 | B1 |
| | | | | |
| Acceptable QC Limits: | (65-135) | (65-135) | (0-30) | |

MS: Matrix Spike; MSD: Matrix Spike Duplicate; RPD: Relative Percent Difference
LCS/LCSD: Lab Control Sample/Duplicate

| Client Name | Project Name | | | Requested Analyses | | | | | | CHAIN-OF-CUSTODY RECORD |
|---|---|---|---|---|---|---|---|---|---|---|
| AEC | 661 Bear Valley Parkway | | | | | | | | | |
| Client Address | Project Address | | | | | | | | | Page 1 of 1 |
| 145 Vallecitos De Oro, Ste. 221 | 661 Bear Valley Parkway | | | | | | | | | |
| San Marcos, CA 92069 | Escondido, CA | | | | | | | | | Laboratory Project #: |
| Phone: 760 744 3363 FAX: -3343 | Project Number 15-06254 | | | | | | | | | 15222 |
| Contact: Dan Wells | | | | | | | | | | |
| Sample ID | Sampling Date | Sampling Time | Lab ID | Soil (S), Water (W), Vapor (V) | Number of Containers | TPH (8015) | | | | Comments |
| B1 | 4/9/15 | 0915 | | S | 1 | X | | | | |
| B2 | 4/9/15 | 0925 | | S | 1 | X | | | | |

| 1. Relinquished by | 2. Received by | Turnaround Time: Normal |
|---|---|---|
| Signature: X | Signature: X | Special Instructions/Notes: |
| Date/Time: 4/9/15 1400 | Date/Time: 4/9/15; 1400 | |
| 3. Relinquished by | 4. Received by | Sample Condition: Sealed? Y / N |
| Signature: X | Signature: X | Chilled? Y / N |
| Date/Time: | Date/Time: | |

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# Laboratory Report

**Client:** Advantage Environmental Consultants, LLC
**Client Address:** 145 Vallecitos De Oro, Suite 201
San Marcos, California 92069

**Project Name:** 661 Bear Valley Parkway
**Project Address:** 661 Bear Valley Parkway
Escondido, California
**Contact:** Dan Weis

**Report Date:** 6/23/15
**Lab Project Number:** 15278
**Client Project Number:** 15-062SD

**Date(s) Sampled:** 6/12/15
**Date(s) Received:** 6/12/15
**Date(s) Analyzed:** 6/20/15
**Sample Matrix:** Soil

---

**Analyses Requested:**

1. **EPA 8015B – Total Petroleum Hydrocarbons as Gasoline (TPH-G)**
2. **EPA 8015B – Total Petroleum Hydrocarbons as Diesel (TPH-D)**
3. **EPA 8015B – Total Petroleum Hydrocarbons as Waste Oil (TPH-WO)**

*Baseline* received a sample collected from the project shown above. A Chain-of-Custody Record (COC) is attached.

The sample was analyzed for the parameters shown above per the COC. In this report, *Baseline* presents the results and a QA/QC summary for this analysis.

Brian K. Kato

Approved
Brian K. Kato, Laboratory Manager

Baseline Analytical Services
P. O. Box 2243
Huntington Beach, CA 92647

# Laboratory Report

**Client:** Advantage Environmental Consultants, LLC
**Client Address:** 145 Vallecitos De Oro, Suite 201
San Marcos, California 92069

**Project Name:** 661 Bear Valley Parkway
**Project Address:** 661 Bear Valley Parkway
Escondido, California
**Contact:** Dan Weis

**Report Date:** 6/23/15
**Lab Project Number:** 15278
**Client Project Number:** 15-062SD

**Date(s) Sampled:** 6/12/15
**Date(s) Received:** 6/12/15
**Date(s) Analyzed:** 6/20/15
**Sample Matrix:** Soil

*Total Petroleum Hydrocarbons as Gasoline (TPH-G), Diesel (TPH-D), and Waste Oil (TPH-WO) Results*

| Constituent: | TPH-G | TPH-D | TPH-WO |
|---|---|---|---|
| Method: | 8015B | 8015B | 8015B |
| Carbon Range: | C4-C12 | C10-C28 | C15-C44+ |
| Units: | mg/kg | mg/kg | mg/kg |
| Sample ID | | | |
| S1 | ND<10 | ND<10 | ND<10 |
| S2 | ND<10 | ND<10 | ND<10 |
| S3 | ND<10 | ND<10 | ND<10 |
| S4 | ND<10 | ND<10 | ND<10 |
| | | | |
| Method Blank | ND<10 | ND<10 | ND<10 |

TPH-G: Total Petroleum Hydrocarbons as Gasoline
TPH-D: Total Petroleum Hydrocarbons as Diesel
TPH-WO: Total Petroleum Hydrocarbons as Waste Oil
ND: Not detected at the indicated Method Detection Limit (MDL)

*Baseline Analytical Services*
P, O. Box 2243
Huntington Beach, CA 92647

# Laboratory Report

**Client:** Advantage Environmental Consultants, LLC
**Client Address:** 145 Vallecitos De Oro, Suite 201
San Marcos, California 92069

**Project Name:** 661 Bear Valley Parkway
**Project Address:** 661 Bear Valley Parkway
Escondido, California
**Contact:** Dan Weis

**Report Date:** 6/23/15
**Lab Project Number:** 15278
**Client Project Number:** 15-062SD

**Date(s) Sampled:** 6/12/15
**Date(s) Received:** 6/12/15
**Date(s) Analyzed:** 6/20/15
**Sample Matrix:** Soil

## Quality Control Summary

| Analytes | MS Recovery (%) | MSD Recovery (%) | RPD (%) | QC Sample |
|---|---|---|---|---|
| | | | | |
| *8015B* | | | | |
| TPH-C6-C44 | 93 | 90 | 3 | LCS/LCSD |
| | | | | |
| Acceptable QC Limits: | (65-135) | (65-135) | (0-30) | |

MS: Matrix Spike; MSD: Matrix Spike Duplicate; RPD: Relative Percent Difference
LCS/LCSD: Lab Control Sample/Duplicate

| Client Name | Project Name |
|---|---|
| AEC | 661 Bear Valley Pkwy |
| Client Address | Project Address |
| 145 Vallecitos De Oro, Ste. 201 | 661 Bear Valley Pkwy |
| San Marcos, CA 92069 | Escondido, CA |
| Phone: 760 744 3363 FAX: -3583 | Project Number 15-06250 |
| Contact: Dan Wells | |

**CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

Laboratory Project #: 15278

| Sample ID | Sampling Date | Sampling Time | Lab ID | Soil (S), Water (W), Vapor (V) | Number of Containers | Requested Analyses: TPH gas | Comments |
|---|---|---|---|---|---|---|---|
| S1 | 6/12/15 | | | S | 1 | X | |
| S2 | | | | | | X | |
| S3 | | | | | | X | |
| S4 | | | | | | X | |

| 1. Relinquished by | 2. Received by | Turnaround Time: Normal |
|---|---|---|
| Signature: X | Signature: X | Special Instructions/Notes: |
| Date/Time: 6/12/15 1000 | Date/Time: 6/12/15 1000 | |
| **3. Relinquished by** | **4. Received by** | |
| Signature: X | Signature: X | Sample Condition: Sealed? Y / N |
| Date/Time: | Date/Time: | Chilled? Y / N |

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2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

**Ordered By**

**Advantage Environmental Consultants**
**145 Vallecitos De Oro Suite 201**
**San Marcos, CA 92069-**

**Telephone: (760)744-3363**
**Attention: Dan Weis**

**Number of Pages 17**
**Date Received 04/09/2015**
**Date Reported 04/17/2015**

| Job Number | Order Date | Client |
|---|---|---|
| 76570 | 04/09/2015 | AEC |

**Project ID:** 15-062SD
**Project Name:** 661 Bear Valley Parkway
**Site:** Escondido, CA

Enclosed please find results of analyses of 2 soil samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

# American Environmental Testing Laboratory Inc.

2834 & 2908 North Naomi Street, Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

# CHAIN OF CUSTODY RECORD

№ 90876

AETL JOB No. 76570

Page 1 of 1

| | |
|---|---|
| COMPANY AEC | PROJECT MANAGER Don West |
| COMPANY ADDRESS 145 Vallecitos De Oro, Ste. 221, San Marcos, CA 92069 | PHONE 760 744 3363 / FAX 3343 |
| PROJECT NAME 661 Bear Valley Parkway | PROJECT # 15-06251 |
| SITE NAME AND ADDRESS Escondido, CA ~~92025~~ | PO # |

| | SAMPLE ID | LAB ID | DATE | TIME | MATRIX | CONTAINER NUMBER/SIZE | PRES. | OCPs (8081A) | Title 22 metals (6010B) | SVOCs (8270C) | TEST INSTRUCTIONS & COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | B1 | 76570-01 | 4/9/15 | 0915 | soil | 4oz jar | ice | X | X | X | |
| 2 | B2 | 76570-02 | 4/9/15 | 0925 | soil | L | L | X | X | X | |
| 3 | | | | | | | | | | | |
| 4 | | | | | | | | | | | |
| 5 | | | | | | | | | | | |
| 6 | | | | | | | | | | | |
| 7 | | | | | | | | | | | |
| 8 | | | | | | | | | | | |
| 9 | | | | | | | | | | | |
| 10 | | | | | | | | | | | |
| 11 | | | | | | | | | | | |
| 12 | | | | | | | | | | | |
| 13 | | | | | | | | | | | |
| 14 | | | | | | | | | | | |
| 15 | | | | | | | | | | | |

ANALYSIS REQUESTED

## SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

| | | | |
|---|---|---|---|
| TOTAL NUMBER OF CONTAINERS | 2 | PROPERLY COOLED (Y) / N / NA | |
| CUSTODY SEALS Y / (N) / NA | | SAMPLES INTACT (Y) / N / NA | |
| RECEIVED IN GOOD COND (Y) / N | | SAMPLES ACCEPTED (Y) / N | |

**TURN AROUND TIME**

(X) NORMAL ( ) RUSH ( ) SAME DAY ( ) NEXT DAY ( ) 2 DAYS ( ) 3 DAYS

**DATA DELIVERABLE REQUIRED**

( ) HARD COPY
(X) PDF
( ) GEOTRACKER (GLOBAL ID) _____
( ) OTHER (PLEASE SPECIFY) _____

| | RELINQUISHED BY SAMPLER: 1. | RELINQUISHED BY: 2. | RELINQUISHED BY: 3. |
|---|---|---|---|
| Signature: | | | |
| Printed Name: | Keith Sy | | Thomas Robinson |
| Date / Time: | 4/9/15 1010 | | 4-9-15 1330 |

| | RECEIVED BY: 1. | RECEIVED BY: 2. | RECEIVED BY LABORATORY: 3. |
|---|---|---|---|
| Signature: | | | |
| Printed Name: | Thomas Robinson | | Arin |
| Date / Time: | 4-9-15 1010 | | 04/09/15 1330 |

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

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**Ordered By**

Advantage Environmental Consultants
145 Vallecitos De Oro Suite 201
San Marcos, CA 92069-

Telephone: (760)744-3363
Attention: Dan Weis

Project ID: 15-062SD
Date Received 04/09/2015
Date Reported 04/17/2015

| Job Number | Order Date | Client |
|---|---|---|
| 76570 | 04/09/2015 | AEC |

## CERTIFICATE OF ANALYSIS
### CASE NARRATIVE

AETL received 2 samples with the following specification on 04/09/2015.

| Lab ID | Sample ID | Sample Date | Matrix | Quantity Of Containers |
|---|---|---|---|---|
| 76570.01 | B1 | 04/09/2015 | Soil | 1 |
| 76570.02 | B2 | 04/09/2015 | Soil | 1 |

| Method ^ Submethod | Req Date | Priority | TAT | Units |
|---|---|---|---|---|
| (6010B/7000CAM) | 04/16/2015 | 2 | Normal | mg/Kg |
| (8081A) | 04/16/2015 | 2 | Normal | ug/Kg |
| (8270C) | 04/16/2015 | 2 | Normal | mg/Kg |

The samples were analyzed as specified on the enclosed chain of custody. Analytical non-conformances have been noted on the report.

Unless otherwise noted, all results of soil and solid samples are based on wet weight.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

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## ANALYTICAL RESULTS

**Ordered By**

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Telephone: (760)744-3363
Attn: Dan Weis

**Site**

Escondido, CA

Page: **2**

Project ID: 15-062SD
Project Name: 661 Bear Valley Parkway

| AETL Job Number | Submitted | Client |
|---|---|---|
| 76570 | 04/09/2015 | AEC |

## Method: (8081A), Organochlorine Pesticides by GC

**QC Batch No: 041415MB1**

| Our Lab I.D. | | | Method Blank | 76570.01 | | | |
|---|---|---|---|---|---|---|---|
| Client Sample I.D. | | | | B1 | | | |
| Date Sampled | | | | 04/09/2015 | | | |
| Date Prepared | | | 04/14/2015 | 04/14/2015 | | | |
| Preparation Method | | | 3550B | 3550B | | | |
| Date Analyzed | | | 04/14/2015 | 04/14/2015 | | | |
| Matrix | | | Soil | Soil | | | |
| Units | | | ug/Kg | ug/Kg | | | |
| Dilution Factor | | | 1 | 1 | | | |
| **Analytes** | **MDL** | **PQL** | **Results** | **Results** | | | |
| Aldrin | 1.0 | 2.0 | ND | ND | | | |
| Chlordane (Total) | 1.0 | 2.0 | ND | ND | | | |
| Chlordane (alpha) | 1.0 | 2.0 | ND | ND | | | |
| 4,4'-DDD (DDD) | 1.0 | 2.0 | ND | ND | | | |
| 4,4'-DDE (DDE) | 1.0 | 2.0 | ND | ND | | | |
| 4,4'-DDT (DDT) | 1.0 | 2.0 | ND | ND | | | |
| Dieldrin | 1.0 | 2.0 | ND | ND | | | |
| Endosulfan 1 | 1.0 | 2.0 | ND | ND | | | |
| Endosulfan 11 | 1.0 | 2.0 | ND | ND | | | |
| Endosulfan sulfate | 1.0 | 2.0 | ND | ND | | | |
| Endrin | 1.0 | 2.0 | ND | ND | | | |
| Endrin aldehyde | 1.0 | 2.0 | ND | ND | | | |
| Endrin ketone | 1.0 | 2.0 | ND | ND | | | |
| Chlordane (gamma) | 1.0 | 2.0 | ND | ND | | | |
| Heptachlor | 1.0 | 2.0 | ND | ND | | | |
| Heptachlor epoxide | 1.0 | 2.0 | ND | ND | | | |
| alpha-Hexachlorocyclohexane (Alpha-BHC) | 1.0 | 2.0 | ND | ND | | | |
| beta-Hexachlorocyclohexane (Betta-BHC) | 1.0 | 2.0 | ND | ND | | | |
| delta-Hexachlorocyclohexane (Delta-BHC) | 1.0 | 2.0 | ND | ND | | | |
| gamma-Hexachlorocyclohexane (Gamma-BHC, Lindane) | 1.0 | 2.0 | ND | ND | | | |
| Methoxychlor | 5.0 | 10.0 | ND | ND | | | |
| Toxaphene | 85.0 | 170.0 | ND | ND | | | |

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# ANALYTICAL RESULTS



Project ID: 15-062SD
Project Name: 661 Bear Valley Parkway

| AETL Job Number | Submitted | Client |
|---|---|---|
| 76570 | 04/09/2015 | AEC |

## Method: (8081A), Organochlorine Pesticides by GC

| Our Lab I.D. | | | Method Blank | 76570.01 | | | |
|---|---|---|---|---|---|---|---|
| Surrogates | %Rec.Limit | | % Rec. | % Rec. | | | |
| Decachlorobiphenyl | 30-150 | | 81.6 | 97.4 | | | |
| Tetrachloro-m-xylene | 30-150 | | 106 | 97.2 | | | |

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# ANALYTICAL RESULTS

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Telephone: (760)744-3363
Attn: Dan Weis

**Site**

Escondido, CA

Page: **4**

Project ID: 15-062SD
Project Name: 661 Bear Valley Parkway

| AETL Job Number | Submitted | Client |
|---|---|---|
| 76570 | 04/09/2015 | AEC |

## Method: (8081A), Organochlorine Pesticides by GC

**QC Batch No: 041415MB1**

| Our Lab I.D. | | | 76570.02 | | | | |
|---|---|---|---|---|---|---|---|
| Client Sample I.D. | | | B2 | | | | |
| Date Sampled | | | 04/09/2015 | | | | |
| Date Prepared | | | 04/14/2015 | | | | |
| Preparation Method | | | 3550B | | | | |
| Date Analyzed | | | 04/14/2015 | | | | |
| Matrix | | | Soil | | | | |
| Units | | | ug/Kg | | | | |
| Dilution Factor | | | 2 | | | | |
| **Analytes** | **MDL** | **PQL** | **Results** | | | | |
| Aldrin | 2.0 | 4.0 | ND | | | | |
| Chlordane (Total) | 2.0 | 4.0 | 15.0 | | | | |
| Chlordane (alpha) | 2.0 | 4.0 | 6.52 | | | | |
| 4,4'-DDD (DDD) | 2.0 | 4.0 | ND | | | | |
| 4,4'-DDE (DDE) | 2.0 | 4.0 | 37.5 | | | | |
| 4,4'-DDT (DDT) | 2.0 | 4.0 | 24.6 | | | | |
| Dieldrin | 2.0 | 4.0 | ND | | | | |
| Endosulfan 1 | 2.0 | 4.0 | ND | | | | |
| Endosulfan 11 | 2.0 | 4.0 | ND | | | | |
| Endosulfan sulfate | 2.0 | 4.0 | ND | | | | |
| Endrin | 2.0 | 4.0 | ND | | | | |
| Endrin aldehyde | 2.0 | 4.0 | ND | | | | |
| Endrin ketone | 2.0 | 4.0 | ND | | | | |
| Chlordane (gamma) | 2.0 | 4.0 | 8.44 | | | | |
| Heptachlor | 2.0 | 4.0 | ND | | | | |
| Heptachlor epoxide | 2.0 | 4.0 | ND | | | | |
| alpha-Hexachlorocyclohexane (Alpha-BHC) | 2.0 | 4.0 | ND | | | | |
| beta-Hexachlorocyclohexane (Betta-BHC) | 2.0 | 4.0 | ND | | | | |
| delta-Hexachlorocyclohexane (Delta-BHC) | 2.0 | 4.0 | ND | | | | |
| gamma-Hexachlorocyclohexane (Gamma-BHC, Lindane) | 2.0 | 4.0 | ND | | | | |
| Methoxychlor | 10 | 20 | ND | | | | |
| Toxaphene | 170 | 340 | ND | | | | |

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# ANALYTICAL RESULTS



Project ID: 15-062SD
Project Name: 661 Bear Valley Parkway

| AETL Job Number | Submitted | Client |
|---|---|---|
| 76570 | 04/09/2015 | AEC |

## Method: (8081A), Organochlorine Pesticides by GC

| Our Lab I.D. | | | 76570.02 | | | | |
|---|---|---|---|---|---|---|---|
| Surrogates | %Rec.Limit | | % Rec. | | | | |
| Decachlorobiphenyl | 30-150 | | 92.0 | | | | |
| Tetrachloro-m-xylene | 30-150 | | 87.0 | | | | |

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Attn: Dan Weis
Page: 6

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Escondido, CA

Project ID: 15-062SD
Project Name: 661 Bear Valley Parkway

| AETL Job Number | Submitted | Client |
|---|---|---|
| 76570 | 04/09/2015 | AEC |

## Method: (8270C), Semivolatile Organic Compounds by GC/MS (SW-846)

**QC Batch No: 041315JB1**

| Our Lab I.D. | | | Method Blank | 76570.01 | | | |
|---|---|---|---|---|---|---|---|
| Client Sample I.D. | | | | B1 | | | |
| Date Sampled | | | | 04/09/2015 | | | |
| Date Prepared | | | 04/13/2015 | 04/13/2015 | | | |
| Preparation Method | | | 3550B | 3550B | | | |
| Date Analyzed | | | 04/15/2015 | 04/16/2015 | | | |
| Matrix | | | Soil | Soil | | | |
| Units | | | mg/Kg | mg/Kg | | | |
| Dilution Factor | | | 1 | 1 | | | |
| **Analytes** | **MDL** | **PQL** | **Results** | **Results** | | | |
| Acenaphthene | 0.25 | 0.50 | ND | ND | | | |
| Acenaphthylene | 0.25 | 0.50 | ND | ND | | | |
| Anthracene | 0.25 | 0.50 | ND | ND | | | |
| Azobenzene | 0.25 | 0.50 | ND | ND | | | |
| Benzidine | 0.25 | 0.50 | ND | ND | | | |
| Benzo(a)anthracene | 0.25 | 0.50 | ND | 1.23 | | | |
| Benzo(a)pyrene | 0.25 | 0.50 | ND | 1.09 | | | |
| Benzo(b)fluoranthene | 0.25 | 0.50 | ND | 1.13 | | | |
| Benzo(g,h,i)perylene | 0.25 | 0.50 | ND | 0.646 | | | |
| Benzo(k)fluoranthene | 0.25 | 0.50 | ND | 1.12 | | | |
| Benzoic Acid | 0.25 | 0.50 | ND | ND | | | |
| Benzyl Alcohol | 0.25 | 0.50 | ND | ND | | | |
| Bis(2-Chloroethoxy)methane | 0.25 | 0.50 | ND | ND | | | |
| Bis(2-Chloroethyl)ether | 0.25 | 0.50 | ND | ND | | | |
| Bis(2-chloroisopropyl) ether | 0.25 | 0.50 | ND | ND | | | |
| Bis(2-ethylhexyl) phthalate | 0.25 | 0.50 | ND | ND | | | |
| 4-Bromophenyl phenyl ether | 0.25 | 0.50 | ND | ND | | | |
| Butyl benzyl phthalate | 0.25 | 0.50 | ND | ND | | | |
| 4-Chloro-3-methylphenol | 0.25 | 0.50 | ND | ND | | | |
| 4-Chloroaniline | 0.25 | 0.50 | ND | ND | | | |
| 2-Chloronaphthalene | 0.25 | 0.50 | ND | ND | | | |
| 2-Chlorophenol | 0.25 | 0.50 | ND | ND | | | |
| 4-Chlorophenyl phenyl ether | 0.25 | 0.50 | ND | ND | | | |
| Chrysene | 0.25 | 0.50 | ND | 1.40 | | | |
| Di-n-butyl phthalate | 0.25 | 0.50 | ND | ND | | | |
| Di-n-octyl phthalate (Dioctyl ester) | 0.25 | 0.50 | ND | ND | | | |
| Dibenzo(a,h)anthracene | 0.25 | 0.50 | ND | ND | | | |

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# ANALYTICAL RESULTS



Project ID: 15-062SD
Project Name: 661 Bear Valley Parkway

| AETL Job Number | Submitted | Client |
|---|---|---|
| 76570 | 04/09/2015 | AEC |

## Method: (8270C), Semivolatile Organic Compounds by GC/MS (SW-846)

**QC Batch No: 041315JB1**

| Our Lab I.D. | | | Method Blank | 76570.01 | | | |
|---|---|---|---|---|---|---|---|
| Client Sample I.D. | | | | B1 | | | |
| Date Sampled | | | | 04/09/2015 | | | |
| Date Prepared | | | 04/13/2015 | 04/13/2015 | | | |
| Preparation Method | | | 3550B | 3550B | | | |
| Date Analyzed | | | 04/15/2015 | 04/16/2015 | | | |
| Matrix | | | Soil | Soil | | | |
| Units | | | mg/Kg | mg/Kg | | | |
| Dilution Factor | | | 1 | 1 | | | |
| **Analytes** | **MDL** | **PQL** | **Results** | **Results** | | | |
| Dibenzofuran | 0.25 | 0.50 | ND | ND | | | |
| 1,2-Dichlorobenzene | 0.25 | 0.50 | ND | ND | | | |
| 1,3-Dichlorobenzene | 0.25 | 0.50 | ND | ND | | | |
| 1,4-Dichlorobenzene | 0.25 | 0.50 | ND | ND | | | |
| 3,3'-Dichlorobenzidine | 0.25 | 0.50 | ND | ND | | | |
| 2,4-Dichlorophenol | 0.25 | 0.50 | ND | ND | | | |
| Diethyl phthalate (Diethyl ester) | 0.25 | 0.50 | ND | ND | | | |
| Dimethyl phthalate (Dimethyl ester) | 0.25 | 0.50 | ND | ND | | | |
| 2,4-Dimethylphenol | 0.25 | 0.50 | ND | ND | | | |
| 4,6-Dinitro-2-methylphenol | 0.25 | 0.50 | ND | ND | | | |
| 2,4-Dinitrophenol | 0.25 | 0.50 | ND | ND | | | |
| 2,4-Dinitrotoluene | 0.25 | 0.50 | ND | ND | | | |
| 2,6-Dinitrotoluene (2,6-DNT) | 0.25 | 0.50 | ND | ND | | | |
| Fluoranthene | 0.25 | 0.50 | ND | 2.16 | | | |
| Fluorene | 0.25 | 0.50 | ND | ND | | | |
| Hexachlorobenzene | 0.25 | 0.50 | ND | ND | | | |
| Hexachlorobutadiene | 0.25 | 0.50 | ND | ND | | | |
| Hexachlorocyclopentadiene | 0.25 | 0.50 | ND | ND | | | |
| Hexachloroethane | 0.25 | 0.50 | ND | ND | | | |
| Indeno(1,2,3-cd)pyrene | 0.25 | 0.50 | ND | 0.591 | | | |
| Isophorone | 0.25 | 0.50 | ND | ND | | | |
| 2-Methylnaphthalene | 0.25 | 0.50 | ND | ND | | | |
| 4-Methylphenol | 0.25 | 0.50 | ND | ND | | | |
| 2-Methylphenol (2-Cresol) | 0.25 | 0.50 | ND | ND | | | |
| 3-Methylphenol (3-Cresol) | 0.25 | 0.50 | ND | ND | | | |
| N-Nitroso-Di-n-propylamine | 0.25 | 0.50 | ND | ND | | | |
| Naphthalene | 0.25 | 0.50 | ND | ND | | | |
| 2-Nitroaniline | 0.25 | 0.50 | ND | ND | | | |
| 3-Nitroaniline | 0.25 | 0.50 | ND | ND | | | |
| 4-Nitroaniline | 0.25 | 0.50 | ND | ND | | | |
| Nitrobenzene (NB) | 0.25 | 0.50 | ND | ND | | | |
| 4-Nitrophenol | 0.25 | 0.50 | ND | ND | | | |
| 2-Nitrophenol (o-Nitrophenol) | 0.25 | 0.50 | ND | ND | | | |
| N-nitrosodiphenylamine | 0.25 | 0.50 | ND | ND | | | |

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# ANALYTICAL RESULTS



Project ID: 15-062SD
Project Name: 661 Bear Valley Parkway

| AETL Job Number | Submitted | Client |
|---|---|---|
| 76570 | 04/09/2015 | AEC |

## Method: (8270C), Semivolatile Organic Compounds by GC/MS (SW-846)

**QC Batch No: 041315JB1**

| **Our Lab I.D.** | | | Method Blank | **76570.01** | | | |
|---|---|---|---|---|---|---|---|
| Client Sample I.D. | | | | B1 | | | |
| Date Sampled | | | | 04/09/2015 | | | |
| Date Prepared | | | 04/13/2015 | 04/13/2015 | | | |
| Preparation Method | | | 3550B | 3550B | | | |
| Date Analyzed | | | 04/15/2015 | 04/16/2015 | | | |
| Matrix | | | Soil | Soil | | | |
| Units | | | mg/Kg | mg/Kg | | | |
| Dilution Factor | | | 1 | 1 | | | |
| **Analytes** | **MDL** | **PQL** | **Results** | **Results** | | | |
| Pentachlorophenol | 0.25 | 0.50 | ND | ND | | | |
| Phenanthrene | 0.25 | 0.50 | ND | 1.02 | | | |
| Phenol | 0.25 | 0.50 | ND | ND | | | |
| Pyrene | 0.25 | 0.50 | ND | 2.24 | | | |
| 1,2,4-Trichlorobenzene | 0.25 | 0.50 | ND | ND | | | |
| 2,4,5-Trichlorophenol | 0.25 | 0.50 | ND | ND | | | |
| 2,4,6-Trichlorophenol | 0.25 | 0.50 | ND | ND | | | |
| **Our Lab I.D.** | | | Method Blank | **76570.01** | | | |
| **Surrogates** | **%Rec.Limit** | | **% Rec.** | **% Rec.** | | | |
| 2-Fluorophenol | 25-121 | | 56.8 | 22.4 S6 | | | |
| 2-Fluorobiphenyl | 30-115 | | 82.4 | 53.6 | | | |
| Nitrobenzene-d5 | 23-120 | | 71.6 | 45.2 | | | |
| Phenol-d6 | 21-113 | | 60.2 | 23.2 | | | |
| p-Terphenyl-D14 | 18-137 | | 96.8 | 63.2 | | | |
| 2,4,6-Tribromophenol | 19-122 | | 64.8 | 23.0 | | | |

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# ANALYTICAL RESULTS

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Page: 9

**Site**

Escondido, CA

Project ID: 15-062SD
Project Name: 661 Bear Valley Parkway

| AETL Job Number | Submitted | Client |
|---|---|---|
| 76570 | 04/09/2015 | AEC |

## Method: (8270C), Semivolatile Organic Compounds by GC/MS (SW-846)

**QC Batch No: 041315JB1**

| Our Lab I.D. | | | 76570.02 | | | | |
|---|---|---|---|---|---|---|---|
| Client Sample I.D. | | | B2 | | | | |
| Date Sampled | | | 04/09/2015 | | | | |
| Date Prepared | | | 04/13/2015 | | | | |
| Preparation Method | | | 3550B | | | | |
| Date Analyzed | | | 04/16/2015 | | | | |
| Matrix | | | Soil | | | | |
| Units | | | mg/Kg | | | | |
| Dilution Factor | | | 2 | | | | |
| **Analytes** | **MDL** | **PQL** | **Results** | | | | |
| Acenaphthene | 0.50 | 1.00 | ND | | | | |
| Acenaphthylene | 0.50 | 1.00 | ND | | | | |
| Anthracene | 0.50 | 1.00 | ND | | | | |
| Azobenzene | 0.50 | 1.00 | ND | | | | |
| Benzidine | 0.50 | 1.00 | ND | | | | |
| Benzo(a)anthracene | 0.50 | 1.00 | ND | | | | |
| Benzo(a)pyrene | 0.50 | 1.00 | ND | | | | |
| Benzo(b)fluoranthene | 0.50 | 1.00 | ND | | | | |
| Benzo(g,h,i)perylene | 0.50 | 1.00 | ND | | | | |
| Benzo(k)fluoranthene | 0.50 | 1.00 | ND | | | | |
| Benzoic Acid | 0.50 | 1.00 | ND | | | | |
| Benzyl Alcohol | 0.50 | 1.00 | ND | | | | |
| Bis(2-Chloroethoxy)methane | 0.50 | 1.00 | ND | | | | |
| Bis(2-Chloroethyl)ether | 0.50 | 1.00 | ND | | | | |
| Bis(2-chloroisopropyl) ether | 0.50 | 1.00 | ND | | | | |
| Bis(2-ethylhexyl) phthalate | 0.50 | 1.00 | ND | | | | |
| 4-Bromophenyl phenyl ether | 0.50 | 1.00 | ND | | | | |
| Butyl benzyl phthalate | 0.50 | 1.00 | ND | | | | |
| 4-Chloro-3-methylphenol | 0.50 | 1.00 | ND | | | | |
| 4-Chloroaniline | 0.50 | 1.00 | ND | | | | |
| 2-Chloronaphthalene | 0.50 | 1.00 | ND | | | | |
| 2-Chlorophenol | 0.50 | 1.00 | ND | | | | |
| 4-Chlorophenyl phenyl ether | 0.50 | 1.00 | ND | | | | |
| Chrysene | 0.50 | 1.00 | ND | | | | |
| Di-n-butyl phthalate | 0.50 | 1.00 | ND | | | | |
| Di-n-octyl phthalate (Dioctyl ester) | 0.50 | 1.00 | ND | | | | |
| Dibenzo(a,h)anthracene | 0.50 | 1.00 | ND | | | | |

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# ANALYTICAL RESULTS



Project ID: 15-062SD
Project Name: 661 Bear Valley Parkway

| AETL Job Number | Submitted | Client |
|---|---|---|
| 76570 | 04/09/2015 | AEC |

## Method: (8270C), Semivolatile Organic Compounds by GC/MS (SW-846)

**QC Batch No: 041315JB1**

| Our Lab I.D. | | | 76570.02 | | | | |
|---|---|---|---|---|---|---|---|
| Client Sample I.D. | | | B2 | | | | |
| Date Sampled | | | 04/09/2015 | | | | |
| Date Prepared | | | 04/13/2015 | | | | |
| Preparation Method | | | 3550B | | | | |
| Date Analyzed | | | 04/16/2015 | | | | |
| Matrix | | | Soil | | | | |
| Units | | | mg/Kg | | | | |
| Dilution Factor | | | 2 | | | | |
| **Analytes** | **MDL** | **PQL** | **Results** | | | | |
| Dibenzofuran | 0.50 | 1.00 | ND | | | | |
| 1,2-Dichlorobenzene | 0.50 | 1.00 | ND | | | | |
| 1,3-Dichlorobenzene | 0.50 | 1.00 | ND | | | | |
| 1,4-Dichlorobenzene | 0.50 | 1.00 | ND | | | | |
| 3,3'-Dichlorobenzidine | 0.50 | 1.00 | ND | | | | |
| 2,4-Dichlorophenol | 0.50 | 1.00 | ND | | | | |
| Diethyl phthalate (Diethyl ester) | 0.50 | 1.00 | ND | | | | |
| Dimethyl phthalate (Dimethyl ester) | 0.50 | 1.00 | ND | | | | |
| 2,4-Dimethylphenol | 0.50 | 1.00 | ND | | | | |
| 4,6-Dinitro-2-methylphenol | 0.50 | 1.00 | ND | | | | |
| 2,4-Dinitrophenol | 0.50 | 1.00 | ND | | | | |
| 2,4-Dinitrotoluene | 0.50 | 1.00 | ND | | | | |
| 2,6-Dinitrotoluene (2,6-DNT) | 0.50 | 1.00 | ND | | | | |
| Fluoranthene | 0.50 | 1.00 | ND | | | | |
| Fluorene | 0.50 | 1.00 | ND | | | | |
| Hexachlorobenzene | 0.50 | 1.00 | ND | | | | |
| Hexachlorobutadiene | 0.50 | 1.00 | ND | | | | |
| Hexachlorocyclopentadiene | 0.50 | 1.00 | ND | | | | |
| Hexachloroethane | 0.50 | 1.00 | ND | | | | |
| Indeno(1,2,3-cd)pyrene | 0.50 | 1.00 | ND | | | | |
| Isophorone | 0.50 | 1.00 | ND | | | | |
| 2-Methylnaphthalene | 0.50 | 1.00 | ND | | | | |
| 4-Methylphenol | 0.50 | 1.00 | ND | | | | |
| 2-Methylphenol (2-Cresol) | 0.50 | 1.00 | ND | | | | |
| 3-Methylphenol (3-Cresol) | 0.50 | 1.00 | ND | | | | |
| N-Nitroso-Di-n-propylamine | 0.50 | 1.00 | ND | | | | |
| Naphthalene | 0.50 | 1.00 | ND | | | | |
| 2-Nitroaniline | 0.50 | 1.00 | ND | | | | |
| 3-Nitroaniline | 0.50 | 1.00 | ND | | | | |
| 4-Nitroaniline | 0.50 | 1.00 | ND | | | | |
| Nitrobenzene (NB) | 0.50 | 1.00 | ND | | | | |
| 4-Nitrophenol | 0.50 | 1.00 | ND | | | | |
| 2-Nitrophenol (o-Nitrophenol) | 0.50 | 1.00 | ND | | | | |
| N-nitrosodiphenylamine | 0.50 | 1.00 | ND | | | | |

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# ANALYTICAL RESULTS



Project ID: 15-062SD
Project Name: 661 Bear Valley Parkway

| AETL Job Number | Submitted | Client |
|---|---|---|
| 76570 | 04/09/2015 | AEC |

## Method: (8270C), Semivolatile Organic Compounds by GC/MS (SW-846)

**QC Batch No: 041315JB1**

| Our Lab I.D. | | | 76570.02 | | | | |
|---|---|---|---|---|---|---|---|
| Client Sample I.D. | | | B2 | | | | |
| Date Sampled | | | 04/09/2015 | | | | |
| Date Prepared | | | 04/13/2015 | | | | |
| Preparation Method | | | 3550B | | | | |
| Date Analyzed | | | 04/16/2015 | | | | |
| Matrix | | | Soil | | | | |
| Units | | | mg/Kg | | | | |
| Dilution Factor | | | 2 | | | | |
| **Analytes** | **MDL** | **PQL** | **Results** | | | | |
| Pentachlorophenol | 0.50 | 1.00 | ND | | | | |
| Phenanthrene | 0.50 | 1.00 | ND | | | | |
| Phenol | 0.50 | 1.00 | ND | | | | |
| Pyrene | 0.50 | 1.00 | ND | | | | |
| 1,2,4-Trichlorobenzene | 0.50 | 1.00 | ND | | | | |
| 2,4,5-Trichlorophenol | 0.50 | 1.00 | ND | | | | |
| 2,4,6-Trichlorophenol | 0.50 | 1.00 | ND | | | | |

*Comment(s):*
*76570.02: Analyzed under dilution due to matrix interference*

| Our Lab I.D. | | | 76570.02 | | | | |
|---|---|---|---|---|---|---|---|
| **Surrogates** | **%Rec.Limit** | | **% Rec.** | | | | |
| 2-Fluorophenol | 25-121 | | 39.0 | | | | |
| 2-Fluorobiphenyl | 30-115 | | 76.8 | | | | |
| Nitrobenzene-d5 | 23-120 | | 62.0 | | | | |
| Phenol-d6 | 21-113 | | 38.0 | | | | |
| p-Terphenyl-D14 | 18-137 | | 93.2 | | | | |
| 2,4,6-Tribromophenol | 19-122 | | 47.2 | | | | |

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**Site**

Escondido, CA

Project ID: 15-062SD
Project Name: 661 Bear Valley Parkway

| AETL Job Number | Submitted | Client |
|---|---|---|
| 76570 | 04/09/2015 | AEC |

## Method: (6010B/7000CAM), Title 22 Metals (SW-846)

**QC Batch No: 0415152C2**

| Our Lab I.D. | | | Method Blank | 76570.01 | 76570.02 | | |
|---|---|---|---|---|---|---|---|
| Client Sample I.D. | | | | B1 | B2 | | |
| Date Sampled | | | | 04/09/2015 | 04/09/2015 | | |
| Date Prepared | | | 04/15/2015 | 04/15/2015 | 04/15/2015 | | |
| Preparation Method | | | 3050B | 3050B | 3050B | | |
| Date Analyzed | | | 04/16/2015 | 04/16/2015 | 04/16/2015 | | |
| Matrix | | | Soil | Soil | Soil | | |
| Units | | | mg/Kg | mg/Kg | mg/Kg | | |
| Dilution Factor | | | 1 | 1 | 1 | | |
| **Analytes** | **MDL** | **PQL** | **Results** | **Results** | **Results** | | |
| Antimony | 1.0 | 5.0 | ND | ND | ND | | |
| Arsenic | 1.0 | 5.0 | ND | ND | ND | | |
| Barium | 2.5 | 5.0 | ND | 160 | 89.9 | | |
| Beryllium | 1.3 | 2.5 | ND | ND | ND | | |
| Cadmium | 1.3 | 2.5 | ND | ND | ND | | |
| Chromium | 2.5 | 5.0 | ND | 19.0 | 13.3 | | |
| Cobalt | 2.5 | 5.0 | ND | 11.0 | 8.52 | | |
| Copper | 2.5 | 5.0 | ND | 20.8 | 22.1 | | |
| Lead | 2.5 | 5.0 | ND | 82.9 | 14.4 | | |
| Mercury (By EPA 7471) | 0.1 | 0.2 | ND | ND | ND | | |
| Molybdenum | 2.5 | 5.0 | ND | ND | ND | | |
| Nickel | 2.5 | 5.0 | ND | 5.75 | 5.09 | | |
| Selenium | 1.0 | 5.0 | ND | ND | ND | | |
| Silver | 2.5 | 5.0 | ND | ND | ND | | |
| Thallium | 1.0 | 5.0 | ND | ND | ND | | |
| Vanadium | 2.5 | 5.0 | ND | 59.3 | 54.2 | | |
| Zinc | 2.5 | 5.0 | ND | 398 | 63.7 | | |

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**Site**

Escondido, CA

Project ID: 15-062SD
Project Name: 661 Bear Valley Parkway

| AETL Job Number | Submitted | Client |
|---|---|---|
| 76570 | 04/09/2015 | AEC |

## Method: (6010B/7000CAM), Title 22 Metals (SW-846)

**QC Batch No: 0415152C2; Dup or Spiked Sample: 76570.01; LCS: Clean Sand; QC Prepared: 04/15/2015; QC Analyzed: 04/16/2015; Units: mg/Kg**

| Analytes | Sample Result | MS Concen | MS Recov | MS % REC | MS DUP Concen | MS DUP Recov | MS DUP % REC | RPD % | MS/MSD % Limit | MS RPD % Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 0.00 | 50.0 | 42.9 | 85.8 | 50.0 | 42.2 | 84.4 | 1.65 | 75-125 | <15 |
| Arsenic | 0.00 | 50.0 | 36.0 M | 72.0 | 50.0 | 36.9 M | 73.8 | 2.47 | 75-125 | <15 |
| Barium | 160 | 50.0 | 244 M | 168 | 50.0 | 244 M | 168 | <1 | 75-125 | <15 |
| Beryllium | 0.00 | 50.0 | 44.9 | 89.8 | 50.0 | 44.9 | 89.8 | <1 | 75-125 | <15 |
| Cadmium | 0.00 | 50.0 | 43.7 | 87.4 | 50.0 | 43.7 | 87.4 | <1 | 75-125 | <15 |
| Chromium | 19.0 | 50.0 | 60.5 | 83.0 | 50.0 | 60.4 | 82.8 | <1 | 75-125 | <15 |
| Cobalt | 11.0 | 50.0 | 52.5 | 83.0 | 50.0 | 52.4 | 82.8 | <1 | 75-125 | <15 |
| Copper | 20.8 | 50.0 | 68.6 | 95.6 | 50.0 | 68.6 | 95.6 | <1 | 75-125 | <15 |
| Lead | 82.9 | 50.0 | 168 M | 170 | 50.0 | 168 M | 170 | <1 | 75-125 | <15 |
| Mercury (By EPA 7471) | 0.00 | 0.500 | 0.515 | 103 | 0.500 | 0.520 | 104 | <1 | 75-125 | <15 |
| Molybdenum | 0.00 | 50.0 | 44.3 | 88.6 | 50.0 | 44.4 | 88.8 | <1 | 75-125 | <15 |
| Nickel | 5.75 | 50.0 | 51.3 | 91.1 | 50.0 | 51.2 | 90.9 | <1 | 75-125 | <15 |
| Selenium | 0.00 | 50.0 | 42.8 | 85.6 | 50.0 | 42.8 | 85.6 | <1 | 75-125 | <15 |
| Silver | 0.00 | 50.0 | 35.8 M | 71.6 | 50.0 | 35.8 M | 71.6 | <1 | 75-125 | <15 |
| Thallium | 0.00 | 50.0 | 24.4 M | 48.8 | 50.0 | 24.6 M | 49.2 | <1 | 75-125 | <15 |
| Vanadium | 59.3 | 50.0 | 103 | 87.4 | 50.0 | 103 | 87.4 | <1 | 75-125 | <15 |
| Zinc | 398 | 50.0 | 382 M | -31.9 | 50.0 | 382 M | -31.9 | <1 | 75-125 | <15 |

**QC Batch No: 0415152C2; Dup or Spiked Sample: 76570.01; LCS: Clean Sand; QC Prepared: 04/15/2015; QC Analyzed: 04/16/2015; Units: mg/Kg**

| Analytes | LCS Concen | LCS Recov | LCS % REC | LCS DUP Concen | LCS DUP Recov | LCS DUP % REC | LCS RPD % REC | LCS/LCSD % Limit | LCS RPD % Limit | |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 50.0 | 45.1 | 90.2 | 50.0 | 45.0 | 90.0 | <1 | 75-125 | <15 | |
| Arsenic | 50.0 | 44.5 | 89.0 | 50.0 | 44.5 | 89.0 | <1 | 75-125 | <15 | |
| Barium | 50.0 | 48.4 | 96.8 | 50.0 | 48.7 | 97.4 | <1 | 75-125 | <15 | |
| Beryllium | 50.0 | 48.9 | 97.8 | 50.0 | 48.6 | 97.2 | <1 | 75-125 | <15 | |
| Cadmium | 50.0 | 44.4 | 88.8 | 50.0 | 44.5 | 89.0 | <1 | 75-125 | <15 | |
| Chromium | 50.0 | 47.8 | 95.6 | 50.0 | 48.1 | 96.2 | <1 | 75-125 | <15 | |
| Cobalt | 50.0 | 46.5 | 93.0 | 50.0 | 46.8 | 93.6 | <1 | 75-125 | <15 | |
| Copper | 50.0 | 48.7 | 97.4 | 50.0 | 48.7 | 97.4 | <1 | 75-125 | <15 | |

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# QUALITY CONTROL RESULTS



Project ID: 15-062SD
Project Name: 661 Bear Valley Parkway

| AETL Job Number | Submitted | Client |
|---|---|---|
| 76570 | 04/09/2015 | AEC |

## Method: (6010B/7000CAM), Title 22 Metals (SW-846)

**QC Batch No: 0415152C2; Dup or Spiked Sample: 76570.01; LCS: Clean Sand; QC Prepared: 04/15/2015; QC Analyzed: 04/16/2015; Units: mg/Kg**

| Analytes | LCS Concen | LCS Recov | LCS % REC | LCS DUP Concen | LCS DUP Recov | LCS DUP % REC | LCS RPD % REC | LCS/LCSD % Limit | LCS RPD % Limit | |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 50.0 | 43.8 | 87.6 | 50.0 | 44.0 | 88.0 | <1 | 75-125 | <15 | |
| Mercury (By EPA 7471) | 0.500 | 0.505 | 101 | 0.500 | 0.505 | 101 | <1 | 75-125 | <15 | |
| Molybdenum | 50.0 | 52.0 | 104 | 50.0 | 52.0 | 104 | <1 | 75-125 | <15 | |
| Nickel | 50.0 | 45.7 | 91.4 | 50.0 | 46.1 | 92.2 | <1 | 75-125 | <15 | |
| Selenium | 50.0 | 42.3 | 84.6 | 50.0 | 42.5 | 85.0 | <1 | 75-125 | <15 | |
| Silver | 50.0 | 44.0 | 88.0 | 50.0 | 44.1 | 88.2 | <1 | 75-125 | <15 | |
| Thallium | 50.0 | 43.0 | 86.0 | 50.0 | 43.0 | 86.0 | <1 | 75-125 | <15 | |
| Vanadium | 50.0 | 48.7 | 97.4 | 50.0 | 49.1 | 98.2 | <1 | 75-125 | <15 | |
| Zinc | 50.0 | 44.3 | 88.6 | 50.0 | 44.2 | 88.4 | <1 | 75-125 | <15 | |

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**Site**

Escondido, CA

Project ID: 15-062SD
Project Name: 661 Bear Valley Parkway

| AETL Job Number | Submitted | Client |
|---|---|---|
| 76570 | 04/09/2015 | AEC |

## Method: (8081A), Organochlorine Pesticides by GC

**QC Batch No: 041415MB1; Dup or Spiked Sample: 76586.02; LCS: Clean Sand; QC Prepared: 04/14/2015; QC Analyzed: 04/14/2015; Units: ug/Kg**

| Analytes | Sample Result | MS Concen | MS Recov | MS % REC | MS DUP Concen | MS DUP Recov | MS DUP % REC | RPD % | MS/MSD % Limit | MS RPD % Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| Aldrin | 0.00 | 20.0 | 17.5 | 87.5 | 20.0 | 19.7 | 98.5 | 11.8 | 40-150 | <40 |
| 4,4'-DDT (DDT) | 201 | 50.0 | 244 | 86.0 | 50.0 | 258 | 114 | 28.0 | 40-150 | <40 |
| Dieldrin | 8.15 | 50.0 | 52.2 | 88.1 | 50.0 | 58.1 | 99.9 | 12.6 | 40-150 | <40 |
| Endrin | 73.3 | 50.0 | 147 | 147 | 50.0 | 161 # | 175 | 17.4 | 40-150 | <40 |
| Heptachlor | 0.00 | 20.0 | 18.7 | 93.5 | 20.0 | 22.6 | 113 | 18.9 | 40-150 | <40 |
| gamma-Hexachlorocyclohexane (Gamma-BHC, Lindane) | 0.00 | 20.0 | 16.5 | 82.5 | 20.0 | 17.6 | 88.0 | 6.45 | 40-150 | <40 |
| **Surrogates** | | | | | | | | | | |
| Decachlorobiphenyl | 0.00 | 50.0 | 36.3 | 72.6 | 50.0 | 41.0 | 82.0 | 12.9 | 30-150 | <40 |
| Tetrachloro-m-xylene | 0.00 | 50.0 | 38.8 | 77.6 | 50.0 | 44.7 | 89.4 | 15.2 | 30-150 | <40 |

**QC Batch No: 041415MB1; Dup or Spiked Sample: 76586.02; LCS: Clean Sand; QC Prepared: 04/14/2015; QC Analyzed: 04/14/2015; Units: ug/Kg**

| Analytes | LCS Concen | LCS Recov | LCS % REC | LCS DUP Concen | LCS DUP Recov | LCS DUP % REC | LCS RPD % REC | LCS/LCSD % Limit | LCS RPD % Limit | |
|---|---|---|---|---|---|---|---|---|---|---|
| Aldrin | 20.0 | 19.3 | 96.5 | 20.0 | 18.6 | 93.0 | 3.69 | 50-150 | <40 | |
| 4,4'-DDT (DDT) | 50.0 | 41.5 | 83.0 | 50.0 | 40.0 | 80.0 | 3.68 | 50-150 | <40 | |
| Dieldrin | 50.0 | 49.6 | 99.2 | 50.0 | 47.8 | 95.6 | 3.70 | 50-150 | <40 | |
| Endrin | 50.0 | 62.5 | 125 | 50.0 | 61.0 | 122 | 2.43 | 50-150 | <40 | |
| Heptachlor | 20.0 | 17.9 | 89.5 | 20.0 | 18.9 | 94.5 | 5.43 | 50-150 | <40 | |
| gamma-Hexachlorocyclohexane (Gamma-BHC, Lindane) | 20.0 | 19.5 | 97.5 | 20.0 | 18.4 | 92.0 | 5.80 | 50-150 | <40 | |
| **Surrogates** | | | | | | | | | | |
| Decachlorobiphenyl | 50.0 | 37.3 | 74.6 | 50.0 | 40.0 | 80.0 | 7.24 | 30-150 | <40 | |
| Tetrachloro-m-xylene | 50.0 | 49.2 | 98.4 | 50.0 | 51.0 | 102 | 3.66 | 30-150 | <40 | |

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Escondido, CA

Page: 16

Project ID: 15-062SD
Project Name: 661 Bear Valley Parkway

| AETL Job Number | Submitted | Client |
|---|---|---|
| 76570 | 04/09/2015 | AEC |

## Method: (8270C), Semivolatile Organic Compounds by GC/MS (SW-846)

**QC Batch No: 041315JB1; Dup or Spiked Sample: 76571.11; LCS: Clean Sand; QC Prepared: 04/13/2015; QC Analyzed: 04/15/2015; Units: mg/Kg**

| Analytes | Sample Result | MS Concen | MS Recov | MS % REC | MS DUP Concen | MS DUP Recov | MS DUP % REC | RPD % | MS/MSD % Limit | MS RPD % Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | 0.00 | 2.50 | 2.41 | 96.4 | 2.50 | 2.17 | 86.8 | 10.5 | 46-118 | <20 |
| 4-Chloro-3-methylphenol | 0.00 | 5.00 | 4.93 | 98.6 | 5.00 | 4.09 | 81.8 | 18.6 | 39-98 | <20 |
| 2-Chlorophenol | 0.00 | 5.00 | 4.20 | 84.0 | 5.00 | 3.65 | 73.0 | 14.0 | 27-123 | <20 |
| 1,4-Dichlorobenzene | 0.00 | 2.50 | 2.25 | 90.0 | 2.50 | 2.01 | 80.4 | 11.3 | 36-97 | <20 |
| 2,4-Dinitrotoluene | 0.00 | 2.50 | 2.46 | 98.4 | 2.50 | 2.27 | 90.8 | 8.03 | 24-96 | <20 |
| N-Nitroso-Di-n-propylamine | 0.00 | 2.50 | 2.32 | 92.8 | 2.50 | 2.12 | 84.8 | 9.01 | 41-116 | <20 |
| 4-Nitrophenol | 0.00 | 5.00 | 4.81 | 96.2 | 5.00 | 4.64 | 92.8 | 3.60 | 10-110 | <20 |
| Pentachlorophenol | 0.00 | 5.00 | 4.32 | 86.4 | 5.00 | 4.16 | 83.2 | 3.77 | 40-125 | <20 |
| Phenol | 0.00 | 5.00 | 3.60 | 72.0 | 5.00 | 3.10 | 62.0 | 14.9 | 12-89 | <20 |
| Pyrene | 0.00 | 2.50 | 2.80 | 112 | 2.50 | 2.33 | 93.2 | 18.3 | 26-127 | <20 |
| 1,2,4-Trichlorobenzene | 0.00 | 2.50 | 2.45 | 98.0 | 2.50 | 2.20 | 88.0 | 10.8 | 39-98 | <20 |
| **Surrogates** | | | | | | | | | | |
| 2-Fluorophenol | 0.00 | 5.00 | 3.56 | 71.2 | 5.00 | 3.10 | 62.0 | 12.9 | 25-121 | <20 |
| 2-Fluorobiphenyl | 0.00 | 2.50 | 2.60 | 104 | 2.50 | 2.36 | 94.4 | 9.23 | 30-115 | <20 |
| Nitrobenzene-d5 | 0.00 | 2.50 | 2.30 | 92.0 | 2.50 | 2.15 | 86.0 | 6.52 | 23-120 | <20 |
| p-Terphenyl-D14 | 0.00 | 2.50 | 2.80 | 112 | 2.50 | 2.36 | 94.4 | 15.7 | 18-137 | <20 |
| Phenol-d6 | 0.00 | 5.00 | 3.81 | 76.2 | 5.00 | 3.31 | 66.2 | 13.1 | 24-113 | <20 |
| 2,4,6-Tribromophenol | 0.00 | 5.00 | 4.39 | 87.8 | 5.00 | 3.88 | 77.6 | 11.6 | 19-122 | <20 |

**QC Batch No: 041315JB1; Dup or Spiked Sample: 76571.11; LCS: Clean Sand; QC Prepared: 04/13/2015; QC Analyzed: 04/15/2015; Units: mg/Kg**

| Analytes | LCS Concen | LCS Recov | LCS % REC | LCS/LCSD % Limit | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | 2.50 | 1.74 | 69.6 | 31-137 | | | | | | |
| 4-Chloro-3-methylphenol | 5.00 | 3.31 | 66.2 | 40-99 | | | | | | |
| 2-Chlorophenol | 5.00 | 2.92 | 58.4 | 25-102 | | | | | | |
| 1,4-Dichlorobenzene | 2.50 | 1.59 | 63.6 | 28-104 | | | | | | |
| 2,4-Dinitrotoluene | 2.50 | 1.70 | 68.0 | 28-89 | | | | | | |
| N-Nitroso-Di-n-propylamine | 2.50 | 1.64 | 65.6 | 41-126 | | | | | | |
| 4-Nitrophenol | 5.00 | 3.43 | 68.6 | 11-114 | | | | | | |

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# QUALITY CONTROL RESULTS



Project ID: 15-062SD
Project Name: 661 Bear Valley Parkway

| AETL Job Number | Submitted | Client |
|---|---|---|
| 76570 | 04/09/2015 | AEC |

## Method: (8270C), Semivolatile Organic Compounds by GC/MS (SW-846)

**QC Batch No: 041315JB1; Dup or Spiked Sample: 76571.11; LCS: Clean Sand; QC Prepared: 04/13/2015; QC Analyzed: 04/15/2015; Units: mg/Kg**

| Analytes | LCS Concen | LCS Recov | LCS % REC | LCS/LCSD % Limit | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Pentachlorophenol | 5.00 | 3.15 | 63.0 | 17-125 | | | | | | |
| Phenol | 5.00 | 2.44 | 48.8 | 26-90 | | | | | | |
| Pyrene | 2.50 | 1.99 | 79.6 | 35-142 | | | | | | |
| 1,2,4-Trichlorobenzene | 2.50 | 1.71 | 68.4 | 38-107 | | | | | | |
| **Surrogates** | | | | | | | | | | |
| 2-Fluorophenol | 5.00 | 2.43 | 48.6 | 25-121 | | | | | | |
| 2-Fluorobiphenyl | 2.50 | 1.87 | 74.8 | 30-115 | | | | | | |
| Nitrobenzene-d5 | 2.50 | 1.65 | 66.0 | 23-120 | | | | | | |
| p-Terphenyl-D14 | 2.50 | 2.00 | 80.0 | 18-137 | | | | | | |
| Phenol-d6 | 5.00 | 2.60 | 52.0 | 24-113 | | | | | | |
| 2,4,6-Tribromophenol | 5.00 | 3.07 | 61.4 | 19-122 | | | | | | |

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# Data Qualifiers and Descriptors

## *Data Qualifier:*

| | |
|---|---|
| #: | Recovery is not within acceptable control limits. |
| *: | In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied. |
| B: | Analyte was present in the Method Blank. |
| D: | Result is from a diluted analysis. |
| E: | Result is beyond calibration limits and is estimated. |
| H: | Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control. |
| J: | Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL). |
| M: | Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable. |
| MCL: | Maximum Contaminant Level |
| NS: | No Standard Available |
| S6: | Surrogate recovery is outside control limits due to matrix interference. |
| S8: | The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria. |
| X: | Results represent LCS and LCSD data. |

## *Definition:*

| | |
|---|---|
| %Limi: | Percent acceptable limits. |
| %REC: | Percent recovery. |
| Con.L: | Acceptable Control Limits |
| Conce: | Added concentration to the sample. |
| LCS: | Laboratory Control Sample |
| MDL: | Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability. |

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# Data Qualifiers and Descriptors

| | |
|---|---|
| MS: | Matrix Spike |
| MS DU: | Matrix Spike Duplicate |
| ND: | Analyte was not detected in the sample at or above MDL. |
| PQL: | Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice. |
| Recov: | Recovered concentration in the sample. |
| RPD: | Relative Percent Difference |

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**Ordered By**

| |
|---|
| **Advantage Environmental Consultants** |
| **145 Vallecitos De Oro Suite 201** |
| **San Marcos, CA 92069-** |

**Telephone: (760)744-3363**
**Attention: Dan Weis**

| | |
|---|---|
| **Number of Pages** | **6** |
| **Date Received** | **05/08/2015** |
| **Date Reported** | **05/13/2015** |

| Job Number | Order Date | Client |
|---|---|---|
| 76864 | 05/08/2015 | AEC |

---

**Project ID:** 15-062SD
**Project Name:** 661 Bear Valley Parkway
**Site:** 661 Bear Valley Parkway
Escondido, CA 92025

Enclosed please find results of analyses of 15 soil samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

# American Environmental Testing Laboratory Inc.

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# CHAIN OF CUSTODY RECORD

№ 72469

AETL JOB No. 76864

Page 1 of 1

COMPANY AEC

PROJECT MANAGER Ron Wells

COMPANY ADDRESS 1145 W. Mesa Blanca Dr, Ste. 201, San Marcos, CA 92069

PHONE 760 744 3363

FAX 3383

PROJECT NAME 661 Rancho Valley Parkway

PROJECT # 15-00250

SITE NAME AND ADDRESS Escondido, CA

PO #

| | SAMPLE ID | LAB ID | DATE | TIME | MATRIX | CONTAINER NUMBER/SIZE | PRES. | Total Lead | | | | | | | | | TEST INSTRUCTIONS & COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | B3 | 76864.01 | 5/7/15 | | soil | 4oz jar | ice | X | | | | | | | | | |
| 2 | B4 | 76864.02 | | | | | | X | | | | | | | | | |
| 3 | B5 | 76864.03 | | | | | | X | | | | | | | | | |
| 4 | B6 | 76864.04 | | | | | | X | | | | | | | | | |
| 5 | B7 | 76864.05 | | | | | | X | | | | | | | | | |
| 6 | B8 | 76864.06 | | | | | | X | | | | | | | | | |
| 7 | B9 | 76864.07 | | | | | | X | | | | | | | | | |
| 8 | B10 | 76864.08 | | | | | | X | | | | | | | | | |
| 9 | B11 | 76864.09 | | | | | | X | | | | | | | | | |
| 10 | B12 | 76864.10 | | | | | | X | | | | | | | | | |
| 11 | B13 | 76864.11 | | | | | | X | | | | | | | | | |
| 12 | B14 | 76864.12 | | | | | | X | | | | | | | | | |
| 13 | B15 | 76864.13 | | | | | | X | | | | | | | | | |
| 14 | B16 | 76864.14 | | | | | | X | | | | | | | | | |
| 15 | B17 | 76864.15 | | | | | | X | | | | | | | | | |

## SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

| | | | |
|---|---|---|---|
| TOTAL NUMBER OF CONTAINERS | 15 | PROPERLY COOLED Y / N / NA | |
| CUSTODY SEALS Y / N / NA | | SAMPLES INTACT Y / N / NA | |
| RECEIVED IN GOOD COND. Y / N | | SAMPLES ACCEPTED Y / N | |

## TURN AROUND TIME

☒ NORMAL ☐ RUSH ☐ SAME DAY ☐ NEXT DAY ☐ 2 DAYS ☐ 3 DAYS

| RELINQUISHED BY SAMPLER: 1. | RELINQUISHED BY: 2. | RELINQUISHED BY: 3. |
|---|---|---|
| Signature: | Signature: | Signature: |
| Printed Name: Kevin Sy | Printed Name: | Printed Name: C. Miller |
| Date: 5/8/15 Time: 1317 | Date: Time: | Date: 5/8/15 Time: 1703 |
| **RECEIVED BY:** 1. | **RECEIVED BY:** 2. | **RECEIVED BY LABORATORY:** AETL 3. |
| Signature: | Signature: | Signature: |
| Printed Name: CARRIER | Printed Name: | Printed Name: Megan Claude |
| Date: 5/8/15 Time: 1317 | Date: Time: | Date: 05/08/15 Time: 1703 |

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

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**Ordered By**

Advantage Environmental Consultants
145 Vallecitos De Oro Suite 201
San Marcos, CA 92069-

Telephone: (760)744-3363
Attention: Dan Weis

Project ID: 15-062SD
Date Received 05/08/2015
Date Reported 05/13/2015

| Job Number | Order Date | Client |
|---|---|---|
| 76864 | 05/08/2015 | AEC |

## CERTIFICATE OF ANALYSIS
### CASE NARRATIVE

AETL received 15 samples with the following specification on 05/08/2015.

| Lab ID | Sample ID | Sample Date | Matrix | Quantity Of Containers |
|---|---|---|---|---|
| 76864.01 | B3 | 05/07/2015 | Soil | 1 |
| 76864.02 | B4 | 05/07/2015 | Soil | 1 |
| 76864.03 | B5 | 05/07/2015 | Soil | 1 |
| 76864.04 | B6 | 05/07/2015 | Soil | 1 |
| 76864.05 | B7 | 05/07/2015 | Soil | 1 |
| 76864.06 | B8 | 05/07/2015 | Soil | 1 |
| 76864.07 | B9 | 05/07/2015 | Soil | 1 |
| 76864.08 | B10 | 05/07/2015 | Soil | 1 |
| 76864.09 | B11 | 05/07/2015 | Soil | 1 |
| 76864.10 | B12 | 05/07/2015 | Soil | 1 |
| 76864.11 | B13 | 05/07/2015 | Soil | 1 |
| 76864.12 | B14 | 05/07/2015 | Soil | 1 |
| 76864.13 | B15 | 05/07/2015 | Soil | 1 |
| 76864.14 | B16 | 05/07/2015 | Soil | 1 |
| 76864.15 | B17 | 05/07/2015 | Soil | 1 |

| Method ^ Submethod | Req Date | Priority | TAT | Units |
|---|---|---|---|---|
| (6010B.LEAD) | 05/15/2015 | 2 | Normal | mg/Kg |

The samples were analyzed as specified on the enclosed chain of custody. Analytical non-conformances have been noted on the report.

Unless otherwise noted, all results of soil and solid samples are based on wet weight.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

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# ANALYTICAL RESULTS

**Ordered By**

Advantage Environmental Consultants
145 Vallecitos De Oro
Suite 201
San Marcos, CA 92069-

Telephone: (760)744-3363
Attn: Dan Weis

**Site**

661 Bear Valley Parkway
Escondido, CA 92025

Page: **2**

Project ID: 15-062SD
Project Name: 661 Bear Valley Parkway

| AETL Job Number | Submitted | Client |
|---|---|---|
| 76864 | 05/08/2015 | AEC |

## Method: (6010B.LEAD), Lead, ICP

**QC Batch No: 0511152C2**

| Our Lab I.D. | | | Method Blank | 76864.01 | 76864.02 | 76864.03 | 76864.04 |
|---|---|---|---|---|---|---|---|
| Client Sample I.D. | | | | B3 | B4 | B5 | B6 |
| Date Sampled | | | | 05/07/2015 | 05/07/2015 | 05/07/2015 | 05/07/2015 |
| Date Prepared | | | 05/11/2015 | 05/11/2015 | 05/11/2015 | 05/11/2015 | 05/11/2015 |
| Preparation Method | | | 3050B | 3050B | 3050B | 3050B | 3050B |
| Date Analyzed | | | 05/11/2015 | 05/11/2015 | 05/11/2015 | 05/11/2015 | 05/11/2015 |
| Matrix | | | Soil | Soil | Soil | Soil | Soil |
| Units | | | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Dilution Factor | | | 1 | 1 | 1 | 1 | 1 |
| **Analytes** | **MDL** | **PQL** | **Results** | **Results** | **Results** | **Results** | **Results** |
| Lead | 2.5 | 5.0 | ND | 11.4 | 125 | 39.1 | 7.60 |

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# ANALYTICAL RESULTS

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Telephone: (760)744-3363
Attn: Dan Weis

**Site**

661 Bear Valley Parkway
Escondido, CA 92025

Page: 3

Project ID: 15-062SD
Project Name: 661 Bear Valley Parkway

| AETL Job Number | Submitted | Client |
|---|---|---|
| 76864 | 05/08/2015 | AEC |

## Method: (6010B.LEAD), Lead, ICP

**QC Batch No: 0511152C2**

| Our Lab I.D. | | | 76864.05 | 76864.06 | 76864.07 | 76864.08 | 76864.09 |
|---|---|---|---|---|---|---|---|
| Client Sample I.D. | | | B7 | B8 | B9 | B10 | B11 |
| Date Sampled | | | 05/07/2015 | 05/07/2015 | 05/07/2015 | 05/07/2015 | 05/07/2015 |
| Date Prepared | | | 05/11/2015 | 05/11/2015 | 05/11/2015 | 05/11/2015 | 05/11/2015 |
| Preparation Method | | | 3050B | 3050B | 3050B | 3050B | 3050B |
| Date Analyzed | | | 05/11/2015 | 05/11/2015 | 05/11/2015 | 05/11/2015 | 05/11/2015 |
| Matrix | | | Soil | Soil | Soil | Soil | Soil |
| Units | | | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Dilution Factor | | | 1 | 1 | 1 | 1 | 1 |
| **Analytes** | **MDL** | **PQL** | **Results** | **Results** | **Results** | **Results** | **Results** |
| Lead | 2.5 | 5.0 | 20.7 | 16.0 | 11.8 | 15.5 | 13.8 |

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Telephone: (760)744-3363
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**Site**

661 Bear Valley Parkway
Escondido, CA 92025

Page: **4**

Project ID: 15-062SD
Project Name: 661 Bear Valley Parkway

| AETL Job Number | Submitted | Client |
|---|---|---|
| 76864 | 05/08/2015 | AEC |

## Method: (6010B.LEAD), Lead, ICP

**QC Batch No: 0511152C2**

| Our Lab I.D. | | | 76864.10 | 76864.11 | 76864.12 | 76864.13 | 76864.14 |
|---|---|---|---|---|---|---|---|
| Client Sample I.D. | | | B12 | B13 | B14 | B15 | B16 |
| Date Sampled | | | 05/07/2015 | 05/07/2015 | 05/07/2015 | 05/07/2015 | 05/07/2015 |
| Date Prepared | | | 05/11/2015 | 05/11/2015 | 05/11/2015 | 05/11/2015 | 05/11/2015 |
| Preparation Method | | | 3050B | 3050B | 3050B | 3050B | 3050B |
| Date Analyzed | | | 05/11/2015 | 05/11/2015 | 05/11/2015 | 05/11/2015 | 05/11/2015 |
| Matrix | | | Soil | Soil | Soil | Soil | Soil |
| Units | | | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Dilution Factor | | | 1 | 1 | 1 | 1 | 1 |
| **Analytes** | **MDL** | **PQL** | **Results** | **Results** | **Results** | **Results** | **Results** |
| Lead | 2.5 | 5.0 | 11.8 | 16.2 | 9.92 | 10.1 | 9.76 |

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# ANALYTICAL RESULTS

**Ordered By**

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San Marcos, CA 92069-

Telephone: (760)744-3363
Attn: Dan Weis

**Site**

661 Bear Valley Parkway
Escondido, CA 92025

Page: 5

Project ID: 15-062SD
Project Name: 661 Bear Valley Parkway

| AETL Job Number | Submitted | Client |
|---|---|---|
| 76864 | 05/08/2015 | AEC |

## Method: (6010B.LEAD), Lead, ICP

**QC Batch No: 0511152C2**

| Our Lab I.D. | | | 76864.15 | | | | |
|---|---|---|---|---|---|---|---|
| Client Sample I.D. | | | B17 | | | | |
| Date Sampled | | | 05/07/2015 | | | | |
| Date Prepared | | | 05/11/2015 | | | | |
| Preparation Method | | | 3050B | | | | |
| Date Analyzed | | | 05/11/2015 | | | | |
| Matrix | | | Soil | | | | |
| Units | | | mg/Kg | | | | |
| Dilution Factor | | | 1 | | | | |
| **Analytes** | **MDL** | **PQL** | **Results** | | | | |
| Lead | 2.5 | 5.0 | 13.9 | | | | |

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# QUALITY CONTROL RESULTS

**Ordered By**

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San Marcos, CA 92069-

Telephone: (760)744-3363
Attn: Dan Weis

**Site**

661 Bear Valley Parkway
Escondido, CA 92025

Page: 6

Project ID: 15-062SD
Project Name: 661 Bear Valley Parkway

| AETL Job Number | Submitted | Client |
|---|---|---|
| 76864 | 05/08/2015 | AEC |

## Method: (6010B.LEAD), Lead, ICP

**QC Batch No: 0511152C2; Dup or Spiked Sample: 76864.01; LCS: Clean Sand; QC Prepared: 05/11/2015; QC Analyzed: 05/11/2015; Units: mg/Kg**

| Analytes | Sample Result | MS Concen | MS Recov | MS % REC | MS DUP Concen | MS DUP Recov | MS DUP % REC | RPD % | MS/MSD % Limit | MS RPD % Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 11.4 | 50.0 | 47.3 M | 71.8 | 50.0 | 48.4 M | 74.0 | 3.02 | 75-125 | <15 |

**QC Batch No: 0511152C2; Dup or Spiked Sample: 76864.01; LCS: Clean Sand; QC Prepared: 05/11/2015; QC Analyzed: 05/11/2015; Units: mg/Kg**

| Analytes | LCS Concen | LCS Recov | LCS % REC | LCS DUP Concen | LCS DUP Recov | LCS DUP % REC | LCS RPD % REC | LCS/LCSD % Limit | LCS RPD % Limit | |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 50.0 | 42.0 | 84.0 | 50.0 | 41.8 | 83.6 | <1 | 75-125 | <15 | |

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# Data Qualifiers and Descriptors

## *Data Qualifier:*

| | |
|---|---|
| #: | Recovery is not within acceptable control limits. |
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| E: | Result is beyond calibration limits and is estimated. |
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| J: | Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL). |
| M: | Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable. |
| MCL: | Maximum Contaminant Level |
| NS: | No Standard Available |
| S6: | Surrogate recovery is outside control limits due to matrix interference. |
| S8: | The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria. |
| X: | Results represent LCS and LCSD data. |

## *Definition:*

| | |
|---|---|
| %Limi: | Percent acceptable limits. |
| %REC: | Percent recovery. |
| Con.L: | Acceptable Control Limits |
| Conce: | Added concentration to the sample. |
| LCS: | Laboratory Control Sample |
| MDL: | Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability. |

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# Data Qualifiers and Descriptors

| | |
|---|---|
| MS: | Matrix Spike |
| MS DU: | Matrix Spike Duplicate |
| ND: | Analyte was not detected in the sample at or above MDL. |
| PQL: | Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice. |
| Recov: | Recovered concentration in the sample. |
| RPD: | Relative Percent Difference |

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**Ordered By**

| |
|---|
| **Advantage Environmental Consultants** |
| **145 Vallecitos De Oro Suite 201** |
| **San Marcos, CA 92069-** |

**Telephone: (760)744-3363**
**Attention: Dan Weis**

| | |
|---|---|
| **Number of Pages** | **7** |
| **Date Received** | **06/12/2015** |
| **Date Reported** | **06/16/2015** |

| Job Number | Order Date | Client |
|---|---|---|
| 77327 | 06/12/2015 | AEC |

**Project ID:** 15-062SD
**Project Name:** 661 Bear Valley Pkwy
**Site:** Escondido, CA

Enclosed please find results of analyses of 8 soil samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

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# CHAIN OF CUSTODY RECORD

№ 91090

AETL JOB No. 77327

Page 1 of 1

| | | | |
|---|---|---|---|
| COMPANY | AEC | PROJECT MANAGER | Don Weis |
| COMPANY ADDRESS | 145 Vallecitos De Oro, Ste. 221, San Marcos, CA 92069 | PHONE | 760-744-3563 |
| | | FAX | -3383 |
| PROJECT NAME | 661 Bear Valley Pkwy | PROJECT # | 15-06250 |
| SITE NAME AND ADDRESS | Escondido, CA | PO # | |

| | SAMPLE ID | LAB ID | DATE | TIME | MATRIX | CONTAINER NUMBER/SIZE | PRES. |
|---|---|---|---|---|---|---|---|
| 1 | S1 | 77327.01 | 6/12/15 | | soil | 2oz jar | ice |
| 2 | S2 | 77327.02 | | | | | |
| 3 | S3 | 77327.03 | | | | | |
| 4 | S4 | 77327.04 | | | | | |
| 5 | B14 | 77327.05 | | | | | |
| 6 | B19 | 77327.06 | | | | | |
| 7 | B20 | 77327.07 | | | | | |
| 8 | B21 | 77327.08 | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |
| 15 | | | | | | | |

## ANALYSIS REQUESTED

| | Total Lead | Title 22 metals |
|---|---|---|
| 1 | X | |
| 2 | | X |
| 3 | X | |
| 4 | | X |
| 5 | X | |
| 6 | X | |
| 7 | X | |
| 8 | X | |

## TEST INSTRUCTIONS & COMMENTS

Normal

48 hr RUSH

## SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

| | | | |
|---|---|---|---|
| TOTAL NUMBER OF CONTAINERS | 8 | PROPERLY COOLED (Y) N / NA | |
| CUSTODY SEALS Y / N / (NA) | | SAMPLES INTACT (Y) N / NA | |
| RECEIVED IN GOOD COND (Y) N | | SAMPLES ACCEPTED (Y) N | |

## TURN AROUND TIME

☒ NORMAL ☒ RUSH ☐ SAME DAY ☐ NEXT DAY ☒ 2 DAYS ☐ 3 DAYS

## DATA DELIVERABLE REQUIRED

☐ HARD COPY ☒ PDF ☐ GEOTRACKER (GLOBAL ID) _____ ☐ OTHER (PLEASE SPECIFY) _____

| | RELINQUISHED BY SAMPLER: 1. | RELINQUISHED BY: 2. | RELINQUISHED BY: 3. |
|---|---|---|---|
| Signature: | | | |
| Printed Name: | Keith Sy | | Thomas Weis |
| Date: | 6-12-15 | | 6-12-15 |
| Time: | 1145 | | 1815 |

| | RECEIVED BY: 1. | RECEIVED BY: 2. | RECEIVED BY LABORATORY: AETL 3. |
|---|---|---|---|
| Signature: | | | |
| Printed Name: | Thomas Weis | | Amin |
| Date: | 6-12-15 | | 06/12/15 |
| Time: | 1145 | | 1815 |

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

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**Ordered By**

Advantage Environmental Consultants
145 Vallecitos De Oro Suite 201
San Marcos, CA 92069-

Telephone: (760)744-3363
Attention: Dan Weis

Project ID: 15-062SD
Date Received 06/12/2015
Date Reported 06/16/2015

| Job Number | Order Date | Client |
|---|---|---|
| 77327 | 06/12/2015 | AEC |

## CERTIFICATE OF ANALYSIS
### CASE NARRATIVE

AETL received 8 samples with the following specification on 06/12/2015.

| Lab ID | Sample ID | Sample Date | Matrix | Quantity Of Containers |
|---|---|---|---|---|
| 77327.01 | S1 | 06/12/2015 | Soil | 1 |
| 77327.03 | S3 | 06/12/2015 | Soil | 1 |

| Method ^ Submethod | Req Date | Priority | TAT | Units |
|---|---|---|---|---|
| (6010B.LEAD) | 06/19/2015 | 2 | Normal | mg/Kg |

| Lab ID | Sample ID | Sample Date | Matrix | Quantity Of Containers |
|---|---|---|---|---|
| 77327.02 | S2 | 06/12/2015 | Soil | 1 |
| 77327.04 | S4 | 06/12/2015 | Soil | 1 |

| Method ^ Submethod | Req Date | Priority | TAT | Units |
|---|---|---|---|---|
| (6010B/7000CAM) | 06/19/2015 | 2 | Normal | mg/Kg |

| Lab ID | Sample ID | Sample Date | Matrix | Quantity Of Containers |
|---|---|---|---|---|
| 77327.05 | B18 | 06/12/2015 | Soil | 1 |
| 77327.06 | B19 | 06/12/2015 | Soil | 1 |
| 77327.07 | B20 | 06/12/2015 | Soil | 1 |
| 77327.08 | B21 | 06/12/2015 | Soil | 1 |

| Method ^ Submethod | Req Date | Priority | TAT | Units |
|---|---|---|---|---|
| (6010B.LEAD) | 06/15/2015 | 3 | Rush | mg/Kg |

The samples were analyzed as specified on the enclosed chain of custody. Analytical non-conformances have been noted on the report.

Unless otherwise noted, all results of soil and solid samples are based on wet weight.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

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# ANALYTICAL RESULTS

**Ordered By**

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145 Vallecitos De Oro
Suite 201
San Marcos, CA 92069-

Telephone: (760)744-3363
Attn: Dan Weis
Page: 2

**Site**

Escondido, CA

Project ID: 15-062SD
Project Name: 661 Bear Valley Pkwy

| AETL Job Number | Submitted | Client |
|---|---|---|
| 77327 | 06/12/2015 | AEC |

## Method: (6010B.LEAD), Lead, ICP

**QC Batch No: 0613152C4**

| Our Lab I.D. | | | Method Blank | 77327.01 | 77327.03 | 77327.05 | 77327.06 |
|---|---|---|---|---|---|---|---|
| Client Sample I.D. | | | | S1 | S3 | B18 | B19 |
| Date Sampled | | | | 06/12/2015 | 06/12/2015 | 06/12/2015 | 06/12/2015 |
| Date Prepared | | | 06/13/2015 | 06/13/2015 | 06/13/2015 | 06/13/2015 | 06/13/2015 |
| Preparation Method | | | 3050B | 3050B | 3050B | 3050B | 3050B |
| Date Analyzed | | | 06/14/2015 | 06/14/2015 | 06/14/2015 | 06/14/2015 | 06/14/2015 |
| Matrix | | | Soil | Soil | Soil | Soil | Soil |
| Units | | | mg/Kg | mg/Kg | mg/Kg | mg/Kg | mg/Kg |
| Dilution Factor | | | 1 | 1 | 1 | 1 | 1 |
| **Analytes** | **MDL** | **PQL** | **Results** | **Results** | **Results** | **Results** | **Results** |
| Lead | 2.5 | 5.0 | ND | 94.9 | 28.6 | 13.1 | 11.7 |

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# ANALYTICAL RESULTS

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Suite 201
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Telephone: (760)744-3363
Attn: Dan Weis
Page: 3

**Site**

Escondido, CA

Project ID: 15-062SD
Project Name: 661 Bear Valley Pkwy

| AETL Job Number | Submitted | Client |
|---|---|---|
| 77327 | 06/12/2015 | AEC |

## Method: (6010B.LEAD), Lead, ICP

**QC Batch No: 0613152C4**

| Our Lab I.D. | | | 77327.07 | 77327.08 | | | |
|---|---|---|---|---|---|---|---|
| Client Sample I.D. | | | B20 | B21 | | | |
| Date Sampled | | | 06/12/2015 | 06/12/2015 | | | |
| Date Prepared | | | 06/13/2015 | 06/13/2015 | | | |
| Preparation Method | | | 3050B | 3050B | | | |
| Date Analyzed | | | 06/14/2015 | 06/14/2015 | | | |
| Matrix | | | Soil | Soil | | | |
| Units | | | mg/Kg | mg/Kg | | | |
| Dilution Factor | | | 1 | 1 | | | |
| **Analytes** | **MDL** | **PQL** | **Results** | **Results** | | | |
| Lead | 2.5 | 5.0 | 11.4 | 10.8 | | | |

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# ANALYTICAL RESULTS

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Attn: Dan Weis
Page: **4**

**Site**

Escondido, CA

Project ID: 15-062SD
Project Name: 661 Bear Valley Pkwy

| AETL Job Number | Submitted | Client |
|---|---|---|
| 77327 | 06/12/2015 | AEC |

## Method: (6010B/7000CAM), Title 22 Metals (SW-846)

**QC Batch No: 0613152C4**

| Our Lab I.D. | | | Method Blank | 77327.02 | 77327.04 | | |
|---|---|---|---|---|---|---|---|
| Client Sample I.D. | | | | S2 | S4 | | |
| Date Sampled | | | | 06/12/2015 | 06/12/2015 | | |
| Date Prepared | | | 06/13/2015 | 06/13/2015 | 06/13/2015 | | |
| Preparation Method | | | 3050B | 3050B | 3050B | | |
| Date Analyzed | | | 06/14/2015 | 06/14/2015 | 06/14/2015 | | |
| Matrix | | | Soil | Soil | Soil | | |
| Units | | | mg/Kg | mg/Kg | mg/Kg | | |
| Dilution Factor | | | 1 | 1 | 1 | | |
| **Analytes** | **MDL** | **PQL** | **Results** | **Results** | **Results** | | |
| Antimony | 1.0 | 5.0 | ND | ND | ND | | |
| Arsenic | 1.0 | 5.0 | ND | ND | ND | | |
| Barium | 2.5 | 5.0 | ND | 119 | 94.7 | | |
| Beryllium | 1.3 | 2.5 | ND | ND | ND | | |
| Cadmium | 1.3 | 2.5 | ND | ND | ND | | |
| Chromium | 2.5 | 5.0 | ND | 15.1 | 14.4 | | |
| Cobalt | 2.5 | 5.0 | ND | 9.44 | 9.65 | | |
| Copper | 2.5 | 5.0 | ND | 22.3 | 23.3 | | |
| Lead | 2.5 | 5.0 | ND | 42.8 | 27.3 | | |
| Mercury (By EPA 7471) | 0.1 | 0.2 | ND | 0.159J | 0.207 | | |
| Molybdenum | 2.5 | 5.0 | ND | ND | ND | | |
| Nickel | 2.5 | 5.0 | ND | 4.94J | 4.36J | | |
| Selenium | 1.0 | 5.0 | ND | ND | ND | | |
| Silver | 2.5 | 5.0 | ND | ND | ND | | |
| Thallium | 1.0 | 5.0 | ND | ND | ND | | |
| Vanadium | 2.5 | 5.0 | ND | 53.2 | 63.4 | | |
| Zinc | 2.5 | 5.0 | ND | 137 | 82.1 | | |

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# QUALITY CONTROL RESULTS

**Ordered By**

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145 Vallecitos De Oro
Suite 201
San Marcos, CA 92069-

Telephone: (760)744-3363
Attn: Dan Weis

**Site**

Escondido, CA

Page: 5

Project ID: 15-062SD
Project Name: 661 Bear Valley Pkwy

| AETL Job Number | Submitted | Client |
|---|---|---|
| 77327 | 06/12/2015 | AEC |

## Method: (6010B.LEAD), Lead, ICP

**QC Batch No: 0613152C4; Dup or Spiked Sample: 77285.01; LCS: Clean Sand; QC Prepared: 06/13/2015; QC Analyzed: 06/14/2015; Units: mg/Kg**

| Analytes | Sample Result | MS Concen | MS Recov | MS % REC | MS DUP Concen | MS DUP Recov | MS DUP % REC | RPD % | MS/MSD % Limit | MS RPD % Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 220 | 50.0 | 243 # | 46.0 | 50.0 | 242 # | 44.0 | 4.44 | 75-125 | <15 |

**QC Batch No: 0613152C4; Dup or Spiked Sample: 77285.01; LCS: Clean Sand; QC Prepared: 06/13/2015; QC Analyzed: 06/14/2015; Units: mg/Kg**

| Analytes | LCS Concen | LCS Recov | LCS % REC | LCS DUP Concen | LCS DUP Recov | LCS DUP % REC | LCS RPD % REC | LCS/LCSD % Limit | LCS RPD % Limit | |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 50.0 | 41.9 | 83.8 | 50.0 | 41.3 | 82.6 | 1.44 | 75-125 | <15 | |

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# QUALITY CONTROL RESULTS

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**Site**

Escondido, CA

Page: 6

Project ID: 15-062SD
Project Name: 661 Bear Valley Pkwy

| AETL Job Number | Submitted | Client |
|---|---|---|
| 77327 | 06/12/2015 | AEC |

## Method: (6010B/7000CAM), Title 22 Metals (SW-846)

**QC Batch No: 0613152C4; Dup or Spiked Sample: 77285.01; LCS: Clean Sand; QC Prepared: 06/13/2015; QC Analyzed: 06/14/2015; Units: mg/Kg**

| Analytes | Sample Result | MS Concen | MS Recov | MS % REC | MS DUP Concen | MS DUP Recov | MS DUP % REC | RPD % | MS/MSD % Limit | MS RPD % Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 0.00 | 50.0 | 45.1 | 90.2 | 50.0 | 44.8 | 89.6 | <1 | 75-125 | <15 |
| Arsenic | 0.00 | 50.0 | 40.9 | 81.8 | 50.0 | 42.4 | 84.8 | 3.60 | 75-125 | <15 |
| Barium | 152 | 50.0 | 205 | 106 | 50.0 | 206 | 108 | 1.87 | 75-125 | <15 |
| Beryllium | 0.00 | 50.0 | 44.3 | 88.6 | 50.0 | 44.4 | 88.8 | <1 | 75-125 | <15 |
| Cadmium | 0.00 | 50.0 | 41.2 | 82.4 | 50.0 | 41.2 | 82.4 | <1 | 75-125 | <15 |
| Chromium | 16.5 | 50.0 | 57.0 | 81.0 | 50.0 | 57.0 | 81.0 | <1 | 75-125 | <15 |
| Cobalt | 7.13 | 50.0 | 47.4 | 80.5 | 50.0 | 47.2 | 80.1 | <1 | 75-125 | <15 |
| Copper | 136 | 50.0 | 222 # | 172 | 50.0 | 223 # | 174 | 1.16 | 75-125 | <15 |
| Lead | 220 | 50.0 | 243 # | 46.0 | 50.0 | 242 # | 44.0 | 4.44 | 75-125 | <15 |
| Mercury (By EPA 7471) | 0.00 | 0.500 | 0.620 | 124 | 0.500 | 0.610 | 122 | 1.6 | 75-125 | <15 |
| Molybdenum | 0.0850 | 50.0 | 44.4 | 88.6 | 50.0 | 44.1 | 88.0 | <1 | 75-125 | <15 |
| Nickel | 9.58 | 50.0 | 46.7 # | 74.2 | 50.0 | 46.7 # | 74.2 | <1 | 75-125 | <15 |
| Selenium | 0.00 | 50.0 | 42.8 | 85.6 | 50.0 | 43.3 | 86.6 | 1.16 | 75-125 | <15 |
| Silver | 0.00 | 50.0 | 36.1 # | 72.2 | 50.0 | 36.1 # | 72.2 | <1 | 75-125 | <15 |
| Thallium | 0.00 | 50.0 | 30.6 # | 61.2 | 50.0 | 30.5 # | 61.0 | <1 | 75-125 | <15 |
| Vanadium | 28.8 | 50.0 | 69.7 | 81.8 | 50.0 | 69.9 | 82.2 | <1 | 75-125 | <15 |
| Zinc | 243 | 50.0 | 327 # | 168 | 50.0 | 327 # | 168 | <1 | 75-125 | <15 |

**QC Batch No: 0613152C4; Dup or Spiked Sample: 77285.01; LCS: Clean Sand; QC Prepared: 06/13/2015; QC Analyzed: 06/14/2015; Units: mg/Kg**

| Analytes | LCS Concen | LCS Recov | LCS % REC | LCS DUP Concen | LCS DUP Recov | LCS DUP % REC | LCS RPD % REC | LCS/LCSD % Limit | LCS RPD % Limit | |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 50.0 | 45.9 | 91.8 | 50.0 | 45.3 | 90.6 | 1.32 | 75-125 | <15 | |
| Arsenic | 50.0 | 44.4 | 88.8 | 50.0 | 44.0 | 88.0 | <1 | 75-125 | <15 | |
| Barium | 50.0 | 45.7 | 91.4 | 50.0 | 45.2 | 90.4 | 1.10 | 75-125 | <15 | |
| Beryllium | 50.0 | 49.9 | 99.8 | 50.0 | 49.7 | 99.4 | <1 | 75-125 | <15 | |
| Cadmium | 50.0 | 43.2 | 86.4 | 50.0 | 42.5 | 85.0 | 1.63 | 75-125 | <15 | |
| Chromium | 50.0 | 45.6 | 91.2 | 50.0 | 45.2 | 90.4 | <1 | 75-125 | <15 | |
| Cobalt | 50.0 | 43.1 | 86.2 | 50.0 | 42.6 | 85.2 | 1.17 | 75-125 | <15 | |
| Copper | 50.0 | 45.6 | 91.2 | 50.0 | 45.0 | 90.0 | 1.32 | 75-125 | <15 | |

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# QUALITY CONTROL RESULTS



Project ID: 15-062SD
Project Name: 661 Bear Valley Pkwy

| AETL Job Number | Submitted | Client |
|---|---|---|
| 77327 | 06/12/2015 | AEC |

## Method: (6010B/7000CAM), Title 22 Metals (SW-846)

**QC Batch No: 0613152C4; Dup or Spiked Sample: 77285.01; LCS: Clean Sand; QC Prepared: 06/13/2015; QC Analyzed: 06/14/2015; Units: mg/Kg**

| Analytes | LCS Concen | LCS Recov | LCS % REC | LCS DUP Concen | LCS DUP Recov | LCS DUP % REC | LCS RPD % REC | LCS/LCSD % Limit | LCS RPD % Limit | |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 50.0 | 41.9 | 83.8 | 50.0 | 41.3 | 82.6 | 1.44 | 75-125 | <15 | |
| Mercury (By EPA 7471) | 0.500 | 0.497 | 99.4 | 0.500 | 0.505 | 101 | 1.6 | 75-125 | <15 | |
| Molybdenum | 50.0 | 49.9 | 99.8 | 50.0 | 49.5 | 99.0 | <1 | 75-125 | <15 | |
| Nickel | 50.0 | 42.3 | 84.6 | 50.0 | 41.7 | 83.4 | 1.43 | 75-125 | <15 | |
| Selenium | 50.0 | 44.3 | 88.6 | 50.0 | 43.2 | 86.4 | 2.51 | 75-125 | <15 | |
| Silver | 50.0 | 42.8 | 85.6 | 50.0 | 42.2 | 84.4 | 1.41 | 75-125 | <15 | |
| Thallium | 50.0 | 39.6 | 79.2 | 50.0 | 39.4 | 78.8 | <1 | 75-125 | <15 | |
| Vanadium | 50.0 | 47.1 | 94.2 | 50.0 | 46.6 | 93.2 | 1.07 | 75-125 | <15 | |
| Zinc | 50.0 | 43.7 | 87.4 | 50.0 | 43.0 | 86.0 | 1.61 | 75-125 | <15 | |

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# Data Qualifiers and Descriptors

## *Data Qualifier:*

| | |
|---|---|
| #: | Recovery is not within acceptable control limits. |
| *: | In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied. |
| B: | Analyte was present in the Method Blank. |
| D: | Result is from a diluted analysis. |
| E: | Result is beyond calibration limits and is estimated. |
| H: | Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control. |
| J: | Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL). |
| M: | Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable. |
| MCL: | Maximum Contaminant Level |
| NS: | No Standard Available |
| S6: | Surrogate recovery is outside control limits due to matrix interference. |
| S8: | The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria. |
| X: | Results represent LCS and LCSD data. |

## *Definition:*

| | |
|---|---|
| %Limi: | Percent acceptable limits. |
| %REC: | Percent recovery. |
| Con.L: | Acceptable Control Limits |
| Conce: | Added concentration to the sample. |
| LCS: | Laboratory Control Sample |
| MDL: | Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability. |

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# Data Qualifiers and Descriptors

| | |
|---|---|
| MS: | Matrix Spike |
| MS DU: | Matrix Spike Duplicate |
| ND: | Analyte was not detected in the sample at or above MDL. |
| PQL: | Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice. |
| Recov: | Recovered concentration in the sample. |
| RPD: | Relative Percent Difference |

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**Ordered By**

| |
|---|
| **Advantage Environmental Consultants** |
| **145 Vallecitos De Oro Suite 201** |
| **San Marcos, CA 92069-** |

**Telephone: (760)744-3363**
**Attention: Dan Weis**

| | |
|---|---|
| **Number of Pages** | **3** |
| **Date Received** | **06/12/2015** |
| **Date Reported** | **06/22/2015** |

| Job Number | Order Date | Client |
|---|---|---|
| 77355 | 06/16/2015 | AEC |

**Project ID:** 15-062SD
**Project Name:** 661 Bear Valley Pkwy
**Site:** Escondido, CA

Enclosed please find results of analyses of 1 soil sample which was analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

# American Environmental Testing Laboratory Inc.

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# CHAIN OF CUSTODY RECORD

77355
77327

№ 91090

AETL JOB No.

Page 1 of 1

| | |
|---|---|
| COMPANY | AEC |
| COMPANY ADDRESS | 145 Vallecitos De Oro, Ste. 221, San Marcos, CA 92069 |
| PROJECT NAME | 661 Bear Valley Pkwy |
| SITE NAME AND ADDRESS | Escondido, CA |
| PROJECT MANAGER | Dan Weis |
| PHONE | 760-744-3563 |
| FAX | -3383 |
| PROJECT # | 15-00250 |
| PO # | |

| | SAMPLE ID | LAB ID | DATE | TIME | MATRIX | CONTAINER NUMBER/SIZE | PRES. | Total Lead | Title 22 Metals | STLC Lead | TCLP Lead |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | S1 | ~~77327.01~~ | 6/12/15 | | SOIL | 2oz jar | Ice | X | | * | * |
| 2 | S2 | 77327.02 | | | | | | | X | | |
| 3 | S3 | 77327.03 | | | | | | X | | | |
| 4 | S4 | 77327.04 | | | | | | | X | | |
| 5 | B14 | 77327.05 | | | | | | X | | | |
| 6 | B19 | 77327.06 | | | | | | X | | | |
| 7 | B20 | 77327.07 | | | | | | X | | | |
| 8 | B21 | 77327.08 | | | | | | X | | | |
| 9 | | | | | | | | | | | |
| 10 | | | | | | | | | | | |
| 11 | | | | | | | | | | | |
| 12 | | | | | | | | | | | |
| 13 | | | | | | | | | | | |
| 14 | | | | | | | | | | | |
| 15 | | | | | | | | | | | |

ANALYSIS REQUESTED

TEST INSTRUCTIONS & COMMENTS

*Added 6/16 Normal TAT

77355.01

Normal

48 hr RUSH

## SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

| | | | |
|---|---|---|---|
| TOTAL NUMBER OF CONTAINERS | 8 | PROPERLY COOLED (Y) N / NA | |
| CUSTODY SEALS Y (N) NA | | SAMPLES INTACT (Y) N / NA | |
| RECEIVED IN GOOD COND. (Y) N | | SAMPLES ACCEPTED (Y) N | |

## TURN AROUND TIME

☒ NORMAL ☒ RUSH ☐ SAME DAY ☐ NEXT DAY ☒ 2 DAYS ☐ 3 DAYS

## DATA DELIVERABLE REQUIRED

☐ HARD COPY ☒ PDF ☐ GEOTRACKER (GLOBAL ID) _____ ☐ OTHER (PLEASE SPECIFY) _____

| | 1. | 2. | 3. |
|---|---|---|---|
| RELINQUISHED BY SAMPLER: / RELINQUISHED BY: | Signature: | Signature: | Signature: |
| | Printed Name: Keith Sy | Printed Name: | Printed Name: Thomas Weis |
| | Date: 6-12-15 Time: 1145 | Date: Time: | Date: 6-12-15 Time: 1815 |
| RECEIVED BY: / RECEIVED BY LABORATORY: | Signature: | Signature: | Signature: |
| | Printed Name: Thomas Weis | Printed Name: | Printed Name: AETL |
| | Date: 6-12-15 Time: 1145 | Date: Time: | Date: 06/12/15 Time: 1815 |

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

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**Ordered By**

Advantage Environmental Consultants
145 Vallecitos De Oro Suite 201
San Marcos, CA 92069-

Telephone: (760)744-3363
Attention: Dan Weis

Project ID: 15-062SD
Date Received 06/12/2015
Date Reported 06/22/2015

| Job Number | Order Date | Client |
|---|---|---|
| 77355 | 06/16/2015 | AEC |

# CERTIFICATE OF ANALYSIS
## CASE NARRATIVE

AETL received 1 samples with the following specification on 06/16/2015.

| Lab ID | Sample ID | Sample Date | Matrix | Quantity Of Containers |
|---|---|---|---|---|
| 77355.01 | S1 | 06/12/2015 | Soil | 1 |

| Method ^ Submethod | Req Date | Priority | TAT | Units |
|---|---|---|---|---|
| (6010/7000TCLP) ^ PB | 06/23/2015 | 2 | Normal | mg/L |
| (6010B-STLC) ^ STLC-PB | 06/23/2015 | 2 | Normal | mg/L |

The samples were analyzed as specified on the enclosed chain of custody.
No analytical non-conformances were encountered.

Unless otherwise noted, all results of soil and solid samples are based on wet weight.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

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# ANALYTICAL RESULTS

**Ordered By**

Advantage Environmental Consultants
145 Vallecitos De Oro
Suite 201
San Marcos, CA 92069-

Telephone: (760)744-3363
Attn: Dan Weis
Page: **2**

**Site**

Escondido, CA

Project ID: 15-062SD
Project Name: 661 Bear Valley Pkwy

| AETL Job Number | Submitted | Client |
|---|---|---|
| 77355 | 06/12/2015 | AEC |

## Method: (6010B-STLC), Soluble Threshold Limit Concentration (STLC)

**QC Batch No: 0617152C1**

| Our Lab I.D. | | | Method Blank | 77355.01 | | | |
|---|---|---|---|---|---|---|---|
| Client Sample I.D. | | | | S1 | | | |
| Date Sampled | | | | 06/12/2015 | | | |
| Date Prepared | | | 06/17/2015 | 06/17/2015 | | | |
| Preparation Method | | | TITLE 22 | TITLE 22 | | | |
| Date Analyzed | | | 06/19/2015 | 06/19/2015 | | | |
| Matrix | | | Soil | Soil | | | |
| Units | | | mg/L | mg/L | | | |
| Dilution Factor | | | 1 | 1 | | | |
| **Analytes** | **MDL** | **PQL** | **Results** | **Results** | | | |
| Lead (STLC) | 0.05 | 0.10 | ND | 1.45 | | | |

## QUALITY CONTROL REPORT

**QC Batch No: 0617152C1; Dup or Spiked Sample: 77355.01; LCS: Clean Sand; LCS Prepared: 06/17/2015; LCS Analyzed: 06/19/2015; Units: mg/L**

| Analytes | LCS Concen | LCS Recov | LCS % REC | LCS DUP Concen | LCS DUP Recov | LCS DUP % REC | LCS RPD % REC | LCS/LCSD % Limit | LCS RPD % Limit | |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead (STLC) | 10.0 | 9.36 | 93.6 | 10.0 | 9.47 | 94.7 | 1.17 | 80-120 | <15 | |

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# ANALYTICAL RESULTS

**Ordered By**

Advantage Environmental Consultants
145 Vallecitos De Oro
Suite 201
San Marcos, CA 92069-

Telephone: (760)744-3363
Attn: Dan Weis
Page: 3

**Site**

Escondido, CA

Project ID: 15-062SD
Project Name: 661 Bear Valley Pkwy

| AETL Job Number | Submitted | Client |
|---|---|---|
| 77355 | 06/12/2015 | AEC |

## Method: (6010/7000TCLP), Toxicity Characteristic Leaching Procedure (TCLP,EPA 1311)

**QC Batch No: 0617152C2**

| Our Lab I.D. | | | Method Blank | 77355.01 | | | |
|---|---|---|---|---|---|---|---|
| Client Sample I.D. | | | | S1 | | | |
| Date Sampled | | | | 06/12/2015 | | | |
| Date Prepared | | | 06/17/2015 | 06/17/2015 | | | |
| Preparation Method | | | 1311 | 1311 | | | |
| Date Analyzed | | | 06/19/2015 | 06/19/2015 | | | |
| Matrix | | | Soil | Soil | | | |
| Units | | | mg/L | mg/L | | | |
| Dilution Factor | | | 1 | 1 | | | |
| **Analytes** | **MDL** | **PQL** | **Results** | **Results** | | | |
| Lead (TCLP) | 0.05 | 0.10 | ND | ND | | | |

## QUALITY CONTROL REPORT

**QC Batch No: 0617152C2; Dup or Spiked Sample: 77355.01; LCS: Clean Sand; LCS Prepared: 06/17/2015; LCS Analyzed: 06/19/2015; Units: mg/L**

| Analytes | SM Result | SM DUP Result | RPD % | SM RPD % Limit | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead (TCLP) | ND | ND | <1 | <20 | | | | | | |

**QC Batch No: 0617152C2; Dup or Spiked Sample: 77355.01; LCS: Clean Sand; LCS Prepared: 06/17/2015; LCS Analyzed: 06/19/2015; Units: mg/L**

| Analytes | LCS Concen | LCS Recov | LCS % REC | LCS DUP Concen | LCS DUP Recov | LCS DUP % REC | LCS RPD % REC | LCS/LCSD % Limit | LCS RPD % Limit | |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead (TCLP) | 10.0 | 9.67 | 96.7 | 10.0 | 9.65 | 96.5 | <1 | 80-120 | <15 | |

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# Data Qualifiers and Descriptors

## *Data Qualifier:*

| | |
|---|---|
| #: | Recovery is not within acceptable control limits. |
| *: | In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied. |
| B: | Analyte was present in the Method Blank. |
| D: | Result is from a diluted analysis. |
| E: | Result is beyond calibration limits and is estimated. |
| H: | Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control. |
| J: | Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL). |
| M: | Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable. |
| MCL: | Maximum Contaminant Level |
| NS: | No Standard Available |
| S6: | Surrogate recovery is outside control limits due to matrix interference. |
| S8: | The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria. |
| X: | Results represent LCS and LCSD data. |

## *Definition:*

| | |
|---|---|
| %Limi: | Percent acceptable limits. |
| %REC: | Percent recovery. |
| Con.L: | Acceptable Control Limits |
| Conce: | Added concentration to the sample. |
| LCS: | Laboratory Control Sample |
| MDL: | Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability. |

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# Data Qualifiers and Descriptors

| | |
|---|---|
| MS: | Matrix Spike |
| MS DU: | Matrix Spike Duplicate |
| ND: | Analyte was not detected in the sample at or above MDL. |
| PQL: | Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice. |
| Recov: | Recovered concentration in the sample. |
| RPD: | Relative Percent Difference |

WP57595

**NO.** 716269

# NON-HAZARDOUS WASTE DATA FORM

BESI # 256473

## GENERATOR

Generator's Name and Mailing Address

661 BEAR VALLEY PARKWAY
661 BEAR VALLEY PARKWAY
ESCONDIDO, CA 92025

Generator's Site Address (if different than mailing address)

661 BEAR VALLEY PARKWAY
661 BEAR VALLEY PARKWAY
ESCONDIDO, CA 92025

Generator's Phone:

Container type removed from site:

☐ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☑ Dump Truck

☐ Other _____

Quantity 1

Container type transported to receiving facility:

☐ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☑ Dump Truck

☐ Other _____

Quantity 1 Volume 10 YARDS

WASTE DESCRIPTION NON-HAZARDOUS SOIL

GENERATING PROCESS EXCAVATION

| COMPONENTS OF WASTE | PPM | % | COMPONENTS OF WASTE | PPM | % |
|---|---|---|---|---|---|
| 1: SOIL | | 100% | 3. | | |
| 2. | | | 4. | | |

Waste Profile _____ PROPERTIES: pH ____ ☐ SOLID ☐ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER _____

HANDLING INSTRUCTIONS: WEAR ALL APPROPRIATE PERSONAL PROTECTIVE CLOTHING

Generator Printed/Typed Name: RALPH MINTZ FOR WALKFORD'S

Signature

Month 7 Day 6 Year 15

The Generator certifies that the waste as described is 100% non-hazardous

## TRANSPORTER

Transporter 1 Company Name: PERRAULT TRUCKING

Phone# (760) 732 0830

Transporter 1 Printed/Typed Name: COREY PERMALA

Signature

Month 7 Day 6 Year 15

Transporter Acknowledgment of Receipt of Materials

Transporter 2 Company Name

Phone#

Transporter 2 Printed/Typed Name

Signature

Month Day Year

Transporter Acknowledgment of Receipt of Materials

## RECEIVING FACILITY

Designated Facility Name and Site Address

PHILADELPHIA RECYCLING MINE
12000 PHILADELPHIA STREET
MIRA LOMA, CA 91752

Phone# 951-685-8343

Printed/Typed Name: VICK GARISPE

Signature

Month 7 Day 6 Year 15

Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.

NO. 716268

# NON-HAZARDOUS WASTE DATA FORM

BESI # 256473

## GENERATOR

Generator's Name and Mailing Address
661 BEAR VALLEY PARKWAY
661 BEAR VALLEY PARKWAY
ESCONDIDO, CA 92025

Generator's Site Address (if different than mailing address)
661 BEAR VALLEY PARKWAY
661 BEAR VALLEY PARKWAY
ESCONDIDO, CA 92025

Generator's Phone:

Container type removed from site:
☐ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☒ Dump Truck
☐ Other

Quantity 1

Container type transported to receiving facility:
☐ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☒ Dump Truck
☐ Other

Quantity 1 Volume 18 YARDS

WASTE DESCRIPTION NON-HAZARDOUS SOIL

GENERATING PROCESS EXCAVATION

| COMPONENTS OF WASTE | PPM | % |
|---|---|---|
| 1. SOIL | | 100% |
| 2. | | |
| 3. | | |
| 4. | | |

Waste Profile

PROPERTIES: pH ☐ SOLID ☐ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER

HANDLING INSTRUCTIONS: WEAR ALL APPROPRIATE PERSONAL PROTECTIVE CLOTHING

Generator Printed/Typed Name: ERLEND M. VINJE FOR WOLF FORCE
Signature:
Month 7 Day 6 Year 15

The Generator certifies that the waste as described is 100% non-hazardous

## TRANSPORTER

Transporter 1 Company Name: PERRAULT TRUCKING
Phone#: (760) 732-0830

Transporter 1 Printed/Typed Name: TROY FREEMAN
Signature:
Month 7 Day 6 Year 15

Transporter Acknowledgment of Receipt of Materials

Transporter 2 Company Name
Phone#

Transporter 2 Printed/Typed Name
Signature
Month Day Year

Transporter Acknowledgment of Receipt of Materials

## RECEIVING FACILITY

Designated Facility Name and Site Address
PHILADELPHIA RECYCLING MINE
12000 PHILADELPHIA STREET
MIRA LOMA, CA 91752

Phone#
951-685-8343

Printed/Typed Name: Vicki GARRISON
Signature:
Month 7 Day 6 Year 15

Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.

PLYLEY ENTERPRISES, INC. d/b/a/

# PHILADELPHIA RECYCLING MINE

Weighmaster

12000 Philadelphia St., Mira Loma, CA 91752

(951) 685-8343

*Weighed at 12000 Philadelphia Street, Mira Loma, California*

## WEIGHMASTER CERTIFICATE

**INVOICE #** 505883

| TIME | DATE |
|---|---|
| 10:42 | 07/06/2015 |

THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.

| VEHICLE I.D. | VEHICLE TYPE | P.O. # | CITY | COUNTY |
|---|---|---|---|---|
| WP57595 | END DUMP | | ESCONDIDO | SAN DIEGO |

| MATERIAL | TRANSACTION | CHECK # | TRAILER LICENSE # | VEHICLE LICENSE # |
|---|---|---|---|---|
| 1 END DUMP | ACCOUNT | | 4HD9913 | WP57595 |

| JOB LOCATION | DRIVER | DEPUTY |
|---|---|---|
| BEAR VALLEY | ON ☑ OFF ☐ | Vicki L. Garispe |

| | | |
|---|---|---|
| Gross: | 50600 lb | (M) |
| Tare: | 31300 lb | |
| Net: | 19300 lb | |
| Net Tons: | 9.65 tn | |
| Accum Tons | 0.00 tn | |

BELSHIRE ENVIRONMENTAL
25971 TOWNE CENTRE DR.
LAKE FOREST, CA 92610

*Thank You*

JOB COPY

X _____
SIGNATURE

PLYLEY ENTERPRISES, INC. d/b/a/

# PHILADELPHIA RECYCLING MINE

Weighmaster

12000 Philadelphia St., Mira Loma, CA 91752

(951) 685-8343

*Weighed at 12000 Philadelphia Street, Mira Loma, California*

## WEIGHMASTER CERTIFICATE

**INVOICE #** 505885

| TIME | DATE |
|---|---|
| 10:53 | 07/06/2015 |

THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.

| VEHICLE I.D. | VEHICLE TYPE | P.O. # | CITY | COUNTY |
|---|---|---|---|---|
| 9F24737 | END DUMP | | ESCONDIDO | SAN DIEGO |

| MATERIAL | TRANSACTION | CHECK # | TRAILER LICENSE # | VEHICLE LICENSE # |
|---|---|---|---|---|
| 1 END DUMP | ACCOUNT | | 4EY5710 | 9F24737 |

| JOB LOCATION | DRIVER | DEPUTY |
|---|---|---|
| BEAR VALLEY | ON ☐ OFF ☐ | Vicki L. Garispe |

| | |
|---|---|
| Gross: | 45320 lb (M) |
| Tare: | 33160 lb |
| Net: | 12160 lb |
| Net Tons: | 6.08 tn |
| Accum Tons | 0.00 tn |

BELSHIRE ENVIRONMENTAL
25971 TOWNE CENTRE DR.
LAKE FOREST, CA 92610

*Thank You*

JOB COPY

X _____
SIGNATURE

# Appendix O Acoustical Site Assessment (April 2016)

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# ACOUSTICAL SITE ASSESSMENT
# 661 BEAR VALLEY TENTATIVE SUBDIVISION MAP
# ESCONDIDO, CA

Submitted to:

Ms. Elizabeth Wohlford
Spieth & Wohlford, Inc.
P.O. Box 5005, #17
Rancho Santa Fe, CA 92067


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*www.ise.us*

ISE Project #14-023

April 27, 2016 (Revised)

## REPORT CONTENTS


**INTRODUCTION AND DEFINITIONS** **1**

Existing Site Characterization 1

Project Description 1

Acoustical Definitions and Theory 1

**ENVIRONMENTAL SIGNIFICANCE THRESHOLDS** **8**

City of Escondido Noise Regulations 8

State of California CCR Title 24 9

City of Escondido Construction Noise Ordinance Regulations 9

City of Escondido Environmental Quality Regulations 10

**APPROACH AND METHODOLOGY** **11**

Field Acoustical Reconnaissance 11

Construction Noise Impact Assessment Approach 11

Traffic Segment Impact Assessment Approach 11

Exterior Traffic Noise Impact Assessment Approach 12

**FINDINGS AND RECOMMENDATIONS** **16**

Field Acoustical Reconnaissance Findings 16

Construction Noise Emission Levels 16

Future Roadway Segment Noise Impacts 19

Future Traffic Noise Impacts to Proposed Development 19

**CERTIFICATION OF ACCURACY AND QUALIFICATIONS** **31**

**APPENDICIES AND SUPPLEMENTAL INFORMATION** **32**

APP 1 – Field Reconnaissance Measurement Results 32

APP 2 – TNM Model Input/Output Data 36

**INDEX OF IMPORTANT TERMS** **61**



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## LIST OF TABLES


| | |
|---|---|
| TABLE 1: CITY OF ESCONDIDO LAND USE COMPATIBILITY MATRIX | 10 |
| TABLE 2: MEASURED AMBIENT SOUND LEVELS | 16 |
| TABLE 3: AGGREGATE CONSTRUCTION NOISE LEVELS AT PROJECT SITE | 17 |
| TABLE 4A: PROJECT TRAFFIC NOISE CONDITIONS (EXISTING) | 20 |
| TABLE 4B: PROJECT TRAFFIC NOISE CONDITIONS (EXISTING + PROJECT) | 21 |
| TABLE 4C: PROJECT TRAFFIC NOISE CONDITIONS (CUMULATIVE) | 22 |
| TABLE 4D: PROJECT TRAFFIC NOISE CONDITIONS (CUMULATIVE + PROJECT) | 23 |
| TABLE 4E: PROJECT TRAFFIC NOISE CONDITIONS (GENERAL PLAN) | 24 |
| TABLE 4F: PROJECT TRAFFIC NOISE CONDITIONS (GENERAL PLAN + PROJECT) | 25 |
| TABLE 4G: PROJECT TRAFFIC NOISE COMPARISON (ALL SCENARIOS) | 26 |
| TABLE 5: PREDICTED FUTURE PROJECT SITE NOISE LEVELS | 27 |



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## LIST OF FIGURES / MAPS / ADDENDA


| | |
|---|---|
| FIGURE 1: PROJECT STUDY AREA VICINITY MAP | 2 |
| FIGURE 2: PROJECT STUDY AREA PARCEL MAP | 3 |
| FIGURE 3: AERIAL IMAGE SHOWING DEVELOPMENT AND SURROUNDING USES | 4 |
| FIGURE 4: PROPOSED 661 BEAR VALLEY SITE DEVELOPMENT MAP | 5 |
| FIGURE 5: DEVELOPMENT SITE RELATIVE TO SURROUNDING PARCELS | 6 |
| FIGURE 6: AMBIENT NOISE MONITORING LOCATIONS ML 1 AND ML 2 | 13 |
| FIGURE 7A: AMBIENT NOISE MONITORING LOCATION ML 1 | 14 |
| FIGURE 7B: AMBIENT NOISE MONITORING LOCATION ML 2 | 15 |
| FIGURE 8: EXPECTED CONSTRUCTION NOISE EXPOSURE MAP | 18 |
| FIGURE 9: PROPOSED 661 BEAR VALLEY SITE ACOUSTICAL MITIGATION PLAN | 29 |
| FIGURE 10: PROPOSED PROJECT SITE RELATIVE TO NEARBY AIRPORTS | 30 |


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## INTRODUCTION AND DEFINITIONS

### Existing Site Characterization

The proposed 661 Bear Valley Tentative Subdivision Map (APN's 237-131-01, 02) consists of approximately 40.9 gross acres, located in the North County Area of San Diego County in the City of Escondido, as shown in Figure 1 on the following page. Regional access to the site is obtained from Bear Valley Parkway as shown in Figure 2 on Page 3 of this report. Surrounding land uses consist of single-family residential lots, limited commercial uses, and undeveloped open space. These features, as well as the proposed site plan configuration, can be seen in Figure 3 on Page 4 of this report.

The project site resides as a fully disturbed land use (i.e., a past extractive/mining use), and currently has one single-family residential structure onsite. Elevations across the property range from approximately 530 feet to 675 feet above mean sea level (MSL).

### Project Description

The 661 Bear Valley Tentative Subdivision Map would construct fifty five (55), approximately 10,000 square-foot, single family residential lots as shown in Figures 4 and 5 starting on Page 5 of this report. The project would also include necessary roadway and drainage improvements as well as the dedication of approximately 1.2 acres for improvements to Bear Valley Parkway.

### Acoustical Definitions and Theory

Sound waves are linear mechanical waves. They can be propagated in solids, liquids, and gases. The material transmitting such a wave oscillates in the direction of propagation of the wave itself. Sound waves originate from some sort of vibrating surface which alternatively compress the surrounding air on a forward movement, and expand it on a backward movement.

There is a large range of frequencies within which linear waves can be generated, sound waves being confined to the frequency range that can stimulate the auditory organs to the sensation of hearing. For humans, this range is from about 20 Hertz (Hz or cycles per second) to about 20,000 Hz. The air transmits these frequency disturbances outward from the source of the wave.

Noise can be represented as a superposition of periodic waves with a large number of components, and is defined as unwanted or annoying sound that interferes with, or disrupts, normal activities. Although exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and is influenced by the type of noise, its perceived importance, the time of day, and the sensitivity of the individual hearing the sound.

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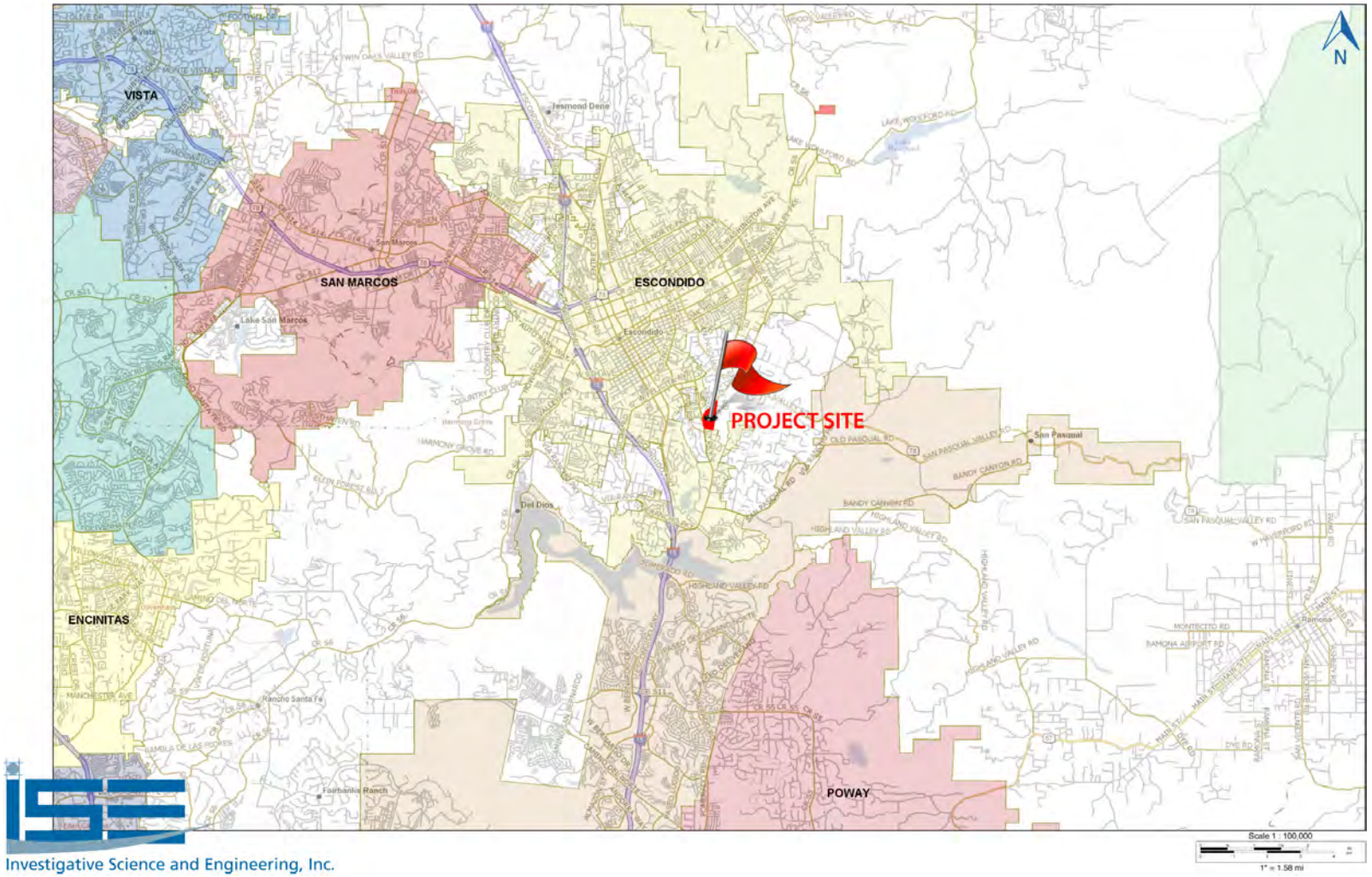


**FIGURE 1: Project Study Area Vicinity Map (ISE 12/14)**

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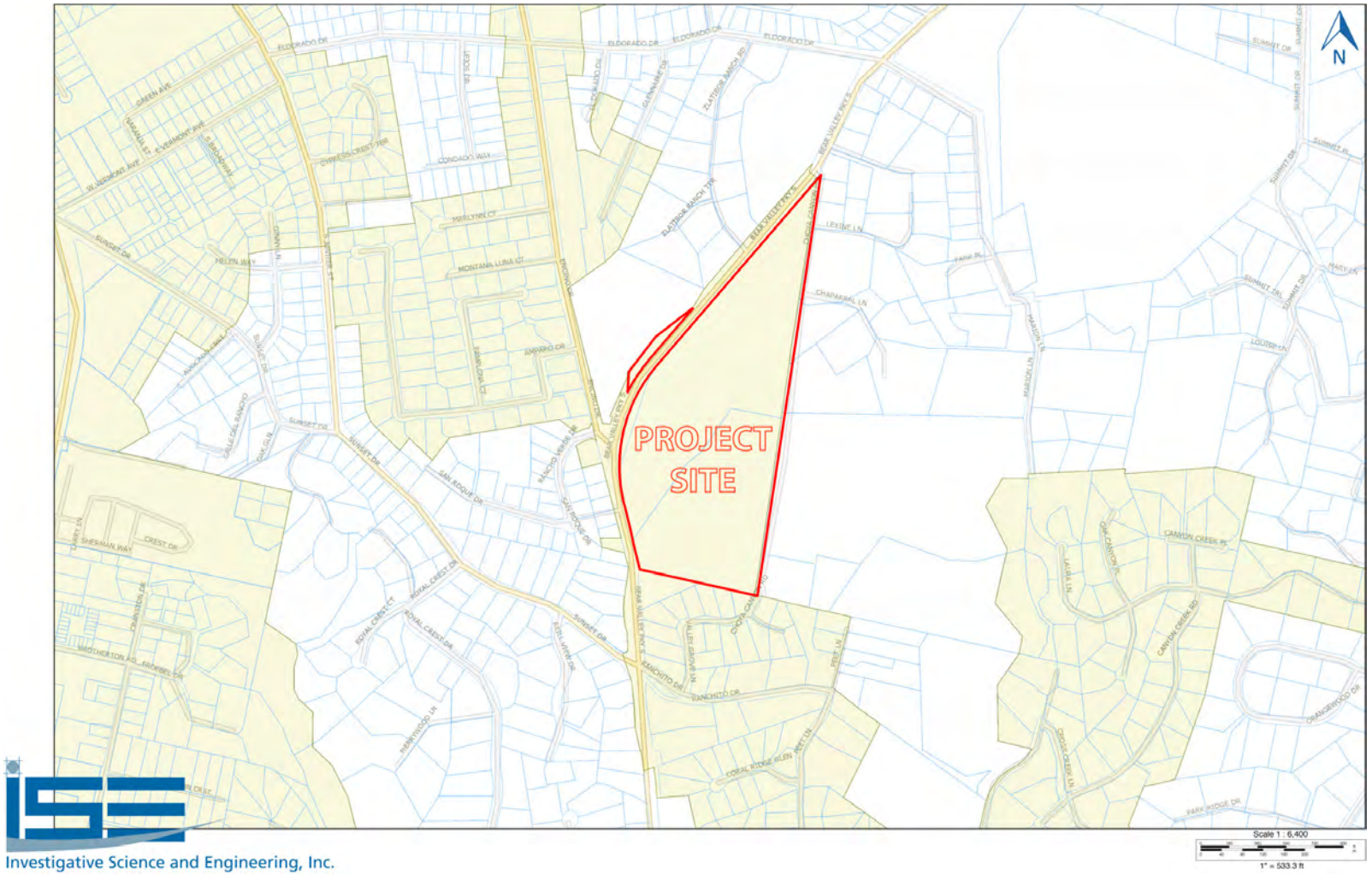


**FIGURE 2: Project Study Area Parcel Map (ISE 12/14)**

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**FIGURE 3: Aerial Image Showing 661 Bear Valley Development and Surrounding Uses (ISE 12/14)**

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**FIGURE 4: Proposed 661 Bear Valley Site Development Map (Hunsaker & Associates 12/14)**

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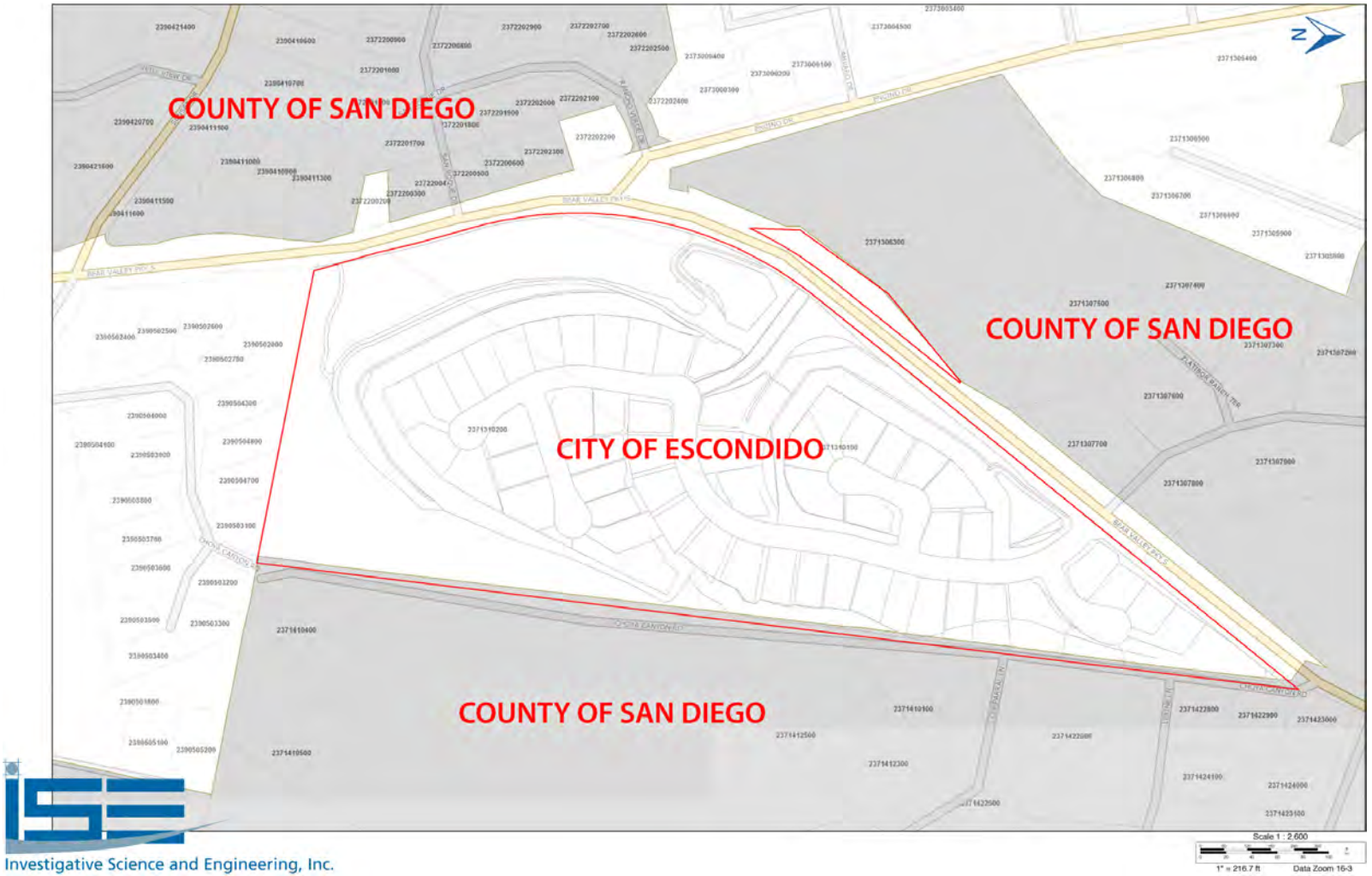


**FIGURE 5: Development Site Relative to Surrounding Parcels (ISE 4/16)**

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The loudest sounds that the human ear can hear comfortably are approximately one trillion (or $1x10^{12}$) times the acoustic energy that the ear can barely detect. Because of this vast range, any attempt to represent the acoustic intensity of a particular sound on a linear scale becomes unwieldy. As a result, a logarithmic ratio, originally conceived for radio work, known as the decibel (dB), is commonly employed.[1]

A sound level of zero "0" dB is scaled such that it is defined as the threshold of human hearing, and would be barely audible to a human of normal hearing under extremely quiet listening conditions. Sound levels above 120 dB roughly correspond to the threshold of pain. The minimum change in sound level that the human ear can detect is approximately 3.0 dBA.[2] A change in sound level of 10 dB is usually perceived by the average person as a doubling (or halving) of the sound's loudness.[3] A change in sound level of 10 dB actually represents an approximate 90 percent change in the sound intensity, but only about a 50 percent change in the perceived loudness. This is due to the nonlinear response of the human ear to sound.

As mentioned above, most of the sounds we hear in the environment do not consist of a single frequency, but rather a broad band of frequencies differing in sound level. The intensities of each frequency add to generate the sound we hear. The method commonly used to quantify environmental sounds, consists of determining all of the frequencies of a sound according to a weighting system that reflects the nonlinear response characteristics of the human ear. This is called "A" weighting, and the decibel level measured is called the A-weighted sound level (or dBA). In practice, the level of a noise source is conveniently measured using a sound level meter that includes a filter corresponding to the dBA curve.

Although the A-weighted sound level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of sounds from distant sources that create a relatively steady background noise in which no particular source is identifiable. For this type of noise, a single descriptor called the Leq (or equivalent sound level) is used. Leq is the energy-mean A-weighted sound level during a measured time interval, and would be defined mathematically by the following continuous integral,

$$L_{eq} = 10Log_{10}\left[\frac{1}{T}\int_0^T SPL(t)^2\,dt\right]$$

[1] A unit used to express the relative magnitude of a sound wave. This level is defined as being equal to 20 times the common logarithm of the ratio of the pressure produced by a sound wave of interest, to a 'reference' pressure wave equal to 20 micro Pascal's (μPa) measured at a distance of 1 meter. 20 μPa is the smallest amount of pressure capable of producing the sensation of hearing in a human.

[2] Every 3 dB equates to a 50% drop (or increase) in wave strength; therefore a 6 dB drop/increase = a loss/increase of 75% of total signal strength and so on.

[3] This is a subjective reference based upon the nonlinear nature of the human ear.

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In the previous expression, $L_{eq}$ is the energy equivalent sound level, t is the independent variable of time, T is the total time interval of the event, and, SPL is the sound pressure level *re. 20 μPa*. Thus, $L_{eq}$ is the 'equivalent' constant sound level that would have to be produced by a given source to equal the average of the fluctuating level measured. For most acoustical studies, the study interval is generally taken as one-hour and the abbreviation used is $L_{eq\text{-}h}$ or $L_{eq(h)}$; however, other time intervals are utilized depending on the jurisdictional preference.

To describe the time-varying character of environmental noise, the statistical noise descriptors $L_{10}$ and $L_{90}$ are commonly used. They are the noise levels equaled or exceeded during 10 percent and 90 percent of a stated time. Sound levels associated with the $L_{10}$ typically describe transient or short-term events, while levels associated with the $L_{90}$ describe the steady state (or most prevalent) noise conditions. In addition, it is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the maximum and minimum measured sound level ($L_{max}$ and $L_{min}$) indicators. The $L_{min}$ value obtained for a particular monitoring location is often called the *acoustic floor* for that location.

The aggregate of all community noise events are typically averaged into a single value known as the *Community Noise Equivalent Level* (CNEL). This descriptor is calculated by averaging all events over a specified time interval and applying a 5-dBA penalty to any sounds occurring between 7:00 p.m. and 10:00 p.m., and a 10-dBA penalty to sounds that occur during nighttime hours (i.e., 10 p.m. to 7 a.m.). This penalty is applied to compensate for the increased sensitivity to noise during the quieter nighttime hours. Mathematically, CNEL can be derived based upon the hourly $L_{eq}$ values, via the following expression where, $L_{eq}(x)_i$ is the equivalent sound level during period *x* at time interval i, and n is the number of time intervals:

$$CNEL = 10Log_{10}\frac{1}{n}\sum_{i=1}^{n}\left(10^{\frac{Leq(day)_i}{10}} + 10^{\frac{Leq(evening+5)_i}{10}} + 10^{\frac{Leq(night+10)_i}{10}}\right)$$

## ENVIRONMENTAL SIGNIFICANCE THRESHOLDS

### City of Escondido Noise Regulations

The City of Escondido, through its Noise Element of the General Plan and Community Protection Element, has established criteria for compatibility of noise for various land uses as shown in Table 1 on Page 10 of this report. Sound levels up to 65 dBA CNEL are considered compatible with sensitive land uses.[4] Thus for the purposes

[4] Under the Community Protection and Safety Noise Policy E1.2, a goal has been set to attempt to lower noise within outdoor residential areas to 60 dBA CNEL. It is noted that this is a design goal and not a General Plan Policy, and that mitigation to this level may not be feasible for every case. These standards are typically applied to areas within a proposed development that would be classified as "usable exterior space", such as rear and some side yards.

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of analysis, the project will be mitigated to the General Plan Policy level of 65 dBA CNEL with additional attention being placed on developing Best Mitigation Practices (BMP) to further reduce sound towards the 60 dBA CNEL goal.

### State of California CCR Title 24

The California Code of Regulations (CCR), State Building Code, Part 2, Title 24, Appendix Chapter 35; "*Noise Insulation Standards for Multifamily Housing*" requires that multi-family dwellings, hotels, and motels located where the CNEL exceeds 60 dBA require an acoustical analysis showing that the proposed design will limit interior noise to less than 45 dBA CNEL for all residential spaces.[5] Worst-case noise levels, either existing or future, must be used. The City of Escondido has adopted the CCR Title 24 regulations for all types of residential dwellings.

### City of Escondido Construction Noise Ordinance Regulations

Construction grading noise within the City of Escondido is regulated under Ordinance Section 17-238. The relevant parts are cited below.

- It shall be unlawful for any person, including the City of Escondido, to do any authorized grading at any construction site, except on Mondays through Fridays during a week between the hours of 7:00 a.m. and 6:00 p.m. and, provided a variance has been obtained in advance from the City Manager, on Saturdays from 10:00 a.m. to 5:00 p.m.
- For the purpose of this section, "grading" shall include, but not be limited to, compacting, drilling, rock crushing or splitting, bulldozing, clearing, dredging, digging, filling and blasting.
- In addition, any equipment used for grading shall not be operated so as to cause noise in excess of a one-hour sound level limit of 75 dB at any time when measured at or within the property lines of any property which is developed and used in whole or in part for residential purposes, unless a variance has been obtained in advance from the City Manager.

Thus for the purposes of analysis within this report, construction grading noise will have a threshold of significance of 75 dBA $L_{eq-h}$ and be limited to the normal hours of 7:00 a.m. through 6:00 p.m. weekdays, and 10:00 a.m. to 5:00 p.m. on Saturday.

[5] This standard is also codified in the 2013 version of the California Code of Regulations, Title 24, Part 2, Volume 1, Chapter 12 – Interior Environment, Section 1207 et. seq.

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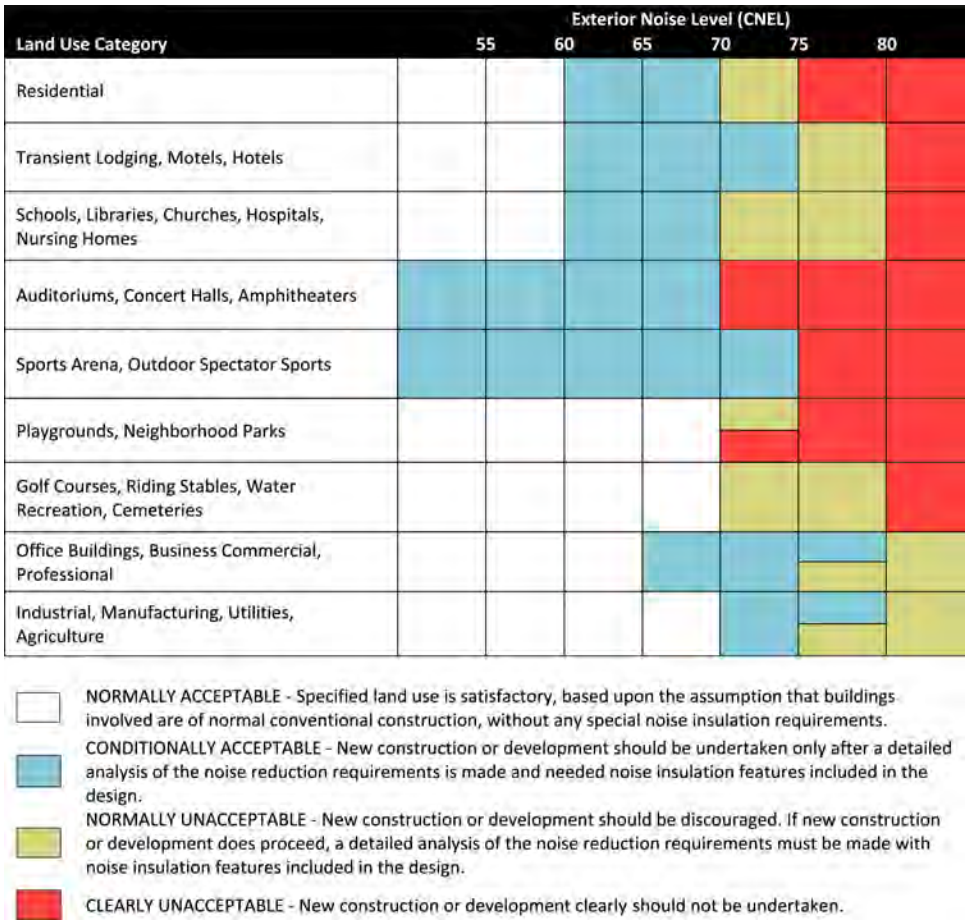
**TABLE 1: City of Escondido Land Use Compatibility Matrix**




## City of Escondido Environmental Quality Regulations

The City of Escondido Municipal Code Chapter 33, Article 47, Environmental Quality Regulations, Section (a)(2), governs noise impacts specifically related to the widening of Mobility and Infrastructure Element streets. According to this section, the following incremental noise increases are generally not considered significant:

a. Short- or long-term increases, regardless of the extent, that do not result in noise increases in excess of General Plan standards.

b. Short or long-term increases that result in a 3 dBA or less incremental increase in noise beyond the General Plan's noise standards.

These thresholds are consistent with those applied by the County of San Diego for incremental traffic noise increases along circulation element roadways.

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## APPROACH AND METHODOLOGY

### Field Acoustical Reconnaissance

Two independent monitoring locations were selected within the proposed 661 Bear Valley Tentative Subdivision Map for the purpose of determining the ambient baseline community noise levels during normal free-flow weekday traffic conditions. The instrumentation locations, denoted as Monitoring Locations ML 1 (near proposed project entrance), and ML 2 (near proposed Lot 46) are shown in Figure 6 on Page 13.

For the field monitoring effort, two Quest SoundPro SP-DL-2 ANSI Type 2 integrating sound level meters were used as the data collection devices. The meters were affixed to tripods five-feet above ground level, in order to simulate the noise exposure of an average-height human being and were calibrated in accordance with ANSI S1-4 1983 Type 2 and IEC 651 Type 2 standards.[6] Photos of the test setup are provided in Figures 7a and –b starting on Page 14. Measurements were performed on December 22, 2014 between 12:00 p.m. and 1:00 p.m.

### Construction Noise Impact Assessment Approach

Major construction noise emission generators expected within the project site would consist predominately of diesel-powered earthwork equipment required for grading activities, underground work, and surface paving. Construction noise present at the project site was based upon EPA recommended values, and past levels measured by ISE.[7] Cumulative (i.e., worst case aggregate) noise levels were calculated for a range of expected emissions from proposed equipment at the closest sensitive receptor, under spherically-soft ground propagation conditions, and compared against the aforementioned City of Escondido Ordinance Section 17-238 thresholds.

### Traffic Segment Impact Assessment Approach

The ISE *RoadNoise v2.5* traffic noise prediction model, which is based upon the Federal Highway Administration's RD-77-108 Noise Prediction Model with FHWA/CA/TL-87/03 noise emission factors, was used to calculate the increase in vehicular traffic noise levels, due to the proposed 661 Bear Valley Tentative Subdivision Map, along all identified major servicing roadways.[8] The model assumed a 3.0-dBA loss per doubling of distance (DD) propagation rule, and a 95/3/2 mix of automobiles/midsize vehicles/trucks, thereby yielding a representative worst-case noise contour set.

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[6] All testing and calibration is performed by ISE's Acoustics and Vibration Laboratory using a LORAN-C and Rubidium atomic frequency and time standard traceable to National Institute of Standards & Technology (NIST). The time and frequency calibration signal has a long-term stability of $10^{-10}$. Specifications for traceability can be obtained at *www.nist.gov*.

[7] Source: EPA PB 206717, Environmental Protection Agency, 12/31/71, "Noise from Construction Equipment and Operations"

[8] Source: Traffic Impact Analysis, 661 Bear Valley, Escondido, CA, LLG Engineers, 12/17/14.

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### Exterior Traffic Noise Impact Assessment Approach

The *Traffic Noise Model version 2.5* (TNM 2.5) based on FHWA-PD-96-010 and FHWA/CA/TL-87/03 standards was used to calculate future onsite vehicular traffic noise levels.[9] Currently, TNM 2.5 is the only noise-modeling program formally accepted for use within the State of California. Dominant input to the acoustical model included the following:

- The proposed site development plan (Source: Hunsaker & Associates, 4/15).
- A digitized line-of-sight representation of all major roadways affecting the project site under the worst-case future noise condition (i.e., Bear Valley Parkway).
- Future Average Daily Trips (ADT's) for the aforementioned roadway segments (Source: Traffic Impact Analysis: 661 Bear Valley – Escondido, CA, Linscott, Law & Greenspan, Engineers, 12/17/14).
- A traffic mix of 88.4% LDA/LDT, 6.4% MDT, 4.7% HDT, and 0.5% MCY in accordance with the Caltrans ITS Transportation Protocols (Source: Caltrans Traffic Data Branch, 3/09). [10]
- A peak hour traffic percentage of 8% of the ADT.[11]
- Receptor and topographic elevations (Source: USGS Digital Elevation Model).
- A composite pavement type, consisting of an average of Portland Cement Concrete (PCC) and Dense-Graded Asphaltic Concrete (DGAC) in accordance with TNM 2.5 test results (1998).

Modeled receptor areas consisting of useable space locations within the project footprint as well as exterior building façade points were sampled at various locations to determine the variation of all acoustic sources across, and affecting, the project site. It was assumed for the purposes of analysis that all units were two story.

Additionally, at the request of the City, ISE examined the project site with respect to nearby municipal airports to ascertain any noise impact potential from these transportation sources.

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[9] The components of the TNM model are supported by a scientifically founded and experimentally calibrated acoustic computation methodology. The database is made up of over 6,000 individual pass-by events measured at forty sites across the country.

[10] The Caltrans vehicle classifications are as follows: LDA = Light Duty Automobile, LDT = Light Duty Truck, MDT = Medium Duty Truck, HDT = Heavy Duty Truck, and MCY = Motorcycle.

[11] For values between approximately 8 and 12 percent, the energy-mean A-weighted sound level is equivalent to the CNEL.

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**FIGURE 6: Ambient Noise Monitoring Locations ML 1 and ML 2 (ISE 12/14)**

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**FIGURE 7a: Ambient Noise Monitoring Location ML 1 (ISE 12/14)**

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**FIGURE 7b: Ambient Noise Monitoring Location ML 2 (ISE 12/14)**

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# FINDINGS AND RECOMMENDATIONS

## Field Acoustical Reconnaissance Findings

The results of the field reconnaissance sound level monitoring are shown in Table 2 below with the field data record provided as attachment APP 1 to this report. The values for the equivalent sound level ($L_{eq-h}$), the maximum and minimum measured sound levels ($L_{max}$ and $L_{min}$), and the statistical indicators $L_{10}$ and $L_{90}$, are given for the monitoring location examined.

**TABLE 2: Measured Ambient Sound Levels – 661 Bear Valley Tentative Subdivision Map**

| | | One-Hour Noise Level Descriptors in dBA | | | | |
|---|---|---|---|---|---|---|
| **Location** | **Start Time** | **$L_{eq}$** | **$L_{max}$** | **$L_{min}$** | **$L_{10}$** | **$L_{90}$** |
| ML 1 | 12:00 p.m. | 66.0 | 77.1 | 37.5 | 69.6 | 48.7 |
| ML 2 | 11:56 a.m. | 54.2 | 61.4 | 43.0 | 56.7 | 49.3 |

Monitoring Location:

Location ML 1: Near Proposed Project Entrance. GPS: CA-VI 6314560.0, 1981114.1
Location ML 2: Near Proposed Lot 46. GPS: CA-VI 6314590.6, 1980688.2

Measurements performed by ISE on 12/22/14.

EPE = Estimated GPS Position Error = 8 ft.

Temperature = 75.0 °F. Relative Humidity = 42.5 %. Barometric Pressure = 29.65 in-Hg.

Measurements collected reflect the ambient daytime community sound levels in the vicinity of the proposed project site. As can be seen, the hourly average sound level (or $L_{eq-h}$) recorded over the monitoring period ranged between 54 to 66 dBA and was observed to be entirely due to traffic noise along Bear Valley parkway, and the relative separation distance from the roadway. These levels were found to currently be in compliance with the City's compatibility standards and consistent with the observed community setting.

## Construction Noise Emission Levels

The estimated worst-case construction vehicle noise emissions are provided in Table 3 on the following page. Construction within the proposed project area would typically occur between the hours of 7:00 a.m. and 3:00 p.m. Monday through Friday. The nearest sensitive residential receptor line would be, at a minimum, approximately 150-feet from any construction activity centroid as shown in Figure 8 on Page 18 of this report.

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**TABLE 3: Aggregate Construction Noise Levels at Project Site**

| Equipment Type Model | Selected EPA Tier Level | Quantity Used (#) | Source Level at 50 Feet at Full Load (dBA) | Average Load Factor (%) | Duty Cycle per Hour | Cumulative Effect at 50 Feet (dBA $Leq_h$) |
|---|---|---|---|---|---|---|
| Push Dozer D10T | 3 | 2 | 75 | 40 | 1 | 74.0 |
| Dozer D9R | 3 | 1 | 70 | 50 | 1 | 67.0 |
| Dozer D6T LGP | 3 | 1 | 75 | 40 | 1 | 71.0 |
| Scraper- 657G Tractor | 3 | 2 | 80 | 30 | 0.5 | 74.8 |
| Motor Grader 120K | 3 | 2 | 70 | 50 | 1 | 70.0 |
| Water Truck | 3 | 1 | 70 | 40 | 1 | 66.0 |
| Hydraulic Excavator 349EL | 3 | 1 | 75 | 60 | 1 | 72.8 |
| | | | | **Worst-Case Aggregate Sum @ 50 Ft. (! ):** | | **80.2** |
| | | | | **$Leq_h$ at Receptor Area 150-Feet Distant:** | | **68.3** |

Source: EPA PB 206717, Environmental Protection Agency, 12/31/71, "Noise from Construction Equipment and Operations"

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**FIGURE 8: Expected Construction Noise Exposure Map (ISE 4/16)**

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As can be seen, predicted worst-case construction noise levels could be as high as 80.2 dBA $Leq_h$ at 50-feet, with a resultant receptor level of 68.3 dBA $Leq_h$ or less at the residences shown in Figure 8. This level is below the City of Escondido construction noise abatement threshold and is not expected to generate impacts, nor require remedial mitigation measures.[12]

### Future Roadway Segment Noise Impacts

The results showing the effect of traffic noise increases on the various servicing roadway segments associated with the proposed 661 Bear Valley Tentative Subdivision Map are presented in Tables 4a through -f. The scenarios examined consisted of: Existing Conditions, Existing + Project Conditions, Cumulative Conditions, Cumulative + Project Conditions, General Plan Build out Conditions, and General Plan Build out + Project Conditions. A comparison matrix of these various scenarios is shown in Table 4g.

For each roadway segment examined, the worst case average daily traffic volume (ADT) and observed/predicted speeds are shown, along with the corresponding reference noise level at 50-feet (in dBA). Additionally, the line-of-sight distance from the roadway centerline to the 60-, 65, and 75 dBA CNEL contours are provided as an indication of the worst-case unobstructed theoretical traffic noise contour placement.

As can be seen, the worst-case traffic noise condition is expected to occur on Encino Drive west of Bear Valley by a worst case 0.4 dBA CNEL under the existing condition scenario. This level would be reduced to 0.2 dBA CNEL under the future General Plan scenario. This would not be deemed impactive to the surrounding land uses previously shown in Figure 5 under City of Escondido Municipal Code Chapter 33, Article 47, Environmental Quality Regulations, or screening criteria employed by the County of San Diego within their General Plan Noise Element.

### Future Traffic Noise Impacts to Proposed Development

Traffic noise affecting the proposed 661 Bear Valley Tentative Subdivision Map is currently, and would continue to be, the aggregation of surface street traffic along Bear Valley Parkway. This roadway has a maximum travel speed of 50 MPH. Thus, per the findings of the project traffic impact assessment, Bear Valley Parkway has a worst case (Future Build out with Project) average daily traffic (ADT) volume of 45,803 ADT.[13]

Table 5 on Page 27 of this report shows the proposed physical lot number and whether or not mitigation measures are indicated. The complete model runs are provided as Attachment APP 2 to this report. Based upon the findings, exterior noise levels within sensitive usable space areas of Lots 2 through 5 would exceed the City's 65 dBA CNEL noise abatement threshold and would require mitigation.

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[12] This level is also consistent with surrounding parcels per the County of San Diego Noise Ordinance Sections 36.409 through 36.410.

[13] This equates to the following peak hour estimates of traffic flow: LDA/LDT = 3239, MDT = 235, HDT = 172, UBUS = 1, and, MCY = 18.

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**TABLE 4a: Project Traffic Noise Conditions (Existing Conditions)**

| Roadway | Segment | LOS | ADT | Speed (MPH) | SPL | 75 dBA CNEL Contour Distance in Feet | 65 dBA CNEL Contour Distance in Feet | 60 dBA CNEL Contour Distance in Feet |
|---|---|---|---|---|---|---|---|---|
| **Bear Valley Parkway** | Eldorado Drive to Zlatibor Ranch Road | F | 20,600 | 50 | 73.6 | 36 | 362 | 1,145 |
| | Zlatibor Ranch Road to Encino Drive | F | 20,110 | 50 | 73.5 | 35 | 354 | 1,119 |
| | Encino Drive to Sunset Drive | F | 21,770 | 50 | 73.8 | 38 | 379 | 1,199 |
| | Sunset Drive to Las Palmas Avenue | F | 30,600 | 50 | 75.3 | 54 | 536 | 1,694 |
| | Las Palmas Avenue to Mary Lane | C | 27,300 | 50 | 74.8 | 48 | 477 | 1,510 |
| | Mary Lane to San Pasqual Road | D | 29,430 | 50 | 75.1 | 51 | 512 | 1,618 |
| **Encino Drive** | West of Bear Valley Parkway | A | 1,420 | 35 | 58.6 | 1 | 11 | 36 |
| **Sunset Drive** | West of Bear Valley Parkway | B | 7,450 | 40 | 67.0 | 8 | 79 | 251 |

SPL values shown in dBA CNEL

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**TABLE 4b: Project Traffic Noise Conditions (Existing + Project Conditions)**

| Roadway | Segment | LOS | ADT | Speed (MPH) | SPL | 75 dBA CNEL Contour Distance in Feet | 65 dBA CNEL Contour Distance in Feet | 60 dBA CNEL Contour Distance in Feet |
|---|---|---|---|---|---|---|---|---|
| **Bear Valley Parkway** | Eldorado Drive to Zlatibor Ranch Road | F | 20,721 | 50 | 73.6 | 36 | 362 | 1,145 |
| | Zlatibor Ranch Road to Encino Drive | F | 20,539 | 50 | 73.6 | 36 | 362 | 1,145 |
| | Encino Drive to Sunset Drive | F | 22,073 | 50 | 73.9 | 39 | 388 | 1,227 |
| | Sunset Drive to Las Palmas Avenue | F | 30,793 | 50 | 75.3 | 54 | 536 | 1,694 |
| | Las Palmas Avenue to Mary Lane | D | 27,465 | 50 | 74.8 | 48 | 477 | 1,510 |
| | Mary Lane to San Pasqual Road | D | 29,595 | 50 | 75.1 | 51 | 512 | 1,618 |
| **Encino Drive** | West of Bear Valley Parkway | A | 1,547 | 35 | 59.0 | 1 | 13 | 40 |
| **Sunset Drive** | West of Bear Valley Parkway | B | 7,560 | 40 | 67.1 | 8 | 81 | 256 |

SPL values shown in dBA CNEL

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**TABLE 4c: Project Traffic Noise Conditions (Cumulative Conditions)**

| Roadway | Segment | LOS | ADT | Speed (MPH) | SPL | 75 dBA CNEL Contour Distance in Feet | 65 dBA CNEL Contour Distance in Feet | 60 dBA CNEL Contour Distance in Feet |
|---|---|---|---|---|---|---|---|---|
| **Bear Valley Parkway** | Eldorado Drive to Zlatibor Ranch Road | F | 25,880 | 50 | 74.6 | 46 | 456 | 1,442 |
| | Zlatibor Ranch Road to Encino Drive | F | 24,040 | 50 | 74.2 | 42 | 416 | 1,315 |
| | Encino Drive to Sunset Drive | F | 25,810 | 50 | 74.6 | 46 | 456 | 1,442 |
| | Sunset Drive to Las Palmas Avenue | F | 34,340 | 50 | 75.8 | 60 | 601 | 1,901 |
| | Las Palmas Avenue to Mary Lane | D | 31,670 | 50 | 75.4 | 55 | 548 | 1,734 |
| | Mary Lane to San Pasqual Road | E | 34,920 | 50 | 75.9 | 62 | 615 | 1,945 |
| **Encino Drive** | West of Bear Valley Parkway | A | 1,890 | 35 | 59.9 | 2 | 15 | 49 |
| **Sunset Drive** | West of Bear Valley Parkway | B | 7,650 | 40 | 67.1 | 8 | 81 | 256 |

SPL values shown in dBA CNEL

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**TABLE 4d: Project Traffic Noise Conditions (Cumulative + Project Conditions)**

| Roadway | Segment | LOS | ADT | Speed (MPH) | SPL | 75 dBA CNEL Contour Distance in Feet | 65 dBA CNEL Contour Distance in Feet | 60 dBA CNEL Contour Distance in Feet |
|---|---|---|---|---|---|---|---|---|
| **Bear Valley Parkway** | Eldorado Drive to Zlatibor Ranch Road | F | 26,001 | 50 | 74.6 | 46 | 456 | 1,442 |
| | Zlatibor Ranch Road to Encino Drive | F | 24,469 | 50 | 74.3 | 43 | 426 | 1,346 |
| | Encino Drive to Sunset Drive | F | 26,113 | 50 | 74.6 | 46 | 456 | 1,442 |
| | Sunset Drive to Las Palmas Avenue | F | 34,533 | 50 | 75.8 | 60 | 601 | 1,901 |
| | Las Palmas Avenue to Mary Lane | D | 31,835 | 50 | 75.5 | 56 | 561 | 1,774 |
| | Mary Lane to San Pasqual Road | E | 35,085 | 50 | 75.9 | 62 | 615 | 1,945 |
| **Encino Drive** | West of Bear Valley Parkway | A | 2,017 | 35 | 60.1 | 2 | 16 | 51 |
| **Sunset Drive** | West of Bear Valley Parkway | B | 7,760 | 40 | 67.2 | 8 | 83 | 262 |

SPL values shown in dBA CNEL

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**TABLE 4e: Project Traffic Noise Conditions (General Plan Build Out Conditions)**

| Roadway | Segment | LOS | ADT | Speed (MPH) | SPL | 75 dBA CNEL Contour Distance in Feet | 65 dBA CNEL Contour Distance in Feet | 60 dBA CNEL Contour Distance in Feet |
|---|---|---|---|---|---|---|---|---|
| **Bear Valley Parkway** | Eldorado Drive to Zlatibor Ranch Road | E | 35,470 | 50 | 75.9 | 62 | 615 | 1,945 |
| | Zlatibor Ranch Road to Encino Drive | F | 37,620 | 50 | 76.2 | 66 | 659 | 2,084 |
| | Encino Drive to Sunset Drive | F | 45,610 | 50 | 77.0 | 79 | 792 | 2,506 |
| | Sunset Drive to Las Palmas Avenue | E | 45,610 | 50 | 77.0 | 79 | 792 | 2,506 |
| | Las Palmas Avenue to Mary Lane | E | 44,590 | 50 | 76.9 | 77 | 774 | 2,449 |
| | Mary Lane to San Pasqual Road | F | 50,940 | 50 | 77.5 | 89 | 889 | 2,812 |
| **Encino Drive** | West of Bear Valley Parkway | A | 3,180 | 35 | 62.1 | 3 | 26 | 81 |
| **Sunset Drive** | West of Bear Valley Parkway | C | 8,300 | 40 | 67.5 | 9 | 89 | 281 |

SPL values shown in dBA CNEL

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**TABLE 4f: Project Traffic Noise Conditions (General Plan Build Out + Project Conditions)**

| Roadway | Segment | LOS | ADT | Speed (MPH) | SPL | 75 dBA CNEL Contour Distance in Feet | 65 dBA CNEL Contour Distance in Feet | 60 dBA CNEL Contour Distance in Feet |
|---|---|---|---|---|---|---|---|---|
| **Bear Valley Parkway** | Eldorado Drive to Zlatibor Ranch Road | E | 35,899 | 50 | 76.0 | 63 | 629 | 1,991 |
| | Zlatibor Ranch Road to Encino Drive | F | 37,923 | 50 | 76.2 | 66 | 659 | 2,084 |
| | Encino Drive to Sunset Drive | F | 45,803 | 50 | 77.0 | 79 | 792 | 2,506 |
| | Sunset Drive to Las Palmas Avenue | E | 45,803 | 50 | 77.0 | 79 | 792 | 2,506 |
| | Las Palmas Avenue to Mary Lane | E | 44,755 | 50 | 76.9 | 77 | 774 | 2,449 |
| | Mary Lane to San Pasqual Road | F | 51,105 | 50 | 77.5 | 89 | 889 | 2,812 |
| **Encino Drive** | West of Bear Valley Parkway | A | 3,307 | 35 | 62.3 | 3 | 27 | 85 |
| **Sunset Drive** | West of Bear Valley Parkway | C | 8,410 | 40 | 67.5 | 9 | 89 | 281 |

SPL values shown in dBA CNEL

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**TABLE 4g: Project Traffic Noise Comparison (All Scenarios)**

| Roadway | Segment | Existing + Project *minus* Existing Conditions SPL | Cumulative + Project *minus* Cumulative Conditions SPL | General Plan + Project *minus* General Plan Conditions SPL |
|---|---|---|---|---|
| **Bear Valley Parkway** | Eldorado Drive to Zlatibor Ranch Road | 0.0 | 0.0 | 0.1 |
| | Zlatibor Ranch Road to Encino Drive | 0.1 | 0.1 | 0.0 |
| | Encino Drive to Sunset Drive | 0.1 | 0.0 | 0.0 |
| | Sunset Drive to Las Palmas Avenue | 0.0 | 0.0 | 0.0 |
| | Las Palmas Avenue to Mary Lane | 0.0 | 0.1 | 0.0 |
| | Mary Lane to San Pasqual Road | 0.0 | 0.0 | 0.0 |
| **Encino Drive** | West of Bear Valley Parkway | 0.4 | 0.2 | 0.2 |
| **Sunset Drive** | West of Bear Valley Parkway | 0.1 | 0.1 | 0.0 |

SPL values shown in dBA CNEL

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**TABLE 5: Predicted Future Project Site Noise Levels**

| Lot Number | Unmitigated First Floor Levels in dBA | Mitigated First Floor Levels in dBA | Second Floor Levels in dBA | General Plan *Exterior* Mitigation Required? | First Floor CCR Title 24 *Interior* Mitigation Required? | Second Floor CCR Title 24 *Interior* Mitigation Required? |
|---|---|---|---|---|---|---|
| 1 | 63.9 | 60.6 | 66.8 | - | yes | yes |
| 2 | 65.0 | 60.9 | 67.5 | yes | yes | yes |
| 3 | 65.2 | 60.9 | 68.3 | yes | yes | yes |
| 4 | 66.4 | 61.3 | 68.4 | yes | yes | yes |
| 5 | 71.0 | 63.3 | 72.2 | yes | yes | yes |
| 6 | 57.5 | 57.1 | 60.7 | - | - | yes |
| 7 | 56.7 | 56.3 | 59.1 | - | - | - |
| 8 | 53.2 | 52.7 | 55.8 | - | - | - |
| 9 | 50.5 | 49.8 | 52.6 | - | - | - |
| 10 | 49.7 | 49.0 | 51.1 | - | - | - |
| 11 | 48.8 | 48.1 | 49.7 | - | - | - |
| 12 | 48.0 | 47.4 | 48.9 | - | - | - |
| 13 | 47.7 | 47.4 | 49.3 | - | - | - |
| 14 | 48.1 | 47.9 | 50.2 | - | - | - |
| 15 | 48.5 | 48.3 | 50.9 | - | - | - |
| 16 | 48.8 | 48.7 | 51.4 | - | - | - |
| 17 | 50.7 | 50.7 | 52.7 | - | - | - |
| 18 | 51.6 | 51.6 | 53.4 | - | - | - |
| 19 | 52.2 | 52.1 | 54.4 | - | - | - |
| 20 | 52.9 | 52.9 | 55.7 | - | - | - |
| 21 | 50.1 | 50.0 | 52.0 | - | - | - |
| 22 | 49.9 | 49.9 | 50.5 | - | - | - |
| 23 | 47.9 | 47.9 | 50.1 | - | - | - |
| 24 | 47.4 | 47.5 | 49.4 | - | - | - |
| 25 | 46.4 | 46.4 | 48.9 | - | - | - |
| 26 | 44.6 | 44.4 | 47.7 | - | - | - |
| 27 | 43.1 | 43.1 | 45.6 | - | - | - |
| 28 | 45.3 | 45.2 | 48.1 | - | - | - |
| 29 | 46.8 | 46.7 | 47.8 | - | - | - |
| 30 | 47.7 | 47.6 | 48.5 | - | - | - |
| 31 | 46.0 | 45.9 | 46.7 | - | - | - |
| 32 | 46.6 | 46.5 | 47.7 | - | - | - |
| 33 | 50.5 | 50.5 | 56.6 | - | - | - |
| 34 | 50.3 | 50.2 | 56.4 | - | - | - |
| 35 | 50.5 | 50.5 | 56.4 | - | - | - |
| 36 | 51.6 | 51.6 | 57.5 | - | - | - |
| 37 | 52.8 | 52.8 | 58.4 | - | - | - |
| 38 | 53.7 | 53.7 | 59.2 | - | - | - |
| 39 | 54.8 | 54.8 | 59.7 | - | - | - |
| 40 | 55.9 | 55.8 | 60.1 | - | - | yes |

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**TABLE 5 (cont.): Predicted Future Project Site Noise Levels**

| Lot Number | Unmitigated First Floor Levels in dBA | Mitigated First Floor Levels in dBA | Second Floor Levels in dBA | General Plan *Exterior* Mitigation Required? | First Floor CCR Title 24 *Interior* Mitigation Required? | Second Floor CCR Title 24 *Interior* Mitigation Required? |
|---|---|---|---|---|---|---|
| 41 | 56.1 | 56.1 | 60.4 | - | - | yes |
| 42 | 58.3 | 58.3 | 62.0 | - | - | yes |
| 43 | 56.9 | 56.9 | 59.6 | - | - | - |
| 44 | 54.1 | 54.1 | 56.2 | - | - | - |
| 45 | 52.8 | 52.8 | 55.4 | - | - | - |
| 46 | 50.2 | 49.3 | 51.3 | - | - | - |
| 47 | 49.4 | 48.7 | 52.8 | - | - | - |
| 48 | 52.6 | 52.3 | 57.6 | - | - | - |
| 49 | 55.1 | 54.9 | 61.3 | - | - | yes |
| 50 | 54.3 | 53.8 | 57.7 | - | - | - |
| 51 | 55.2 | 54.7 | 58.9 | - | - | - |
| 52 | 56.4 | 55.9 | 61.7 | - | - | yes |
| 53 | 55.7 | 55.2 | 61.7 | - | - | yes |
| 54 | 52.5 | 51.4 | 54.6 | - | - | - |
| 55 | 54.2 | 53.8 | 60.1 | - | - | yes |

Second floor areas shown with any applicable exterior mitigation.

A proposed mitigation plan, consisting of a perimeter block noise wall, is shown in Figure 9 on Page 29. Upon application of the mitigation plan, no residual exterior acoustical impacts are anticipated. Additionally, onsite development would be exposed to noise levels in excess of the CCR Title 24 threshold of 60 dBA CNEL for first and second floor areas, as shown in Table 5 above, and would require mitigation. A structural interior acoustical study should be performed for each approved architectural design once plans are available for the purpose of determining appropriate door, window, and exterior wall assemblies.

Finally, the relative proximity of the two closest regional airports to the project site is shown in Figure 10 on Page 30 of this report. As can be seen, the Ramona Airfield (KRNM) is located 9.2 miles to the southeast of the project site, while Palomar Airport (KCRQ) is located 13.1 miles to the northwest. Neither airfield has the potential to acoustically affect the project site, thus no aircraft noise impacts are expected.

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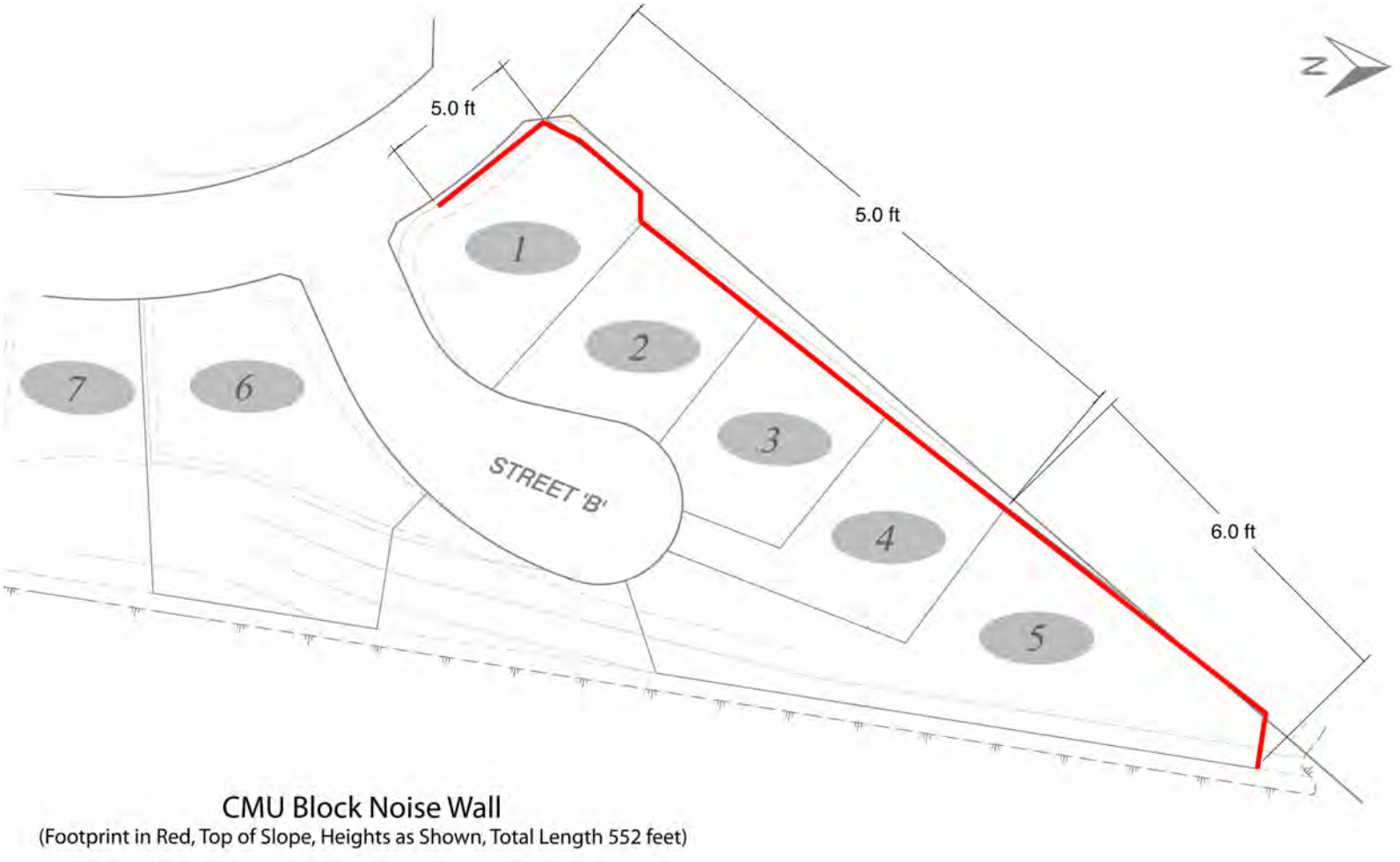


**FIGURE 9: Proposed 661 Bear Valley Site Acoustical Mitigation Plan (ISE 4/15)**

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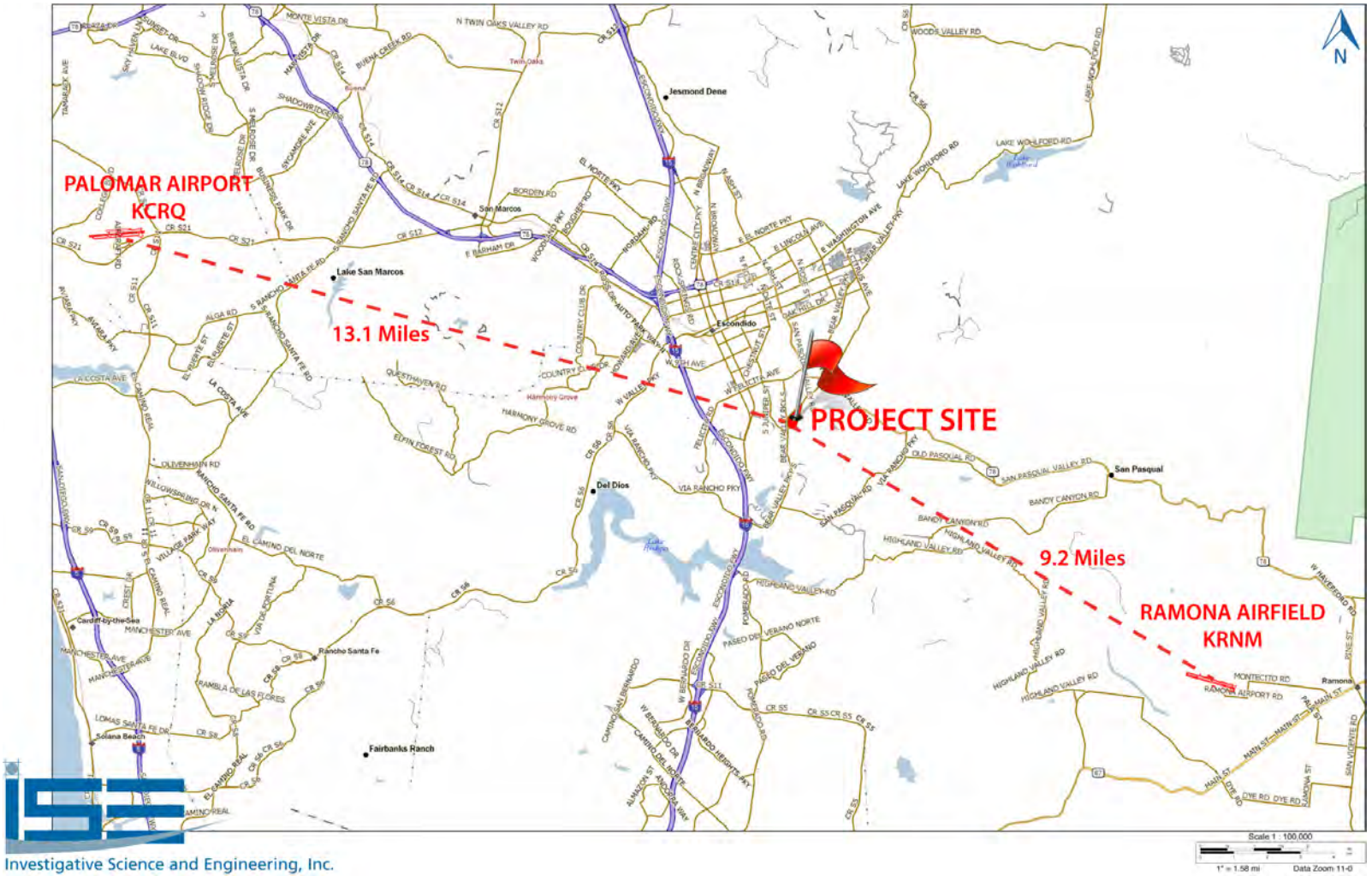


**FIGURE 10: Proposed Project Site Relative to Nearby Airports (ISE 4/16)**

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## CERTIFICATION OF ACCURACY AND QUALIFICATIONS

This report was prepared by Investigative Science and Engineering, Inc. (ISE), located at 1134 D Street, Ramona, CA 92065. The members of its professional staff contributing to the report are listed below:

| | |
|---|---|
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| Karen Tavares<br>*(ktavares@ise.us)* | B.S. Electrical Engineering |

ISE affirms to the best of its knowledge and belief that the statements and information contained herein are in all respects true and correct as of the date of this report. Content and information contained within this report is intended only for the subject project and is protected under 17 U.S.C. §§ 101 through 810.

Should the reader have any questions regarding the findings and conclusions presented in this report, please do not hesitate to contact ISE at (760) 787-0016.

*Approved as to Form and Content:*

Rick Tavares, Ph.D.

Project Principal
Investigative Science and Engineering, Inc. (ISE)

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# APPENDICIES AND SUPPLEMENTAL INFORMATION

## APP 1 – Field Reconnaissance Measurement Results

### Monitoring Location ML 1

12/22/2014

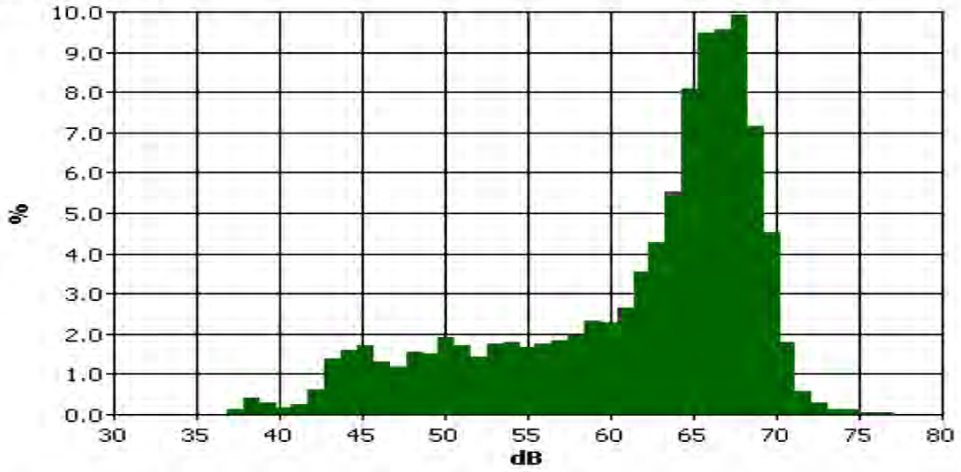
**Information Panel**

| | |
|---|---|
| Name | ML 1 |
| Start Time | Monday, December 22, 2014 12:00:54 |
| Stop Time | Monday, December 22, 2014 13:00:51 |
| Device Model Type | SoundPro DL |
| Comments | |

**General Data Panel**

| Description | Meter | Value | Description | Meter | Value |
|---|---|---|---|---|---|
| Leq | 1 | 66 dB | Exchange Rate | 1 | 3 dB |
| Weighting | 1 | A | Response | 1 | SLOW |
| Bandwidth | 1 | OFF | Exchange Rate | 2 | 3 dB |
| Weighting | 2 | C | Response | 2 | FAST |

**Statistics Chart**




**Statistics Table**

| dB | 0.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | % |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 30.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 31.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 32.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 33.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 34.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 35.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 36.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 37.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 38.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.4 |
| 39.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 |
| 40.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 |
| 41.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 |
| 42.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.6 |
| 43.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 1.4 |
| 44.0 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 1.6 |
| 45.0 | 0.2 | 0.1 | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 1.7 |
| 46.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 1.3 |
| 47.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 1.2 |
| 48.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.2 | 1.5 |
| 49.0 | 0.2 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 1.5 |
| 50.0 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 1.9 |
| 51.0 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 1.7 |
| 52.0 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 1.4 |
| 53.0 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 1.7 |
| 54.0 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 1.8 |
| 55.0 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 1.7 |
| 56.0 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 1.8 |

1

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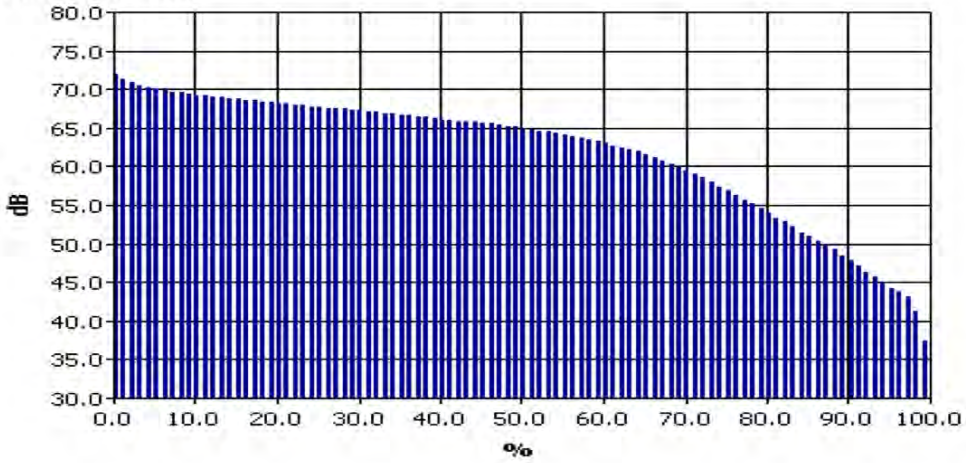
## Statistics Table (cont'd)

| dB | 0.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | % |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 57.0 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 1.8 |
| 58.0 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 2.0 |
| 59.0 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.3 | 2.3 |
| 60.0 | 0.2 | 0.3 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 2.3 |
| 61.0 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 2.7 |
| 62.0 | 0.3 | 0.4 | 0.4 | 0.3 | 0.3 | 0.4 | 0.3 | 0.4 | 0.4 | 0.4 | 3.6 |
| 63.0 | 0.4 | 0.5 | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.5 | 4.3 |
| 64.0 | 0.5 | 0.6 | 0.6 | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 | 5.5 |
| 65.0 | 0.6 | 0.7 | 0.7 | 0.8 | 0.8 | 0.8 | 0.9 | 0.9 | 0.9 | 0.9 | 8.1 |
| 66.0 | 0.9 | 0.9 | 0.8 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 9.5 |
| 67.0 | 0.9 | 0.8 | 0.9 | 0.9 | 1.0 | 1.0 | 1.0 | 0.9 | 1.1 | 1.1 | 9.6 |
| 68.0 | 1.1 | 1.0 | 1.0 | 1.0 | 1.0 | 1.1 | 1.0 | 1.0 | 0.9 | 0.9 | 9.9 |
| 69.0 | 0.9 | 0.9 | 0.7 | 0.7 | 0.7 | 0.8 | 0.7 | 0.6 | 0.5 | 0.5 | 7.2 |
| 70.0 | 0.6 | 0.6 | 0.6 | 0.6 | 0.5 | 0.4 | 0.4 | 0.3 | 0.2 | 0.3 | 4.5 |
| 71.0 | 0.3 | 0.2 | 0.3 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 1.8 |
| 72.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 |
| 73.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 |
| 74.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 75.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 76.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 77.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 78.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 79.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 80.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

## Exceedance Chart




## Exceedance Table

| | 0% | 1% | 2% | 3% | 4% | 5% | 6% | 7% | 8% | 9% |
|---|---|---|---|---|---|---|---|---|---|---|
| 0% | | 72.0 | 71.3 | 70.8 | 70.5 | 70.3 | 70.1 | 69.9 | 69.7 | 69.6 |
| 10% | 69.4 | 69.3 | 69.2 | 69.0 | 68.9 | 68.8 | 68.7 | 68.6 | 68.5 | 68.4 |
| 20% | 68.3 | 68.2 | 68.1 | 68.0 | 67.9 | 67.8 | 67.7 | 67.6 | 67.5 | 67.4 |
| 30% | 67.3 | 67.2 | 67.1 | 67.0 | 66.9 | 66.8 | 66.7 | 66.6 | 66.5 | 66.4 |
| 40% | 66.3 | 66.1 | 66.0 | 65.9 | 65.8 | 65.7 | 65.6 | 65.5 | 65.4 | 65.2 |
| 50% | 65.1 | 65.0 | 64.8 | 64.6 | 64.5 | 64.3 | 64.1 | 63.9 | 63.7 | 63.5 |
| 60% | 63.2 | 63.0 | 62.7 | 62.4 | 62.1 | 61.9 | 61.5 | 61.1 | 60.7 | 60.3 |
| 70% | 59.8 | 59.4 | 59.0 | 58.5 | 58.0 | 57.4 | 56.9 | 56.3 | 55.7 | 55.2 |
| 80% | 54.6 | 54.0 | 53.4 | 52.9 | 52.2 | 51.5 | 50.9 | 50.4 | 49.9 | 49.2 |
| 90% | 48.5 | 47.9 | 47.1 | 46.3 | 45.6 | 45.0 | 44.3 | 43.7 | 43.1 | 41.2 |
| 100% | 37.4 | | | | | | | | | |



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# Monitoring Location ML 2

12/22/2014

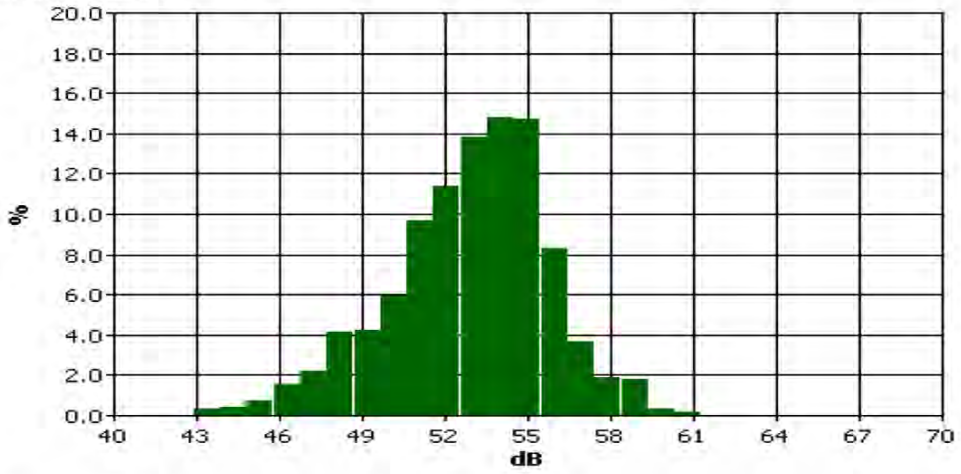
## Information Panel

| | |
|---|---|
| Name | ML 2 |
| Start Time | Monday, December 22, 2014 11:56:45 |
| Stop Time | Monday, December 22, 2014 12:56:00 |
| Device Model Type | SoundPro DL |
| Comments | |

## General Data Panel

| Description | Meter | Value | Description | Meter | Value |
|---|---|---|---|---|---|
| Leq | 1 | 54.2 dB | Exchange Rate | 1 | 3 dB |
| Weighting | 1 | A | Response | 1 | SLOW |
| Bandwidth | 1 | OFF | Exchange Rate | 2 | 3 dB |
| Weighting | 2 | A | Response | 2 | SLOW |

## Statistics Chart




## Statistics Table

| dB | 0.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | % |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 41.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 42.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 43.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 |
| 44.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.4 |
| 45.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.8 |
| 46.0 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 1.5 |
| 47.0 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.2 | 0.3 | 0.2 | 0.2 | 0.3 | 2.2 |
| 48.0 | 0.3 | 0.3 | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 4.2 |
| 49.0 | 0.4 | 0.2 | 0.4 | 0.5 | 0.5 | 0.5 | 0.4 | 0.4 | 0.5 | 0.5 | 4.2 |
| 50.0 | 0.6 | 0.6 | 0.5 | 0.5 | 0.6 | 0.7 | 0.6 | 0.6 | 0.6 | 0.7 | 6.0 |
| 51.0 | 0.9 | 1.0 | 0.8 | 0.8 | 0.9 | 1.0 | 1.1 | 1.1 | 1.1 | 1.0 | 9.7 |
| 52.0 | 1.2 | 0.9 | 1.0 | 1.2 | 1.3 | 1.2 | 1.1 | 1.1 | 1.3 | 1.1 | 11.4 |
| 53.0 | 1.1 | 1.4 | 1.5 | 1.4 | 1.3 | 1.4 | 1.4 | 1.3 | 1.4 | 1.5 | 13.8 |
| 54.0 | 1.5 | 1.4 | 1.6 | 1.5 | 1.5 | 1.5 | 1.3 | 1.3 | 1.5 | 1.7 | 14.8 |
| 55.0 | 1.8 | 1.5 | 1.2 | 1.6 | 1.6 | 1.5 | 1.5 | 1.4 | 1.3 | 1.3 | 14.7 |
| 56.0 | 1.1 | 1.1 | 1.0 | 1.0 | 0.9 | 0.7 | 0.7 | 0.8 | 0.6 | 0.5 | 8.3 |
| 57.0 | 0.5 | 0.4 | 0.5 | 0.4 | 0.4 | 0.3 | 0.4 | 0.3 | 0.3 | 0.2 | 3.6 |
| 58.0 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 1.8 |
| 59.0 | 0.3 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 1.8 |
| 60.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 |
| 61.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 |
| 62.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 63.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 64.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 65.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 66.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

1

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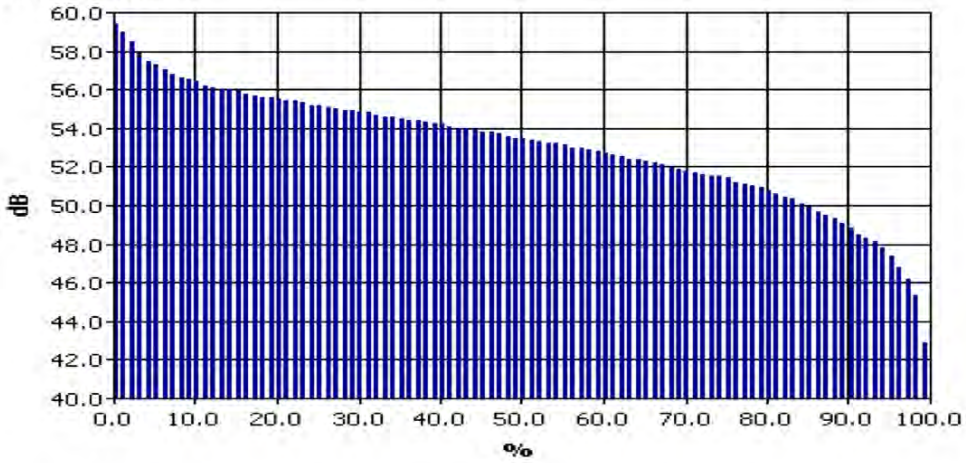
**Statistics Table (cont'd)**

| dB | 0.0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | % |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 67.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 68.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 69.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 70.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

**Exceedance Chart**




**Exceedance Table**

| | 0% | 1% | 2% | 3% | 4% | 5% | 6% | 7% | 8% | 9% |
|---|---|---|---|---|---|---|---|---|---|---|
| 0% | | 59.4 | 59.0 | 58.5 | 57.9 | 57.5 | 57.3 | 57.0 | 56.8 | 56.6 |
| 10% | 56.5 | 56.4 | 56.2 | 56.1 | 56.0 | 56.0 | 55.9 | 55.8 | 55.7 | 55.6 |
| 20% | 55.6 | 55.5 | 55.4 | 55.4 | 55.3 | 55.2 | 55.2 | 55.1 | 55.0 | 54.9 |
| 30% | 54.9 | 54.8 | 54.8 | 54.7 | 54.6 | 54.6 | 54.5 | 54.4 | 54.4 | 54.3 |
| 40% | 54.2 | 54.2 | 54.1 | 54.0 | 54.0 | 53.9 | 53.8 | 53.8 | 53.7 | 53.6 |
| 50% | 53.5 | 53.5 | 53.4 | 53.3 | 53.2 | 53.2 | 53.1 | 53.0 | 53.0 | 52.9 |
| 60% | 52.8 | 52.7 | 52.6 | 52.5 | 52.4 | 52.4 | 52.3 | 52.2 | 52.1 | 52.0 |
| 70% | 51.9 | 51.8 | 51.7 | 51.6 | 51.5 | 51.5 | 51.4 | 51.2 | 51.1 | 51.0 |
| 80% | 50.9 | 50.8 | 50.6 | 50.4 | 50.3 | 50.1 | 49.9 | 49.7 | 49.5 | 49.3 |
| 90% | 49.1 | 48.8 | 48.5 | 48.3 | 48.1 | 47.8 | 47.4 | 46.8 | 46.2 | 45.3 |
| 100% | 42.9 | | | | | | | | | |

2

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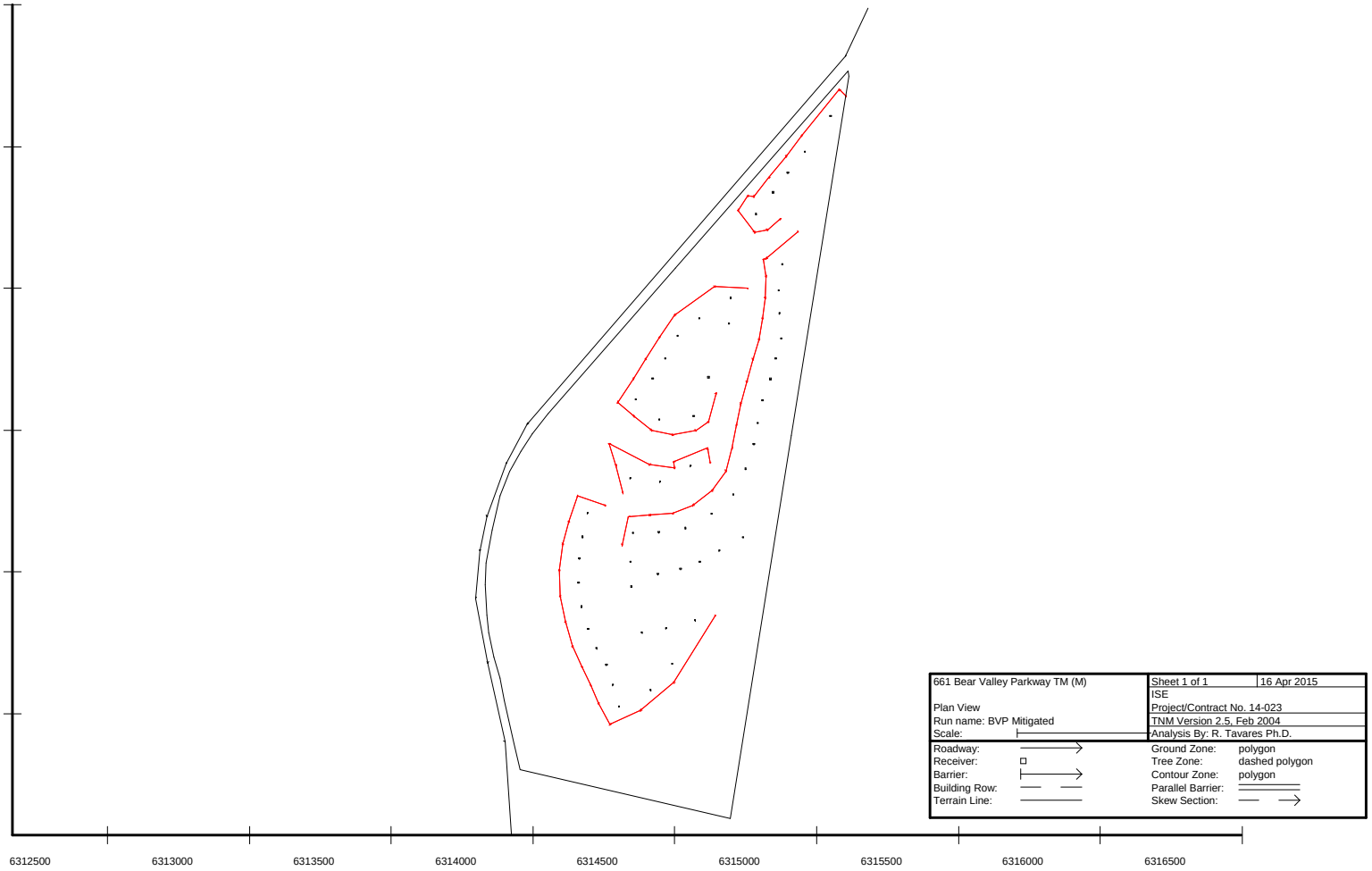
## APP 2 – TNM Model Input/Output Data

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INPUT: ROADWAYS 14-023

ISE 16 April 2015
R. Tavares Ph.D. TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: 14-023
RUN: 661 Bear Valley Parkway TM (U)

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

| Roadway Name | Width | Points Name | No. | Coordinates (pavement) X | Y | Z | Flow Control Control Device | Speed Constraint | Percent Vehicles Affected | Segment Pvmt Type | On Struct? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ft | | | ft | ft | ft | | mph | % | | |
| BEAR VALLEY PARKWAY | 30.0 | BVP-1 | 52 | 6,315,177.0 | 1,981,991.0 | 630.90 | | | | Average | |
| | | BVP-2 | 53 | 6,315,098.0 | 1,981,820.0 | 645.00 | | | | Average | |
| | | BVP-3 | 54 | 6,313,977.0 | 1,980,525.0 | 577.80 | | | | Average | |
| | | BVP-4 | 55 | 6,313,902.0 | 1,980,385.0 | 563.60 | | | | Average | |
| | | BVP-5 | 56 | 6,313,834.0 | 1,980,198.0 | 556.10 | | | | Average | |
| | | BVP-6 | 57 | 6,313,809.0 | 1,980,078.0 | 554.80 | | | | Average | |
| | | BVP-7 | 58 | 6,313,796.0 | 1,979,910.0 | 547.70 | | | | Average | |
| | | BVP-8 | 59 | 6,313,838.0 | 1,979,683.0 | 541.80 | | | | Average | |
| | | BVP-9 | 60 | 6,313,898.0 | 1,979,405.0 | 532.70 | | | | Average | |
| | | BVP-10 | 61 | 6,313,923.0 | 1,979,038.6 | 509.90 | | | | | |

C:\TNM25\Bear Valley Parkway TM\BVP Unmitigated 1 16

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**INPUT: TRAFFIC FOR LAeq1h Volumes** **14-023**

**ISE** **16 April 2015**
**R. Tavares Ph.D.** **TNM 2.5**

**INPUT: TRAFFIC FOR LAeq1h Volumes**
**PROJECT/CONTRACT:** 14-023
**RUN:** 661 Bear Valley Parkway TM (U)

| Roadway Name | Points Name | No. | Segment | Autos | | MTrucks | | HTrucks | | Buses | | Motorcycles | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V | S | V | S | V | S | V | S | V | S |
| | | | | veh/hr | mph | veh/hr | mph | veh/hr | mph | veh/hr | mph | veh/hr | mph |
| BEAR VALLEY PARKWAY | BVP-1 | 52 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 | |
| | BVP-2 | 53 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 | |
| | BVP-3 | 54 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 | |
| | BVP-4 | 55 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 | |
| | BVP-5 | 56 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 | |
| | BVP-6 | 57 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 | |
| | BVP-7 | 58 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 | |
| | BVP-8 | 59 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 | |
| | BVP-9 | 60 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 | |
| | BVP-10 | 61 | | | | | | | | | | | |

**C:\TNM25\Bear Valley Parkway TM\BVP Unmitigated** **1**

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INPUT: RECEIVERS 14-023

ISE 16 April 2015
R. Tavares Ph.D. TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: 14-023
RUN: 661 Bear Valley Parkway TM (U)

| Receiver Name | No. | #DUs | Coordinates (ground) X | Y | Z | Height above Ground | Input Sound Levels and Criteria Existing LAeq1h | Impact Criteria LAeq1h | Sub'l | NR Goal | Active in Calc. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ft | ft | ft | ft | dBA | dBA | dB | dB | |
| LOT 1 | 95 | 1 | 6,314,784.0 | 1,981,265.0 | | 637.70 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 2 | 96 | 1 | 6,314,843.0 | 1,981,342.0 | | 644.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 3 | 97 | 1 | 6,314,895.0 | 1,981,410.0 | | 645.10 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 4 | 98 | 1 | 6,314,956.0 | 1,981,484.5 | | 645.80 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 5 | 99 | 1 | 6,315,046.0 | 1,981,611.4 | | 647.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 6 | 100 | 1 | 6,314,875.5 | 1,981,088.6 | | 639.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 7 | 101 | 1 | 6,314,862.0 | 1,980,996.0 | | 643.30 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 8 | 102 | 1 | 6,314,866.0 | 1,980,915.0 | | 645.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 9 | 103 | 1 | 6,314,872.0 | 1,980,827.0 | | 647.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 10 | 104 | 1 | 6,314,852.0 | 1,980,757.0 | | 648.30 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 11 | 105 | 1 | 6,314,834.0 | 1,980,684.0 | | 648.10 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 12 | 106 | 1 | 6,314,806.0 | 1,980,609.0 | | 646.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 13 | 107 | 1 | 6,314,789.0 | 1,980,529.0 | | 644.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 14 | 108 | 1 | 6,314,775.0 | 1,980,454.0 | | 639.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 15 | 109 | 1 | 6,314,747.0 | 1,980,367.0 | | 631.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 16 | 110 | 1 | 6,314,703.0 | 1,980,277.0 | | 624.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 17 | 111 | 1 | 6,314,627.0 | 1,980,210.0 | | 617.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 18 | 112 | 1 | 6,314,535.0 | 1,980,158.0 | | 610.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 19 | 113 | 1 | 6,314,440.0 | 1,980,144.0 | | 604.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 20 | 114 | 1 | 6,314,349.0 | 1,980,142.0 | | 600.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 21 | 115 | 1 | 6,314,341.0 | 1,980,040.0 | | 595.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 22 | 116 | 1 | 6,314,344.0 | 1,979,952.0 | | 596.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |

C:\TNM25\Bear Valley Parkway TM\BVP Unmitigated 1

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| INPUT: RECEIVERS | | | | | | | | | | | 14-023 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LOT 23 | 117 | 1 | 6,314,437.0 | 1,979,996.0 | 598.30 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 24 | 118 | 1 | 6,314,517.0 | 1,980,015.0 | 600.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 25 | 119 | 1 | 6,314,585.0 | 1,980,040.0 | 601.10 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 26 | 120 | 1 | 6,314,654.0 | 1,980,079.0 | 602.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 27 | 121 | 1 | 6,314,737.0 | 1,980,127.0 | 603.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 28 | 122 | 1 | 6,314,569.0 | 1,979,833.0 | 600.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 29 | 123 | 1 | 6,314,466.0 | 1,979,806.0 | 598.30 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 30 | 124 | 1 | 6,314,381.0 | 1,979,790.0 | 596.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 31 | 125 | 1 | 6,314,488.0 | 1,979,681.0 | 600.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 32 | 126 | 1 | 6,314,412.0 | 1,979,588.0 | 600.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 33 | 127 | 1 | 6,314,300.0 | 1,979,530.0 | 600.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 34 | 128 | 1 | 6,314,279.0 | 1,979,606.0 | 600.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 35 | 129 | 1 | 6,314,256.0 | 1,979,677.0 | 599.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 36 | 130 | 1 | 6,314,221.0 | 1,979,735.0 | 598.60 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 37 | 131 | 1 | 6,314,191.0 | 1,979,804.0 | 597.70 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 38 | 132 | 1 | 6,314,168.0 | 1,979,882.0 | 596.80 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 39 | 133 | 1 | 6,314,158.0 | 1,979,967.0 | 596.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 40 | 134 | 1 | 6,314,161.0 | 1,980,052.0 | 595.20 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 41 | 135 | 1 | 6,314,172.0 | 1,980,128.0 | 594.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 42 | 136 | 1 | 6,314,189.0 | 1,980,212.0 | 595.80 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 43 | 137 | 1 | 6,314,340.0 | 1,980,334.0 | 599.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 44 | 138 | 1 | 6,314,444.0 | 1,980,322.0 | 604.80 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 45 | 139 | 1 | 6,314,552.0 | 1,980,378.0 | 622.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 46 | 140 | 1 | 6,314,616.0 | 1,980,690.0 | 656.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 47 | 141 | 1 | 6,314,563.0 | 1,980,554.0 | 658.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 48 | 142 | 1 | 6,314,443.0 | 1,980,541.0 | 658.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 49 | 143 | 1 | 6,314,359.0 | 1,980,612.0 | 658.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 50 | 144 | 1 | 6,314,419.0 | 1,980,686.0 | 657.90 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 51 | 145 | 1 | 6,314,463.0 | 1,980,757.0 | 656.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 52 | 146 | 1 | 6,314,507.0 | 1,980,837.0 | 653.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 53 | 147 | 1 | 6,314,582.5 | 1,980,898.4 | 652.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 54 | 148 | 1 | 6,314,687.0 | 1,980,880.0 | 647.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 55 | 149 | 1 | 6,314,693.0 | 1,980,970.0 | 643.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |



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ISE
R. Tavares Ph.D.

16 April 2015
TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: 14-023
RUN: 661 Bear Valley Parkway TM (U)

| Barrier Name | Type | Height Min | Height Max | If Wall $ per Unit Area | If Berm $ per Unit Vol. | Top Width | Run:Rise | Add'tnl $ per Unit Length | Points Name | No. | Coordinates (bottom) X | Y | Z | Height at Point | Segment Seg Ht Incre-ment | Perturbs #Up | Perturbs #Dn | On Struct? | Important Reflec-tions? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ft | ft | $/sq ft | $/cu yd | ft | ft:ft | $/ft | | | ft | ft | ft | ft | ft | | | | |
| SLOPE EDGE 1 | W | 0.00 | 99.99 | 0.00 | | | | 0.00 | SE1-1 | 28 | 6,315,100.5 | 1,981,680.9 | 647.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-2 | 93 | 6,315,076.5 | 1,981,702.8 | 647.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-3 | 29 | 6,314,943.0 | 1,981,540.0 | 645.80 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-4 | 30 | 6,314,889.0 | 1,981,469.0 | 645.10 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-5 | 31 | 6,314,829.0 | 1,981,393.0 | 644.40 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-6 | 32 | 6,314,775.0 | 1,981,326.0 | 644.40 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-7 | 33 | 6,314,753.0 | 1,981,329.0 | 637.70 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-8 | 34 | 6,314,720.0 | 1,981,278.0 | 637.70 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-9 | 35 | 6,314,778.0 | 1,981,201.0 | 637.70 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-10 | 36 | 6,314,824.0 | 1,981,210.0 | 637.70 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-11 | 37 | 6,314,870.0 | 1,981,248.0 | 637.70 | 0.00 | | | | | |
| SLOPE EDGE 2 | W | 0.00 | 99.99 | 0.00 | | | | 0.00 | SE2-1 | 38 | 6,314,932.0 | 1,981,204.0 | 639.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-2 | 39 | 6,314,819.0 | 1,981,108.0 | 639.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-3 | 40 | 6,314,808.0 | 1,981,106.0 | 639.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-4 | 41 | 6,314,818.0 | 1,981,044.0 | 643.30 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-5 | 42 | 6,314,815.0 | 1,980,968.0 | 645.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-6 | 43 | 6,314,806.0 | 1,980,895.0 | 647.40 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-7 | 44 | 6,314,794.0 | 1,980,822.0 | 648.30 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-8 | 45 | 6,314,771.0 | 1,980,753.0 | 648.10 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-9 | 46 | 6,314,750.0 | 1,980,674.0 | 646.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-10 | 47 | 6,314,728.0 | 1,980,595.0 | 644.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-11 | 48 | 6,314,714.0 | 1,980,520.0 | 639.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-12 | 49 | 6,314,700.0 | 1,980,440.0 | 631.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-13 | 50 | 6,314,676.0 | 1,980,359.0 | 624.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-14 | 51 | 6,314,628.0 | 1,980,290.0 | 617.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-15 | 52 | 6,314,560.0 | 1,980,239.0 | 610.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-16 | 53 | 6,314,489.0 | 1,980,209.0 | 604.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-17 | 54 | 6,314,408.0 | 1,980,204.0 | 600.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-18 | 55 | 6,314,334.0 | 1,980,199.0 | 600.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-19 | 56 | 6,314,310.0 | 1,980,097.0 | 600.50 | 0.00 | | | | | |
| SLOPE EDGE 3 | W | 0.00 | 99.99 | 0.00 | | | | 0.00 | SE3-1 | 57 | 6,314,639.0 | 1,979,851.0 | 600.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE3-2 | 58 | 6,314,493.0 | 1,979,613.0 | 600.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE3-3 | 59 | 6,314,376.0 | 1,979,516.0 | 600.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE3-4 | 60 | 6,314,268.0 | 1,979,466.0 | 600.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE3-5 | 61 | 6,314,228.0 | 1,979,542.0 | 600.00 | 0.00 | 0.00 | 0 | 0 | | |



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**INPUT: BARRIERS** **14-023**

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | SE3-6 | 62 | 6,314,200.0 | 1,979,606.0 | 599.50 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-7 | 63 | 6,314,169.0 | 1,979,670.0 | 598.60 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-8 | 64 | 6,314,136.0 | 1,979,742.0 | 597.70 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-9 | 65 | 6,314,111.0 | 1,979,828.0 | 596.80 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-10 | 66 | 6,314,094.0 | 1,979,920.0 | 596.00 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-11 | 67 | 6,314,090.0 | 1,980,011.0 | 595.20 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-12 | 68 | 6,314,102.0 | 1,980,104.0 | 594.40 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-13 | 69 | 6,314,124.0 | 1,980,182.0 | 595.80 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-14 | 70 | 6,314,155.0 | 1,980,273.0 | 595.80 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-15 | 71 | 6,314,254.0 | 1,980,237.0 | 595.80 | 0.00 | | | |
| SLOPE EDGE 4 | W | 0.00 | 99.99 | 0.00 | 0.00 | SE4-1 | 72 | 6,314,621.0 | 1,980,389.0 | 622.00 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE4-2 | 73 | 6,314,612.0 | 1,980,440.0 | 622.00 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE4-3 | 74 | 6,314,494.0 | 1,980,392.0 | 622.00 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE4-4 | 75 | 6,314,497.0 | 1,980,369.0 | 604.80 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE4-5 | 76 | 6,314,407.0 | 1,980,383.0 | 599.50 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE4-6 | 77 | 6,314,265.0 | 1,980,457.0 | 599.50 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE4-7 | 78 | 6,314,291.0 | 1,980,378.0 | 599.50 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE4-8 | 79 | 6,314,314.0 | 1,980,282.0 | 599.50 | 0.00 | | | |
| SLOPE EDGE 5 | W | 0.00 | 99.99 | 0.00 | 0.00 | SE5-1 | 80 | 6,314,755.0 | 1,981,002.0 | 643.00 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-2 | 81 | 6,314,636.0 | 1,981,010.0 | 652.00 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-3 | 82 | 6,314,497.0 | 1,980,909.0 | 653.50 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-4 | 83 | 6,314,442.0 | 1,980,830.0 | 656.50 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-5 | 84 | 6,314,394.0 | 1,980,754.0 | 657.90 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-6 | 85 | 6,314,350.0 | 1,980,684.0 | 658.40 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-7 | 86 | 6,314,295.0 | 1,980,601.0 | 658.40 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-8 | 87 | 6,314,353.0 | 1,980,553.0 | 658.40 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-9 | 88 | 6,314,415.0 | 1,980,503.0 | 658.40 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-10 | 89 | 6,314,491.0 | 1,980,487.0 | 658.40 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-11 | 90 | 6,314,572.0 | 1,980,504.0 | 658.40 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-12 | 91 | 6,314,616.0 | 1,980,534.0 | 656.50 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-13 | 92 | 6,314,642.0 | 1,980,634.0 | 656.50 | 0.00 | | | |

**C:\TNM25\Bear Valley Parkway TM\BVP Unmitigated** **2** **16 April 2015**

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RESULTS: SOUND LEVELS 14-023

ISE
R. Tavares Ph.D.

16 April 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 14-023
RUN: 661 Bear Valley Parkway TM (U)
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

| Receiver Name | No. | #DUs | Existing LAeq1h | No Barrier LAeq1h Calculated | Crit'n | Increase over existing Calculated | Crit'n Sub'l Inc | Type Impact | With Barrier Calculated LAeq1h | Noise Reduction Calculated | Goal | Calculated minus Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | dBA | dBA | dBA | dB | dB | | dBA | dB | dB | dB |
| LOT 1 | 95 | 1 | 0.0 | 63.9 | 65 | 63.9 | 10 | ---- | 63.9 | 0.0 | 8 | -8.0 |
| LOT 2 | 96 | 1 | 0.0 | 65.0 | 65 | 65.0 | 10 | Snd Lvl | 65.0 | 0.0 | 8 | -8.0 |
| LOT 3 | 97 | 1 | 0.0 | 65.2 | 65 | 65.2 | 10 | Snd Lvl | 65.2 | 0.0 | 8 | -8.0 |
| LOT 4 | 98 | 1 | 0.0 | 66.4 | 65 | 66.4 | 10 | Snd Lvl | 66.4 | 0.0 | 8 | -8.0 |
| LOT 5 | 99 | 1 | 0.0 | 71.0 | 65 | 71.0 | 10 | Snd Lvl | 71.0 | 0.0 | 8 | -8.0 |
| LOT 6 | 100 | 1 | 0.0 | 57.5 | 65 | 57.5 | 10 | ---- | 57.5 | 0.0 | 8 | -8.0 |
| LOT 7 | 101 | 1 | 0.0 | 56.7 | 65 | 56.7 | 10 | ---- | 56.7 | 0.0 | 8 | -8.0 |
| LOT 8 | 102 | 1 | 0.0 | 53.2 | 65 | 53.2 | 10 | ---- | 53.2 | 0.0 | 8 | -8.0 |
| LOT 9 | 103 | 1 | 0.0 | 50.5 | 65 | 50.5 | 10 | ---- | 50.5 | 0.0 | 8 | -8.0 |
| LOT 10 | 104 | 1 | 0.0 | 49.7 | 65 | 49.7 | 10 | ---- | 49.7 | 0.0 | 8 | -8.0 |
| LOT 11 | 105 | 1 | 0.0 | 48.8 | 65 | 48.8 | 10 | ---- | 48.8 | 0.0 | 8 | -8.0 |
| LOT 12 | 106 | 1 | 0.0 | 48.0 | 65 | 48.0 | 10 | ---- | 48.0 | 0.0 | 8 | -8.0 |
| LOT 13 | 107 | 1 | 0.0 | 47.7 | 65 | 47.7 | 10 | ---- | 47.7 | 0.0 | 8 | -8.0 |
| LOT 14 | 108 | 1 | 0.0 | 48.1 | 65 | 48.1 | 10 | ---- | 48.1 | 0.0 | 8 | -8.0 |
| LOT 15 | 109 | 1 | 0.0 | 48.5 | 65 | 48.5 | 10 | ---- | 48.5 | 0.0 | 8 | -8.0 |
| LOT 16 | 110 | 1 | 0.0 | 48.8 | 65 | 48.8 | 10 | ---- | 48.8 | 0.0 | 8 | -8.0 |
| LOT 17 | 111 | 1 | 0.0 | 50.7 | 65 | 50.7 | 10 | ---- | 50.7 | 0.0 | 8 | -8.0 |
| LOT 18 | 112 | 1 | 0.0 | 51.6 | 65 | 51.6 | 10 | ---- | 51.6 | 0.0 | 8 | -8.0 |
| LOT 19 | 113 | 1 | 0.0 | 52.2 | 65 | 52.2 | 10 | ---- | 52.2 | 0.0 | 8 | -8.0 |
| LOT 20 | 114 | 1 | 0.0 | 52.9 | 65 | 52.9 | 10 | ---- | 52.9 | 0.0 | 8 | -8.0 |
| LOT 21 | 115 | 1 | 0.0 | 50.1 | 65 | 50.1 | 10 | ---- | 50.1 | 0.0 | 8 | -8.0 |
| LOT 22 | 116 | 1 | 0.0 | 49.9 | 65 | 49.9 | 10 | ---- | 49.9 | 0.0 | 8 | -8.0 |
| LOT 23 | 117 | 1 | 0.0 | 47.9 | 65 | 47.9 | 10 | ---- | 47.9 | 0.0 | 8 | -8.0 |
| LOT 24 | 118 | 1 | 0.0 | 47.4 | 65 | 47.4 | 10 | ---- | 47.4 | 0.0 | 8 | -8.0 |

C:\TNM25\Bear Valley Parkway TM\BVP Unmitigated 1 16 April 2015

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| RESULTS: SOUND LEVELS | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | 14-023 | |
| LOT 25 | 119 | 1 | 0.0 | 46.4 | 65 | 46.4 | 10 | ---- | 46.4 | 0.0 | 8 | -8.0 |
| LOT 26 | 120 | 1 | 0.0 | 44.6 | 65 | 44.6 | 10 | ---- | 44.6 | 0.0 | 8 | -8.0 |
| LOT 27 | 121 | 1 | 0.0 | 43.1 | 65 | 43.1 | 10 | ---- | 43.1 | 0.0 | 8 | -8.0 |
| LOT 28 | 122 | 1 | 0.0 | 45.3 | 65 | 45.3 | 10 | ---- | 45.3 | 0.0 | 8 | -8.0 |
| LOT 29 | 123 | 1 | 0.0 | 46.8 | 65 | 46.8 | 10 | ---- | 46.8 | 0.0 | 8 | -8.0 |
| LOT 30 | 124 | 1 | 0.0 | 47.7 | 65 | 47.7 | 10 | ---- | 47.7 | 0.0 | 8 | -8.0 |
| LOT 31 | 125 | 1 | 0.0 | 46.0 | 65 | 46.0 | 10 | ---- | 46.0 | 0.0 | 8 | -8.0 |
| LOT 32 | 126 | 1 | 0.0 | 46.6 | 65 | 46.6 | 10 | ---- | 46.6 | 0.0 | 8 | -8.0 |
| LOT 33 | 127 | 1 | 0.0 | 50.5 | 65 | 50.5 | 10 | ---- | 50.5 | 0.0 | 8 | -8.0 |
| LOT 34 | 128 | 1 | 0.0 | 50.3 | 65 | 50.3 | 10 | ---- | 50.3 | 0.0 | 8 | -8.0 |
| LOT 35 | 129 | 1 | 0.0 | 50.5 | 65 | 50.5 | 10 | ---- | 50.5 | 0.0 | 8 | -8.0 |
| LOT 36 | 130 | 1 | 0.0 | 51.6 | 65 | 51.6 | 10 | ---- | 51.6 | 0.0 | 8 | -8.0 |
| LOT 37 | 131 | 1 | 0.0 | 52.8 | 65 | 52.8 | 10 | ---- | 52.8 | 0.0 | 8 | -8.0 |
| LOT 38 | 132 | 1 | 0.0 | 53.7 | 65 | 53.7 | 10 | ---- | 53.7 | 0.0 | 8 | -8.0 |
| LOT 39 | 133 | 1 | 0.0 | 54.8 | 65 | 54.8 | 10 | ---- | 54.8 | 0.0 | 8 | -8.0 |
| LOT 40 | 134 | 1 | 0.0 | 55.9 | 65 | 55.9 | 10 | ---- | 55.9 | 0.0 | 8 | -8.0 |
| LOT 41 | 135 | 1 | 0.0 | 56.1 | 65 | 56.1 | 10 | ---- | 56.1 | 0.0 | 8 | -8.0 |
| LOT 42 | 136 | 1 | 0.0 | 58.3 | 65 | 58.3 | 10 | ---- | 58.3 | 0.0 | 8 | -8.0 |
| LOT 43 | 137 | 1 | 0.0 | 56.9 | 65 | 56.9 | 10 | ---- | 56.9 | 0.0 | 8 | -8.0 |
| LOT 44 | 138 | 1 | 0.0 | 54.1 | 65 | 54.1 | 10 | ---- | 54.1 | 0.0 | 8 | -8.0 |
| LOT 45 | 139 | 1 | 0.0 | 52.8 | 65 | 52.8 | 10 | ---- | 52.8 | 0.0 | 8 | -8.0 |
| LOT 46 | 140 | 1 | 0.0 | 50.2 | 65 | 50.2 | 10 | ---- | 50.2 | 0.0 | 8 | -8.0 |
| LOT 47 | 141 | 1 | 0.0 | 49.4 | 65 | 49.4 | 10 | ---- | 49.4 | 0.0 | 8 | -8.0 |
| LOT 48 | 142 | 1 | 0.0 | 52.6 | 65 | 52.6 | 10 | ---- | 52.6 | 0.0 | 8 | -8.0 |
| LOT 49 | 143 | 1 | 0.0 | 55.1 | 65 | 55.1 | 10 | ---- | 55.1 | 0.0 | 8 | -8.0 |
| LOT 50 | 144 | 1 | 0.0 | 54.3 | 65 | 54.3 | 10 | ---- | 54.3 | 0.0 | 8 | -8.0 |
| LOT 51 | 145 | 1 | 0.0 | 55.2 | 65 | 55.2 | 10 | ---- | 55.2 | 0.0 | 8 | -8.0 |
| LOT 52 | 146 | 1 | 0.0 | 56.4 | 65 | 56.4 | 10 | ---- | 56.4 | 0.0 | 8 | -8.0 |
| LOT 53 | 147 | 1 | 0.0 | 55.7 | 65 | 55.7 | 10 | ---- | 55.7 | 0.0 | 8 | -8.0 |
| LOT 54 | 148 | 1 | 0.0 | 52.5 | 65 | 52.5 | 10 | ---- | 52.5 | 0.0 | 8 | -8.0 |
| LOT 55 | 149 | 1 | 0.0 | 54.2 | 65 | 54.2 | 10 | ---- | 54.2 | 0.0 | 8 | -8.0 |

| Dwelling Units | # DUs | Noise Reduction Min dB | Avg dB | Max dB |
|---|---|---|---|---|
| All Selected | 55 | 0.0 | 0.0 | 0.0 |
| All Impacted | 4 | 0.0 | 0.0 | 0.0 |
| All that meet NR Goal | 0 | 0.0 | 0.0 | 0.0 |

C:\TNM25\Bear Valley Parkway TM\BVP Unmitigated 2 16 April 2015

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INPUT: ROADWAYS 14-023

ISE 16 April 2015
R. Tavares Ph.D. TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: 14-023
RUN: 661 Bear Valley Parkway TM (M)

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

| Roadway Name | Width | Points Name | No. | Coordinates (pavement) X | Y | Z | Flow Control Control Device | Speed Constraint | Percent Vehicles Affected | Segment Pvmt Type | On Struct? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ft | | | ft | ft | ft | | mph | % | | |
| BEAR VALLEY PARKWAY | 30.0 | BVP-1 | 52 | 6,315,177.0 | 1,981,991.0 | 630.90 | | | | Average | |
| | | BVP-2 | 53 | 6,315,098.0 | 1,981,820.0 | 645.00 | | | | Average | |
| | | BVP-3 | 54 | 6,313,977.0 | 1,980,525.0 | 577.80 | | | | Average | |
| | | BVP-4 | 55 | 6,313,902.0 | 1,980,385.0 | 563.60 | | | | Average | |
| | | BVP-5 | 56 | 6,313,834.0 | 1,980,198.0 | 556.10 | | | | Average | |
| | | BVP-6 | 57 | 6,313,809.0 | 1,980,078.0 | 554.80 | | | | Average | |
| | | BVP-7 | 58 | 6,313,796.0 | 1,979,910.0 | 547.70 | | | | Average | |
| | | BVP-8 | 59 | 6,313,838.0 | 1,979,683.0 | 541.80 | | | | Average | |
| | | BVP-9 | 60 | 6,313,898.0 | 1,979,405.0 | 532.70 | | | | Average | |
| | | BVP-10 | 61 | 6,313,923.0 | 1,979,038.6 | 509.90 | | | | | |

C:\TNM25\Bear Valley Parkway TM\BVP Mitigated 1 16 April 2015

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**INPUT: TRAFFIC FOR LAeq1h Volumes** **14-023**

**ISE** **16 April 2015**
**R. Tavares Ph.D.** **TNM 2.5**

**INPUT: TRAFFIC FOR LAeq1h Volumes**
**PROJECT/CONTRACT:** 14-023
**RUN:** 661 Bear Valley Parkway TM (M)

| Roadway Name | Points Name | No. | Segment | Autos | | MTrucks | | HTrucks | | Buses | | Motorcycles | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V | S | V | S | V | S | V | S | V | S |
| | | | | veh/hr | mph | veh/hr | mph | veh/hr | mph | veh/hr | mph | veh/hr | mph |
| BEAR VALLEY PARKWAY | BVP-1 | | 52 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 |
| | BVP-2 | | 53 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 |
| | BVP-3 | | 54 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 |
| | BVP-4 | | 55 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 |
| | BVP-5 | | 56 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 |
| | BVP-6 | | 57 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 |
| | BVP-7 | | 58 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 |
| | BVP-8 | | 59 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 |
| | BVP-9 | | 60 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 |
| | BVP-10 | | 61 | | | | | | | | | | |

**C:\TNM25\Bear Valley Parkway TM\BVP Mitigated** **1** **16**

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**INPUT: RECEIVERS** **14-023**

**ISE** **16 April 2015**
**R. Tavares Ph.D.** **TNM 2.5**

**INPUT: RECEIVERS**
**PROJECT/CONTRACT:** 14-023
**RUN:** 661 Bear Valley Parkway TM (M)

| Receiver Name | No. | #DUs | Coordinates (ground) X | Y | Z | Height above Ground | Input Sound Levels and Criteria Existing LAeq1h | Impact Criteria LAeq1h | Sub'l | NR Goal | Active in Calc. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ft | ft | ft | ft | dBA | dBA | dB | dB | |
| LOT 1 | 95 | 1 | 6,314,784.0 | 1,981,265.0 | | 637.70 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 2 | 96 | 1 | 6,314,843.0 | 1,981,342.0 | | 644.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 3 | 97 | 1 | 6,314,895.0 | 1,981,410.0 | | 645.10 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 4 | 98 | 1 | 6,314,956.0 | 1,981,484.5 | | 645.80 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 5 | 99 | 1 | 6,315,046.0 | 1,981,611.4 | | 647.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 6 | 100 | 1 | 6,314,875.5 | 1,981,088.6 | | 639.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 7 | 101 | 1 | 6,314,862.0 | 1,980,996.0 | | 643.30 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 8 | 102 | 1 | 6,314,866.0 | 1,980,915.0 | | 645.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 9 | 103 | 1 | 6,314,872.0 | 1,980,827.0 | | 647.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 10 | 104 | 1 | 6,314,852.0 | 1,980,757.0 | | 648.30 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 11 | 105 | 1 | 6,314,834.0 | 1,980,684.0 | | 648.10 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 12 | 106 | 1 | 6,314,806.0 | 1,980,609.0 | | 646.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 13 | 107 | 1 | 6,314,789.0 | 1,980,529.0 | | 644.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 14 | 108 | 1 | 6,314,775.0 | 1,980,454.0 | | 639.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 15 | 109 | 1 | 6,314,747.0 | 1,980,367.0 | | 631.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 16 | 110 | 1 | 6,314,703.0 | 1,980,277.0 | | 624.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 17 | 111 | 1 | 6,314,627.0 | 1,980,210.0 | | 617.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 18 | 112 | 1 | 6,314,535.0 | 1,980,158.0 | | 610.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 19 | 113 | 1 | 6,314,440.0 | 1,980,144.0 | | 604.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 20 | 114 | 1 | 6,314,349.0 | 1,980,142.0 | | 600.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 21 | 115 | 1 | 6,314,341.0 | 1,980,040.0 | | 595.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 22 | 116 | 1 | 6,314,344.0 | 1,979,952.0 | | 596.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |

**C:\TNM25\Bear Valley Parkway TM\BVP Mitigated** **1** **16**

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**INPUT: RECEIVERS** **14-023**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LOT 23 | 117 | 1 | 6,314,437.0 | 1,979,996.0 | 598.30 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 24 | 118 | 1 | 6,314,517.0 | 1,980,015.0 | 600.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 25 | 119 | 1 | 6,314,585.0 | 1,980,040.0 | 601.10 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 26 | 120 | 1 | 6,314,654.0 | 1,980,079.0 | 602.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 27 | 121 | 1 | 6,314,737.0 | 1,980,127.0 | 603.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 28 | 122 | 1 | 6,314,569.0 | 1,979,833.0 | 600.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 29 | 123 | 1 | 6,314,466.0 | 1,979,806.0 | 598.30 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 30 | 124 | 1 | 6,314,381.0 | 1,979,790.0 | 596.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 31 | 125 | 1 | 6,314,488.0 | 1,979,681.0 | 600.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 32 | 126 | 1 | 6,314,412.0 | 1,979,588.0 | 600.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 33 | 127 | 1 | 6,314,300.0 | 1,979,530.0 | 600.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 34 | 128 | 1 | 6,314,279.0 | 1,979,606.0 | 600.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 35 | 129 | 1 | 6,314,256.0 | 1,979,677.0 | 599.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 36 | 130 | 1 | 6,314,221.0 | 1,979,735.0 | 598.60 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 37 | 131 | 1 | 6,314,191.0 | 1,979,804.0 | 597.70 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 38 | 132 | 1 | 6,314,168.0 | 1,979,882.0 | 596.80 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 39 | 133 | 1 | 6,314,158.0 | 1,979,967.0 | 596.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 40 | 134 | 1 | 6,314,161.0 | 1,980,052.0 | 595.20 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 41 | 135 | 1 | 6,314,172.0 | 1,980,128.0 | 594.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 42 | 136 | 1 | 6,314,189.0 | 1,980,212.0 | 595.80 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 43 | 137 | 1 | 6,314,340.0 | 1,980,334.0 | 599.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 44 | 138 | 1 | 6,314,444.0 | 1,980,322.0 | 604.80 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 45 | 139 | 1 | 6,314,552.0 | 1,980,378.0 | 622.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 46 | 140 | 1 | 6,314,616.0 | 1,980,690.0 | 656.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 47 | 141 | 1 | 6,314,563.0 | 1,980,554.0 | 658.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 48 | 142 | 1 | 6,314,443.0 | 1,980,541.0 | 658.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 49 | 143 | 1 | 6,314,359.0 | 1,980,612.0 | 658.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 50 | 144 | 1 | 6,314,419.0 | 1,980,686.0 | 657.90 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 51 | 145 | 1 | 6,314,463.0 | 1,980,757.0 | 656.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 52 | 146 | 1 | 6,314,507.0 | 1,980,837.0 | 653.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 53 | 147 | 1 | 6,314,582.5 | 1,980,898.4 | 652.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 54 | 148 | 1 | 6,314,687.0 | 1,980,880.0 | 647.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 55 | 149 | 1 | 6,314,693.0 | 1,980,970.0 | 643.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |

**C:\TNM25\Bear Valley Parkway TM\BVP Mitigated** **2** **16**

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ISE
R. Tavares Ph.D.

16 April 2015
TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: 14-023
RUN: 661 Bear Valley Parkway TM (M)

| Barrier Name | Type | Height Min | Height Max | If Wall $ per Unit Area | If Berm $ per Unit Vol. | Top Width | Run:Rise | Add'tnl $ per Unit Length | Points Name | No. | Coordinates (bottom) X | Y | Z | Height at Point | Segment Seg Ht Incre-ment | Perturbs #Up | Perturbs #Dn | On Struct? | Important Reflec-tions? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ft | ft | $/sq ft | $/cu yd | ft | ft:ft | $/ft | | | ft | ft | ft | ft | ft | | | | |
| SLOPE EDGE 1 | W | 0.00 | 99.99 | 0.00 | | | | 0.00 | SE1-1 | 28 | 6,315,100.5 | 1,981,680.9 | 647.00 | 6.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-2 | 93 | 6,315,076.5 | 1,981,702.8 | 647.00 | 6.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-3 | 29 | 6,314,943.0 | 1,981,540.0 | 645.80 | 5.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-4 | 30 | 6,314,889.0 | 1,981,469.0 | 645.10 | 5.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-5 | 31 | 6,314,829.0 | 1,981,393.0 | 644.40 | 5.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-6 | 32 | 6,314,775.0 | 1,981,326.0 | 644.40 | 5.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-7 | 33 | 6,314,753.0 | 1,981,329.0 | 637.70 | 5.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-8 | 34 | 6,314,720.0 | 1,981,278.0 | 637.70 | 5.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-9 | 35 | 6,314,778.0 | 1,981,201.0 | 637.70 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-10 | 36 | 6,314,824.0 | 1,981,210.0 | 637.70 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-11 | 37 | 6,314,870.0 | 1,981,248.0 | 637.70 | 0.00 | | | | | |
| SLOPE EDGE 2 | W | 0.00 | 99.99 | 0.00 | | | | 0.00 | SE2-1 | 38 | 6,314,932.0 | 1,981,204.0 | 639.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-2 | 39 | 6,314,819.0 | 1,981,108.0 | 639.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-3 | 40 | 6,314,808.0 | 1,981,106.0 | 639.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-4 | 41 | 6,314,818.0 | 1,981,044.0 | 643.30 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-5 | 42 | 6,314,815.0 | 1,980,968.0 | 645.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-6 | 43 | 6,314,806.0 | 1,980,895.0 | 647.40 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-7 | 44 | 6,314,794.0 | 1,980,822.0 | 648.30 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-8 | 45 | 6,314,771.0 | 1,980,753.0 | 648.10 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-9 | 46 | 6,314,750.0 | 1,980,674.0 | 646.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-10 | 47 | 6,314,728.0 | 1,980,595.0 | 644.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-11 | 48 | 6,314,714.0 | 1,980,520.0 | 639.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-12 | 49 | 6,314,700.0 | 1,980,440.0 | 631.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-13 | 50 | 6,314,676.0 | 1,980,359.0 | 624.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-14 | 51 | 6,314,628.0 | 1,980,290.0 | 617.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-15 | 52 | 6,314,560.0 | 1,980,239.0 | 610.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-16 | 53 | 6,314,489.0 | 1,980,209.0 | 604.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-17 | 54 | 6,314,408.0 | 1,980,204.0 | 600.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-18 | 55 | 6,314,334.0 | 1,980,199.0 | 600.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-19 | 56 | 6,314,310.0 | 1,980,097.0 | 600.50 | 0.00 | | | | | |
| SLOPE EDGE 3 | W | 0.00 | 99.99 | 0.00 | | | | 0.00 | SE3-1 | 57 | 6,314,639.0 | 1,979,851.0 | 600.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE3-2 | 58 | 6,314,493.0 | 1,979,613.0 | 600.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE3-3 | 59 | 6,314,376.0 | 1,979,516.0 | 600.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE3-4 | 60 | 6,314,268.0 | 1,979,466.0 | 600.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE3-5 | 61 | 6,314,228.0 | 1,979,542.0 | 600.00 | 0.00 | 0.00 | 0 | 0 | | |



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**INPUT: BARRIERS** **14-023**

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | SE3-6 | 62 | 6,314,200.0 | 1,979,606.0 | 599.50 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-7 | 63 | 6,314,169.0 | 1,979,670.0 | 598.60 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-8 | 64 | 6,314,136.0 | 1,979,742.0 | 597.70 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-9 | 65 | 6,314,111.0 | 1,979,828.0 | 596.80 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-10 | 66 | 6,314,094.0 | 1,979,920.0 | 596.00 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-11 | 67 | 6,314,090.0 | 1,980,011.0 | 595.20 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-12 | 68 | 6,314,102.0 | 1,980,104.0 | 594.40 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-13 | 69 | 6,314,124.0 | 1,980,182.0 | 595.80 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-14 | 70 | 6,314,155.0 | 1,980,273.0 | 595.80 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-15 | 71 | 6,314,254.0 | 1,980,237.0 | 595.80 | 0.00 | | | |
| SLOPE EDGE 4 | W | 0.00 | 99.99 | 0.00 | 0.00 | SE4-1 | 72 | 6,314,621.0 | 1,980,389.0 | 622.00 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE4-2 | 73 | 6,314,612.0 | 1,980,440.0 | 622.00 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE4-3 | 74 | 6,314,494.0 | 1,980,392.0 | 622.00 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE4-4 | 75 | 6,314,497.0 | 1,980,369.0 | 604.80 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE4-5 | 76 | 6,314,407.0 | 1,980,383.0 | 599.50 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE4-6 | 77 | 6,314,265.0 | 1,980,457.0 | 599.50 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE4-7 | 78 | 6,314,291.0 | 1,980,378.0 | 599.50 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE4-8 | 79 | 6,314,314.0 | 1,980,282.0 | 599.50 | 0.00 | | | |
| SLOPE EDGE 5 | W | 0.00 | 99.99 | 0.00 | 0.00 | SE5-1 | 80 | 6,314,755.0 | 1,981,002.0 | 643.00 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-2 | 81 | 6,314,636.0 | 1,981,010.0 | 652.00 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-3 | 82 | 6,314,497.0 | 1,980,909.0 | 653.50 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-4 | 83 | 6,314,442.0 | 1,980,830.0 | 656.50 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-5 | 84 | 6,314,394.0 | 1,980,754.0 | 657.90 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-6 | 85 | 6,314,350.0 | 1,980,684.0 | 658.40 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-7 | 86 | 6,314,295.0 | 1,980,601.0 | 658.40 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-8 | 87 | 6,314,353.0 | 1,980,553.0 | 658.40 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-9 | 88 | 6,314,415.0 | 1,980,503.0 | 658.40 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-10 | 89 | 6,314,491.0 | 1,980,487.0 | 658.40 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-11 | 90 | 6,314,572.0 | 1,980,504.0 | 658.40 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-12 | 91 | 6,314,616.0 | 1,980,534.0 | 656.50 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-13 | 92 | 6,314,642.0 | 1,980,634.0 | 656.50 | 0.00 | | | |

**C:\TNM25\Bear Valley Parkway TM\BVP Mitigated** **2** **16 April 2015**

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RESULTS: SOUND LEVELS 14-023

ISE
R. Tavares Ph.D.

16 April 2015
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 14-023
RUN: 661 Bear Valley Parkway TM (M)
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

| Receiver Name | No. | #DUs | Existing LAeq1h | No Barrier LAeq1h Calculated | Crit'n | Increase over existing Calculated | Crit'n | Sub'l Inc | Type Impact | With Barrier Calculated LAeq1h | Noise Reduction Calculated | Goal | Calculated minus Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | dBA | dBA | dBA | dB | dB | | | dBA | dB | dB | dB |
| LOT 1 | 95 | 1 | 0.0 | 60.6 | 65 | 60.6 | 10 | ---- | | 60.6 | 0.0 | 8 | -8.0 |
| LOT 2 | 96 | 1 | 0.0 | 60.9 | 65 | 60.9 | 10 | ---- | | 60.9 | 0.0 | 8 | -8.0 |
| LOT 3 | 97 | 1 | 0.0 | 60.9 | 65 | 60.9 | 10 | ---- | | 60.9 | 0.0 | 8 | -8.0 |
| LOT 4 | 98 | 1 | 0.0 | 61.3 | 65 | 61.3 | 10 | ---- | | 61.3 | 0.0 | 8 | -8.0 |
| LOT 5 | 99 | 1 | 0.0 | 63.3 | 65 | 63.3 | 10 | ---- | | 63.3 | 0.0 | 8 | -8.0 |
| LOT 6 | 100 | 1 | 0.0 | 57.1 | 65 | 57.1 | 10 | ---- | | 57.1 | 0.0 | 8 | -8.0 |
| LOT 7 | 101 | 1 | 0.0 | 56.3 | 65 | 56.3 | 10 | ---- | | 56.3 | 0.0 | 8 | -8.0 |
| LOT 8 | 102 | 1 | 0.0 | 52.7 | 65 | 52.7 | 10 | ---- | | 52.7 | 0.0 | 8 | -8.0 |
| LOT 9 | 103 | 1 | 0.0 | 49.8 | 65 | 49.8 | 10 | ---- | | 49.8 | 0.0 | 8 | -8.0 |
| LOT 10 | 104 | 1 | 0.0 | 49.0 | 65 | 49.0 | 10 | ---- | | 49.0 | 0.0 | 8 | -8.0 |
| LOT 11 | 105 | 1 | 0.0 | 48.1 | 65 | 48.1 | 10 | ---- | | 48.1 | 0.0 | 8 | -8.0 |
| LOT 12 | 106 | 1 | 0.0 | 47.4 | 65 | 47.4 | 10 | ---- | | 47.4 | 0.0 | 8 | -8.0 |
| LOT 13 | 107 | 1 | 0.0 | 47.4 | 65 | 47.4 | 10 | ---- | | 47.4 | 0.0 | 8 | -8.0 |
| LOT 14 | 108 | 1 | 0.0 | 47.9 | 65 | 47.9 | 10 | ---- | | 47.9 | 0.0 | 8 | -8.0 |
| LOT 15 | 109 | 1 | 0.0 | 48.3 | 65 | 48.3 | 10 | ---- | | 48.3 | 0.0 | 8 | -8.0 |
| LOT 16 | 110 | 1 | 0.0 | 48.7 | 65 | 48.7 | 10 | ---- | | 48.7 | 0.0 | 8 | -8.0 |
| LOT 17 | 111 | 1 | 0.0 | 50.7 | 65 | 50.7 | 10 | ---- | | 50.7 | 0.0 | 8 | -8.0 |
| LOT 18 | 112 | 1 | 0.0 | 51.6 | 65 | 51.6 | 10 | ---- | | 51.6 | 0.0 | 8 | -8.0 |
| LOT 19 | 113 | 1 | 0.0 | 52.1 | 65 | 52.1 | 10 | ---- | | 52.1 | 0.0 | 8 | -8.0 |
| LOT 20 | 114 | 1 | 0.0 | 52.9 | 65 | 52.9 | 10 | ---- | | 52.9 | 0.0 | 8 | -8.0 |
| LOT 21 | 115 | 1 | 0.0 | 50.0 | 65 | 50.0 | 10 | ---- | | 50.0 | 0.0 | 8 | -8.0 |
| LOT 22 | 116 | 1 | 0.0 | 49.9 | 65 | 49.9 | 10 | ---- | | 49.9 | 0.0 | 8 | -8.0 |
| LOT 23 | 117 | 1 | 0.0 | 47.9 | 65 | 47.9 | 10 | ---- | | 47.9 | 0.0 | 8 | -8.0 |
| LOT 24 | 118 | 1 | 0.0 | 47.5 | 65 | 47.5 | 10 | ---- | | 47.5 | 0.0 | 8 | -8.0 |

C:\TNM25\Bear Valley Parkway TM\BVP Mitigated 1 16 April 2015

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| RESULTS: SOUND LEVELS | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 14-023 | | | | |
| LOT 25 | 119 | 1 | 0.0 | 46.4 | 65 | 46.4 | 10 | ---- | 46.4 | 0.0 | 8 | -8.0 |
| LOT 26 | 120 | 1 | 0.0 | 44.4 | 65 | 44.4 | 10 | ---- | 44.4 | 0.0 | 8 | -8.0 |
| LOT 27 | 121 | 1 | 0.0 | 43.1 | 65 | 43.1 | 10 | ---- | 43.1 | 0.0 | 8 | -8.0 |
| LOT 28 | 122 | 1 | 0.0 | 45.2 | 65 | 45.2 | 10 | ---- | 45.2 | 0.0 | 8 | -8.0 |
| LOT 29 | 123 | 1 | 0.0 | 46.7 | 65 | 46.7 | 10 | ---- | 46.7 | 0.0 | 8 | -8.0 |
| LOT 30 | 124 | 1 | 0.0 | 47.6 | 65 | 47.6 | 10 | ---- | 47.6 | 0.0 | 8 | -8.0 |
| LOT 31 | 125 | 1 | 0.0 | 45.9 | 65 | 45.9 | 10 | **** | 45.9 | 0.0 | 8 | -8.0 |
| LOT 32 | 126 | 1 | 0.0 | 46.5 | 65 | 46.5 | 10 | ---- | 46.5 | 0.0 | 8 | -8.0 |
| LOT 33 | 127 | 1 | 0.0 | 50.5 | 65 | 50.5 | 10 | ---- | 50.5 | 0.0 | 8 | -8.0 |
| LOT 34 | 128 | 1 | 0.0 | 50.2 | 65 | 50.2 | 10 | ---- | 50.2 | 0.0 | 8 | -8.0 |
| LOT 35 | 129 | 1 | 0.0 | 50.5 | 65 | 50.5 | 10 | ---- | 50.5 | 0.0 | 8 | -8.0 |
| LOT 36 | 130 | 1 | 0.0 | 51.6 | 65 | 51.6 | 10 | **** | 51.6 | 0.0 | 8 | -8.0 |
| LOT 37 | 131 | 1 | 0.0 | 52.8 | 65 | 52.8 | 10 | ---- | 52.8 | 0.0 | 8 | -8.0 |
| LOT 38 | 132 | 1 | 0.0 | 53.7 | 65 | 53.7 | 10 | ---- | 53.7 | 0.0 | 8 | -8.0 |
| LOT 39 | 133 | 1 | 0.0 | 54.8 | 65 | 54.8 | 10 | ---- | 54.8 | 0.0 | 8 | -8.0 |
| LOT 40 | 134 | 1 | 0.0 | 55.8 | 65 | 55.8 | 10 | ---- | 55.8 | 0.0 | 8 | -8.0 |
| LOT 41 | 135 | 1 | 0.0 | 56.1 | 65 | 56.1 | 10 | ---- | 56.1 | 0.0 | 8 | -8.0 |
| LOT 42 | 136 | 1 | 0.0 | 58.3 | 65 | 58.3 | 10 | ---- | 58.3 | 0.0 | 8 | -8.0 |
| LOT 43 | 137 | 1 | 0.0 | 56.9 | 65 | 56.9 | 10 | ---- | 56.9 | 0.0 | 8 | -8.0 |
| LOT 44 | 138 | 1 | 0.0 | 54.1 | 65 | 54.1 | 10 | ---- | 54.1 | 0.0 | 8 | -8.0 |
| LOT 45 | 139 | 1 | 0.0 | 52.8 | 65 | 52.8 | 10 | ---- | 52.8 | 0.0 | 8 | -8.0 |
| LOT 46 | 140 | 1 | 0.0 | 49.3 | 65 | 49.3 | 10 | ---- | 49.3 | 0.0 | 8 | -8.0 |
| LOT 47 | 141 | 1 | 0.0 | 48.7 | 65 | 48.7 | 10 | ---- | 48.7 | 0.0 | 8 | -8.0 |
| LOT 48 | 142 | 1 | 0.0 | 52.3 | 65 | 52.3 | 10 | ---- | 52.3 | 0.0 | 8 | -8.0 |
| LOT 49 | 143 | 1 | 0.0 | 54.9 | 65 | 54.9 | 10 | ---- | 54.9 | 0.0 | 8 | -8.0 |
| LOT 50 | 144 | 1 | 0.0 | 53.8 | 65 | 53.8 | 10 | ---- | 53.8 | 0.0 | 8 | -8.0 |
| LOT 51 | 145 | 1 | 0.0 | 54.7 | 65 | 54.7 | 10 | ---- | 54.7 | 0.0 | 8 | -8.0 |
| LOT 52 | 146 | 1 | 0.0 | 55.9 | 65 | 55.9 | 10 | ---- | 55.9 | 0.0 | 8 | -8.0 |
| LOT 53 | 147 | 1 | 0.0 | 55.2 | 65 | 55.2 | 10 | ---- | 55.2 | 0.0 | 8 | -8.0 |
| LOT 54 | 148 | 1 | 0.0 | 51.4 | 65 | 51.4 | 10 | ---- | 51.4 | 0.0 | 8 | -8.0 |
| LOT 55 | 149 | 1 | 0.0 | 53.8 | 65 | 53.8 | 10 | ---- | 53.8 | 0.0 | 8 | -8.0 |

| Dwelling Units | # DUs | Noise Reduction Min dB | Avg dB | Max dB |
|---|---|---|---|---|
| All Selected | 55 | 0.0 | 0.0 | 0.0 |
| All Impacted | 0 | 0.0 | 0.0 | 0.0 |
| All that meet NR Goal | 0 | 0.0 | 0.0 | 0.0 |

C:\TNM25\Bear Valley Parkway TM\BVP Mitigated 2 16 April 2015

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INPUT: ROADWAYS 14-023

ISE 27 April 2016
R. Tavares Ph.D. TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: 14-023
RUN: 661 Bear Valley Parkway TM (M SF)

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

| Roadway Name | Width | Points Name | No. | Coordinates (pavement) X | Y | Z | Flow Control Control Device | Speed Constraint | Percent Vehicles Affected | Segment Pvmt Type | On Struct? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ft | | | ft | ft | ft | | mph | % | | |
| BEAR VALLEY PARKWAY | 30.0 | BVP-1 | 52 | 6,315,177.0 | 1,981,991.0 | 630.90 | | | | Average | |
| | | BVP-2 | 53 | 6,315,098.0 | 1,981,820.0 | 645.00 | | | | Average | |
| | | BVP-3 | 54 | 6,313,977.0 | 1,980,525.0 | 577.80 | | | | Average | |
| | | BVP-4 | 55 | 6,313,902.0 | 1,980,385.0 | 563.60 | | | | Average | |
| | | BVP-5 | 56 | 6,313,834.0 | 1,980,198.0 | 556.10 | | | | Average | |
| | | BVP-6 | 57 | 6,313,809.0 | 1,980,078.0 | 554.80 | | | | Average | |
| | | BVP-7 | 58 | 6,313,796.0 | 1,979,910.0 | 547.70 | | | | Average | |
| | | BVP-8 | 59 | 6,313,838.0 | 1,979,683.0 | 541.80 | | | | Average | |
| | | BVP-9 | 60 | 6,313,898.0 | 1,979,405.0 | 532.70 | | | | Average | |
| | | BVP-10 | 61 | 6,313,923.0 | 1,979,038.6 | 509.90 | | | | | |

C:\TNM25\BVP Mitigated SF 1 27 April 2016

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**INPUT: TRAFFIC FOR LAeq1h Volumes** **14-023**

**ISE** **27 April 2016**
**R. Tavares Ph.D.** **TNM 2.5**

**INPUT: TRAFFIC FOR LAeq1h Volumes**
**PROJECT/CONTRACT:** 14-023
**RUN:** 661 Bear Valley Parkway TM (M SF)

| Roadway Name | Points Name | No. | Segment | Autos | | MTrucks | | HTrucks | | Buses | | Motorcycles | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | V | S | V | S | V | S | V | S | V | S |
| | | | | veh/hr | mph | veh/hr | mph | veh/hr | mph | veh/hr | mph | veh/hr | mph |
| BEAR VALLEY PARKWAY | BVP-1 | 52 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 | |
| | BVP-2 | 53 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 | |
| | BVP-3 | 54 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 | |
| | BVP-4 | 55 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 | |
| | BVP-5 | 56 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 | |
| | BVP-6 | 57 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 | |
| | BVP-7 | 58 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 | |
| | BVP-8 | 59 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 | |
| | BVP-9 | 60 | 3239 | 50 | 235 | 40 | 172 | 40 | 1 | 35 | 18 | 50 | |
| | BVP-10 | 61 | | | | | | | | | | | |

**C:\TNM25\BVP Mitigated SF** **1** **27 April 2016**

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**INPUT: RECEIVERS** **14-023**

**ISE** **27 April 2016**
**R. Tavares Ph.D.** **TNM 2.5**

**INPUT: RECEIVERS**
**PROJECT/CONTRACT:** 14-023
**RUN:** 661 Bear Valley Parkway TM (M SF)

| Receiver Name | No. | #DUs | Coordinates (ground) X | Y | Z | Height above Ground | Input Sound Levels and Criteria Existing LAeq1h | Impact Criteria LAeq1h | Sub'l | NR Goal | Active in Calc. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ft | ft | ft | ft | dBA | dBA | dB | dB | |
| LOT 1 | 95 | 1 | 6,314,784.0 | 1,981,265.0 | | 647.70 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 2 | 96 | 1 | 6,314,843.0 | 1,981,342.0 | | 654.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 3 | 97 | 1 | 6,314,895.0 | 1,981,410.0 | | 655.10 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 4 | 98 | 1 | 6,314,956.0 | 1,981,484.5 | | 655.80 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 5 | 99 | 1 | 6,315,046.0 | 1,981,611.4 | | 657.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 6 | 100 | 1 | 6,314,875.5 | 1,981,088.6 | | 649.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 7 | 101 | 1 | 6,314,862.0 | 1,980,996.0 | | 653.30 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 8 | 102 | 1 | 6,314,866.0 | 1,980,915.0 | | 655.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 9 | 103 | 1 | 6,314,872.0 | 1,980,827.0 | | 657.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 10 | 104 | 1 | 6,314,852.0 | 1,980,757.0 | | 658.30 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 11 | 105 | 1 | 6,314,834.0 | 1,980,684.0 | | 658.10 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 12 | 106 | 1 | 6,314,806.0 | 1,980,609.0 | | 656.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 13 | 107 | 1 | 6,314,789.0 | 1,980,529.0 | | 654.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 14 | 108 | 1 | 6,314,775.0 | 1,980,454.0 | | 649.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 15 | 109 | 1 | 6,314,747.0 | 1,980,367.0 | | 641.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 16 | 110 | 1 | 6,314,703.0 | 1,980,277.0 | | 634.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 17 | 111 | 1 | 6,314,627.0 | 1,980,210.0 | | 627.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 18 | 112 | 1 | 6,314,535.0 | 1,980,158.0 | | 620.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 19 | 113 | 1 | 6,314,440.0 | 1,980,144.0 | | 614.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 20 | 114 | 1 | 6,314,349.0 | 1,980,142.0 | | 610.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 21 | 115 | 1 | 6,314,341.0 | 1,980,040.0 | | 605.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |
| LOT 22 | 116 | 1 | 6,314,344.0 | 1,979,952.0 | | 606.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 Y |

**C:\TNM25\BVP Mitigated SF** **1** **27 April 2016**

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**INPUT: RECEIVERS** **14-023**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LOT 23 | 117 | 1 | 6,314,437.0 | 1,979,996.0 | 608.30 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 24 | 118 | 1 | 6,314,517.0 | 1,980,015.0 | 610.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 25 | 119 | 1 | 6,314,585.0 | 1,980,040.0 | 611.10 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 26 | 120 | 1 | 6,314,654.0 | 1,980,079.0 | 612.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 27 | 121 | 1 | 6,314,737.0 | 1,980,127.0 | 613.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 28 | 122 | 1 | 6,314,569.0 | 1,979,833.0 | 610.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 29 | 123 | 1 | 6,314,466.0 | 1,979,806.0 | 608.30 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 30 | 124 | 1 | 6,314,381.0 | 1,979,790.0 | 606.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 31 | 125 | 1 | 6,314,488.0 | 1,979,681.0 | 610.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 32 | 126 | 1 | 6,314,412.0 | 1,979,588.0 | 610.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 33 | 127 | 1 | 6,314,300.0 | 1,979,530.0 | 610.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 34 | 128 | 1 | 6,314,279.0 | 1,979,606.0 | 610.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 35 | 129 | 1 | 6,314,256.0 | 1,979,677.0 | 609.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 36 | 130 | 1 | 6,314,221.0 | 1,979,735.0 | 608.60 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 37 | 131 | 1 | 6,314,191.0 | 1,979,804.0 | 607.70 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 38 | 132 | 1 | 6,314,168.0 | 1,979,882.0 | 606.80 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 39 | 133 | 1 | 6,314,158.0 | 1,979,967.0 | 606.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 40 | 134 | 1 | 6,314,161.0 | 1,980,052.0 | 605.20 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 41 | 135 | 1 | 6,314,172.0 | 1,980,128.0 | 604.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 42 | 136 | 1 | 6,314,189.0 | 1,980,212.0 | 605.80 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 43 | 137 | 1 | 6,314,340.0 | 1,980,334.0 | 609.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 44 | 138 | 1 | 6,314,444.0 | 1,980,322.0 | 614.80 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 45 | 139 | 1 | 6,314,552.0 | 1,980,378.0 | 632.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 46 | 140 | 1 | 6,314,616.0 | 1,980,690.0 | 666.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 47 | 141 | 1 | 6,314,563.0 | 1,980,554.0 | 668.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 48 | 142 | 1 | 6,314,443.0 | 1,980,541.0 | 668.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 49 | 143 | 1 | 6,314,359.0 | 1,980,612.0 | 668.40 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 50 | 144 | 1 | 6,314,419.0 | 1,980,686.0 | 667.90 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 51 | 145 | 1 | 6,314,463.0 | 1,980,757.0 | 666.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 52 | 146 | 1 | 6,314,507.0 | 1,980,837.0 | 663.50 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 53 | 147 | 1 | 6,314,582.5 | 1,980,898.4 | 662.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 54 | 148 | 1 | 6,314,687.0 | 1,980,880.0 | 657.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |
| LOT 55 | 149 | 1 | 6,314,693.0 | 1,980,970.0 | 653.00 | 5.00 | 0.00 | 65 | 10.0 | 8.0 | Y |

**C:\TNM25\BVP Mitigated SF** **2** **27 April 2016**

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INPUT: BARRIERS 14-023

ISE 27 April 2016
R. Tavares Ph.D. TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: 14-023
RUN: 661 Bear Valley Parkway TM (M SF)

| Barrier Name | Type | Height Min | Height Max | If Wall $ per Unit Area | If Berm $ per Unit Vol. | Top Width | Run:Rise | Add'tnl $ per Unit Length | Points Name | No. | Coordinates (bottom) X | Y | Z | Height at Point | Segment Seg Ht Incre-ment | Perturbs #Up | Perturbs #Dn | On Struct? | Important Reflec-tions? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ft | ft | $/sq ft | $/cu yd | ft | ft:ft | $/ft | | | ft | ft | ft | ft | ft | | | | |
| SLOPE EDGE 1 | W | 0.00 | 99.99 | 0.00 | | | | 0.00 | SE1-1 | 28 | 6,315,100.5 | 1,981,680.9 | 647.00 | 6.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-2 | 93 | 6,315,076.5 | 1,981,702.8 | 647.00 | 6.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-3 | 29 | 6,314,943.0 | 1,981,540.0 | 645.80 | 5.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-4 | 30 | 6,314,889.0 | 1,981,469.0 | 645.10 | 5.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-5 | 31 | 6,314,829.0 | 1,981,393.0 | 644.40 | 5.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-6 | 32 | 6,314,775.0 | 1,981,326.0 | 644.40 | 5.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-7 | 33 | 6,314,753.0 | 1,981,329.0 | 637.70 | 5.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-8 | 34 | 6,314,720.0 | 1,981,278.0 | 637.70 | 5.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-9 | 35 | 6,314,778.0 | 1,981,201.0 | 637.70 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-10 | 36 | 6,314,824.0 | 1,981,210.0 | 637.70 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE1-11 | 37 | 6,314,870.0 | 1,981,248.0 | 637.70 | 0.00 | | | | | |
| SLOPE EDGE 2 | W | 0.00 | 99.99 | 0.00 | | | | 0.00 | SE2-1 | 38 | 6,314,932.0 | 1,981,204.0 | 639.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-2 | 39 | 6,314,819.0 | 1,981,108.0 | 639.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-3 | 40 | 6,314,808.0 | 1,981,106.0 | 639.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-4 | 41 | 6,314,818.0 | 1,981,044.0 | 643.30 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-5 | 42 | 6,314,815.0 | 1,980,968.0 | 645.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-6 | 43 | 6,314,806.0 | 1,980,895.0 | 647.40 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-7 | 44 | 6,314,794.0 | 1,980,822.0 | 648.30 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-8 | 45 | 6,314,771.0 | 1,980,753.0 | 648.10 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-9 | 46 | 6,314,750.0 | 1,980,674.0 | 646.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-10 | 47 | 6,314,728.0 | 1,980,595.0 | 644.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-11 | 48 | 6,314,714.0 | 1,980,520.0 | 639.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-12 | 49 | 6,314,700.0 | 1,980,440.0 | 631.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-13 | 50 | 6,314,676.0 | 1,980,359.0 | 624.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-14 | 51 | 6,314,628.0 | 1,980,290.0 | 617.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-15 | 52 | 6,314,560.0 | 1,980,239.0 | 610.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-16 | 53 | 6,314,489.0 | 1,980,209.0 | 604.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-17 | 54 | 6,314,408.0 | 1,980,204.0 | 600.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-18 | 55 | 6,314,334.0 | 1,980,199.0 | 600.50 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE2-19 | 56 | 6,314,310.0 | 1,980,097.0 | 600.50 | 0.00 | | | | | |
| SLOPE EDGE 3 | W | 0.00 | 99.99 | 0.00 | | | | 0.00 | SE3-1 | 57 | 6,314,639.0 | 1,979,851.0 | 600.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE3-2 | 58 | 6,314,493.0 | 1,979,613.0 | 600.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE3-3 | 59 | 6,314,376.0 | 1,979,516.0 | 600.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE3-4 | 60 | 6,314,268.0 | 1,979,466.0 | 600.00 | 0.00 | 0.00 | 0 | 0 | | |
| | | | | | | | | | SE3-5 | 61 | 6,314,228.0 | 1,979,542.0 | 600.00 | 0.00 | 0.00 | 0 | 0 | | |

C:\TNM25\BVP Mitigated SF 1 27 April 2016

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**INPUT: BARRIERS** **14-023**

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | SE3-6 | 62 | 6,314,200.0 | 1,979,606.0 | 599.50 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-7 | 63 | 6,314,169.0 | 1,979,670.0 | 598.60 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-8 | 64 | 6,314,136.0 | 1,979,742.0 | 597.70 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-9 | 65 | 6,314,111.0 | 1,979,828.0 | 596.80 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-10 | 66 | 6,314,094.0 | 1,979,920.0 | 596.00 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-11 | 67 | 6,314,090.0 | 1,980,011.0 | 595.20 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-12 | 68 | 6,314,102.0 | 1,980,104.0 | 594.40 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-13 | 69 | 6,314,124.0 | 1,980,182.0 | 595.80 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-14 | 70 | 6,314,155.0 | 1,980,273.0 | 595.80 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE3-15 | 71 | 6,314,254.0 | 1,980,237.0 | 595.80 | 0.00 | | | |
| SLOPE EDGE 4 | W | 0.00 | 99.99 | 0.00 | 0.00 | SE4-1 | 72 | 6,314,621.0 | 1,980,389.0 | 622.00 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE4-2 | 73 | 6,314,612.0 | 1,980,440.0 | 622.00 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE4-3 | 74 | 6,314,494.0 | 1,980,392.0 | 622.00 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE4-4 | 75 | 6,314,497.0 | 1,980,369.0 | 604.80 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE4-5 | 76 | 6,314,407.0 | 1,980,383.0 | 599.50 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE4-6 | 77 | 6,314,265.0 | 1,980,457.0 | 599.50 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE4-7 | 78 | 6,314,291.0 | 1,980,378.0 | 599.50 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE4-8 | 79 | 6,314,314.0 | 1,980,282.0 | 599.50 | 0.00 | | | |
| SLOPE EDGE 5 | W | 0.00 | 99.99 | 0.00 | 0.00 | SE5-1 | 80 | 6,314,755.0 | 1,981,002.0 | 643.00 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-2 | 81 | 6,314,636.0 | 1,981,010.0 | 652.00 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-3 | 82 | 6,314,497.0 | 1,980,909.0 | 653.50 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-4 | 83 | 6,314,442.0 | 1,980,830.0 | 656.50 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-5 | 84 | 6,314,394.0 | 1,980,754.0 | 657.90 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-6 | 85 | 6,314,350.0 | 1,980,684.0 | 658.40 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-7 | 86 | 6,314,295.0 | 1,980,601.0 | 658.40 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-8 | 87 | 6,314,353.0 | 1,980,553.0 | 658.40 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-9 | 88 | 6,314,415.0 | 1,980,503.0 | 658.40 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-10 | 89 | 6,314,491.0 | 1,980,487.0 | 658.40 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-11 | 90 | 6,314,572.0 | 1,980,504.0 | 658.40 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-12 | 91 | 6,314,616.0 | 1,980,534.0 | 656.50 | 0.00 | 0.00 | 0 | 0 |
| | | | | | | SE5-13 | 92 | 6,314,642.0 | 1,980,634.0 | 656.50 | 0.00 | | | |



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RESULTS: SOUND LEVELS 14-023

ISE
R. Tavares Ph.D.

27 April 2016
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 14-023
RUN: 661 Bear Valley Parkway TM (M SF)
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

| Receiver Name | No. | #DUs | Existing LAeq1h | No Barrier LAeq1h Calculated | Crit'n | Increase over existing Calculated | Crit'n Sub'l Inc | Type Impact | With Barrier Calculated LAeq1h | Noise Reduction Calculated | Goal | Calculated minus Goal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | dBA | dBA | dBA | dB | dB | | dBA | dB | dB | dB |
| LOT 1 | 95 | 1 | 0.0 | 66.8 | 65 | 66.8 | 10 | Snd Lvl | 66.8 | 0.0 | 8 | -8.0 |
| LOT 2 | 96 | 1 | 0.0 | 67.5 | 65 | 67.5 | 10 | Snd Lvl | 67.5 | 0.0 | 8 | -8.0 |
| LOT 3 | 97 | 1 | 0.0 | 68.3 | 65 | 68.3 | 10 | Snd Lvl | 68.3 | 0.0 | 8 | -8.0 |
| LOT 4 | 98 | 1 | 0.0 | 68.4 | 65 | 68.4 | 10 | Snd Lvl | 68.4 | 0.0 | 8 | -8.0 |
| LOT 5 | 99 | 1 | 0.0 | 72.2 | 65 | 72.2 | 10 | Snd Lvl | 72.2 | 0.0 | 8 | -8.0 |
| LOT 6 | 100 | 1 | 0.0 | 60.7 | 65 | 60.7 | 10 | ---- | 60.7 | 0.0 | 8 | -8.0 |
| LOT 7 | 101 | 1 | 0.0 | 59.1 | 65 | 59.1 | 10 | ---- | 59.1 | 0.0 | 8 | -8.0 |
| LOT 8 | 102 | 1 | 0.0 | 55.8 | 65 | 55.8 | 10 | ---- | 55.8 | 0.0 | 8 | -8.0 |
| LOT 9 | 103 | 1 | 0.0 | 52.6 | 65 | 52.6 | 10 | ---- | 52.6 | 0.0 | 8 | -8.0 |
| LOT 10 | 104 | 1 | 0.0 | 51.1 | 65 | 51.1 | 10 | ---- | 51.1 | 0.0 | 8 | -8.0 |
| LOT 11 | 105 | 1 | 0.0 | 49.7 | 65 | 49.7 | 10 | ---- | 49.7 | 0.0 | 8 | -8.0 |
| LOT 12 | 106 | 1 | 0.0 | 48.9 | 65 | 48.9 | 10 | ---- | 48.9 | 0.0 | 8 | -8.0 |
| LOT 13 | 107 | 1 | 0.0 | 49.3 | 65 | 49.3 | 10 | ---- | 49.3 | 0.0 | 8 | -8.0 |
| LOT 14 | 108 | 1 | 0.0 | 50.2 | 65 | 50.2 | 10 | ---- | 50.2 | 0.0 | 8 | -8.0 |
| LOT 15 | 109 | 1 | 0.0 | 50.9 | 65 | 50.9 | 10 | ---- | 50.9 | 0.0 | 8 | -8.0 |
| LOT 16 | 110 | 1 | 0.0 | 51.4 | 65 | 51.4 | 10 | ---- | 51.4 | 0.0 | 8 | -8.0 |
| LOT 17 | 111 | 1 | 0.0 | 52.7 | 65 | 52.7 | 10 | ---- | 52.7 | 0.0 | 8 | -8.0 |
| LOT 18 | 112 | 1 | 0.0 | 53.4 | 65 | 53.4 | 10 | ---- | 53.4 | 0.0 | 8 | -8.0 |
| LOT 19 | 113 | 1 | 0.0 | 54.4 | 65 | 54.4 | 10 | ---- | 54.4 | 0.0 | 8 | -8.0 |
| LOT 20 | 114 | 1 | 0.0 | 55.7 | 65 | 55.7 | 10 | ---- | 55.7 | 0.0 | 8 | -8.0 |
| LOT 21 | 115 | 1 | 0.0 | 52.0 | 65 | 52.0 | 10 | ---- | 52.0 | 0.0 | 8 | -8.0 |
| LOT 22 | 116 | 1 | 0.0 | 50.5 | 65 | 50.5 | 10 | ---- | 50.5 | 0.0 | 8 | -8.0 |
| LOT 23 | 117 | 1 | 0.0 | 50.1 | 65 | 50.1 | 10 | ---- | 50.1 | 0.0 | 8 | -8.0 |
| LOT 24 | 118 | 1 | 0.0 | 49.4 | 65 | 49.4 | 10 | ---- | 49.4 | 0.0 | 8 | -8.0 |

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**RESULTS: SOUND LEVELS** **14-023**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOT 25 | 119 | 1 | 0.0 | 48.9 | 65 | 48.9 | 10 | ---- | 48.9 | 0.0 | 8 | -8.0 |
| LOT 26 | 120 | 1 | 0.0 | 47.7 | 65 | 47.7 | 10 | ---- | 47.7 | 0.0 | 8 | -8.0 |
| LOT 27 | 121 | 1 | 0.0 | 45.6 | 65 | 45.6 | 10 | ---- | 45.6 | 0.0 | 8 | -8.0 |
| LOT 28 | 122 | 1 | 0.0 | 48.1 | 65 | 48.1 | 10 | ---- | 48.1 | 0.0 | 8 | -8.0 |
| LOT 29 | 123 | 1 | 0.0 | 47.8 | 65 | 47.8 | 10 | ---- | 47.8 | 0.0 | 8 | -8.0 |
| LOT 30 | 124 | 1 | 0.0 | 48.5 | 65 | 48.5 | 10 | ---- | 48.5 | 0.0 | 8 | -8.0 |
| LOT 31 | 125 | 1 | 0.0 | 46.7 | 65 | 46.7 | 10 | ---- | 46.7 | 0.0 | 8 | -8.0 |
| LOT 32 | 126 | 1 | 0.0 | 47.7 | 65 | 47.7 | 10 | ---- | 47.7 | 0.0 | 8 | -8.0 |
| LOT 33 | 127 | 1 | 0.0 | 56.6 | 65 | 56.6 | 10 | ---- | 56.6 | 0.0 | 8 | -8.0 |
| LOT 34 | 128 | 1 | 0.0 | 56.4 | 65 | 56.4 | 10 | ---- | 56.4 | 0.0 | 8 | -8.0 |
| LOT 35 | 129 | 1 | 0.0 | 56.4 | 65 | 56.4 | 10 | ---- | 56.4 | 0.0 | 8 | -8.0 |
| LOT 36 | 130 | 1 | 0.0 | 57.5 | 65 | 57.5 | 10 | ---- | 57.5 | 0.0 | 8 | -8.0 |
| LOT 37 | 131 | 1 | 0.0 | 58.4 | 65 | 58.4 | 10 | ---- | 58.4 | 0.0 | 8 | -8.0 |
| LOT 38 | 132 | 1 | 0.0 | 59.2 | 65 | 59.2 | 10 | ---- | 59.2 | 0.0 | 8 | -8.0 |
| LOT 39 | 133 | 1 | 0.0 | 59.7 | 65 | 59.7 | 10 | ---- | 59.7 | 0.0 | 8 | -8.0 |
| LOT 40 | 134 | 1 | 0.0 | 60.1 | 65 | 60.1 | 10 | ---- | 60.1 | 0.0 | 8 | -8.0 |
| LOT 41 | 135 | 1 | 0.0 | 60.4 | 65 | 60.4 | 10 | ---- | 60.4 | 0.0 | 8 | -8.0 |
| LOT 42 | 136 | 1 | 0.0 | 62.0 | 65 | 62.0 | 10 | ---- | 62.0 | 0.0 | 8 | -8.0 |
| LOT 43 | 137 | 1 | 0.0 | 59.6 | 65 | 59.6 | 10 | ---- | 59.6 | 0.0 | 8 | -8.0 |
| LOT 44 | 138 | 1 | 0.0 | 56.2 | 65 | 56.2 | 10 | ---- | 56.2 | 0.0 | 8 | -8.0 |
| LOT 45 | 139 | 1 | 0.0 | 55.4 | 65 | 55.4 | 10 | ---- | 55.4 | 0.0 | 8 | -8.0 |
| LOT 46 | 140 | 1 | 0.0 | 51.3 | 65 | 51.3 | 10 | ---- | 51.3 | 0.0 | 8 | -8.0 |
| LOT 47 | 141 | 1 | 0.0 | 52.8 | 65 | 52.8 | 10 | ---- | 52.8 | 0.0 | 8 | -8.0 |
| LOT 48 | 142 | 1 | 0.0 | 57.6 | 65 | 57.6 | 10 | ---- | 57.6 | 0.0 | 8 | -8.0 |
| LOT 49 | 143 | 1 | 0.0 | 61.3 | 65 | 61.3 | 10 | ---- | 61.3 | 0.0 | 8 | -8.0 |
| LOT 50 | 144 | 1 | 0.0 | 57.7 | 65 | 57.7 | 10 | ---- | 57.7 | 0.0 | 8 | -8.0 |
| LOT 51 | 145 | 1 | 0.0 | 58.9 | 65 | 58.9 | 10 | ---- | 58.9 | 0.0 | 8 | -8.0 |
| LOT 52 | 146 | 1 | 0.0 | 61.7 | 65 | 61.7 | 10 | ---- | 61.7 | 0.0 | 8 | -8.0 |
| LOT 53 | 147 | 1 | 0.0 | 61.7 | 65 | 61.7 | 10 | ---- | 61.7 | 0.0 | 8 | -8.0 |
| LOT 54 | 148 | 1 | 0.0 | 54.6 | 65 | 54.6 | 10 | ---- | 54.6 | 0.0 | 8 | -8.0 |
| LOT 55 | 149 | 1 | 0.0 | 60.1 | 65 | 60.1 | 10 | ---- | 60.1 | 0.0 | 8 | -8.0 |

| **Dwelling Units** | **# DUs** | **Noise Reduction** | | |
|---|---|---|---|---|
| | | **Min dB** | **Avg dB** | **Max dB** |
| All Selected | 55 | 0.0 | 0.0 | 0.0 |
| All Impacted | 5 | 0.0 | 0.0 | 0.0 |
| All that meet NR Goal | 0 | 0.0 | 0.0 | 0.0 |

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## INDEX OF IMPORTANT TERMS

acoustic floor, 8
ADT, 19
A-weighted, 7

California Code of Regulations, 9
Caltrans ITS, 12
CCR, 9
CNEL, 8, 9, 12

dB, 7
dBA, 7, 8, 9, 16
decibel, 7, 8

FHWA/CA/TL-87/03, 11, 12
FHWA-PD-96-010, 12

Hertz, 1
Hz, 1

ISE, 1, 2, 11, 14, 15, 16, 31

$L_{10}$, 8, 16
$L_{90}$, 8, 16
Leq, 7, 8, 16
$L_{eq(h)}$, 8
$L_{eq-h}$, 8
LORAN-C, 11

Noise, 1, 8, 9, 13, 16

Quest SoundPro, 11

RD-77-108, 11
RoadNoise v2.4, 11

SR-125, 12

TNM 2.5, 12

U.S. EPA, 19

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# Appendix P Noise Impacts from the Bear Valley Parkway Specific Alignment Plan (September 2016)

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Harris & Associates

September 27, 2016

Ann Dolmage, Associate Planner
City of Escondido, Planning Division
201 North Broadway
Escondido, CA 92026

**Subject: Noise Impacts from the Bear Valley Parkway Full-Width Specific Alignment Plan Project Component, Escondido, CA.**

Dear Ms. Dolmage:

The following presents the results of Harris & Associates' (Harris) analysis of the potential noise impacts of the Full-Width Specific Plan for the Alignment of Bear Valley Parkway adjacent to the proposed 661 Bear Valley Parkway residential development in the City of Escondido (City). The Full-Width Specific Alignment Plan (SAP) roadway improvements would address goals in the City's General Plan Mobility Element, such as bicycle and pedestrian access, and would make Bear Valley Parkway compliant with infrastructure requirements for classification as a Major Road. The SAP would also improve the geometry of the intersection at Bear Valley Parkway and Encino Drive. Construction of the SAP component of the project would occur independent of the proposed 661 Bear Valley Parkway residential development. The full-width road widening would involve relocation of existing retaining walls and fences, as well as the acquisition/dedication of additional right of way along the property lines of residences located on the west side of Bear Valley Parkway between Sunset Drive and Encino Drive.

This memorandum describes the regulatory setting, the potential for permanent changes in operational noise as a result of the project, and potential impacts from groundborne vibration, and temporary construction-related noise.

This analysis refers to the Acoustical Site Assessment prepared by Investigative Science and Engineering (ISE) on April 27, 2016 for the residential development component of the project.

**Noise Terms and General Principles**

Environmental noise is comprised of infinite combinations of sound intensities of varying frequency and duration. The following weighted and averaging terms are used to reasonably characterize environmental noise (County of San Diego 2009).

- A-weighted Sound Pressure Level (decibel (dB) or dBA). Some frequencies of noise are more noticeable than others. To compensate for this fact, different sound frequencies are weighted more heavily (A-weighted) so that the response of the average human ear is simulated.

- Equivalent Sound Level ($L_{eq}$). Environmental noise often fluctuates over time. To be able to describe this in a practicable manner the $L_{eq}$ was developed. $L_{eq}$ is the A-weighted steady sound level that contains the same total acoustical energy as the actual fluctuating sound level.
- One-Hour Equivalent Noise Level ($L_{eq\text{-}h}$). A one-hour equivalent noise level is a measurement of noise intensity, which is the equivalent sound level ($L_{eq}$) over a one hour averaging period.
- Maximum Sound Level ($L_{MAX}$). The highest sound level reached when measuring noise with a sound level meter using the A-weighted network and slow time weighting. The maximum sound level is equivalent to the industry standard known as $L_{MAX}$.
- Impulsive Noise. Any single noise event or a series of single noise events, which causes a high peak noise level of short duration (one second or less), measured at a specific location. Examples include, but are not limited to, a gunshot, an explosion or a noise generated by construction equipment.
- Noise Sensitive Land Use (NSLU). Any residence, hospital, school, hotel, resort, library, or similar facility where quiet is an important attribute of the environment.

**Regulatory Setting**

As described in the City of Escondido Noise Ordinance Section 17-234 (Construction Equipment), it is illegal for any person to operate construction equipment at any construction site except on Monday through Friday between the hours of 7 am and 6 pm and on Saturdays between the hours of 9 am and 5 pm. Section 17-238 (Grading) further restricts grading activities. It states that it is illegal to do any authorized grading at any construction site except on Mondays through Fridays between the hours of 7 am and 6 pm and, provided a variance has been obtained in advance from the City Manager, on Saturdays from 10 am to 5 pm.

Furthermore, Section 17-234 of the City of Escondido Noise Ordinance states that no construction equipment or combination of equipment shall be operated so as to cause noise in excess of a one-hour average sound level limit of 75 decibels (dB) $L_{eq\text{-}h}$ at any time.

The City's General Plan Community Protection Element Noise Policy 5.5 requires construction projects and new development to ensure acceptable vibration levels at nearby noise-sensitive uses based on Federal Transit Administration (FTA) criteria. The FTA Transit Noise Impact and Vibration Assessment (2006) stipulates an impact criterion for groundborne vibration at residences or buildings where people normally sleep of 80 velocity in decibels (VdB)[1] for infrequent events[2] and 75 VdB for occasional events.[3] It also stipulates an impact criterion for groundborne vibration of 0.3 inches per second peak particle velocity (in/sec PPV)[4] at engineered concrete and masonry structures and 0.2 in/sec PPV at non-engineered timber and masonry buildings.

[1] Groundborne vibration related to human annoyance is generally related to root mean square (rms) velocity levels expressed in velocity in decibels (VdB) relative to 1 micro-inch/second.
[2] Infrequent events are defined as fewer than 30 vibration events of the same kind per day.
[3] Occasional events are defined as between 30 and 70 vibration events of the same source per day.
[4] Groundborne vibration related to potential building damage effects is generally related to the peak particle velocity (PPV) in inches/second.

**Permanent Operational Noise**

The SAP would not generate new vehicle trips on Bear Valley Parkway or surrounding roadways. There would be no substantial change in permanent operational noise as a result of implementation of the SAP and this memorandum does not analyze the issue further.

**Groundborne Vibration**

*Thresholds of Significance*

The project site is surrounded by residences where people normally sleep. The residences are likely constructed of engineered concrete or masonry; however, to be conservative, this analysis assumes they are constructed of non-engineered timber and masonry. While construction activities would occur during the daytime and would not disturb sleep, residences may be occupied during daytime construction, resulting in nuisance to daily activities. Construction activities are characterized by infrequent (fewer than 30 per day) vibration events, according to the City's General Plan EIR. Therefore, for the purposes of this analysis, an impact would occur if construction would generate vibration levels greater than the threshold described in the City's General Plan Community Protection Element Noise Policy 5.5 (80 VdB or 0.2 in/sec PPV at the nearest residential receptor). An impact would also occur if construction activities were to occur outside of the hours specified in the City's Noise Ordinance.

*Methodology and Assumptions*

The exact number and type of construction equipment required for the proposed SAP road widening is currently unknown. It was assumed that the construction equipment used for the SAP would be similar to that anticipated to be needed for construction of the residential development component of the project, given the similarities in location and site conditions. However, the SAP would require construction equipment more specific to road-widening activities and relocation of existing walls and other structures.

The Federal Transit Administration (FTA), in its 2006 Transit Noise and Vibration Impact Assessment, describes equipment typically used in transportation construction projects.[5] The vibration source levels from construction equipment typically used in road construction, which can reasonably be assumed to be necessary for construction of the SAP project component, are shown in Table 1.

[5] The Acoustical Site Assessment (ISE 2016) did not anticipate the need for pile drivers, caissons, or equipment necessary to construct slurry walls, given the proposed project site conditions. This analysis makes the same assumption.

**Table 1: Vibration Levels for Typical Construction Equipment**

| Equipment | PPV at 25 ft. (in/sec) | PPV at 40 ft. (in/sec)[1] | VdB at 25 ft. (1 µ-in/sec) | VdB at 40 ft. (1 µ-in/sec)[2] | VdB at 75 ft. (1 µ-in/sec)[2] |
|---|---|---|---|---|---|
| Vibratory Roller | 0.210 | 0.104 | 94 | 88 | 80 |
| Hoe Ram | 0.089 | 0.044 | 87 | 81 | 73 |
| Large bulldozer | 0.089 | 0.044 | 87 | 81 | 73 |
| Loaded trucks | 0.076 | 0.038 | 86 | 80 | 72 |
| Jackhammer | 0.035 | 0.017 | 79 | 73 | 65 |
| Small bulldozer | 0.003 | 0.001 | 58 | 52 | 44 |

Notes:
1. Based on the propagation adjustment formula PPV = $PPV_{25\ feet}$ x (25/distance from the equipment to the receptor)$^{1.5}$
2. Based on the propagation adjustment formula VdB = $VdB_{25\ feet}$ – 30log(distance from the equipment to the receptor/25)
Source:
FTA Transit Noise and Vibration Impact Assessment, May 2006

*Analysis*

The nearest residences would be located approximately 40 feet from the construction activity on Bear Valley Parkway. As shown in Table 1, construction equipment would not exceed the 0.2 in/sec PPV vibration significance criteria for building damage effects at a distance of 40 feet. Therefore, no structural damage impacts to nearby residences are anticipated to result from implementation of the SAP.

However, as shown in Table 1, at 40 feet from the proposed construction activities, construction equipment including large dozers and rollers would have the potential to generate vibration which exceeds the 80 VdB vibration significance criteria for human annoyance. A distance of 75 feet between the heaviest piece of equipment (vibratory roller) and sensitive receptor would be required before groundborne vibration would fall below the significance criteria. During SAP construction, equipment would likely be distributed throughout the construction site and would not be used simultaneously such that groundborne vibration in one location would not be constant.

*Mitigation*

Implementation of Mitigation Measures NOI-1 and NOI-2 would minimize temporary groundborne vibration impacts from construction activities at adjacent residences.

NOI-1 Construction Notification. The construction contractor shall provide written notification to all residences located within 75 feet of the proposed construction activities at least three weeks prior to the start of construction activities, informing them of the estimated start date and duration of daytime vibration-generating construction activities. This notification shall include information about the potential for nuisance vibration. The City shall provide a phone number for the affected residences to call if they have concerns about construction-related vibration. If additional houses are built within 75 feet of the proposed SAP prior to completion of

construction of the proposed SAP, written notification shall be provided to these residences as well.

NOI-2 Vibration Best Management Practices. For construction activities within 75 feet of residences on Bear Valley Parkway, the construction contractor shall implement the following measures during construction:

1. Stationary sources, such as temporary generators, shall be located as far from nearby vibration-sensitive receptors as possible.
2. Trucks shall be prohibited from idling along streets serving the construction site where vibration-sensitive receptors are located.
3. Demolition, earthmoving, and ground-impacting operations shall be phased so as not to occur in the same time period.

If additional houses are built within 75 feet of the proposed SAP prior to completion of construction of the proposed SAP, the best management practices shall be implemented for these residences as well.

**Temporary Construction Noise**

*Thresholds of Significance*

For the purposes of this analysis, construction noise would have a significant impact if it would exceed the threshold of significance defined in the City of Escondido's Noise Ordinance of 75 dB $L_{eq-h}$ and occur outside the hours of 7 am through 6 pm weekdays, and 10 am to 5 pm on Saturday. See the Regulatory Setting section of this memorandum for more detail on the Noise Ordinance.

*Methodology and Assumptions*

The type of equipment assumed to be required for construction of the proposed SAP is described in the Groundborne Vibration section of this memorandum. The Federal Highway Administration's (FHWA) Roadway Construction Noise Model (RCNM) was used to estimate the worst-case noise level that would result from simultaneous operation of the three nosiest construction equipment types anticipated to be required for SAP construction.[6] Estimated noise levels at 50 feet for assumed equipment are provided in Table 2.

**Table 2: Noise Levels at 50 feet for Typical Construction Equipment**

| Equipment Description | Spec $L_{max}$ (dBA) | Actual $L_{max}$ (dBA) |
|---|---|---|
| Jackhammer | 85 | 88.9 |
| Dozer | 85 | 81.7 |
| Excavator | 85 | 80.7 |
| Source: Federal Highway Administration's Roadway Construction Noise Model (RCNM) 2008 | | |

[6] As previously stated, during SAP construction, equipment would likely be distributed throughout the construction site and would not be used simultaneously such that noise and groundborne vibration in one location would not be constant. However, to estimate a conservative, worst-case noise level, this analysis assumes simultaneous operation of the three noisiest equipment types.

*Analysis*

The nearest residences would be located approximately 40 feet from SAP construction area. According to the RCNM, the worst-case calculated $L_{eq}$ of construction activities associated with simultaneous operation of the three potentially noisiest construction equipment types for the project would be 86.1 dBA at 40 feet from construction activities. This worst-case assumption is conservative because construction equipment would typically be dispersed over the construction area and would not operate simultaneously in a single location. The worst-case calculated $L_{eq}$ of construction activities associated with the project would be 80.6 dBA at a distance of 75 feet from construction activities and 74.9 dBA at a distance of 145 feet.

As required by City Noise Ordinance Section 17-234, construction activities would only occur between the hours of 7 a.m. and 6 p.m. on weekdays and no nighttime construction would occur. However, temporary construction noise from the proposed full-width SAP could potentially exceed the City's 75 dBA $L_{eq-h}$ threshold at nearby sensitive receptors.

*Mitigation*

Implementation of Mitigation Measures NOI-1 through NOI-3 would minimize noise from construction activities such that noise levels would not exceed an hourly average noise level of 75 dBA at an adjacent residence. With the implementation of Mitigation Measures NOI-1, NOI-2 and NOI-3, impacts from implementation of the SAP would be less than significant.

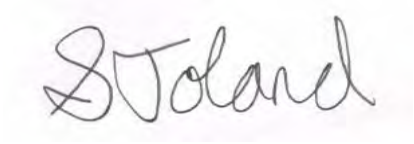
NOI-3 Prior to grading activities, the construction contractor shall implement and monitor the noise reduction measures described below to the extent necessary to reduce construction noise levels to below an hourly average noise level of 75 dBA at any residential property line. Noise reduction measures are required for all construction within 145 feet of a residence. Any one or a combination of measures can be used as necessary. Typical measures that may be implemented include the following, as necessary, to achieve compliance with the City's noise ordinance:

1. Use "quiet" gasoline-powered compressors or other electric-powered compressors, and use electric rather than gasoline or diesel powered forklifts for small lifting.
2. Locate stationary noise sources, such as temporary generators, as far from nearby receptors as possible.
3. Use the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) for construction equipment and trucks.
4. Muffle and enclose stationary noise sources within temporary sheds or incorporate insulation barriers.
5. Limit simultaneous operation of construction equipment or limit construction time within an hour to reduce hourly average noise level.
6. Implement temporary noise barriers, such as sound blankets, of a sufficient height and thickness around the perimeter of the construction area to minimize construction noise to 75 dBA as measured at the applicable property lines of the adjacent uses.

To ensure compliance with the City's Noise Ordinance, noise monitoring shall be conducted on the first day of typical construction. A one-hour noise measurement shall be conducted in accordance with Section 17-228 of the City's Noise Ordinance at 50 feet from the most intensive construction activity. If it is determined that construction would have the potential to exceed the hourly construction noise level limit at any residential property, additional noise control measures shall be implemented as necessary and an additional noise measurement will be conducted to confirm compliance.

Should you have any questions regarding this memo, please contact me at 619.236.1778, ext. 2528 or Sharon.Toland@WeAreHarris.com.

Sincerely,
**Harris & Associates**



Sharon Toland
Project Manager

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Investigative Science and Engineering, Inc. *Acoustical Site Assessment 661 Bear Valley Tentative Subdivision Map Escondido, CA*. April 27, 2016 (Revised).

# Appendix Q Construction Vibration Assessment (May 2016)

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# CONSTRUCTION VIBRATION ASSESSMENT
# 661 BEAR VALLEY TENTATIVE SUBDIVISION MAP
# ESCONDIDO, CA

Submitted to:

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Investigative Science and Engineering, Inc.

ISE Project #14-023

May 19, 2016

## REPORT CONTENTS


| | |
|---|---|
| **INTRODUCTION AND DEFINITIONS** | **1** |
| Existing Site Characterization | 1 |
| Project Description | 1 |
| Ground Vibration Definitions and Theory | 1 |
| **THRESHOLDS OF SIGNIFICANCE** | **9** |
| **APPROACH AND METHODOLOGY** | **10** |
| **FINDINGS AND RECOMMENDATIONS** | **11** |
| Existing Soil Conditions | 11 |
| Dynamic Soil Testing Findings | 11 |
| Required Construction Setback Distances | 11 |
| **CERTIFICATION OF ACCURACY AND QUALIFICATIONS** | **15** |
| **INDEX OF IMPORTANT TERMS** | **16** |


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## LIST OF TABLES


TABLE 1: TYPICAL VIBRATION SOURCES AND SENSITIVITIES 8
TABLE 2: CONSTRUCTION VIBRATION THRESHOLDS OF SIGNIFICANCE 9
TABLE 3: RECOMMENDED CONSTRUCTION SETBACK DISTANCES 14


## LIST OF FIGURES / MAPS / ADDENDA


FIGURE 1: PROJECT STUDY AREA VICINITY MAP 2
FIGURE 2: PROJECT STUDY AREA PARCEL MAP 3
FIGURE 3: AERIAL IMAGE SHOWING SURROUNDING USES 4
FIGURE 4: PROPOSED 661 BEAR VALLEY SITE DEVELOPMENT MAP 5
FIGURE 5: DEVELOPMENT SITE RELATIVE TO SURROUNDING PARCELS 6
FIGURE 6: TYPICAL RAYLEIGH WAVE PROPAGATION PROFILE 7
FIGURE 7: TYPICAL SEISMOMETER CONFIGURATION 10
FIGURE 8: SOIL CONDITIONS SURROUNDING PROJECT SITE 12
FIGURE 9: MEASURED DYNAMIC SOIL RESPONSE 13



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## INTRODUCTION AND DEFINITIONS

### Existing Site Characterization

The proposed 661 Bear Valley Tentative Subdivision Map (APN's 237-131-01, 02) consists of approximately 40.9 gross acres, located in the North County Area of San Diego County in the City of Escondido, as shown in Figure 1 on the following page. Regional access to the site is obtained from Bear Valley Parkway as shown in Figure 2 on Page 3 of this report. Surrounding land uses consist of single-family residential lots, limited commercial uses, and undeveloped open space. These features, as well as the proposed site plan configuration, can be seen in Figure 3 on Page 4 of this report.

The project site resides as a fully disturbed land use (i.e., a past extractive/mining use), and currently has one single-family residential structure onsite. Elevations across the property range from approximately 530 feet to 675 feet above mean sea level (MSL).

### Project Description

The 661 Bear Valley Tentative Subdivision Map would construct fifty five (55), approximately 10,000 square-foot, single family residential lots as shown in Figures 4 and 5 starting on Page 5 of this report. The project would also include necessary roadway and drainage improvements as well as the dedication of approximately 1.2 acres for improvements to Bear Valley Parkway.

### Ground Vibration Definitions and Theory

Vibration is generally defined as any oscillatory motion induced in a structure or mechanical device as a direct result of some type of input excitation. The object of interest typically has sufficient inertia 'm' so that by Newton's first law of motion, its rest state is one of zero vibration with velocity 'v' equal to zero. Input excitation, in the form of an applied external force 'F' is the mechanism required to start some type of vibratory response. Mathematically, this governing equation can be expressed in the following form for an object's rest state as,

$$\frac{d}{dt}(mv) = \sum_{Ext} F = 0$$

Once an object begins to respond to an applied force excitation, its natural tendency is to vibrate as a linear combination of its natural frequencies. A 'natural frequency' is defined as the frequency at which an object will tend to vibrate if set into motion and allowed to move freely. Any continuous system of particles will have an infinite number of natural frequencies, with each one adding to the overall response in a series of ever-decreasing contributions.

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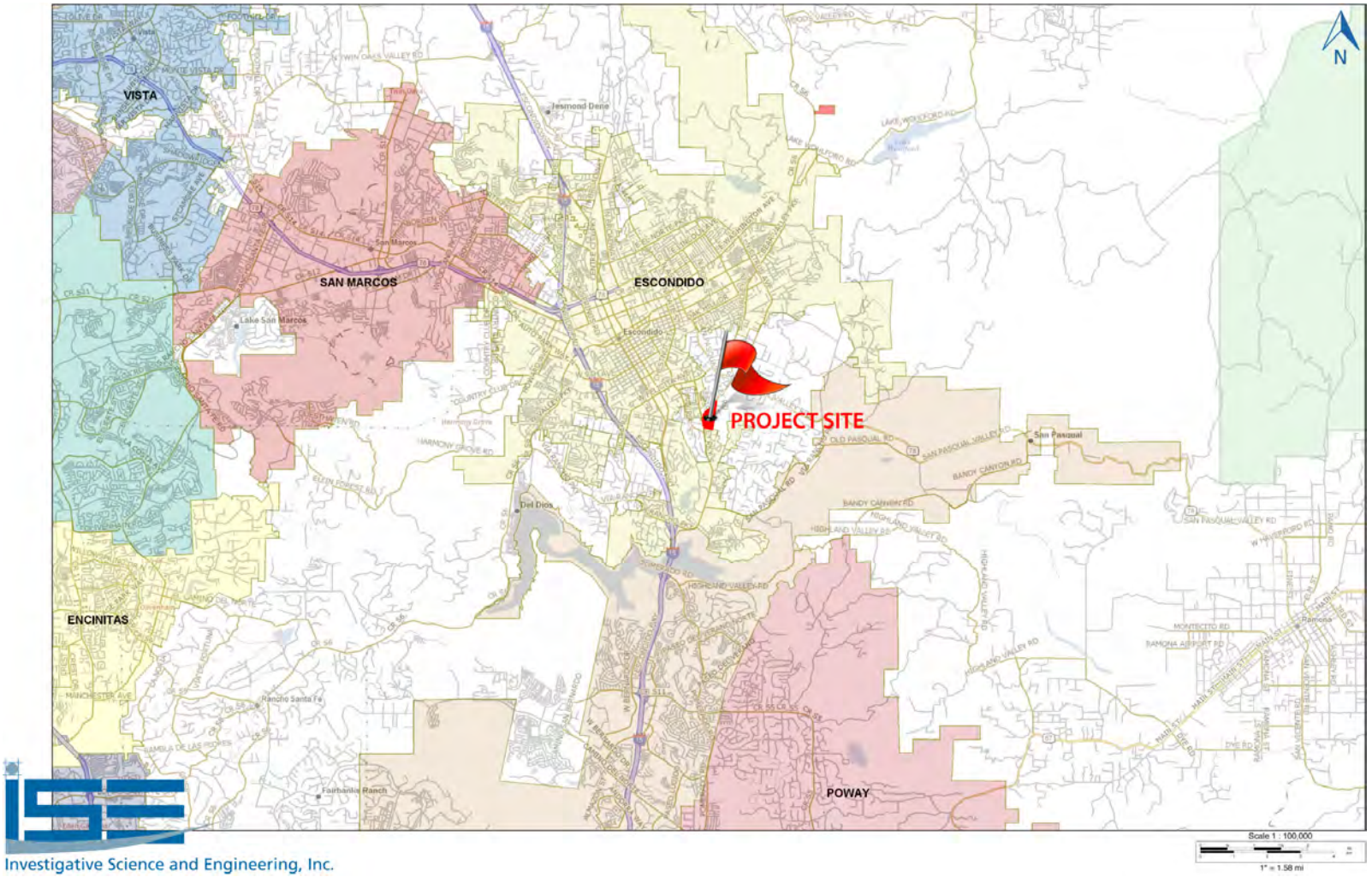


**FIGURE 1: Project Study Area Vicinity Map (ISE 12/14)**

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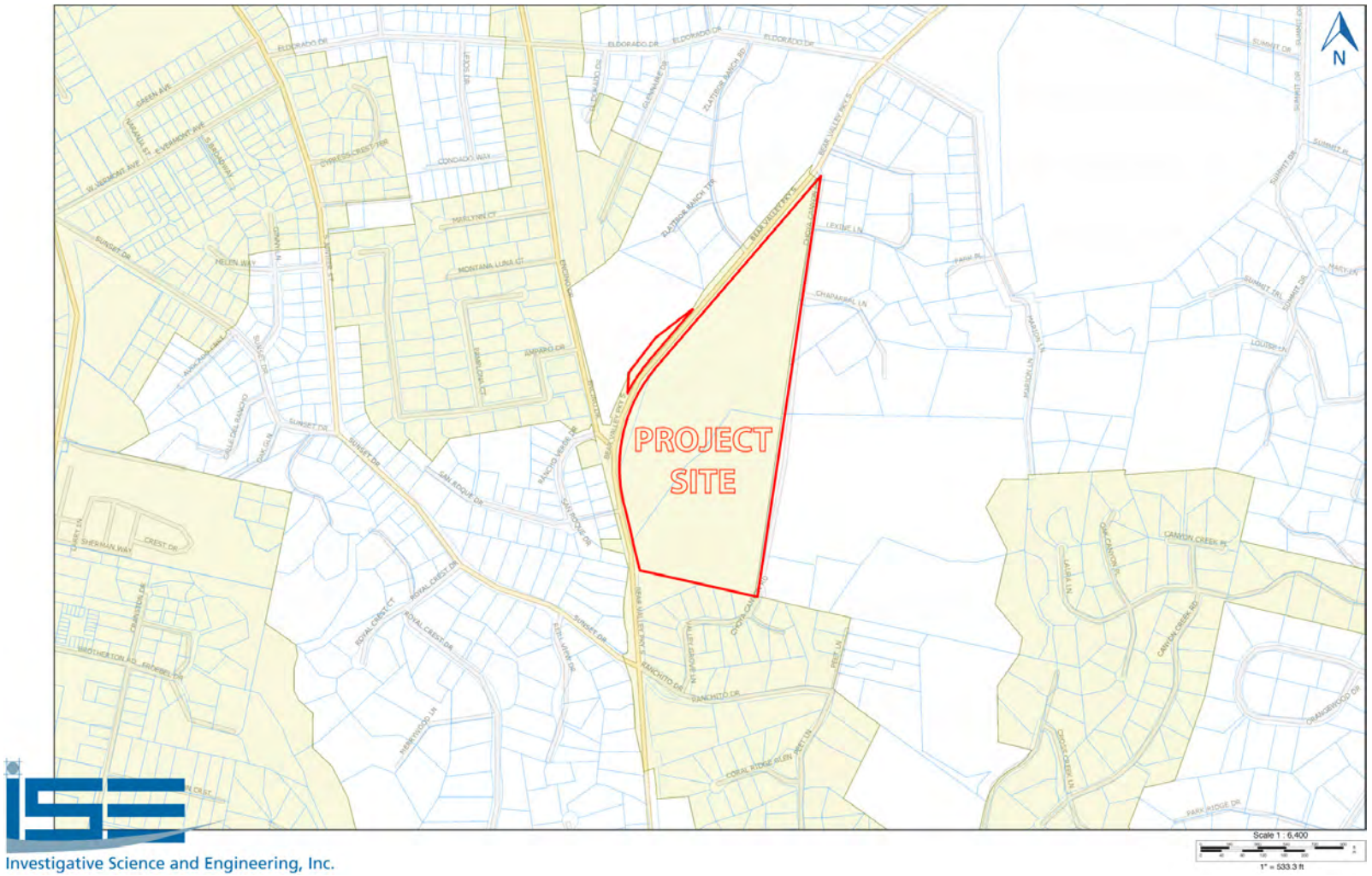


**FIGURE 2: Project Study Area Parcel Map (ISE 12/14)**

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**FIGURE 3: Aerial Image Showing 661 Bear Valley Development and Surrounding Uses (ISE 12/14)**

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**FIGURE 4: Proposed 661 Bear Valley Site Development Map (Hunsaker & Associates 12/14)**

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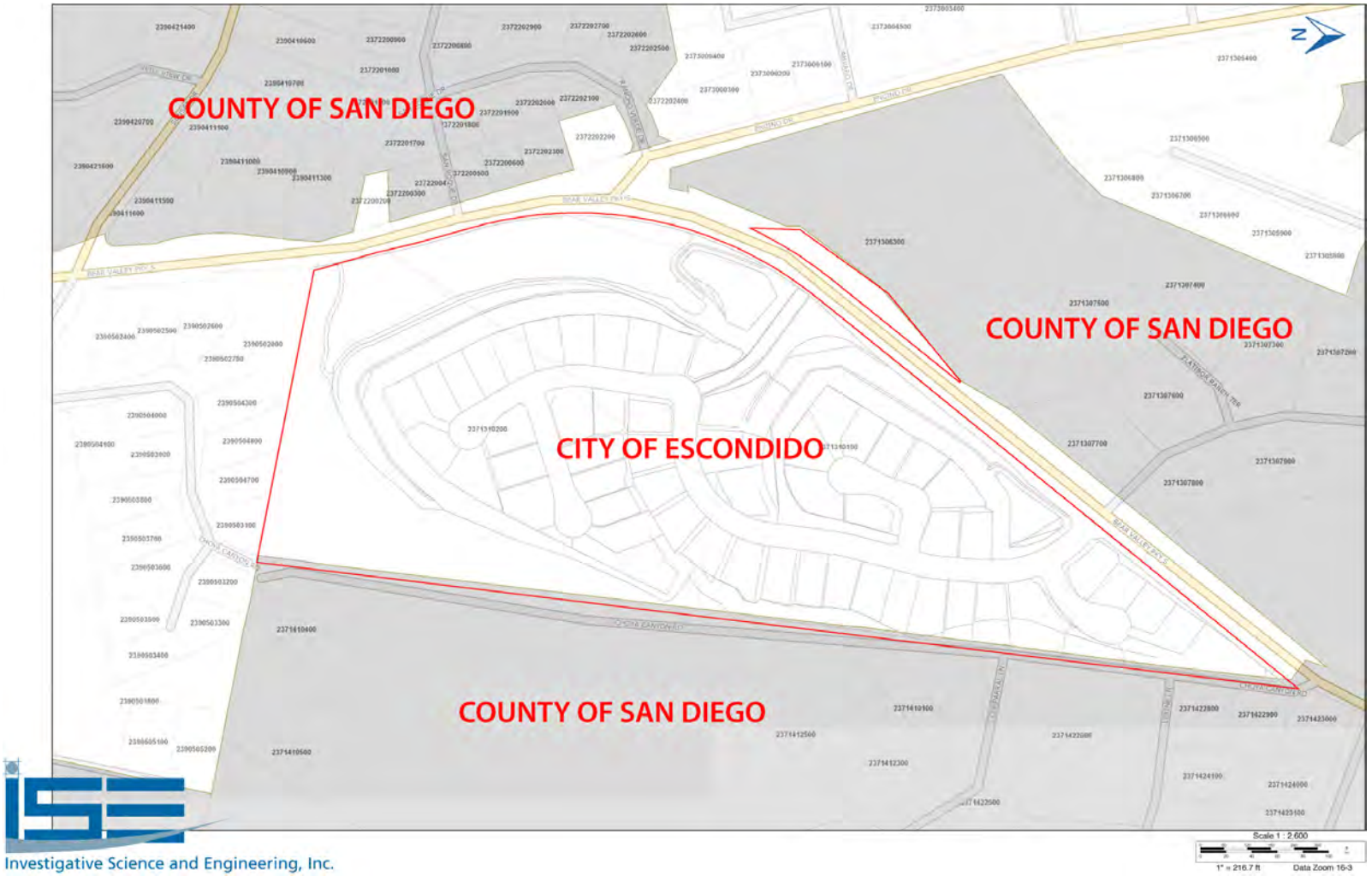


**FIGURE 5: Development Site Relative to Surrounding Parcels (ISE 4/16)**

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As the frequency of the excitation approaches one of the object's natural frequencies, the magnitude of the object's vibratory response increases. When the two frequencies are exactly the same, a condition known as *resonance* arises. At resonance, the amplitude of the response approaches infinity. The only natural mechanism available to temper the catastrophic effects of resonance is a quantity known as 'damping'.[1]

In structures, or soils and rock, damping is generally present within the material itself and hence is called 'material damping'. The cause of this damping is due to the interactions between the molecular lattice structures comprising the material.

Vibration energy travels along the surface of a soil using a mechanism known as 'Rayleigh waves'. A Rayleigh wave is a seismic wave producing retrograde elliptical ground motion, and having no transverse, or perpendicular, components. This type of motion can seen visually in Figure 6 to the right. Rayleigh waves have the slowest decay rate of any seismic wave.

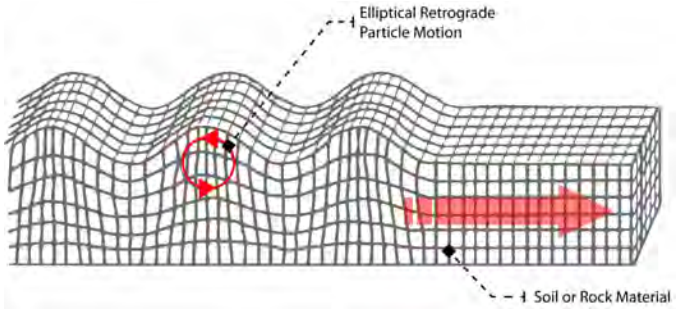


**FIGURE 6: Typical Rayleigh Wave Propagation Profile (ISE 4/16)**

Damping of surface waves in soils typically occurs as a combination of distance attenuation called 'radiation damping' and the aforementioned material damping. The latter is commonly approximated using a linear damping model that assumes the overall material damping increases as a function of distance between the source and receiver (i.e., the more soil between the source and receiver, the greater the mass, and the greater the material damping).

Table 1 on the following page provides a tabular representation of typical vibration sources and their effects on buildings, equipment, and humans. The peak ground velocity produced by various disturbances is given throughout a wide spectrum ranging from the infinitesimal to the severe. For most practical applications, induced vibration is a thing to be avoided, since the phenomenon is typically associated with physical discomfort, misalignment of equipment, loosening of mechanical fasteners, product defects, and skewed research results. In the case where the excitation frequency is close to resonance, or of sufficient magnitude (such as in an earthquake), severe structural damage can occur.

[1] Damping can be thought of as a type of 'drag force or resistance' that is always present to some degree in an object and serves to remove energy from the vibrating system as it moves. Artificial damping is used routinely in mechanical devices and takes the form of shock absorbers, viscous isolation materials, and simple friction.

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**TABLE 1: Typical Vibration Sources and Sensitivities**

| Peak Ground Velocity (in/Sec) | Environmental Ground Vibration Sources | | | Observed Effects and Tolerances | | |
|---|---|---|---|---|---|---|
| | Transportation Sources | Construction Sources | Natural Sources | Structural Effects | Human Response | Typical Engineering Tolerances |
| 100 | | | | | | |
| 10 | | K-( ..$!L )( , 0&9M<br>; 59, 0-' 0&59!L )( , 0&9M | ; 5( )&9M(:!; <!<br>=( .0>?-( @!1BNBDC! | 70-' 0 .( )!P( 6 (M+!<br>* &95.!P( 6 (M+! | =R0+6 +)$!<br>U9%)+( , (9 0 | Q- 6 (9 !=R%5 - .+!<br>"!7 S !T& &0B<br>C!* &- 0+! |
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## THRESHOLDS OF SIGNIFICANCE

Numerous ground vibration standards exist to provide a general indication as to the adverse effects of ground motion on structural systems and humans. All standards provide effectively the same threshold levels based on field investigations of displacement, fatigue, and damage in conventionally constructed structures (i.e., structures built within the past 100 years). The two most common standards will be used as a threshold indicator in this report.

U.S. Bureau of Mines RI 8507 / Swiss SN640 312 Vibration Criteria

The United States Bureau of Mines provides a well-defined impact guide to vibration on structures. This criteria, which was originally developed to catalog the observable effects of blasting on structures, has been accepted for all types of ground vibration excitation, since the fundamental parameter in all cases is the peak particle velocity of the receiving structure.[2]

A modern variant based on the Bureau of Mines research, was developed under Swiss Standard SN640 312, and is applied in Europe and the United States for the purpose of limiting vibration to sensitive resource areas. These threshold levels are shown in Table 2, and will be applied as the structural construction impact threshold for the 661 Bear Valley Tentative Subdivision as it constitutes the most conservative ground motion threshold for proposed construction activities.

**TABLE 2: Construction Vibration Thresholds of Significance**

| Vibration Frequency (Hz.) | Maximum Peak Particle Velocity (in/sec) | Maximum Peak Particle Velocity (VdB re. 1.0 μin/sec) |
|---|---|---|
| < 30 | 0.12 | 101.6 |
| 30 to 60 | 0.15 | 103.5 |
| > 60 | 0.24 | 107.6 |

Human Vibration Standards

The International Organization for Standardization (ISO) Standard 2631 Part 2 entitled "*Evaluation of human exposure to whole body vibration - Continuous and shock induced vibration in buildings*" contains guidelines pertaining to human exposure to vibration. The recommended continuous excitation levels are based upon various types of activities and building occupancy. The ISO human vibration standards are shown in the last column of Table 1. These standards are only applicable in cases where adverse impacts, or annoyance, to humans are suspected to be encountered.

[2] The standards are based upon the Bureau of Mines report RI 8507 entitled "*Structure Response and Damage Produced by Ground Vibrations from Surface Blasting*". This criterion presented, which is similar to the earlier Bureau of Mines *Bulletin 656*, sets the maximum peak particle velocity as a function of frequency.

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## APPROACH AND METHODOLOGY

Dynamic soil testing at the 661 Bear Valley Tentative Subdivision was performed on 5/18/16 using two Kinemetrics *Ranger Model SS-1* moving-coil short period field seismometers as shown in Figure 7.[3] The seismometers were connected through shielded coaxial cable to a two-channel Larson Davis Model 2900 FFT spectrum analyzer for analysis and recording.[4]

**FIGURE 7: Typical Seismometer Configuration (ISE 5/16)**

For the testing in question, ISE instrumented an area adjacent to an existing onsite access road with the seismometers positioned exactly 50-feet apart in the vertical 'z-axis' response direction. The measurement spectrum examined, ranged between 0.8 Hz and 10 kHz, which is greater than the entire usable range of expected civil vibration problems. The cable length used was at least 100 feet to ensure adequate isolation of the experimenter and the monitoring location. The generator constants for the seismometers used was 8,457 mV/in/sec and 9,070 mV/in/sec with natural periods of one second each.

A series of hammer blows was applied to a four-inch-square cross-sectional wooden block using a rubber mallet. This impulse generated a uniform transverse (shear) stress wave in the soil in accordance with Saint-Venant's Principle. The resulting ground motion, as a function of frequency, was measured at the closest (source) seismometer, as well as at the 50-foot distant (receiver) seismometer. Subtracting the resulting waveforms, and correcting for geometric attenuation, provided an estimate of the material damping present in the soil as a function of frequency. The measured results were then frequency-truncated at a point where it was observed that no ground excitation due to the hammer blow was indicated. This was typically around 500 Hz.

---

[3] These instruments, which are the terrestrial version of the lunar seismometer developed for NASA, are direct velocity-reading instrument capable of measuring inertial changes into the micro-inch-per-second range (the equivalent of footfalls one city block away).

[4] All testing and calibration is performed by ISE's Acoustics and Vibration Laboratory using a LORAN-C and Rubidium atomic frequency and time standard traceable to National Institute of Standards & Technology (NIST). The time and frequency calibration signal has a long-term stability of $10^{-10}$. Specifications for traceability can be obtained at *www.nist.gov*.

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## FINDINGS AND RECOMMENDATIONS

### Existing Soil Conditions

The area containing the 661 Bear Valley Tentative Subdivision is of a Cieneba Series Type and Chino Series type, as shown in Figure 8 on Page 12 of this report. Cieneba soils consist of very shallow to moderately shallow, somewhat excessively drained soils that form in weathered granitic rock, while Chino soils have a gray, calcareous, silty clay loam texture. Both types occur on hills and mountains that have slopes of between nine to 85 percent.[5,6]

### Dynamic Soil Testing Findings

The results of the dynamic soil testing are shown in Figure 9 on Page 13 of this report. The testing indicated a high level of surface wave attenuation as a function of frequency.

Between 1.0 to 160 Hz. there is an increasing trend of greater soil damping reaching a peak level of 1.13 dB/ft signal loss in the 160 Hz band. Above 160 Hz. a drop in signal attenuation was noted with no attenuation being indicated above 1,250 Hz. No appreciable change in ground motion was observed above approximately 500 Hz, so a frequency cut-off of 500 Hz. was applied to the data. Throughout the entire frequency range of interest (1.0 to 500 Hz.), the RMS soil attenuation level was found to be 0.56 dB/ft.

### Required Construction Setback Distances

Solving the general equation for radiation damping due to a Rayleigh wave under an assumed linear soil damping model, one can numerically back-calculate the required separation distance from a known ground excitation event to achieve compliance with the SN640 312 standard shown previously shown in Table 2.

Construction methods for the 661 Bear Valley Tentative Subdivision project could produce worst-case impulsive ground excitation of no more than 1.0 in/sec peak particle velocity PPV (120.0 VdB PPV). This maximum level was utilized for the purposes of calculation of a recommended setback distance from any sensitive area within the project site. The results are shown in Table 3 on Page 14 of this report.

[5] Source: United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Series Database, 5/16.

[6] These soil types are located within the following taxonomic classes: Cieneba = CIENEBA LOAMY, MIXED, SUPERACTIVE, NONACID, THERMIC, SHALLOW TYPIC XERORTHENTS; CHINO = FINE-LOAMY, MIXED, SUPERACTIVE, THERMIC AQUIC HAPLOXEROLLS.

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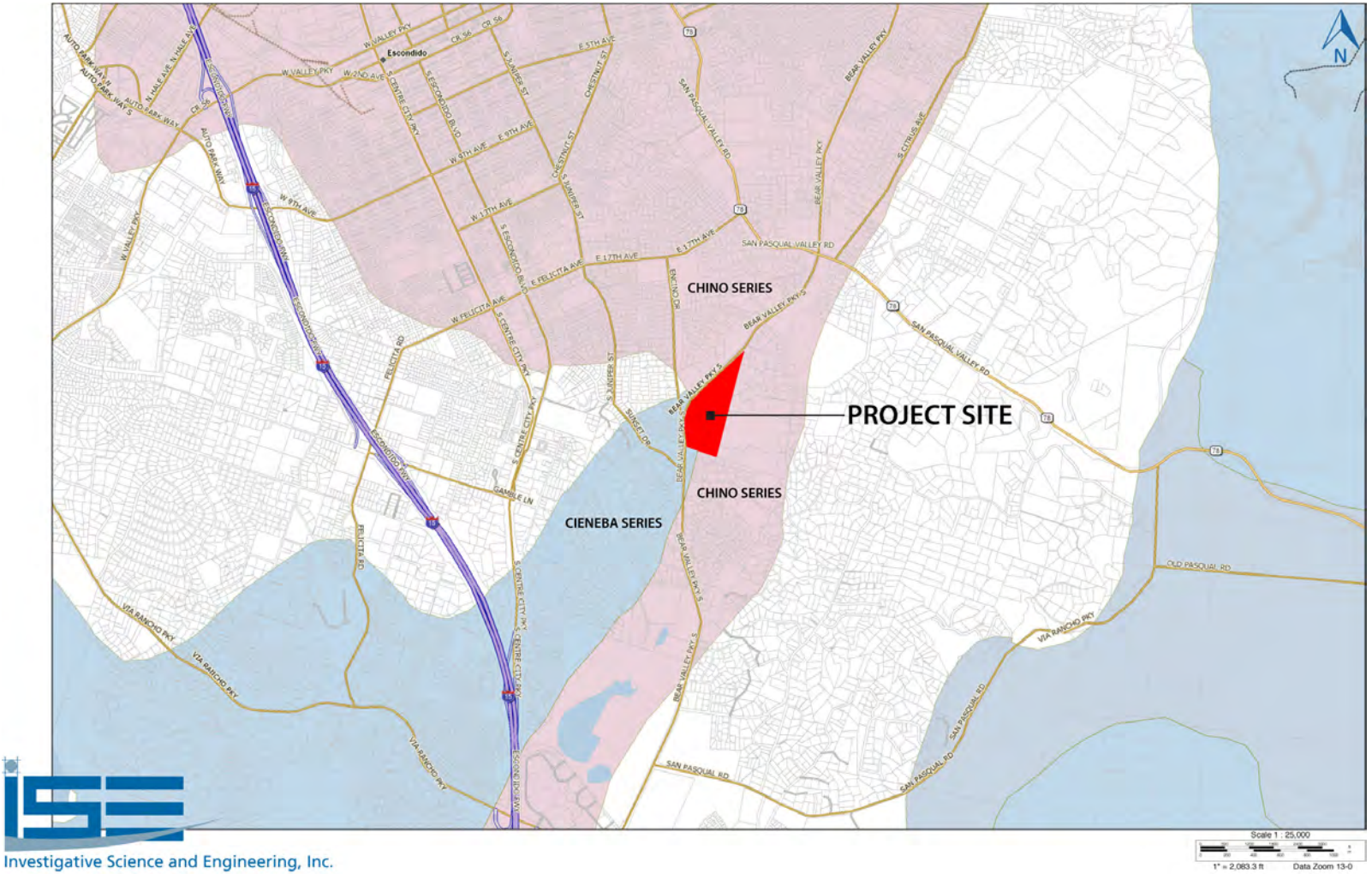


**FIGURE 8: Soil Conditions Surrounding Project Site (ISE 5/16)**

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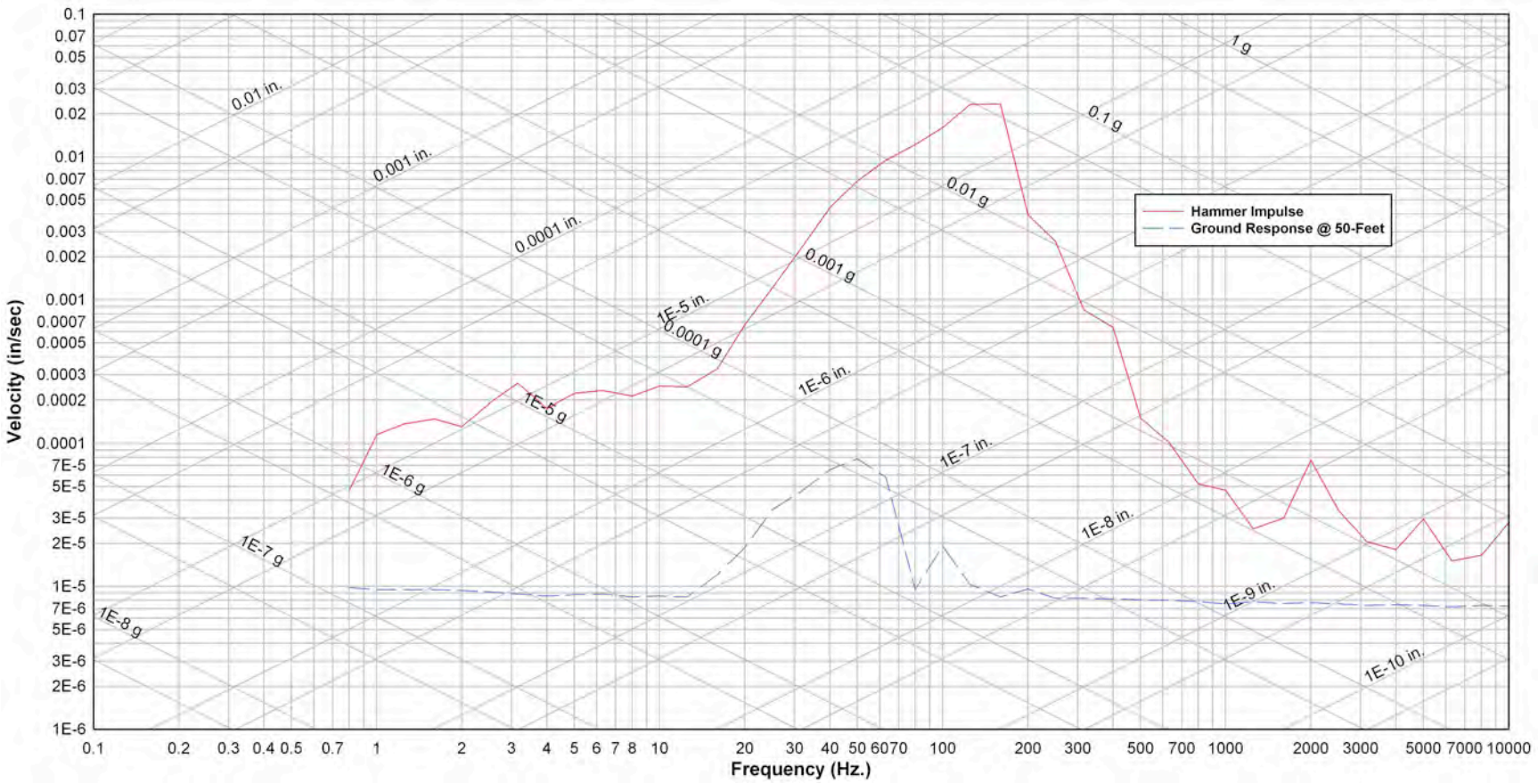


**FIGURE 9: Measured Dynamic Soil Response at 661 Bear Valley Tentative Subdivision Site (ISE 5/16)**

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**TABLE 3: Recommended Construction Setback Distances**

| One-Third Octave Band Vibration Frequency Component (Hz.) | Maximum Allowable Peak Particle Velocity (VdB re. 1.0 μin/sec) | Minimum Recommended Setback Distances in Feet for 1.0 in/sec Ground Excitation |
|---|---|---|
| 1 | 101.6 | 73 |
| 1.25 | 101.6 | 65 |
| 1.6 | 101.6 | 62 |
| 2 | 101.6 | 66 |
| 2.5 | 101.6 | 54 |
| 3.15 | 101.6 | 46 |
| 4 | 101.6 | 54 |
| 5 | 101.6 | 49 |
| 6.3 | 101.6 | 48 |
| 8 | 101.6 | 49 |
| 10 | 101.6 | 46 |
| 12.5 | 101.6 | 46 |
| 16 | 101.6 | 47 |
| 20 | 101.6 | 43 |
| 25 | 101.6 | 43 |
| 31.5 | 103.5 | 35 |
| 40 | 103.5 | 32 |
| 50 | 103.5 | 30 |
| 63 | 103.5 | 26 |
| 80 | 107.6 | 15 |
| 100 | 107.6 | 16 |
| 125 | 107.6 | 14 |
| 160 | 107.6 | 13 |
| 200 | 107.6 | 17 |
| 250 | 107.6 | 18 |
| 315 | 107.6 | 23 |
| 400 | 107.6 | 24 |
| 500 | 107.6 | 39 |

Thus, for anticipated ground excitation not exceeding 1.0 in/sec PPV, the separation distances shown in Table 3 were found to be adequate to preclude the presence of an impact to either structures or humans. No additional measures would be necessary.

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## CERTIFICATION OF ACCURACY AND QUALIFICATIONS

This report was prepared by Investigative Science and Engineering, Inc. (ISE). The members of its professional staff contributing to the report are listed below:

| | |
|---|---|
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| Karen Tavares<br>*(ktavares@ise.us)* | B.S. Electrical Engineering |

ISE affirms to the best of its knowledge and belief that the statements and information contained herein are in all respects true and correct as of the date of this report. Content and information contained within this report is intended only for the subject project and is protected under 17 U.S.C. §§ 101 through 810.

Should the reader have any questions regarding the findings and conclusions presented in this report, please do not hesitate to contact ISE at (760) 787-0016.

Approved as to Form and Content:

Rick Tavares, Ph.D.

Project Principal
Investigative Science and Engineering, Inc. (ISE)

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## INDEX OF IMPORTANT TERMS

Bureau of Mines, 9

damping, 7

FFT, 10
frequency, 1, 7, 9, 10, 11

Hz, 9, 10, 14

ISE, 1, 2, 10, 15
ISO, 9

LORAN-C, 10

material damping', 7

Newton's first law, 1

Octave Band, 14

People's Ditch, 11
PPV, 11, 14

radiation damping, 7
Rayleigh waves, 7
resonance, 7

Saint-Venant's Principle, 10
seismometer, 10
Soil, 11, 12, 13
soil damping, 11
Standard SN640 312, 9

VdB, 9, 11, 14
Vibration, 1, 8

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# Appendix R Traffic Impact Analysis (January 2017)

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LINSCOTT LAW & GREENSPAN engineers

# TRAFFIC IMPACT ANALYSIS

# 661 BEAR VALLEY

Escondido, California
January 18, 2017

LLG Ref. 3-13-2299

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# EXECUTIVE SUMMARY

The "661 Bear Valley" Project (Project) proposes the development of 55 residential dwelling units on 40.88 acres. The project site is located east of Bear Valley Parkway, north of Encino Drive in the City of Escondido. The Project proposes to improve its frontage along Bear Valley Parkway to include a third northbound lane which will provide additional capacity to these two segments.

The project study area includes five intersections and eight roadway street segments. The traffic analyses for the project were conducted in accordance with the *City of Escondido's Traffic Impact Study Guidelines*. The following scenarios are evaluated in this report:

- Existing
- Existing + Project
- Existing + Cumulative Projects
- Existing + Project + Cumulative Projects
- Buildout (Year 2035) without Project (Street Segments only)
- Buildout (Year 2035) with Project (Street Segments only)

The project traffic generation calculations were conducted using the trip generation rates published in the SANDAG's *"Not so Brief Guide of Vehicular Traffic Generation Rates for San Diego Region" (April 2002)*. Based on the lot size of the project, SANDAG specifies a trip rate of 10.0 trips/ unit. The project is calculated to generate 550 daily trips with 44 trips (13 inbound/31 outbound) in AM peak hour and 55 trips (39 inbound/16 outbound) during PM peak hour.

The project traffic distribution was based on a SANDAG Select Zone Assignment to determine the gross regional distribution of traffic. Additional engineering judgment was applied based on existing traffic flows, intersection controls, and roadway characteristics to refine the local distribution.

Cumulative projects were accounted for based on research conducted by LLG within the City of Escondido and County of San Diego. Under direction of City staff, cumulative project information was interpolated based on growth between Year 2035 volumes and existing traffic counts.

A Horizon Year (2035) analysis was conducted comparing street segment operations both with and without the project. The analysis showed that no changes to future roadway impacts would occur due to development of the Proposed Project.

Based on the City of Escondido and Caltrans significance criteria, ***significant impacts are identified*** at one (1) intersection locations. Proposed fair share mitigation measures are described in *Section 12.0* of this report. The Project will also contribute fair share payments to LOS F-operating locations to which it: a) adds a less-than-significant amount of traffic volumes, and b) does not otherwise contribute some form of improvement, per recommendations in the City's published traffic guideline.

# TABLE OF CONTENTS


| SECTION | | PAGE |
|---|---|---|
| **1.0** | **Introduction** | **1** |
| **2.0** | **Project Description** | **4** |
| 2.1 | Project Location | 4 |
| 2.2 | Project Description | 4 |
| 2.3 | Project Access | 4 |
| 2.4 | Alternative Transportation and Non-Motorized Travel | 4 |
| 2.5 | Frontage Improvements/Safety Hazards | 4 |
| **3.0** | **Existing Conditions** | **6** |
| 3.1 | Existing Transportation Conditions | 6 |
| 3.2 | Existing Traffic Volumes | 7 |
| **4.0** | **Analysis Approach and Methodology** | **11** |
| **5.0** | **Significance Criteria** | **14** |
| 5.1 | City of Escondido | 14 |
| **6.0** | **Analysis of Existing Conditions** | **15** |
| 6.1 | Peak Hour Intersection Levels of Service | 15 |
| 6.2 | Daily Street Segment Levels of Service | 16 |
| **7.0** | **Trip Generation/Distribution/Assignment** | **17** |
| 7.1 | Trip Generation | 17 |
| 7.2 | Trip Distribution/Assignment | 17 |
| **8.0** | **Cumulative Growth Traffic Volumes** | **22** |
| **9.0** | **Analysis of Near-Term Scenarios** | **26** |
| 9.1 | Existing + Project | 26 |
| 9.1.1 | Intersection Analysis | 26 |
| 9.1.2 | Segment Operations | 26 |
| 9.2 | Existing + Cumulative Growth | 26 |
| 9.2.1 | Intersection Analysis | 26 |
| 9.2.2 | Segment Operations | 26 |
| 9.3 | Existing + Project + Cumulative Growth | 27 |
| 9.3.1 | Intersection Analysis | 27 |
| 9.3.2 | Segment Operations | 27 |
| **10.0** | **Analysis of Buildout Scenario** | **30** |

10.1 Buildout ..... 30
10.2 Buildout + Project ..... 30

**11.0 Project Access ..... 34**

**12.0 Significance of Impacts and Mitigation Measures ..... 35**
12.1 Significant Impacts Prior to Mitigation ..... 35
12.1.1 Intersections ..... 35
12.2 Mitigation Measures ..... 35
12.2.1 Intersections ..... 35

**13.0 Project Fair Share Contributions ..... 38**

## APPENDICES

APPENDIX

A. Intersection and Segment Manual Count Sheets

B. Intersection Methodology and Near-Term Analysis Sheets

C. Post-Mitigation Analysis Sheets

# LIST OF FIGURES


| SECTION—FIGURE # | | FOLLOWING PAGE |
|---|---|---|
| Figure 1–1 | Vicinity Map | 2 |
| Figure 1–2 | Project Area Map | 3 |
| Figure 2–1 | Site Plan | 5 |
| Figure 3–1 | Existing Conditions Diagram | 9 |
| Figure 3–2 | Existing Traffic Volumes | 10 |
| Figure 7–1 | Project Traffic Distribution | 19 |
| Figure 7–2 | Project Traffic Volumes | 20 |
| Figure 7–3 | Existing + Project Traffic Volumes | 21 |
| Figure 8–1 | Cumulative Projects Traffic Volumes | 23 |
| Figure 8–2 | Existing + Cumulative Projects Traffic Volumes | 24 |
| Figure 8–3 | Existing + Project + Cumulative Projects Traffic Volumes | 25 |
| Figure 10–1 | Year 2035 Traffic Volumes | 32 |
| Figure 10–2 | Year 2035 + Project Traffic Volumes | 33 |
| Figure 12–1 | Project Contributions Diagram | 37 |


# LIST OF TABLES


| SECTION—TABLE # | | PAGE |
|---|---|---|
| Table 3–1 | Existing Traffic Volumes | 8 |
| Table 4–1 | Traffic Impact Analysis ADT Thresholds for Roadway Segments | 12 |
| Table 4–2 | Traffic Impact Analysis ADT Thresholds for Intersections | 12 |
| Table 4–3 | City of Escondido Street Segment Average Daily Vehicle Trip Thresholds | 13 |
| Table 5–1 | City of Escondido Traffic Impact Significance Thresholds | 14 |
| Table 6–1 | Existing Intersection Operations | 15 |
| Table 6–2 | Existing Street Segment Operations | 16 |
| Table 7–1 | Project Trip Generation | 17 |
| Table 9–1 | Near-Term Intersection Operations | 28 |
| Table 9–2 | Near-Term Street Segment Operations | 29 |
| Table 10–1 | Long-Term Street Segment Operations | 31 |
| Table 11–1 | Project Driveway Operations | 34 |
| Table 12–1 | Post-Mitigation Intersection Operations | 36 |

Table 13–1 Fair Share Summary Significant and Cumulative LOS E/F Locations ..... 38
Table 13–2 Fair Share Summary Non-Significant LOS F Locations ..... 39

TRAFFIC IMPACT ANALYSIS

# 661 BEAR VALLEY

Escondido, California
January 18, 2017

## 1.0 INTRODUCTION

Linscott, Law and Greenspan, Engineers (LLG) have prepared the following traffic impact analysis to assess the impacts to the street system as a result of the 661 Bear Valley residential project (Project), which proposes the development of 55 single-family dwelling units. The Project site is located east of Bear Valley Parkway across from Encino Drive in the City of Escondido.

***Figure 1–1*** shows the Project vicinity and ***Figure 1–2*** illustrates, in more detail, the site location.

The traffic analysis presented in this report includes the following:

- Project Description
- Existing Conditions
- Analysis Approach and Methodology
- Significance Criteria
- Analysis of Existing Conditions
- Project Trip Generation/Distribution/Assignment
- Cumulative Projects
- Analysis of Near-term Scenarios
- Analysis of Buildout Scenarios
- Site Access Discussion
- Significance of Impacts and Mitigation Measures
- Project Fair Share Contributions

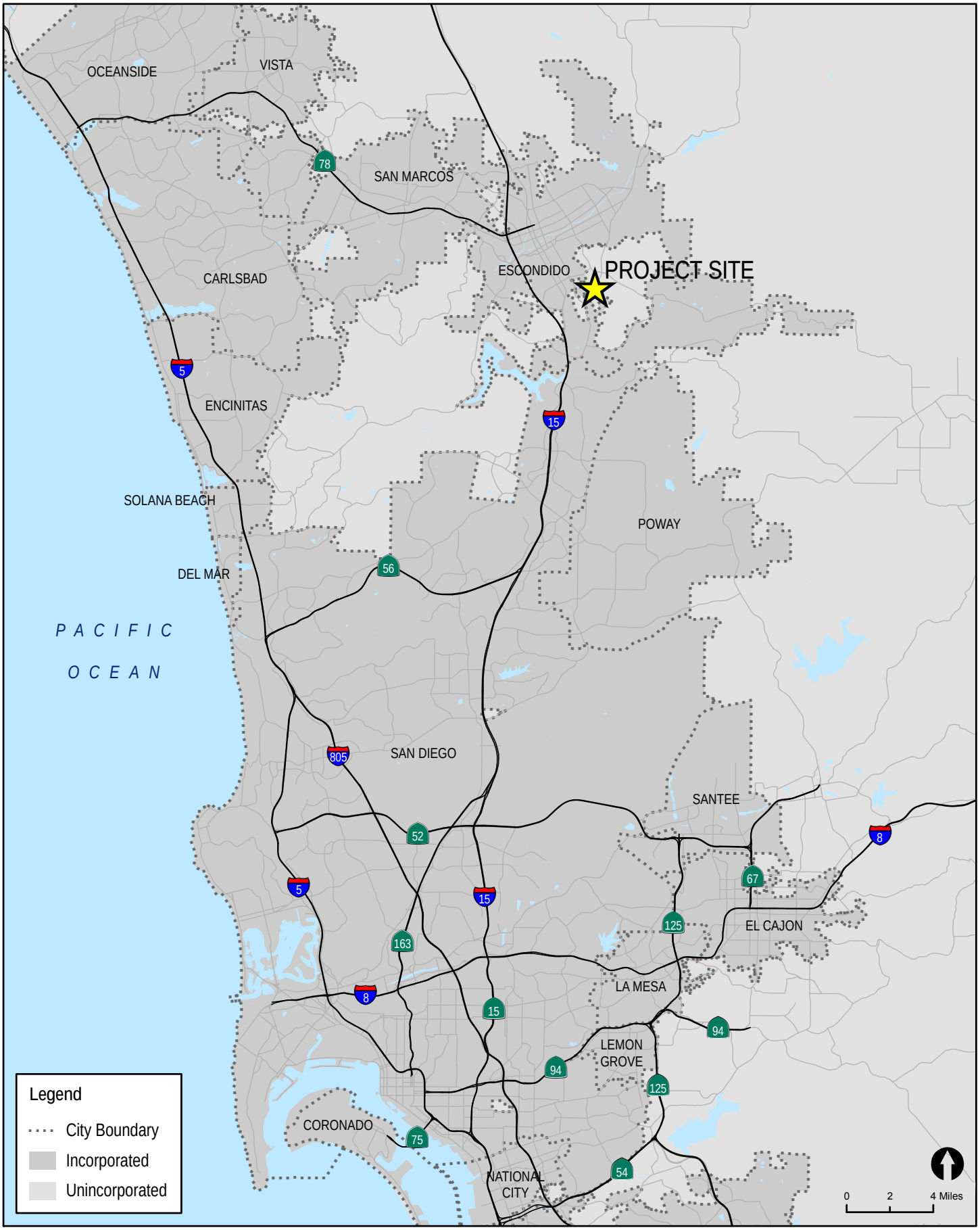


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**Figure 1-1**

## Vicinity Map

661 Bear Valley

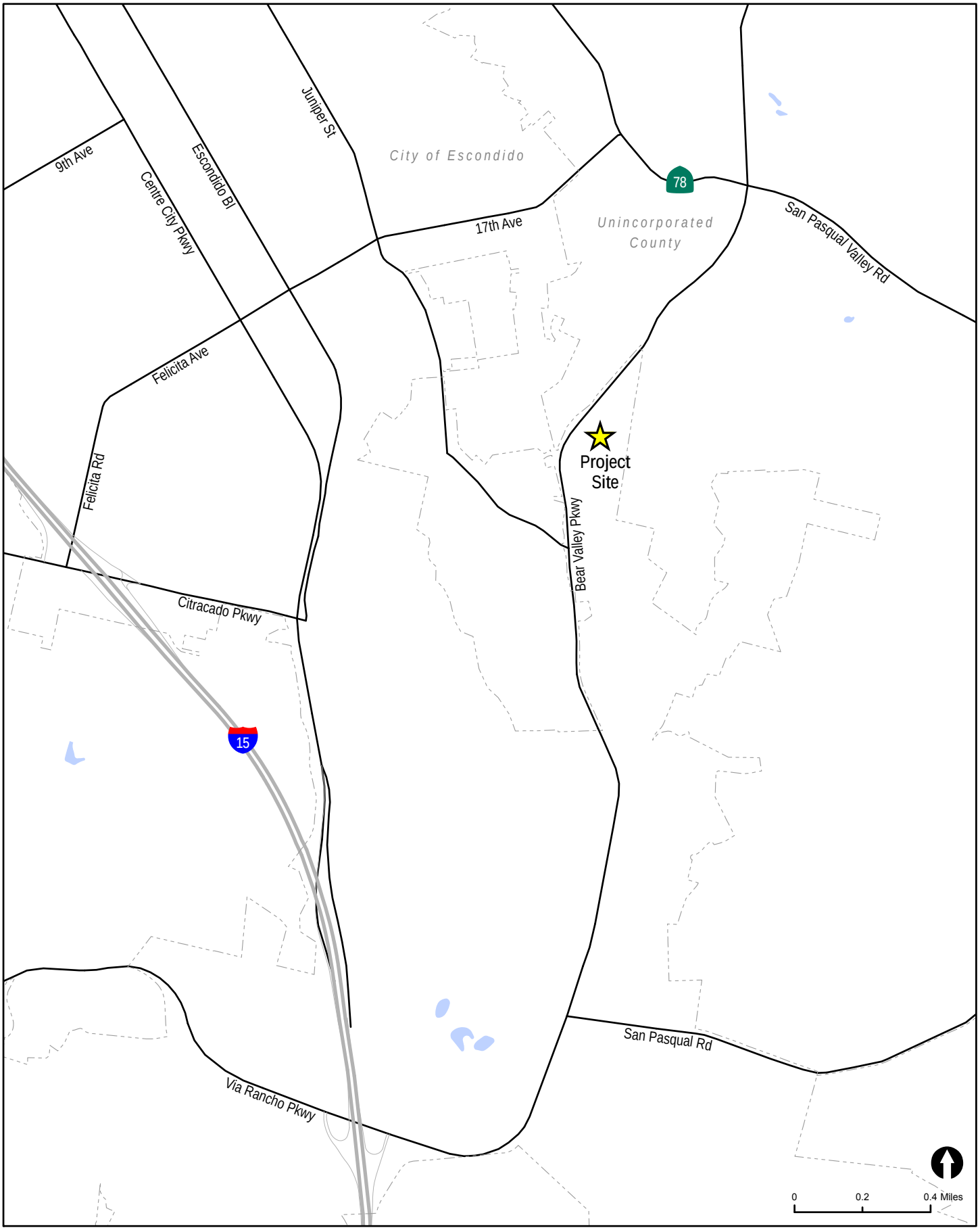


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**Figure 1-2**

# Project Area Map

661 Bear Valley

# 2.0 PROJECT DESCRIPTION

## 2.1 Project Location

The Project is located east of Bear Valley Road, across from Encino Drive in the City of Escondido.

## 2.2 Project Description

The proposed Project would construct 55 new single-family detached residences on a 40.88 acre parcel. The residential lots would have an average lot size of approximately 10,000 square feet, with approximately 20.7 acres of the parcel devoted to open space and recreation. The site is designated for Estate II residential land uses in the City of Escondido General Plan (2012), which allows for up to two dwelling units per acre (du/ac). The gross density of the Project site would be 1.35 du/ac.

## 2.3 Project Access

Access to the site would be provided from a signalized, full-access driveway located across from the existing Zlatibor Ranch Road at the northern portion of the Project. A secondary, emergency-only access would be provided at the south end of the site. All access/emergency access is designed to meet City of Escondido Fire Department's specifications.

## 2.4 Alternative Transportation and Non-Motorized Travel

There is currently a Class II bicycle lane on Bear Valley Parkway from its southern end to San Pasqual Valley Road to serve alternative transportation and non-motorized travel. Development of the Project will result in frontage improvements from the site's southern boundary to just south of Choya Canyon Road. These improvements will maintain the northbound bike lane, and add dedications and sidewalks along the frontage to benefit pedestrians.

## 2.5 Frontage Improvements/Safety Hazards

In addition to the signalized access at the main driveway, the Project will also dedicate additional right-of-way to accommodate full half-width improvements along the site's frontage on Bear Valley Parkway. The improvements will provide a third northbound lane along the Project extents. The current capacity of Bear Valley Parkway is 15,000 average daily trips (ADT). The additional 3rd lane would offer as much as 7,500 ADT more capacity to the roadway, although for the purposes of the analysis a modest increase in capacity of 500 ADT was assumed. This would fully offset the Project ADT on Bear Valley Parkway shown on *Figure 7–2*.

Implementation of frontage improvements by the Project will be developed to the satisfaction of the City of Escondido's traffic engineer, and will adhere to published standards where practical. As such, these frontage improvements are not expected to result in increased safety hazards.

***Figure 2–1*** shows the Project's Site Plan.

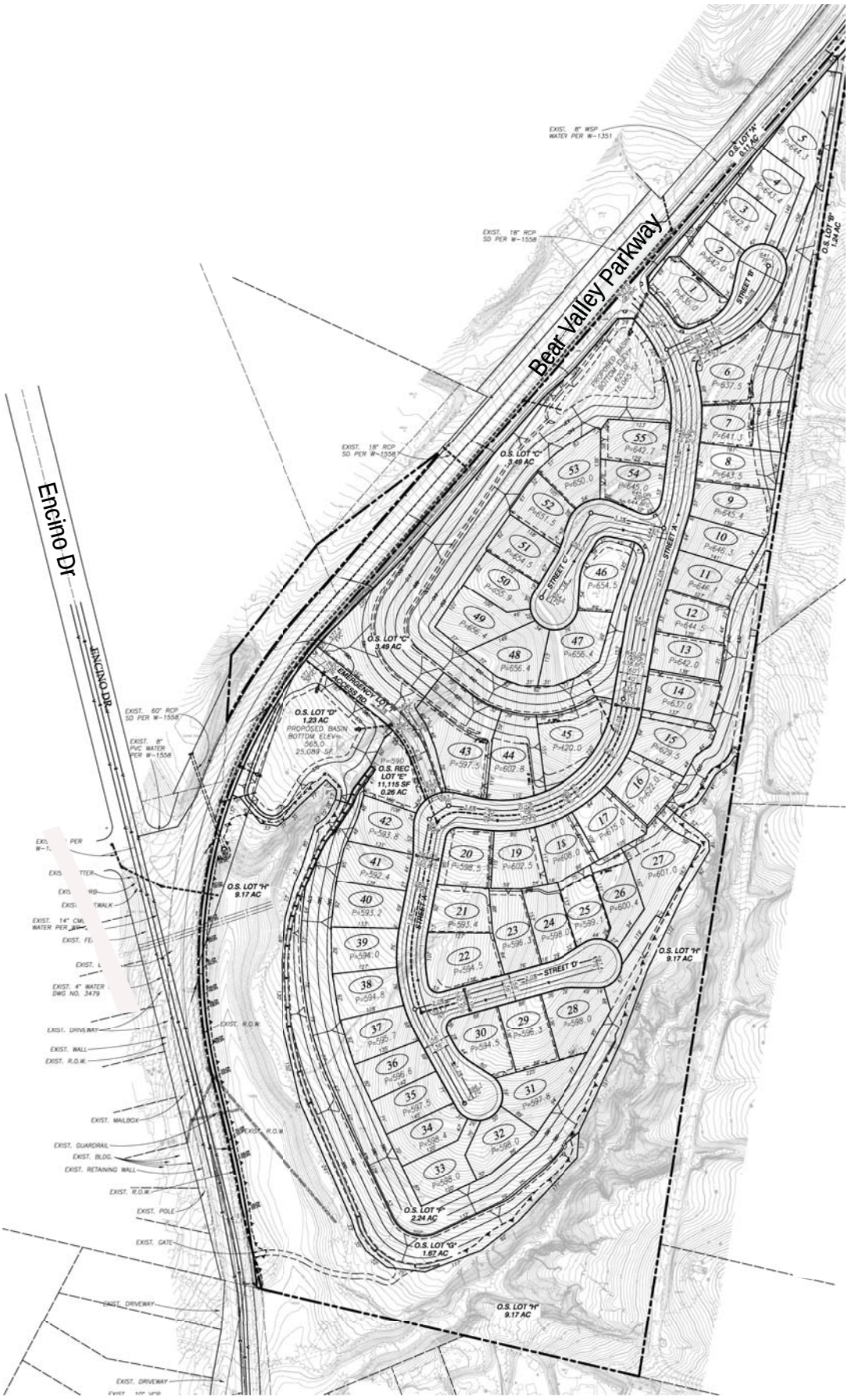


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**Figure 2-1**

## Site Plan

661 Bear Valley

# 3.0 EXISTING CONDITIONS

Effective evaluation of the traffic impacts associated with the proposed Project requires an understanding of the existing transportation system within the Project study area. ***Figure 3–1*** shows an existing conditions diagram, including signalized/unsignalized intersections and lane configurations.

The study area was determined in accordance with the City of Escondido's published *Traffic Impact Analysis Requirement Guidelines (2014)*. Further details on the City's guidelines for developing the study area can be found in *Section 4.0*. The study area includes the following five (5) existing public intersections and eight (8) street segments.

*Intersections:*

1. Bear Valley Parkway / San Pasqual Valley Road (SR 78)
2. Bear Valley Parkway / Zlatibor Ranch Road (future Project Driveway)
3. Bear Valley Parkway / Encino Drive
4. Bear Valley Parkway / Sunset Drive
5. Bear Valley Parkway / Las Palmas Avenue

*Segments:*

1. Bear Valley Parkway: Eldorado Drive to Zlatibor Ranch Rd
2. Bear Valley Parkway: Zlatibor Ranch Rd to Encino Drive
3. Bear Valley Parkway: Encino Drive to Sunset Drive
4. Bear Valley Parkway: Sunset Drive to Las Palmas Avenue
5. Bear Valley Parkway: Las Palmas Avenue to Mary Lane
6. Bear Valley Parkway: Mary Lane to San Pasqual Road
7. Encino Drive: West of Bear Valley Parkway
8. Sunset Drive: West of Bear Valley Parkway

## 3.1 Existing Transportation Conditions

The following is a brief description of the streets in the Project area. All study area roadways are located within the City of Escondido General Plan area and thus roadway classifications are taken from the City of Escondido's *General Plan Mobility Element (2011)*.

**Bear Valley Parkway** is a north/south facility with varying Mobility Element classifications. In the Project study area, from north of San Pasqual Valley Road to Las Palmas Avenue, it is currently constructed as a two-lane undivided roadway and classified as Major Road. From Las Palmas Avenue to Beethoven Drive, it is constructed as a four-lane divided roadway and classified as a Super Major Road.

The posted speed limit is 50 mph on all segments of Bear Valley Parkway described, with the exception of a 25 mph school zone in the vicinity of Las Palmas Avenue. Curbside parking is prohibited. Bear Valley Parkway provides Class II bicycle lanes from its southern end to San Pasqual Valley Road.

It should be noted that there is a Specific Alignment Plan for the two-lane portion of Bear Valley Parkway along the Project's frontage, through Bear Valley Parkway's intersection with Encino Drive (Hunsaker & Associates, 2016). This plan will allow Bear Valley Parkway to be improved to four-lanes, but with requisite design exceptions needed to preserve sensitive riparian habitat located between the site and the roadways. The frontage improvements proposed for the Project will be consistent with, and a subset of, the overall improvements shown on the Specific Alignment Plan. These frontage improvements will generally consist of dedication and widening of Bear Valley parkway to half-width improvements for the extents of the Project frontage. This will include transitions to and from an additional third, northbound lane. A northbound bike lane will also be provided, as will a dedicated northbound right-turn turn-lane and taper from Bear Valley Parkway to the Project's main access at Zlatibor Ranch Road. The ultimate improvements (to be constructed by others) related to the Specific Alignment Plan will generally include the provision of a second southbound travel lane, realignment and improvement of the Bear Valley Parkway/Encino Drive intersection, ultimately providing four lanes from Choya Canyon Road south to match the existing four-lane section of Bear Valley Parkway north of Sunset Drive.

**San Pasqual Valley Road (SR 78)** is classified as a Major Road. It is constructed as a two-lane undivided roadway with a posted speed limit of 45 mph. No bicycle facilities are provided, though Class II bicycle lanes are proposed per the City's *Mobility Element*. SR 78 intersects Bear Valley Parkway at a signalized intersection.

**Encino Drive** is classified as a Local Collector. It is currently constructed as a two-lane undivided roadway with a two-way left-turn lane on a short segment immediately adjacent to the southern end of the roadway. The posted speed limit is 35 mph and curbside parking is not allowed. No bicycle facilities currently exist, though Class II bicycle lanes are proposed per the City's *Mobility Element*. Encino Drive intersects Bear Valley Parkway with an unorthodox unsignalized intersection configuration.

**Sunset Drive** is classified as a Local Collector. It is currently constructed as a two-lane undivided roadway with a posted speed limit of 40 mph. Curbside parking is prohibited. Sunset Drive intersects Bear Valley Parkway at a signalized intersection.

**Las Palmas Avenue** is an unclassified residential road. It is currently constructed as a two-lane undivided road, with a two-way left-turn lane in the immediate vicinity of Bear Valley Middle School, just west of Bear Valley Parkway. The posted speed limit is 25 mph and curbside parking is prohibited. Las Palmas Avenue is signalized at its intersection with Bear Valley Parkway. In addition to the Bear Valley Middle School, LR Green Elementary School and the Classical Academy are also located in the vicinity of this intersection.

## 3.2 Existing Traffic Volumes

***Table 3–1*** is a summary of the most recent available average daily traffic volumes (ADTs) from LLG counts commissioned in February 2014. Manual hand counts at the study area intersections were also conducted in February 2014 when schools were in session.

***Figure 3–2*** shows the Existing Traffic Volumes. ***Appendix A*** contains the manual count sheets.

TABLE 3–1
EXISTING TRAFFIC VOLUMES

| Street Segment | ADT[a] |
|---|---|
| **Bear Valley Parkway** | |
| Eldorado Drive to Zlatibor Ranch Road | 20,600 |
| Zlatibor Ranch Road to Encino Drive | 20,110 |
| Encino Drive to Sunset Drive | 21,770 |
| Sunset Drive to Las Palmas Avenue | 30,600 |
| Las Palmas Avenue to Mary Lane | 27,300 |
| Mary Lane to San Pasqual Road | 29,430 |
| **Encino Drive** | |
| West of Bear Valley Parkway | 1,420 |
| **Sunset Drive** | |
| West of Bear Valley Parkway | 7,450 |

***Footnotes:***

a. Average Daily Traffic Volume counts conducted in February 2014 by LLG Engineers.

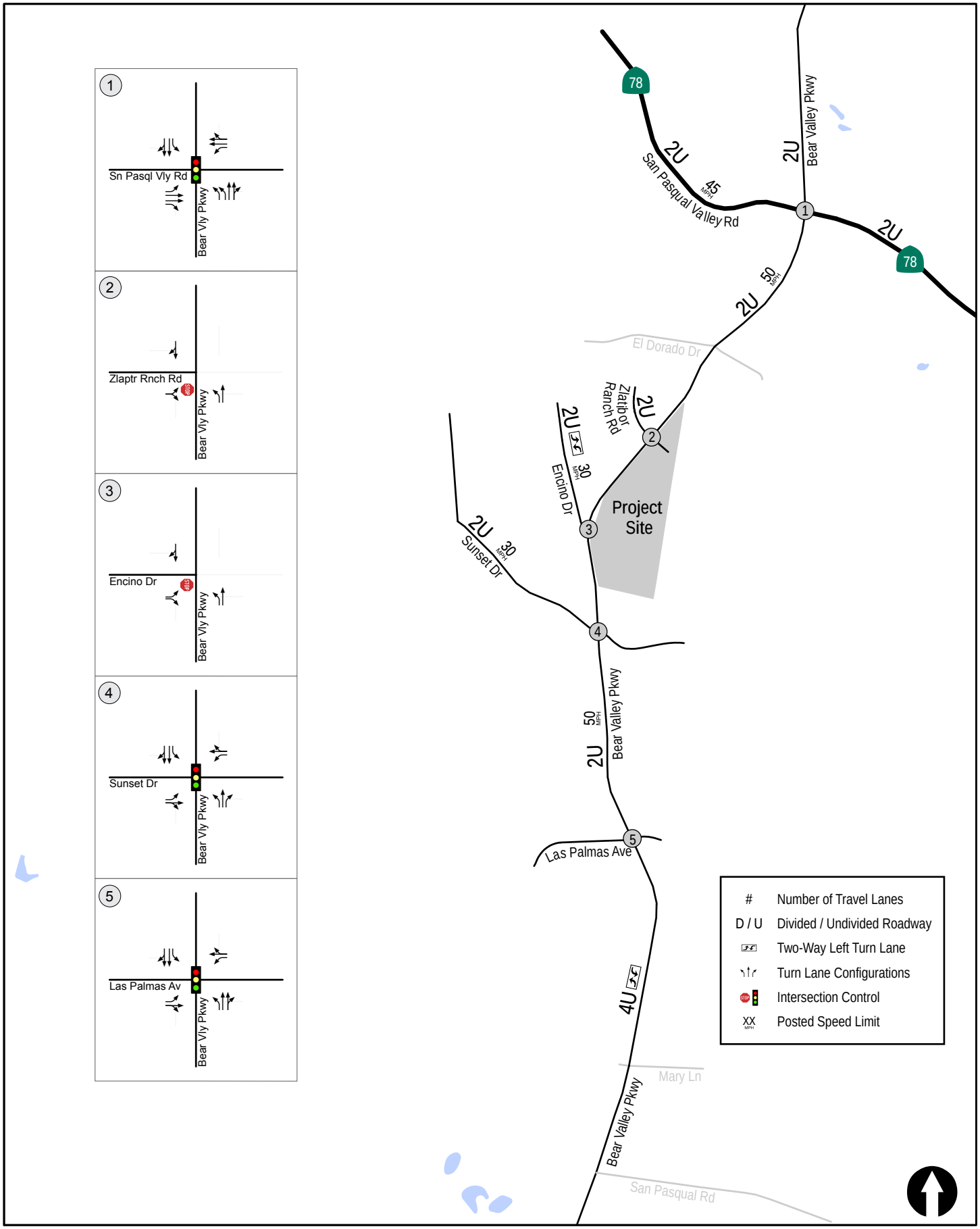


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**Figure 3-1**

# Existing Conditions Diagram

661 BEAR VALLEY

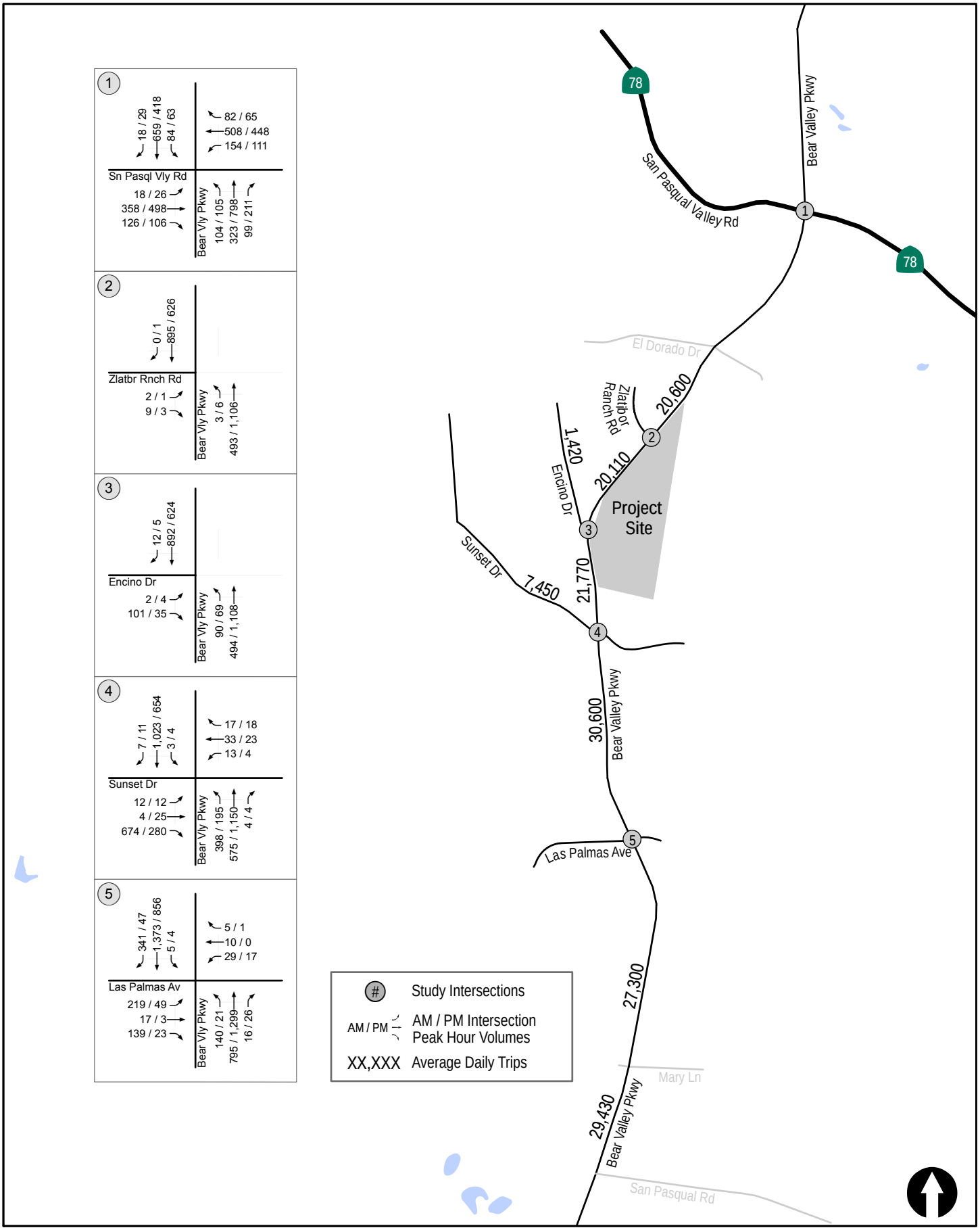


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**Figure 3-2**

# Existing Traffic Volumes

661 BEAR VALLEY

# 4.0 ANALYSIS APPROACH AND METHODOLOGY

Level of service (LOS) is the term used to denote the different operating conditions which occur on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Level of service designation is reported differently for signalized intersections, unsignalized intersections and roadway segments.

The City of Escondido's recently published Traffic Impact Analysis Guidelines provide the following direction on report approach and methodology:

1. The traffic study should include a SANDAG prepared Select Zone Assignment for the project to determine the project traffic distribution.
2. The traffic study should utilize the Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (April 2002) published by SANDAG, to determine the project traffic volume.
3. Traffic should utilize the following scenarios to determine project traffic impacts at intersections and along roadway segments.
    a. Existing Condition (based on new traffic counts)
    b. Existing + Project Traffic Condition
    c. Existing + Cumulative Projects Traffic Condition
    d. Existing + Cumulative Projects + Project Traffic Condition
    e. Year 2035 Traffic Condition
4. Highway Capacity Manual (Year 2010) should be utilized to determine level of service for intersections.
5. The study area should include at least all site access points and major intersections (signalized and unsignalized) adjacent to the site. The tables below contain the trigger-points to identify if a roadway segment or intersection should be included in the Traffic Impact Analysis.

    ***Table 4–1*** below contains the trigger-points for roadway segments within the City of Escondido for different street classifications based on ADT added to the segment. ***Table 4–2*** below contains the trigger-points for intersections based on peak hour volumes.

TABLE 4–1
TRAFFIC IMPACT ANALYSIS ADT THRESHOLDS FOR ROADWAY SEGMENTS

| Street Classification | Lanes | Cross Sections (ft.) | TIA Trigger-Points (ADT generation) |
|---|---|---|---|
| Prime Arterial | (8 lanes) | 116/136 (NP) | 900 |
| | (6 lanes) | 106/126 (NP) | 800 |
| Major Road | (6 lanes) | 90/110 (NP) | 700 |
| | (4 lanes) | 82/102 (NP) | 500 |
| Collector | (4 lanes) | 64/84 (NP) | 500 |
| | (4 lanes) | (WP) | 250 |
| Local Collector and all other | (2 lanes) | 42/66 (NP) (WP) | 200 |

TABLE 4–2
TRAFFIC IMPACT ANALYSIS ADT THRESHOLDS FOR INTERSECTIONS

| Intersection Classification (Minor leg of the intersection) | TIA Trigger-Points (AM or PM peak hour trips added to any leg) |
|---|---|
| Prime Arterial | 50 |
| Major Road | 40 |
| Collector | 30 |
| Local Collector | 20 |

***Signalized intersections*** were analyzed under AM and PM peak hour conditions. Average vehicle delay was determined utilizing the methodology found in Chapter 18 of the *2010 Highway Capacity Manual (HCM),* with the assistance of the *Synchro* (version 8) computer software. The delay values (represented in seconds) were qualified with a corresponding intersection Level of Service (LOS). Signalized intersection calculation worksheets and a more detailed explanation of the methodology are attached in ***Appendix B***.

***Unsignalized intersections*** were analyzed under AM and PM peak hour conditions. Average vehicle delay and Levels of Service (LOS) was determined based upon the procedures found in Chapters 19 and 20 of the *2010 Highway Capacity Manual (HCM),* with the assistance of the *Synchro* (version 8) computer software. Unsignalized intersection calculation worksheets and a more detailed explanation of the methodology are attached in *Appendix B.*

***Street segment*** analysis is based upon the comparison of daily traffic volumes (ADTs) to the City of Escondido *Street Segment Average Daily Vehicle Trip Thresholds* table. This table provides segment capacities for different street classifications, based on traffic volumes and roadway characteristics. The City of Escondido *Roadway Classification, Level of Service, and ADT Table* is included as ***Table 4–3*** below.

TABLE 4–3
CITY OF ESCONDIDO
STREET SEGMENT AVERAGE DAILY VEHICLE TRIP THRESHOLDS

| Street Classification | Lanes | Cross Sections | Level of Service | | | | |
|---|---|---|---|---|---|---|---|
| | | | A | B | C | D | E |
| Prime Arterial | (8 lanes) | 116/136(NP) | 23,800 | 37,800 | 51,800 | 62,300 | 70,000 |
| Prime Arterial | (6 lanes) | 106/126 (NP) | 20,400 | 32,400 | 44,400 | 53,400 | 60,000 |
| Major Road | (6 lanes) | 90/110 (NP) | 17,000 | 27,000 | 37,000 | 44,500 | 50,000 |
| Major Road | (4 lanes) | 82/102 (NP) | 12,600 | 20,000 | 27,400 | 32,900 | 37,000 |
| Collector | (4 lanes) | 64/84 (NP) | 11,600 | 18,500 | 25,300 | 30,400 | 34,200 |
| Collector | (4 lanes) | (WP) | 6,800 | 10,800 | 14,800 | 17,800 | 20,000 |
| Local Collector | (2 lanes) | 42/66 (NP) | 5,100 | 8,100 | 11,100 | 13,400 | 15,000 |
| Local Collector | (2 lanes) | (WP) | 3,400 | 5,400 | 7,400 | 8,900 | 10,000 |

***Source:*** *Escondido Traffic Impact Analysis Guidelines, 2013.*

***General Notes:***

1. (NP) = No Parking
2. (WP) = With Parking

| LOS | V/C Ratio |
|---|---|
| A | 0.00 ≥ 0.34 |
| B | 0.35 ≥ 0.54 |
| C | 0.55 ≥ 0.74 |
| D | 0.75 ≥ 0.80 |
| E | 0.90 ≥ 1.00 |
| F | >1.00 |

The Project proposes half-width frontage improvements along Bear Valley Parkway, which will provide an additional northbound lane for approximately 2,600 feet. This length allows for transitions into and out of this lane, which effectively adds capacity to portions of two street segments under study on Bear Valley Parkway: Zlatibor Ranch Road to Encino Drive, and Encino Drive to Sunset Drive. The capacity for these roadways is 15,000 ADT (Local Collector Standard) as shown above. A full, third northbound lane could be considered to offer half again as much capacity (+7,500 ADT), however as only a portion of either segment is being improved in the northbound direction, a conservative increase in capacity of 500 ADT is applied to the Bear Valley Parkway Local Collector capacity to represent the Project improvements in the analysis. Thus, for all "With Project" calculations, the capacity used in the calculations is 15,500 ADT.

# 5.0 SIGNIFICANCE CRITERIA

The project study area includes locations that lie within the City of Escondido and to a lesser extent the County of San Diego. The City of Escondido's significance criteria is more restrictive than the County of San Diego's, in that secondary thresholds are applied to LOS D operating roadways, not LOS E/F operating roadways. Also, the City's 2.0 second delay threshold for unsignalized intersections is also more conservative than the County's use of "minimum peak hour trips". The following is a summary of the City's published significance criteria.

## 5.1 City of Escondido

Per the City of Escondido's *Traffic Impact Analysis Guidelines*, based on SANTEC/ITE's *Guidelines for Traffic Impact Studies in the San Diego Region*, the following thresholds shall be used to identify if a project is of significant traffic impact under any scenario. If now or in the future, the project's traffic impact causes the values in ***Table 5–1*** below to be exceeded in a roadway segment or an intersection that is operating at LOS D or worse, it is determined to be a significant impact and the project shall identify mitigation measures.

TABLE 5–1
CITY OF ESCONDIDO TRAFFIC IMPACT SIGNIFICANCE THRESHOLDS

| **Level of Service With Project** | **Allowable Change due to Project Impact** | | |
|---|---|---|---|
| | **Roadway Segments** | | **Intersections** |
| | **V/C** | **Speed Reduction (mph)** | **Delay (sec.)** |
| D, E, or F | **0.02** | **1** | **2** |

# 6.0 ANALYSIS OF EXISTING CONDITIONS

## 6.1 Peak Hour Intersection Levels of Service

***Table 6–1*** summarizes the existing peak hour intersection operations. As shown, all the study area intersections are calculated to currently operate at service levels of LOS D or better during both the AM and PM peak hours, with the exception of Bear Valley Parkway / Sunset Drive, which currently operates at LOS F during the AM peak hour.

TABLE 6–1
EXISTING INTERSECTION OPERATIONS

| Intersection | Control Type | Peak Hour | Existing | |
|---|---|---|---|---|
| | | | Delay[a] | LOS[b] |
| 1. Bear Valley Parkway / San Pasqual Valley Road (SR 78)[c] | Signal | AM | 38.8 | D |
| | | PM | 43.1 | D |
| 2. Bear Valley Pkwy / Zlatibor Ranch Rd (future Project Driveway) | OWSC[d] | AM | 17.7 | C |
| | | PM | 15.8 | C |
| 3. Bear Valley Parkway / Encino Drive | OWSC[d] | AM | 30.5 | D |
| | | PM | 20.4 | C |
| 4. Bear Valley Parkway / Sunset Drive | Signal | AM | 121.6 | F |
| | | PM | 41.6 | D |
| 5. Bear Valley Parkway / Las Palmas Avenue | Signal | AM | 44.5 | D |
| | | PM | 6.7 | A |

***Footnotes:***

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. Caltrans-controlled intersection location.
d. One-Way Stop Controlled intersection, Minor street left-turn delay is reported.

| SIGNALIZED | | UNSIGNALIZED | |
|---|---|---|---|
| DELAY/LOS THRESHOLDS | | DELAY/LOS THRESHOLDS | |
| Delay | LOS | Delay | LOS |
| 0.0 ≤ 10.0 | A | 0.0 ≤ 10.0 | A |
| 10.1 to 20.0 | B | 10.1 to 15.0 | B |
| 20.1 to 35.0 | C | 15.1 to 25.0 | C |
| 35.1 to 55.0 | D | 25.1 to 35.0 | D |
| 55.1 to 80.0 | E | 35.1 to 50.0 | E |
| ≥ 80.1 | F | ≥ 50.1 | F |

## 6.2 Daily Street Segment Levels of Service

***Table 6–2*** summarizes the existing segment operations along the key study area roadways. As shown, Bear Valley Parkway from Eldorado Drive to Las Palmas Avenue is calculated to currently operate at LOS F. All other roadway segments currently operate at LOS D or better.

TABLE 6–2
EXISTING STREET SEGMENT OPERATIONS

| Street Segment | Existing Classification | Capacity (LOS E) [a] | ADT [b] | LOS [c] | V/C [d] |
|---|---|---|---|---|---|
| **Bear Valley Parkway** | | | | | |
| Eldorado Drive to Zlatibor Ranch Road | 2-Lane Collector | 15,000 | 20,600 | F | 1.373 |
| Zlatibor Ranch Road to Encino Drive | 2-Lane Collector | 15,000 | 20,110 | F | 1.341 |
| Encino Drive to Sunset Drive | 2-Lane Collector | 15,000 | 21,770 | F | 1.451 |
| Sunset Drive to Las Palmas Avenue | 2-Lane Collector | 15,000 | 30,600 | F | 2.040 |
| Las Palmas Avenue to Mary Lane | 4-Lane Major | 37,000 | 27,300 | C | 0.738 |
| Mary Lane to San Pasqual Road | 4-Lane Major | 37,000 | 29,430 | D | 0.795 |
| **Encino Drive** | | | | | |
| West of Bear Valley Parkway | 2-Lane Collector | 15,000 | 1,420 | A | 0.095 |
| **Sunset Drive** | | | | | |
| West of Bear Valley Parkway | 2-Lane Collector | 15,000 | 7,450 | B | 0.497 |

***Footnotes:***

a. Capacities based on City of Escondido Roadway Classification Table.
b. Average Daily Traffic Volumes
c. Level of Service
d. Volume to Capacity

# 7.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

## 7.1 Trip Generation

The Project proposes to develop 55 single-family homes on an 40.88-acre property.

The Project traffic generation calculations were conducted using the trip generation rates published in the SANDAG's *"Not so Brief Guide of Vehicular Traffic Generation Rates for San Diego Region" (April 2002)*. Based on the type and density of homes proposed by the Project, SANDAG specifies a trip rate of 10/ unit.

***Table 7–1*** shows a summary of the Project traffic generation. As tabulated the proposed Project is calculated to generate 550 daily trips with 44 trips (13 inbound/31 outbound) in AM peak hour and 55 trips (39 inbound/16 outbound) during PM peak hour.

TABLE 7–1
PROJECT TRIP GENERATION

| Land Use | Size | Daily Trip Ends (ADTs) | | AM Peak Hour | | | | PM Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Rate [a] | Volume | % of ADT | In:Out Split | Volume In | Volume Out | % of ADT | In:Out Split | Volume In | Volume Out |
| Residential – Single Family Detached | 55 DU | 10/DU | 550 | 8% | 30:70 | 13 | 31 | 10% | 70:30 | 39 | 16 |

***Footnotes:***

a. Rate is based on SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002.

Air Quality (AQ) and Greenhouse Gas (GHG) analyses were completed on the trip generation of 550 ADT described above. These studies evaluated the Project's land use, trip generation and location in the City/County, and utilized an average trip length of 20 miles and an average running speed of 45 MPH based on these variables.

## 7.2 Trip Distribution/Assignment

A Select Zone Assignment (SZA) was conducted to determine the area's regional distribution. LLG utilized the SANDAG traffic model, including the subarea model for the City of Escondido including the land uses associated with General Plan Update. This is the City's preferred model as it includes the most up-to-date buildout land uses. The Project traffic was distributed and assigned to the local street system based on the SZA results, which is affected by the Project's proximity to Interstate 15 and State Route 78, and the location of area schools, and office/commercial/retail development, particularly in downtown Escondido.

While the model was used to determine gross regional distribution, LLG applied engineering judgment based on existing traffic flows, intersection controls and roadway characteristics to inform the local distribution among the nearby intersections. In some instances, reciprocal movements (e.g. a northbound to westbound left-turn and its reciprocal eastbound to southbound right-turn) occur at two different intersections based on what type of control (signal or stop sign) the intersections provide.

***Figure 7–1*** shows the Project trip distribution percentages. ***Figure 7–2*** shows the AM/PM peak hour Project traffic volumes. ***Figure 7–3*** shows Existing + Project traffic volumes.

As seen in *Figure 7–1*, 2% of inbound and outbound Project traffic is expected to use Eldorado Drive. To be conservative in the intersection analysis, this traffic was assigned to use the Bear Valley Parkway / San Pasqual Valley Road (SR 78) intersection. This is reflected in the volumes shown in *Figure 7–2* and *Figure 7–3*.

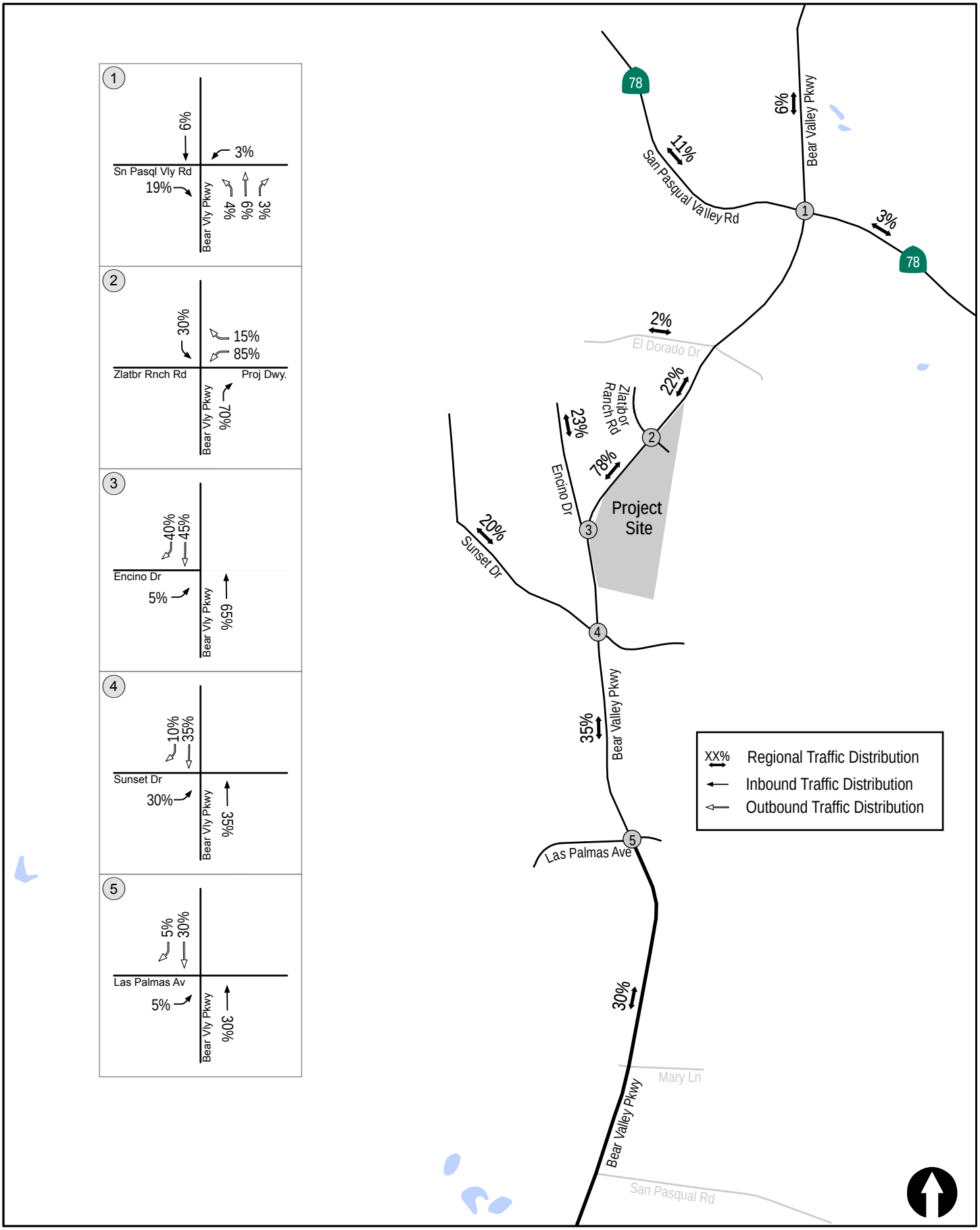


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**Figure 7-1**

# Project Traffic Distribution

661 BEAR VALLEY

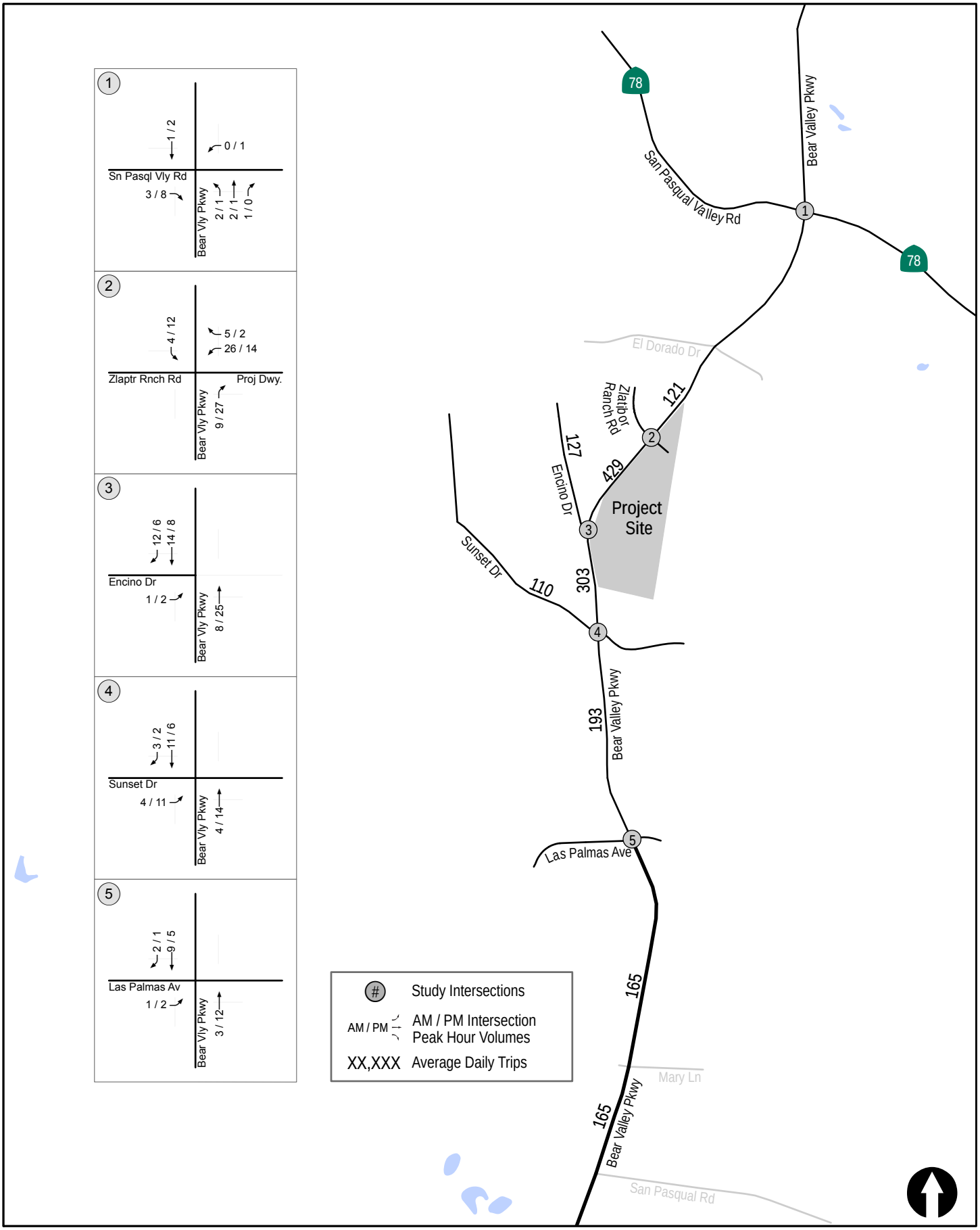


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**Figure 7-2**

# Project Traffic Volumes

661 Bear Valley

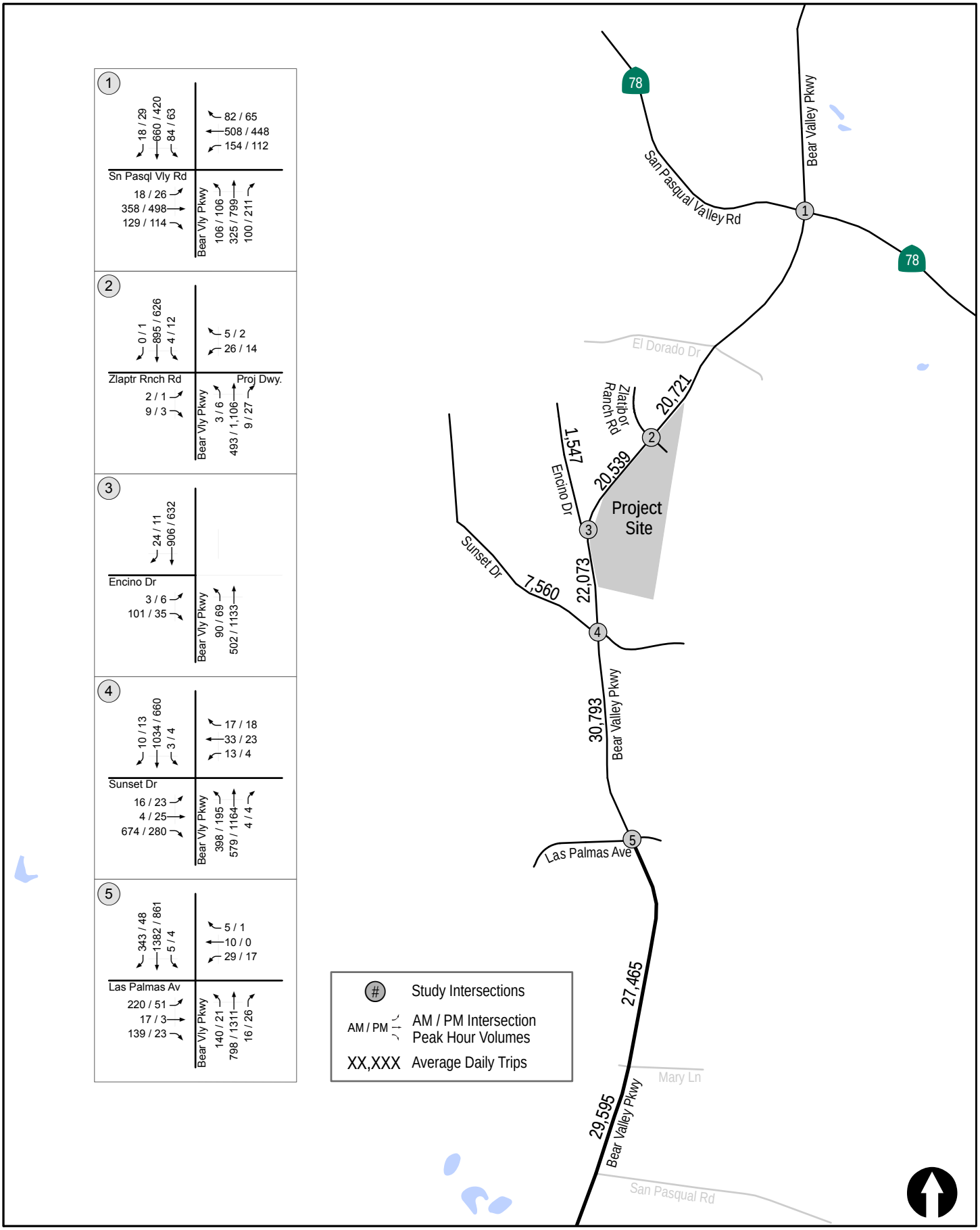


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**Figure 7-3**

# Existing + Project Traffic Volumes

661 BEAR VALLEY

# 8.0 CUMULATIVE GROWTH TRAFFIC VOLUMES

Cumulative projects are other projects in the study area that will add traffic to the local circulation system in the near future. LLG coordinated directly with City of Escondido and County of San Diego staff to determine and obtain cumulative projects' traffic volume information to be included for analysis. Based on coordination with the City, LLG interpolated growth between Year 2035 and existing Year 2014 traffic counts. Typical annual growth ranged between 2-5% at study area intersections and segments. Location-specific growth factors were applied to each study area location for a period of five (5) years to arrive at near-term baseline conditions which are analyzed in this report as "+ Cumulative Growth" scenarios.

***Figure 8–1*** shows the total cumulative growth traffic volumes. ***Figure 8–2*** shows the existing + cumulative growth traffic volumes. ***Figure 8–3*** shows the existing + project + cumulative growth traffic volumes.

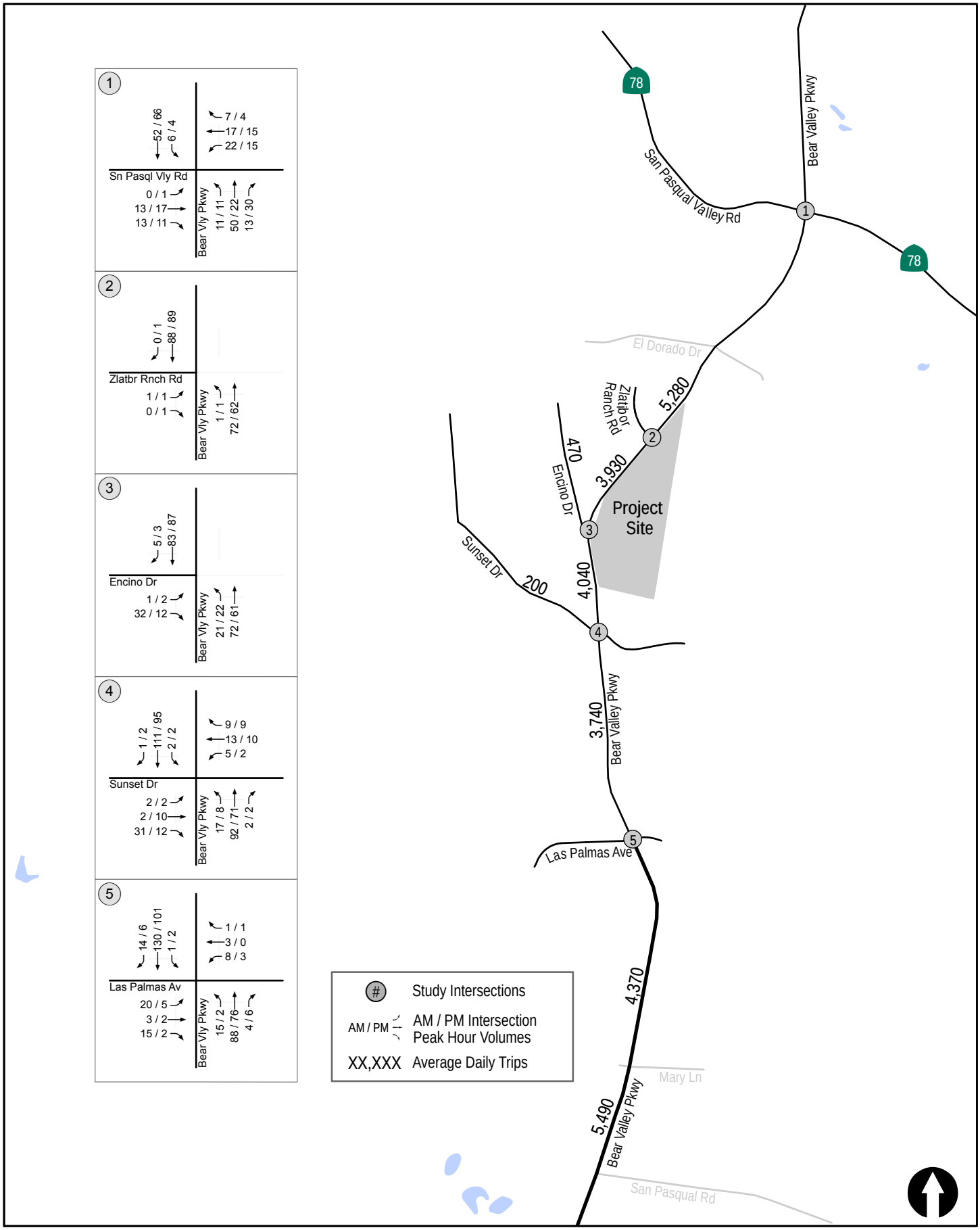


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**Figure 8-1**

# Cumulative Growth Traffic Volumes

661 BEAR VALLEY

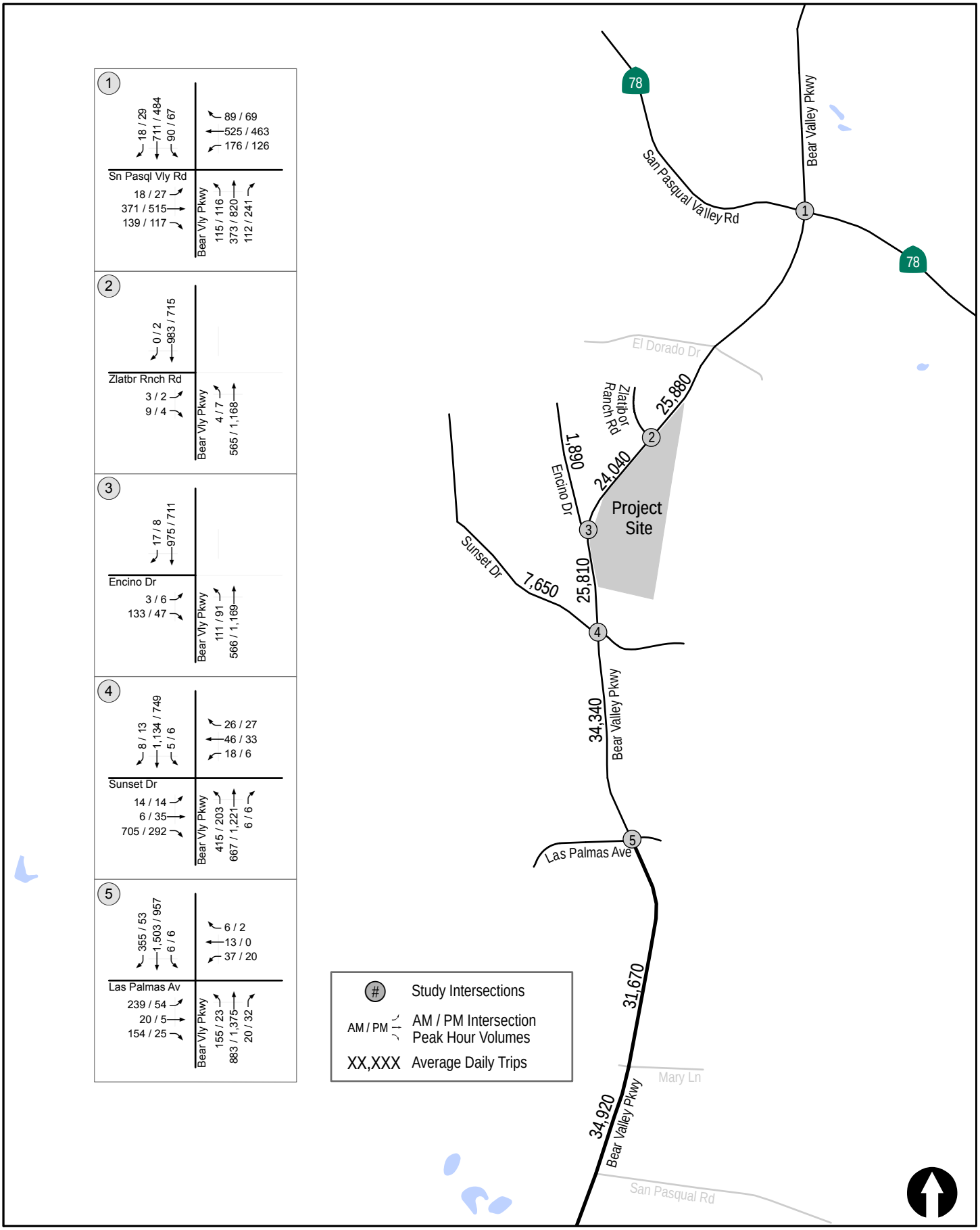


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**Figure 8-2**

# Existing + Cumulative Growth Traffic Volumes

661 BEAR VALLEY

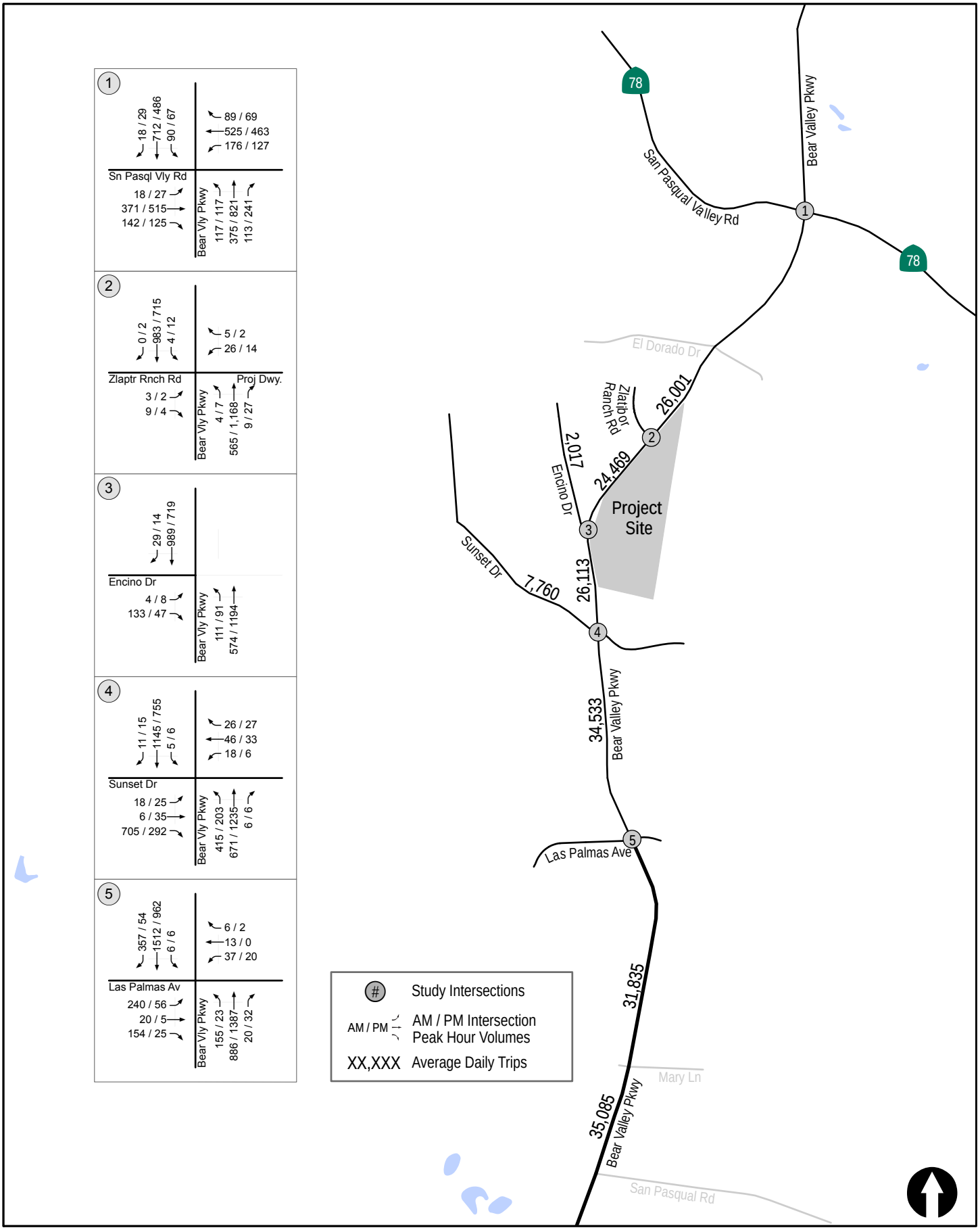


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**Figure 8-3**

# Existing + Project + Cumulative Growth Traffic Volumes

661 BEAR VALLEY

# 9.0 ANALYSIS OF NEAR-TERM SCENARIOS

The following is a summary of the operational analyses for the various street-system components for the near-term traffic scenarios.

## 9.1 Existing + Project

### 9.1.1 *Intersection Analysis*

***Table 9–1*** summarizes the peak hour intersection operations with the addition of Project traffic. *Table 9–1* shows that no study area intersections are calculated to degrade in LOS due to Project development. The Project plans to signalize the Bear Valley Parkway/ Zlatibor Ranch Road intersection, where the main Project access point is to be located. Thus, LOS improves at this location under this scenario.

The allowable increase in delay at the LOS D or worse operating intersections is 2.0 seconds. As shown in *Table 9–1*, the Project-attributable increase is less than this amount.

### 9.1.2 *Segment Operations*

***Table 9–2*** summarizes the roadway segment operations with the addition of Project traffic. As seen in *Table 9–2*, with the addition of Project traffic, six (6) study area segments on Bear Valley Parkway are calculated to operate at LOS D or worse. However, based on the established significance criteria, no significant segment impacts are calculated at these locations. It should be noted that the two Bear Valley Parkway segments adjacent to the property are analyzed with a modest increase in capacity of 500 ADT to reflect the additional northbound lane that will be constructed as a Project feature. As such, a resulting negative V/C increase is calculated and no impacts occur despite poor LOS operations.

The Project contribution to the remaining four (4) segments calculated at LOS D or worse is less than the maximum allowable 0.02 increase in V/C ratio and therefore no significant impacts are calculated at these locations.

## 9.2 Existing + Cumulative Growth

### 9.2.1 *Intersection Analysis*

*Table 9–1* summarizes the peak hour intersection operations with the addition of cumulative growth traffic. *Table 9–1* shows that all study area intersections are calculated to operate at LOS D or worse, except for the Bear Valley Parkway/ Zlatibor Ranch Road intersection, which continues to operate at LOS C.

### 9.2.2 *Segment Operations*

*Table 9–2* summarizes the roadway segment operations with the addition of cumulative growth traffic. As seen in *Table 9–2*, four Bear Valley Parkway segments (from Eldorado Drive to Las Palmas Avenue) are calculated to continue to operate at LOS F. Additionally, Bear Valley Parkway from Las Palmas Avenue to San Pasqual Road is calculated to operate at LOS D/E. Two segments are calculated to operate at LOS A or B.

## 9.3 Existing + Project + Cumulative Growth

### 9.3.1 *Intersection Analysis*

*Table 9–1* summarizes the peak hour intersection operations for Existing + Cumulative Growth + Project conditions. *Table 9–1* shows that all but one of the study area intersections are calculated to operate at LOS D or worse. Based on the 2.0 second allowable increase in delay, significant impacts are calculated for the following:

- **Bear Valley Parkway/ Encino Drive – LOS F/E in the AM/PM peak hour**

### 9.3.2 *Segment Operations*

*Table 9–2* summarizes the roadway segment operations for the Existing + Cumulative Growth + Project conditions. As seen in *Table 9–2*, with the addition of Project and cumulative growth traffic, six (6) study area segments are calculated to continue to operate at LOS D or worse as compared to Existing + Cumulative Project traffic. Based on the established significance criteria, no significant impacts are calculated at any locations. Again, a modest increase in capacity is assumed for the two Bear Valley Parkway segments that will be improved with a partial northbound lane as part of the Project development. This increase results in a negative increase in V/C.

The Project contribution to the remaining four (4) segments calculated at LOS D or worse is less than the allowable 0.02 increase in V/C ratio and therefore no significant impacts are calculated at these locations.

## TABLE 9–1
## NEAR-TERM INTERSECTION OPERATIONS

| Intersection | Control Type | Peak Hour | Existing | | Existing + Project | | | Existing + Cumulative Growth | | Existing + Cumulative Growth + Project | | | Significant Impact? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Delay[a] | LOS[b] | Delay | LOS | Δ[c] | Delay | LOS | Delay | LOS | Δ | |
| 1. Bear Valley Parkway/ San Pasqual Valley Road (SR 78)[c] | Signal | AM | 38.8 | D | 38.8 | D | 0.0 | 42.3 | D | 42.3 | D | 0.0 | No |
| | | PM | 43.1 | D | 43.1 | D | 0.0 | 65.0 | E | 65.0 | E | 0.0 | No |
| 2. Bear Valley Pkwy/ Zlatibor Ranch Rd (Project Driveway)[d] | OWSC[e] | AM | 17.7 | C | 6.5 | A | (11.2) | 19.7 | C | 9.7 | A | (10.0) | No |
| | | PM | 15.8 | C | 18.1 | B | 2.3 | 18.2 | C | 27.6 | C | 9.4 | No |
| 3. Bear Valley Parkway/ Encino Drive | OWSC[e] | AM | 30.5 | D | 32.0 | D | 1.5 | 57.2 | F | **61.1** | **F** | **3.9** | **Yes** |
| | | PM | 20.4 | C | 24.4 | C | 4.0 | 28.7 | D | **35.4** | **E** | **6.7** | **Yes** |
| 4. Bear Valley Parkway/ Sunset Drive | Signal | AM | 121.6 | F | 121.7 | F | 0.1 | 135.1 | F | 135.8 | F | 0.7 | No |
| | | PM | 41.6 | D | 42.0 | D | 0.4 | 61.4 | E | 62.4 | E | 1.0 | No |
| 5. Bear Valley Parkway/ Las Palmas Avenue | Signal | AM | 44.5 | D | 45.5 | D | 1.0 | 61.2 | E | 62.4 | E | 1.2 | No |
| | | PM | 6.7 | A | 6.8 | A | 0.1 | 8.9 | A | 9.1 | A | 0.2 | No |

***Footnotes:***
1. Average delay expressed in seconds per vehicle.
2. Level of Service.
3. Δ denotes an increase in delay due to project.
4. Intersection is signalized with construction of Project driveway in "with Project" scenarios.
5. OWSC – One-Way Stop Controlled intersection. Minor street left turn delay is reported.

| SIGNALIZED | | UNSIGNALIZED | |
|---|---|---|---|
| DELAY/LOS THRESHOLDS | | DELAY/LOS THRESHOLDS | |
| Delay | LOS | Delay | LOS |
| 0.0 ≤ 10.0 | A | 0.0 ≤ 10.0 | A |
| 10.1 to 20.0 | B | 10.1 to 15.0 | B |
| 20.1 to 35.0 | C | 15.1 to 25.0 | C |
| 35.1 to 55.0 | D | 25.1 to 35.0 | D |
| 55.1 to 80.0 | E | 35.1 to 50.0 | E |
| ≥ 80.1 | F | ≥ 50.1 | F |

TABLE 9–2
NEAR-TERM STREET SEGMENT OPERATIONS

| Street Segment | Capacity (LOS E) [a] | Existing | | | Existing + Project | | | | Existing + Cumulative Projects | | | Existing + Cumulative Projects + Project | | | | Sig Impact ? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ADT[b] | LOS[c] | V/C[d] | ADT | LOS | V/C | Δ[e] | ADT | LOS | V/C | ADT | LOS | V/C | Δ[e] | |
| **Bear Valley Parkway** | | | | | | | | | | | | | | | | |
| Eldorado Dr to Zlatibor Ranch Rd | 15,000 | 20,600 | F | 1.373 | 20,721 | F | 1.381 | 0.008 | 25,880 | F | 1.725 | 26,001 | F | 1.733 | 0.008 | No |
| Zlatibor Ranch Rd to Encino Dr | 15,000/ 15.500 | 20,110 | F | 1.341 | 20,539 | F | 1.325 | (0.016) | 24,040 | F | 1.603 | 24,469 | F | 1.579 | (0.024) | No |
| Encino Dr to Sunset Dr | 15,000/ 15.500 | 21,770 | F | 1.451 | 22,073 | F | 1.424 | (0.027) | 25,810 | F | 1.721 | 26,113 | F | 1.685 | (0.036) | No |
| Sunset Drive to Las Palmas Ave | 15,000 | 30,600 | F | 2.040 | 30,793 | F | 2.053 | 0.013 | 34,340 | F | 2.289 | 34,533 | F | 2.302 | 0.013 | No |
| Las Palmas Ave to Mary Lane | 37,000 | 27,300 | C | 0.738 | 27,465 | D | 0.742 | 0.004 | 31,670 | D | 0.856 | 31,835 | D | 0.860 | 0.004 | No |
| Mary Lane to San Pasqual Road | 37,000 | 29,430 | D | 0.795 | 29,595 | D | 0.800 | 0.004 | 34,920 | E | 0.944 | 35,085 | E | 0.948 | 0.004 | No |
| **Encino Drive** | | | | | | | | | | | | | | | | |
| West of Bear Valley Parkway | 15,000 | 1,420 | A | 0.095 | 1,547 | A | 0.103 | 0.008 | 1,890 | A | 0.126 | 2,017 | A | 0.134 | 0.008 | No |
| **Sunset Drive** | | | | | | | | | | | | | | | | |
| West of Bear Valley Parkway | 15,000 | 7,450 | B | 0.497 | 7,560 | B | 0.504 | 0.007 | 7,650 | B | 0.510 | 7,760 | B | 0.517 | 0.007 | No |

***Footnotes:***

a. Capacities based on the *City of Escondido Roadway Classification* (See *Table 4–3*). For "without Project" evaluation, the existing Local Collector capacity of 15,000 ADT is used. For "with Project" evaluation, an increased capacity of 15,500 is used to reflect the additional northbound lane that will be provided along the Project frontage as part of the Project development. (X.XXX) = negative changes in V/C accordingly.

b. Average Daily Traffic

c. Level of Service

d. Volume to Capacity ratio

e. Δ denotes a Project-induced increase in the Volume to Capacity (V/C) ratio.

f. Δ denotes a project-induced increase in the volume to capacity ratio.

# 10.0 ANALYSIS OF BUILDOUT SCENARIO

## 10.1 Buildout

Buildout traffic volumes were obtained from the SANDAG Series 12 traffic model (Year 2035) based on consultation with City Staff.

***Figure 10–1*** shows the Year 2035 Buildout traffic volumes. ***Figure 10–2*** shows Year 2035 Buildout + Project traffic volumes.

***Table 10–1*** summarizes the roadway segment operations for Year 2035. As seen in *Table 10–1*, all Bear Valley Parkway segments within the study area are calculated to operate at LOS D or better with the exception of Bear Valley Parkway (Mary Lane to San Pasqual Road), which operates at LOS E. The Encino Drive and Sunset Drive segments are calculated to operate at LOS B or better.

## 10.2 Buildout + Project

***Table 10–1*** summarizes the roadway segment operations for Buildout with the addition of Project traffic. As seen in *Table 10–1* the LOS remains unchanged with the addition of Project traffic. The Project-attributable increases in V/C to the one LOS E-operating segment does not exceed the allowable 0.02.

TABLE 10–1
LONG-TERM STREET SEGMENT OPERATIONS

| Street Segment | Adopted Circulation Element Capacity (LOS E) [a] | Buildout | | | Buildout With Project | | | Δ[e] | Sig? [f] |
|---|---|---|---|---|---|---|---|---|---|
| | | ADT[b] | LOS [c] | V/C [d] | ADT | LOS | V/C | | |
| **Bear Valley Parkway** | | | | | | | | | |
| Eldorado Drive to Zlatibor Ranch Road | 37,000 | 23,400 | C | 0.632 | 23,521 | C | 0.636 | 0.004 | No |
| Zlatibor Ranch Road to Encino Drive | 37,000 | 23,400 | C | 0.632 | 23,829 | C | 0.644 | 0.012 | No |
| Encino Drive to Sunset Drive | 37,000 | 24,400 | C | 0.659 | 24,703 | C | 0.668 | 0.009 | No |
| Sunset Drive to Las Palmas Avenue | 50,000 | 39,600 | D | 0.792 | 39,793 | D | 0.796 | 0.004 | No |
| Las Palmas Avenue to Mary Lane | 50,000 | 39,900 | D | 0.798 | 40,065 | D | 0.801 | 0.003 | No |
| Mary Lane to San Pasqual Road | 50,000 | 42,800 | E | 0.856 | 42,965 | E | 0.859 | 0.003 | No |
| **Encino Drive** | | | | | | | | | |
| Amparo Drive to Bear Valley Parkway | 15,000 | 2,200 | A | 0.147 | 2,327 | A | 0.155 | 0.008 | No |
| **Sunset Drive** | | | | | | | | | |
| Reill View Drive to Bear Valley Parkway | 15,000 | 6,000 | B | 0.400 | 6,110 | B | 0.407 | 0.007 | No |

***Footnotes:***

a. Capacity based on City of Escondido's roadway classification Table.
b. Average Daily Traffic.
c. Level of Service.
d. Volume to Capacity.
e. Δ denotes a Project-induced increase in the Volume to Capacity (V/C) ratio.
f. Sig = significant Project impact based on Significance Criteria.

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**Figure 10-1**

## Year 2035 Traffic Volumes

661 BEAR VALLEY

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Date: 12/21/16

**Figure 10-2**

## Year 2035 + Project Traffic Volumes

661 BEAR VALLEY

# 11.0 PROJECT ACCESS

Access to the proposed project is via two driveway along Bear Valley Parkway. Primary access is proposed via a signalized full access driveway aligned opposite of Zlatibor Ranch Road, on the northern portion of the site. Secondary, emergency-only access is proposed via an unsignalized driveway located on the central/southern portion of the site. 100% of project traffic was distributed through the main signalized driveway.

The main project driveway was assumed to have two outbound lanes (a shared through/left and a right turn lane). A dedicated single northbound right-turn lane and southbound left-turn lane were also assumed.

***Table 11–1*** restates the driveway operations as proposed.

TABLE 11–1
PROJECT DRIVEWAY OPERATIONS

| Intersection | Control Type | Peak Hour | Existing + Project | | Existing + Cumulative Projects + Project | | Significant Impact? |
|---|---|---|---|---|---|---|---|
| | | | Delay[a] | LOS[b] | Delay | LOS | |
| Bear Valley Parkway/ Main Project Driveway | Signal[c] | AM | 6.5 | A | 9.7 | A | No |
| | | PM | 18.1 | B | 27.6 | C | No |

***Footnotes:***
a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. The traffic signal is assumed as a proposed feature, not a mitigation measure.

SIGNALIZED

DELAY/LOS THRESHOLDS

| Delay | LOS |
|---|---|
| 0.0 ≤ 10.0 | A |
| 10.1 to 20.0 | B |
| 20.1 to 35.0 | C |
| 35.1 to 55.0 | D |
| 55.1 to 80.0 | E |
| ≥ 80.1 | F |

# 12.0 SIGNIFICANCE OF IMPACTS AND MITIGATION MEASURES

Per the City of Escondido significance thresholds and the analysis methodologies presented in this report, Project-related and cumulative traffic are calculated to cause significant impacts within the study area. The following section lists the significant impacts and provides recommendations for mitigation measures to address operating deficiencies.

## 12.1 Significant Impacts Prior to Mitigation

### 12.1.1 *Intersections*

- Intersection #3: Bear Valley Parkway and Encino Drive
  *(Cumulative only)*

## 12.2 Mitigation Measures

### 12.2.1 *Intersections*

**Intersection #3: Bear Valley Parkway and Encino Drive** – The cumulative impact at this location will be mitigated by a fair-share contribution to realignment and signalization of the unsignalized intersection. It is proposed that the intersection be realigned such that the Encino Drive leg is simplified to include one approach lane and one departure lane. Currently, there are two departure lanes on Encino Drive from Bear Valley Parkway; one serving left-turns from the northbound direction, and one serving right-turns from the southbound direction. Also, the median separating the approach and departure lanes is proposed to be reduced as Encino Drive is "squared up" (to a 90-degree angle) with Bear Valley Parkway. These proposed improvements are consistent with the designs shown in the Specific Alignment Plan.

***Table 12–1*** shows that the development of this mitigation measure would result in LOS C or better peak hour operations.

***Figure 12–1*** shows a summary of the facilities to which fair-share contributions are proposed. Fair-share contributions to additional locations other than intersection #3 described above included on this figure, and described in the following section. ***Appendix C*** contains the post-mitigation intersection analysis worksheets.

TABLE 12–1
POST-MITIGATION INTERSECTION OPERATIONS

| Intersection | Control Type *(Mitigation)* | Peak Hour | Existing | | Existing + Cumulative Projects + Project *(with Mitigation)* | |
|---|---|---|---|---|---|---|
| | | | **Delay**[a] | **LOS**[b] | **Delay** | **LOS** |
| 2. Bear Valley Parkway / Encino Drive | OWSC[c] *(Signal)* | AM | 30.5 | D | 30.7 | C |
| | | PM | 20.4 | C | 8.2 | A |

***Footnotes:***

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. One-Way Stop Controlled intersection, Minor street left-turn delay is reported.

| SIGNALIZED | | UNSIGNALIZED | |
|---|---|---|---|
| DELAY/LOS THRESHOLDS | | DELAY/LOS THRESHOLDS | |
| Delay | LOS | Delay | LOS |
| 0.0 ≤ 10.0 | A | 0.0 ≤ 10.0 | A |
| 10.1 to 20.0 | B | 10.1 to 15.0 | B |
| 20.1 to 35.0 | C | 15.1 to 25.0 | C |
| 35.1 to 55.0 | D | 25.1 to 35.0 | D |
| 55.1 to 80.0 | E | 35.1 to 50.0 | E |
| ≥ 80.1 | F | ≥ 50.1 | F |

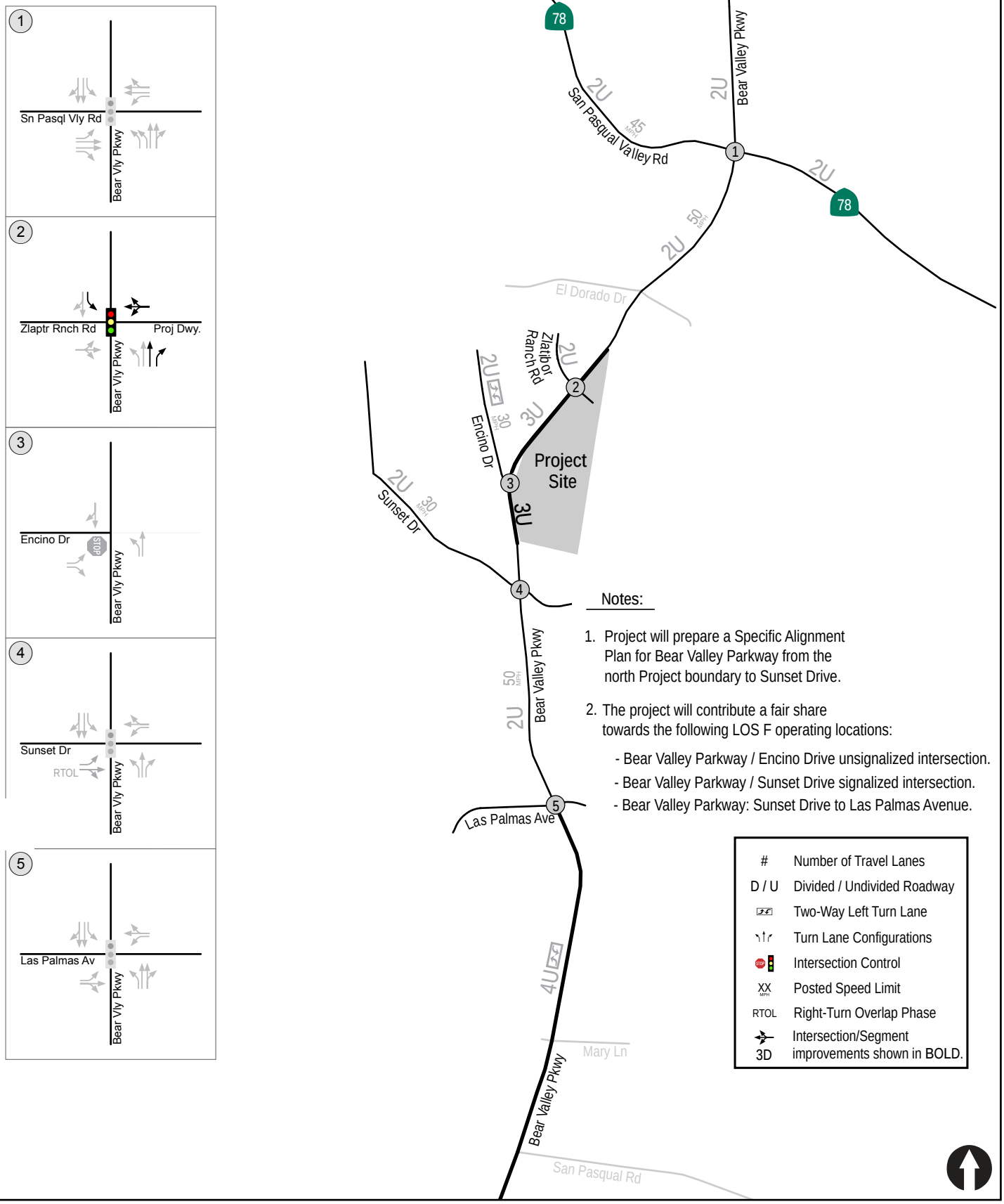


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**Figure 12-1**

# Project Contributions Diagram

661 BEAR VALLEY

## 13.0 PROJECT FAIR SHARE CONTRIBUTIONS

The analysis in *Section 9.3* shows that based on the City's published criteria, the Project contribution to the near-term circulation system exceeds the allowable thresholds of significance with the addition of cumulative traffic volumes at the following location:

- *Intersections:*
  - Bear Valley Parkway/Encino Drive (LOS F/E, AM/PM peak hours, respectively)

As discussed earlier, this a cumulative impact that requires a fair share contribution as mitigation.

***Table 13–1*** shows the fair share summary for this impact's mitigation. The mitigation fair share contribution is calculated to be $4,000.

TABLE 13–1
FAIR SHARE SUMMARY
SIGNIFICANT AND CUMULATIVE LOS E/F LOCATIONS

| Location | Condition | Fair Share Percentage [a] | Improvement Cost [b] | Fair Share Amount [c] |
|---|---|---|---|---|
| Bear Valley Parkway/ Encino Drive (Unsignalized Intersection) | Near-Term | 2.0% | $200,000 | $4,000 |
| ***Subtotal – Significant and Cumulative LOS F Locations:*** | | | | ***$4,000*** |

***General Notes:***
1. This location exceeds the City's published thresholds with the addition of cumulative traffic volumes. This is a significant and cumulative impact requiring a fair share contribution as mitigation.
2. See *Tables 9–1, 9–2 and 10–1* for summary of LOS calculations.

***Footnotes:***
a. Fair Share Percentage is based on Total Project Peak Hour Volumes (PHVs) ÷ Total Existing + Cumulative + Project PHVs.
b. Improvement Cost is provided by City of Escondido.
c. Fair Share Amount is the Fair Share Percentage × Improvement Cost.

Additionally, there are the LOS F-operating intersections and street segments along the Bear Valley Parkway corridor to which the Project adds trips, but *does not exceed the published thresholds*:

- *Intersections:*
  - Bear Valley Parkway/Sunset Drive (LOS F)

- *Segments:*
  - Bear Valley Parkway: Eldorado Drive to Zlatibor Ranch Road (LOS F)
  - Bear Valley Parkway: Zlatibor Ranch Road to Encino Drive (LOS F)
  - Bear Valley Parkway: Encino Drive to Sunset Drive (LOS F)
  - Bear Valley Parkway: Sunset Drive to Las Palmas Avenue (LOS F)

Again, the Project contribution does not exceed the City's allowable thresholds, so no direct or cumulative significant impacts are concluded at these locations. However, the *City of Escondido Traffic Impact Study Guideline (2014)* states that projects adding traffic to LOS F-operating locations should contribute towards improvements, regardless of the formal findings of significance. The Project is providing frontage improvements (second NB lane and signal at Zlatibor Ranch Road) that will positively affect operations on the first three segments listed above; thus no additional fair share contribution is required to comply with the guideline for these three locations. This leaves the following two LOS F (but not significantly impacted) locations to require a fair share contribution:

- Intersections:
  - Bear Valley Parkway/Sunset Drive (LOS F)
- Segments:
  - Bear Valley Parkway: Sunset Drive to Las Palmas Avenue (LOS F)

***Table 13–2*** shows a summary of the fair share calculations for these locations. *Figure 12–1* also shows the geographic locations of each.

TABLE 13–2
FAIR SHARE SUMMARY
NON-SIGNIFICANT LOS F LOCATIONS

| Location | Condition | Fair Share Percentage | Improvement Cost [c] | Fair Share Amount [d] |
|---|---|---|---|---|
| Bear Valley Parkway: Sunset Drive to Las Palmas Avenue (Street Segment) | Near-Term | 0.5% [a] | $5,000,000 | $25,000 |
| Bear Valley Parkway/ Sunset Drive (Signalized Intersection) | Near-Term | 0.5% [b] | $200,000 | $1,000 |
| ***Subtotal – Non-Significant LOS F Locations:*** | | | | ***$26,000*** |

***General Notes:***
1. While not significantly impacted, these locations should be improved per the City's *Traffic Impact Study Guideline (2014)*.
2. See *Tables 9–1, 9–2 and 10–1* for summary of LOS calculations.

***Footnotes:***
a. Fair Share Percentage is based on Project ADTs ÷ Existing + Cumulative + Project ADTs.
b. Fair Share Percentage is based on Total Project PHVs ÷ Total Existing + Cumulative + Project PHVs.
c. Improvement Cost is provided by City of Escondido.
d. Fair Share Amount is the Fair Share Percentage × Improvement Cost.

To address this provision in the *Traffic Impact Study Guideline*, the Project will contribute a fair share sum of $26,000 towards Bear Valley Parkway corridor improvements.

***In total, the Project will contribute $30,000 of fair share monies to: a) mitigate cumulative impacts, and b) comply with the City's published traffic impact guideline recommendations.***

***End of Report***

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TECHNICAL APPENDICES

# 661 BEAR VALLEY

Escondido, California
January 18, 2017

LLG Ref. 3-13-2299

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# APPENDIX A

## INTERSECTION AND SEGMENT COUNT SHEETS

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# Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136

***Location:*** SR 78 @ Bear Valley Parkway

***Date of Count:*** *Wednesday, February 26, 2014*

***Analysts:*** *LV/CD*

***Weather:*** *Sunny*

***AVC Proj No:*** *14-0168*

# Vehicular Count

**Accurate Video Counts Inc**
**info@accuratevideocounts.com**
**(619) 987-5136**

***Location:*** SR 78 @ Bear Valley Parkway

| AM Period (7:00 AM - 9:00 AM) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | |
| | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | TOTAL |
| 7:00 AM | 3 | 186 | 31 | 16 | 102 | 36 | 25 | 72 | 15 | 19 | 78 | 1 | 584 |
| 7:15 AM | 5 | 141 | 28 | 16 | 124 | 28 | 25 | 67 | 20 | 22 | 77 | 1 | 554 |
| 7:30 AM | 8 | 171 | 15 | 30 | 141 | 47 | 29 | 76 | 20 | 45 | 84 | 5 | 671 |
| 7:45 AM | 4 | 187 | 29 | 18 | 118 | 45 | 29 | 78 | 26 | 28 | 85 | 4 | 651 |
| 8:00 AM | 2 | 143 | 18 | 21 | 132 | 35 | 18 | 79 | 27 | 16 | 96 | 6 | 593 |
| 8:15 AM | 4 | 158 | 22 | 13 | 117 | 27 | 23 | 90 | 31 | 37 | 93 | 3 | 618 |
| 8:30 AM | 10 | 109 | 10 | 17 | 161 | 31 | 8 | 67 | 18 | 26 | 86 | 3 | 546 |
| 8:45 AM | 3 | 135 | 5 | 9 | 111 | 27 | 13 | 62 | 15 | 25 | 85 | 3 | 493 |
| Total | 39 | 1,230 | 158 | 140 | 1,006 | 276 | 170 | 591 | 172 | 218 | 684 | 26 | 4,710 |

AM Intersection Peak Hour : **7:30 AM - 8:30 AM** Intersection PHF : **0.94**

| | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | |
| Volume | 18 | 659 | 84 | 82 | 508 | 154 | 99 | 323 | 104 | 126 | 358 | 18 | 2,533 |
| PHF | 0.56 | 0.88 | 0.72 | 0.68 | 0.90 | 0.82 | 0.85 | 0.90 | 0.84 | 0.70 | 0.93 | 0.75 | 0.94 |
| Movement PHF | | 0.86 | | | 0.85 | | | 0.91 | | | 0.94 | | 0.94 |

| PM Period (4:00 PM - 6:00 PM) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | |
| | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | TOTAL |
| 4:00 PM | 11 | 114 | 15 | 21 | 107 | 27 | 36 | 178 | 40 | 26 | 127 | 5 | 707 |
| 4:15 PM | 7 | 116 | 20 | 15 | 117 | 13 | 39 | 177 | 29 | 21 | 114 | 7 | 675 |
| 4:30 PM | 6 | 129 | 22 | 11 | 102 | 23 | 33 | 151 | 34 | 17 | 127 | 6 | 661 |
| 4:45 PM | 5 | 128 | 16 | 8 | 105 | 34 | 47 | 192 | 39 | 27 | 114 | 5 | 720 |
| 5:00 PM | 4 | 84 | 17 | 19 | 113 | 19 | 44 | 170 | 29 | 37 | 133 | 8 | 677 |
| 5:15 PM | 10 | 105 | 19 | 24 | 117 | 25 | 72 | 226 | 13 | 18 | 130 | 8 | 767 |
| 5:30 PM | 10 | 101 | 11 | 14 | 113 | 33 | 48 | 210 | 24 | 24 | 121 | 5 | 714 |
| 5:45 PM | 8 | 121 | 15 | 13 | 77 | 25 | 55 | 229 | 29 | 23 | 116 | 5 | 716 |
| Total | 61 | 898 | 135 | 125 | 851 | 199 | 374 | 1,533 | 237 | 193 | 982 | 49 | 5,637 |

PM Intersection Peak Hour : **4:45 PM - 5:45 PM** Intersection PHF : **0.94**

| | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | |
| Volume | 29 | 418 | 63 | 65 | 448 | 111 | 211 | 798 | 105 | 106 | 498 | 26 | 2878 |
| PHF | 0.73 | 0.816 | 0.829 | 0.677 | 0.957 | 0.816 | 0.733 | 0.883 | 0.673 | 0.716 | 0.936 | 0.813 | 0.94 |
| Movement PHF | | 0.86 | | | 0.94 | | | 0.90 | | | 0.88 | | 0.94 |

# Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136

***Location:*** Encino Drive @ Bear Valley Parkway

***Date of Count:*** *Wednesday, February 26, 2014*

***Analysts:*** *LV/CD*

***Weather:*** *Sunny*

***AVC Proj No:*** *14-0168*

# Vehicular Count

**Accurate Video Counts Inc**
**info@accuratevideocounts.com**
**(619) 987-5136**

***Location:*** Encino Drive @ Bear Valley Parkway

| AM Period (7:00 AM - 9:00 AM) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | |
| | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | TOTAL |
| 7:00 AM | 2 | 233 | 0 | 0 | 0 | 0 | 0 | 105 | 11 | 30 | 0 | 1 | 382 |
| 7:15 AM | 4 | 214 | 0 | 0 | 0 | 0 | 0 | 113 | 12 | 27 | 0 | 0 | 370 |
| 7:30 AM | 1 | 250 | 0 | 0 | 0 | 0 | 0 | 123 | 23 | 20 | 0 | 1 | 418 |
| 7:45 AM | 3 | 199 | 0 | 0 | 0 | 0 | 0 | 131 | 19 | 41 | 0 | 0 | 393 |
| 8:00 AM | 8 | 228 | 0 | 0 | 0 | 0 | 0 | 103 | 24 | 28 | 0 | 1 | 392 |
| 8:15 AM | 0 | 215 | 0 | 0 | 0 | 0 | 0 | 137 | 24 | 12 | 0 | 0 | 388 |
| 8:30 AM | 1 | 187 | 0 | 0 | 0 | 0 | 0 | 89 | 7 | 8 | 0 | 0 | 292 |
| 8:45 AM | 7 | 170 | 0 | 0 | 0 | 0 | 0 | 88 | 5 | 7 | 0 | 1 | 278 |
| Total | 26 | 1,696 | 0 | 0 | 0 | 0 | 0 | 889 | 125 | 173 | 0 | 4 | 2,913 |

AM Intersection Peak Hour : **7:30 AM - 8:30 AM** Intersection PHF : **0.95**

| | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | |
| Volume | 12 | 892 | 0 | 0 | 0 | 0 | 0 | 494 | 90 | 101 | 0 | 2 | 1,591 |
| PHF | 0.38 | 0.89 | ##### | ##### | ##### | ##### | ##### | 0.90 | 0.94 | 0.62 | ##### | 0.50 | 0.95 |
| Movement PHF | | 0.90 | | | #DIV/0! | | | 0.91 | | | 0.63 | | 0.95 |

| PM Period (4:00 PM - 6:00 PM) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | |
| | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | TOTAL |
| 4:00 PM | 1 | 166 | 0 | 0 | 0 | 0 | 0 | 261 | 10 | 14 | 0 | 0 | 452 |
| 4:15 PM | 0 | 144 | 0 | 0 | 0 | 0 | 0 | 231 | 12 | 9 | 0 | 0 | 396 |
| 4:30 PM | 1 | 166 | 0 | 0 | 0 | 0 | 0 | 233 | 11 | 12 | 0 | 1 | 424 |
| 4:45 PM | 3 | 172 | 0 | 0 | 0 | 0 | 0 | 267 | 18 | 14 | 0 | 3 | 477 |
| 5:00 PM | 0 | 162 | 0 | 0 | 0 | 0 | 0 | 256 | 19 | 3 | 0 | 0 | 440 |
| 5:15 PM | 1 | 141 | 0 | 0 | 0 | 0 | 0 | 292 | 15 | 10 | 0 | 0 | 459 |
| 5:30 PM | 1 | 149 | 0 | 0 | 0 | 0 | 0 | 293 | 17 | 8 | 0 | 1 | 469 |
| 5:45 PM | 0 | 168 | 0 | 0 | 0 | 0 | 0 | 290 | 11 | 6 | 0 | 0 | 475 |
| Total | 7 | 1268 | 0 | 0 | 0 | 0 | 0 | 2,123 | 113 | 76 | 0 | 5 | 3,592 |

PM Intersection Peak Hour : **4:45 PM - 5:45 PM** Intersection PHF : **0.97**

| | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | |
| Volume | 5 | 624 | 0 | 0 | 0 | 0 | 0 | 1108 | 69 | 35 | 0 | 4 | 1845 |
| PHF | 0.42 | 0.907 | ##### | ##### | ##### | ##### | ##### | 0.945 | 0.908 | 0.625 | ##### | 0.333 | 0.97 |
| Movement PHF | | 0.90 | | | #DIV/0! | | | 0.95 | | | 0.57 | | 0.97 |

# Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136

***Location:*** Sunset Drive @ Bear Valley Parkway

***Date of Count:*** *Wednesday, February 26, 2014*

***Analysts:*** *LV/CD*

***Weather:*** *Sunny*

***AVC Proj No:*** *14-0168*

LINSCOTT LAW & GREENSPAN engineers

# Vehicular Count

**Accurate Video Counts Inc**
**info@accuratevideocounts.com**
**(619) 987-5136**

AVC

***Location:*** Sunset Drive @ Bear Valley Parkway

| AM Period (7:00 AM - 9:00 AM) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | |
| | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | TOTAL |
| 7:00 AM | 2 | 272 | 0 | 2 | 2 | 3 | 1 | 118 | 77 | 187 | 1 | 2 | 667 |
| 7:15 AM | 3 | 250 | 0 | 3 | 12 | 3 | 1 | 123 | 113 | 197 | 2 | 1 | 708 |
| 7:30 AM | 1 | 256 | 1 | 7 | 13 | 5 | 1 | 118 | 109 | 128 | 1 | 6 | 646 |
| 7:45 AM | 1 | 245 | 2 | 5 | 6 | 2 | 1 | 144 | 99 | 162 | 0 | 3 | 670 |
| 8:00 AM | 0 | 244 | 2 | 2 | 6 | 0 | 0 | 120 | 126 | 156 | 3 | 2 | 661 |
| 8:15 AM | 5 | 283 | 2 | 2 | 6 | 4 | 0 | 160 | 112 | 44 | 1 | 2 | 621 |
| 8:30 AM | 0 | 198 | 1 | 1 | 3 | 1 | 0 | 95 | 37 | 40 | 2 | 1 | 379 |
| 8:45 AM | 3 | 164 | 1 | 1 | 2 | 0 | 1 | 95 | 36 | 40 | 6 | 3 | 352 |
| Total | 15 | 1,912 | 9 | 23 | 50 | 18 | 5 | 973 | 709 | 954 | 16 | 20 | 4,704 |

AM Intersection Peak Hour : **7:00 AM - 8:00 AM** Intersection PHF : **0.95**

| | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | |
| Volume | 7 | 1,023 | 3 | 17 | 33 | 13 | 4 | 503 | 398 | 674 | 4 | 12 | 2,691 |
| PHF | 0.58 | 0.94 | 0.38 | 0.61 | 0.63 | 0.65 | 1.00 | 0.87 | 0.88 | 0.86 | 0.50 | 0.50 | 0.95 |
| Movement PHF | | 0.94 | | | 0.63 | | | 0.93 | | | 0.86 | | 0.95 |

| PM Period (4:00 PM - 6:00 PM) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | |
| | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | TOTAL |
| 4:00 PM | 2 | 180 | 1 | 0 | 4 | 2 | 4 | 270 | 80 | 63 | 4 | 2 | 612 |
| 4:15 PM | 0 | 142 | 4 | 1 | 2 | 0 | 1 | 240 | 74 | 58 | 2 | 5 | 529 |
| 4:30 PM | 0 | 190 | 3 | 2 | 2 | 0 | 1 | 243 | 61 | 71 | 3 | 0 | 576 |
| 4:45 PM | 2 | 190 | 2 | 4 | 6 | 0 | 1 | 272 | 65 | 76 | 4 | 5 | 627 |
| 5:00 PM | 1 | 160 | 1 | 1 | 5 | 1 | 1 | 276 | 49 | 72 | 12 | 1 | 580 |
| 5:15 PM | 3 | 149 | 0 | 6 | 7 | 1 | 1 | 308 | 42 | 71 | 3 | 1 | 592 |
| 5:30 PM | 5 | 155 | 1 | 7 | 5 | 2 | 1 | 294 | 39 | 61 | 6 | 5 | 581 |
| 5:45 PM | 4 | 172 | 0 | 1 | 5 | 0 | 2 | 295 | 36 | 52 | 4 | 7 | 578 |
| Total | 17 | 1338 | 12 | 22 | 36 | 6 | 12 | 2,198 | 446 | 524 | 38 | 26 | 4,675 |

PM Intersection Peak Hour : **4:45 PM - 5:45 PM** Intersection PHF : **0.95**

| | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | |
| Volume | 11 | 654 | 4 | 18 | 23 | 4 | 4 | 1150 | 195 | 280 | 25 | 12 | 2380 |
| PHF | 0.55 | 0.861 | 0.5 | 0.643 | 0.821 | 0.5 | 1 | 0.933 | 0.75 | 0.921 | 0.521 | 0.6 | 0.95 |
| Movement PHF | | 0.86 | | | 0.80 | | | 0.96 | | | 0.93 | | 0.95 |

# Turn Count Summary

**Accurate Video Counts Inc**
**info@accuratevideocounts.com**
**(619) 987-5136**

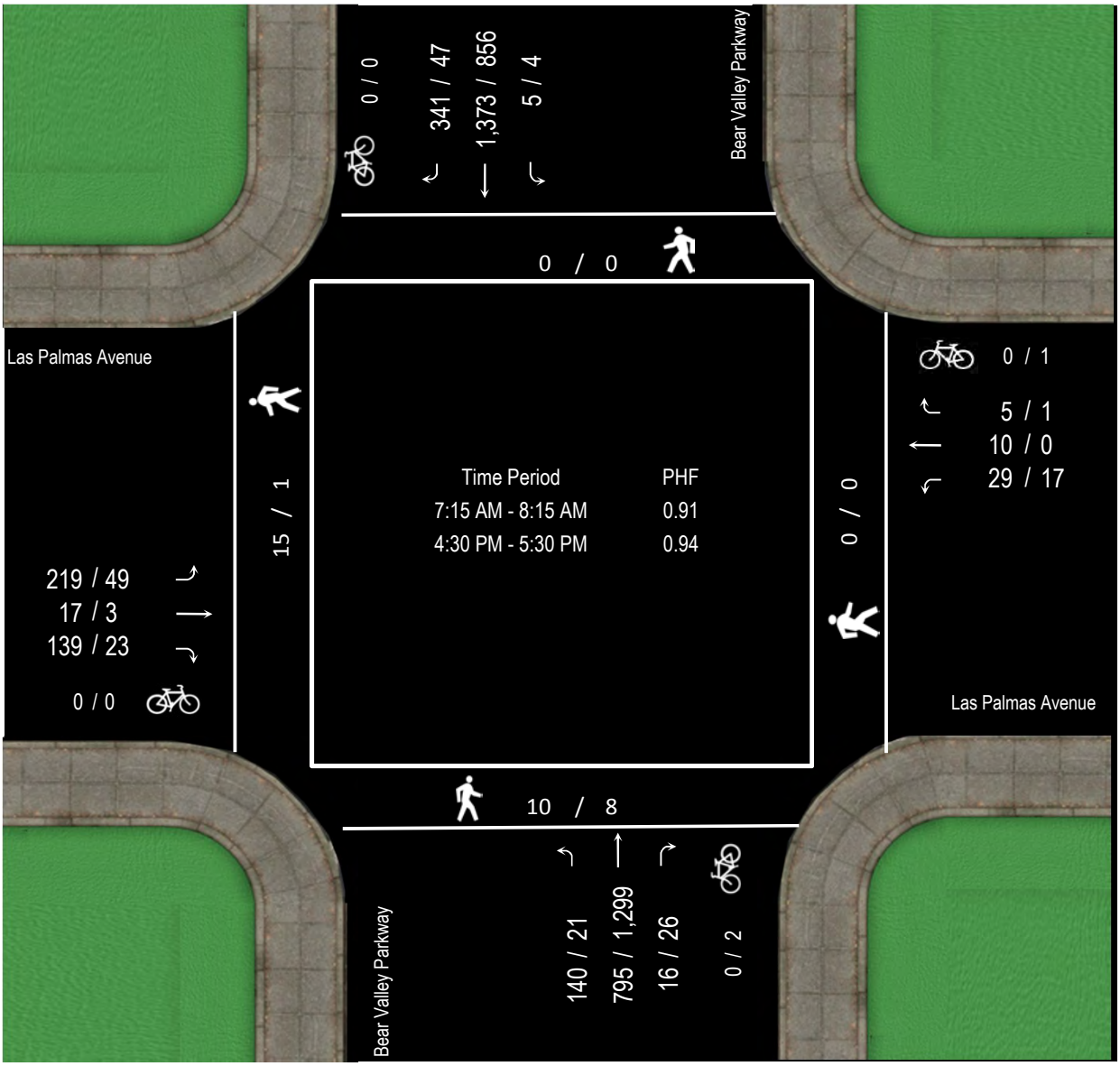
***Location:*** Las Palmas Avenue @ Bear Valley Parkway

***Date of Count:*** *Wednesday, February 26, 2014*

***Analysts:*** *LV/CD*

***Weather:*** *Sunny*

***AVC Proj No:*** *14-0168*



# Vehicular Count

**Accurate Video Counts Inc**
**info@accuratevideocounts.com**
**(619) 987-5136**

***Location:*** Las Palmas Avenue @ Bear Valley Parkway

| AM Period (7:00 AM - 9:00 AM) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | |
| | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | TOTAL |
| 7:00 AM | 25 | 468 | 0 | 1 | 1 | 10 | 3 | 215 | 6 | 5 | 1 | 4 | 739 |
| 7:15 AM | 36 | 448 | 0 | 0 | 1 | 11 | 12 | 287 | 21 | 10 | 1 | 25 | 852 |
| 7:30 AM | 86 | 313 | 1 | 0 | 1 | 3 | 2 | 152 | 38 | 29 | 2 | 41 | 668 |
| 7:45 AM | 112 | 303 | 1 | 2 | 2 | 4 | 2 | 175 | 44 | 43 | 2 | 85 | 775 |
| 8:00 AM | 107 | 309 | 3 | 3 | 6 | 11 | 0 | 181 | 37 | 57 | 12 | 68 | 794 |
| 8:15 AM | 21 | 324 | 2 | 1 | 0 | 7 | 5 | 155 | 5 | 26 | 17 | 35 | 598 |
| 8:30 AM | 7 | 214 | 3 | 1 | 1 | 5 | 6 | 114 | 3 | 6 | 0 | 16 | 376 |
| 8:45 AM | 8 | 195 | 3 | 0 | 0 | 4 | 2 | 99 | 5 | 9 | 0 | 13 | 338 |
| Total | 402 | 2,574 | 13 | 8 | 12 | 55 | 32 | 1,378 | 159 | 185 | 35 | 287 | 5,140 |

AM Intersection Peak Hour : **7:15 AM - 8:15 AM** Intersection PHF : **0.91**

| | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | |
| Volume | 341 | 1,373 | 5 | 5 | 10 | 29 | 16 | 795 | 140 | 139 | 17 | 219 | 3,089 |
| PHF | 0.76 | 0.77 | 0.42 | 0.42 | 0.42 | 0.66 | 0.33 | 0.69 | 0.80 | 0.61 | 0.35 | 0.64 | 0.91 |
| Movement PHF | | 0.89 | | | 0.55 | | | 0.74 | | | 0.68 | | 0.91 |

| PM Period (4:00 PM - 6:00 PM) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | |
| | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | TOTAL |
| 4:00 PM | 14 | 192 | 0 | 1 | 0 | 6 | 3 | 328 | 8 | 15 | 1 | 16 | 584 |
| 4:15 PM | 16 | 212 | 0 | 0 | 1 | 3 | 10 | 295 | 5 | 7 | 0 | 7 | 556 |
| 4:30 PM | 10 | 222 | 0 | 1 | 0 | 4 | 9 | 321 | 4 | 7 | 1 | 17 | 596 |
| 4:45 PM | 19 | 190 | 2 | 0 | 0 | 3 | 8 | 361 | 7 | 4 | 0 | 10 | 604 |
| 5:00 PM | 7 | 208 | 1 | 0 | 0 | 7 | 2 | 275 | 3 | 5 | 2 | 9 | 519 |
| 5:15 PM | 11 | 236 | 1 | 0 | 0 | 3 | 7 | 342 | 7 | 7 | 0 | 13 | 627 |
| 5:30 PM | 9 | 187 | 1 | 1 | 0 | 1 | 10 | 327 | 7 | 11 | 2 | 10 | 566 |
| 5:45 PM | 5 | 245 | 1 | 0 | 0 | 2 | 9 | 336 | 3 | 4 | 0 | 8 | 613 |
| Total | 91 | 1692 | 6 | 3 | 1 | 29 | 58 | 2,585 | 44 | 60 | 6 | 90 | 4,665 |

PM Intersection Peak Hour : **4:30 PM - 5:30 PM** Intersection PHF : **0.94**

| | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | |
| Volume | 47 | 856 | 4 | 1 | 0 | 17 | 26 | 1299 | 21 | 23 | 3 | 49 | 2346 |
| PHF | 0.62 | 0.907 | 0.5 | 0.25 | ##### | 0.607 | 0.722 | 0.9 | 0.75 | 0.821 | 0.375 | 0.721 | 0.94 |
| Movement PHF | | 0.91 | | | 0.64 | | | 0.89 | | | 0.75 | | 0.94 |

# Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136

***Location:*** San Pasqual Road @ Bear Valley Parkway

***Date of Count:*** *Wednesday, February 26, 2014*

***Analysts:*** *LV/CD*

***Weather:*** *Sunny*

***AVC Proj No:*** *14-0168*

LINSCOTT LAW & GREENSPAN engineers

# Vehicular Count

**Accurate Video Counts Inc**
**info@accuratevideocounts.com**
**(619) 987-5136**

AVC

***Location:*** San Pasqual Road @ Bear Valley Parkway

| AM Period (7:00 AM - 9:00 AM) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | |
| | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | TOTAL |
| 7:00 AM | 0 | 301 | 88 | 17 | 0 | 177 | 99 | 169 | 0 | 0 | 0 | 0 | 851 |
| 7:15 AM | 0 | 332 | 71 | 13 | 0 | 232 | 119 | 316 | 0 | 0 | 0 | 0 | 1,083 |
| 7:30 AM | 0 | 382 | 13 | 10 | 0 | 130 | 47 | 176 | 0 | 0 | 0 | 0 | 758 |
| 7:45 AM | 0 | 368 | 23 | 27 | 0 | 94 | 56 | 229 | 0 | 0 | 0 | 0 | 797 |
| 8:00 AM | 0 | 381 | 17 | 22 | 0 | 111 | 54 | 167 | 0 | 0 | 0 | 0 | 752 |
| 8:15 AM | 0 | 432 | 22 | 13 | 0 | 103 | 71 | 142 | 0 | 0 | 0 | 0 | 783 |
| 8:30 AM | 0 | 292 | 13 | 10 | 0 | 113 | 85 | 119 | 0 | 0 | 0 | 0 | 632 |
| 8:45 AM | 0 | 248 | 12 | 6 | 0 | 78 | 73 | 117 | 0 | 0 | 0 | 0 | 534 |
| Total | 0 | 2,736 | 259 | 118 | 0 | 1,038 | 604 | 1,435 | 0 | 0 | 0 | 0 | 6,190 |

AM Intersection Peak Hour : **7:00 AM - 8:00 AM** Intersection PHF : **0.81**

| | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | |
| Volume | 0 | 1,383 | 195 | 67 | 0 | 633 | 321 | 890 | 0 | 0 | 0 | 0 | 3,489 |
| PHF | ##### | 0.91 | 0.55 | 0.62 | ##### | 0.68 | 0.67 | 0.70 | ##### | ##### | ##### | ##### | 0.81 |
| Movement PHF | | 0.98 | | | 0.71 | | | 0.70 | | | #DIV/0! | | 0.81 |

| PM Period (4:00 PM - 6:00 PM) | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | |
| | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | TOTAL |
| 4:00 PM | 0 | 235 | 17 | 15 | 0 | 90 | 96 | 322 | 0 | 0 | 0 | 0 | 775 |
| 4:15 PM | 0 | 198 | 23 | 15 | 0 | 115 | 112 | 292 | 0 | 0 | 0 | 0 | 755 |
| 4:30 PM | 0 | 183 | 40 | 11 | 0 | 113 | 121 | 323 | 0 | 0 | 0 | 0 | 791 |
| 4:45 PM | 0 | 209 | 37 | 21 | 0 | 132 | 142 | 339 | 0 | 0 | 0 | 0 | 880 |
| 5:00 PM | 0 | 212 | 47 | 8 | 0 | 102 | 149 | 344 | 0 | 0 | 0 | 0 | 862 |
| 5:15 PM | 0 | 191 | 41 | 25 | 0 | 104 | 140 | 363 | 0 | 0 | 0 | 0 | 864 |
| 5:30 PM | 0 | 184 | 21 | 23 | 0 | 109 | 112 | 351 | 0 | 0 | 0 | 0 | 800 |
| 5:45 PM | 0 | 178 | 28 | 14 | 0 | 86 | 139 | 357 | 0 | 0 | 0 | 0 | 802 |
| Total | 0 | 1590 | 254 | 132 | 0 | 851 | 1,011 | 2,691 | 0 | 0 | 0 | 0 | 6,529 |

PM Intersection Peak Hour : **4:45 PM - 5:45 PM** Intersection PHF : **0.97**

| | Southbound | | | Westbound | | | Northbound | | | Eastbound | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | Right | Thru | Left | |
| Volume | 0 | 796 | 146 | 77 | 0 | 447 | 543 | 1397 | 0 | 0 | 0 | 0 | 3406 |
| PHF | ##### | 0.939 | 0.777 | 0.77 | ##### | 0.847 | 0.911 | 0.962 | ##### | ##### | ##### | ##### | 0.97 |
| Movement PHF | | 0.91 | | | 0.86 | | | 0.96 | | | #DIV/0! | | 0.97 |

LINSCOTT LAW & GREENSPAN engineers

# 24 Hour Segment Count

**Accurate Video Counts Inc**
**info@accuratevideocounts.com**
**(619) 987-5136**

AVC

***Location:*** 1. Bear Valley Parkway btw Zlatibor Ranch Rd to Eldorado Rd

***Orientation:*** *North-South*

***Date of Count:*** *Wednesday, February 26, 2014*

***Analysts:*** *DASH*

***Weather:*** *Sunny*

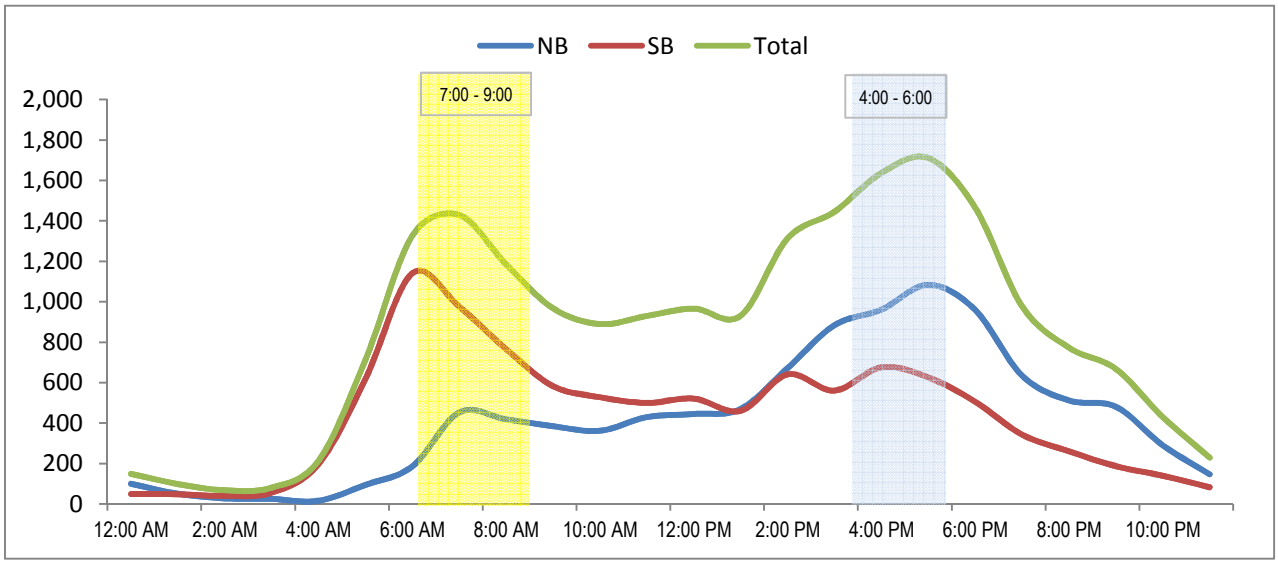
***AVC Proj. No:*** *14-0168*

| *24 Hour Segment Volume* | | | *20,601* |
|---|---|---|---|

| Time | Hourly Volume | | |
|---|---|---|---|
| | NB | SB | Total |
| 12:00 AM - 1:00 AM | 100 | 49 | 149 |
| 1:00 AM - 2:00 AM | 51 | 48 | 99 |
| 2:00 AM - 3:00 AM | 28 | 40 | 68 |
| 3:00 AM - 4:00 AM | 25 | 56 | 81 |
| 4:00 AM - 5:00 AM | 16 | 198 | 214 |
| 5:00 AM - 6:00 AM | 95 | 618 | 713 |
| 6:00 AM - 7:00 AM | 186 | 1,141 | 1,327 |
| 7:00 AM - 8:00 AM | 453 | 976 | 1,429 |
| 8:00 AM - 9:00 AM | 419 | 766 | 1,185 |
| 9:00 AM - 10:00 AM | 385 | 583 | 968 |
| 10:00 AM - 11:00 AM | 362 | 528 | 890 |
| 11:00 AM - 12:00 PM | 430 | 500 | 930 |
| **Total** | **2,550** | **5,503** | **8,053** |

| Time | Hourly Volume | | |
|---|---|---|---|
| | NB | SB | Total |
| 12:00 PM - 1:00 PM | 445 | 521 | 966 |
| 1:00 PM - 2:00 PM | 470 | 461 | 931 |
| 2:00 PM - 3:00 PM | 672 | 641 | 1,313 |
| 3:00 PM - 4:00 PM | 884 | 561 | 1,445 |
| 4:00 PM - 5:00 PM | 961 | 676 | 1,637 |
| 5:00 PM - 6:00 PM | 1,084 | 627 | 1,711 |
| 6:00 PM - 7:00 PM | 960 | 506 | 1,466 |
| 7:00 PM - 8:00 PM | 635 | 343 | 978 |
| 8:00 PM - 9:00 PM | 512 | 261 | 773 |
| 9:00 PM - 10:00 PM | 481 | 187 | 668 |
| 10:00 PM - 11:00 PM | 290 | 140 | 430 |
| 11:00 PM - 12:00 AM | 147 | 83 | 230 |
| **Total** | **7,541** | **5,007** | **12,548** |

| *24-Hour* | *NB* | *Volume* | *10,091* | *24-Hour* | *SB* | *Volume* | *10,510* |
|---|---|---|---|---|---|---|---|



# 24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136

**Location:** 2. Bear Valley Parkway btw Encino Dr to Zlatibor Ranch Rd

**Orientation:** *North-South*

**Date of Count:** *Wednesday, February 26, 2014*

**Analysts:** *DASH*

**Weather:** *Sunny*

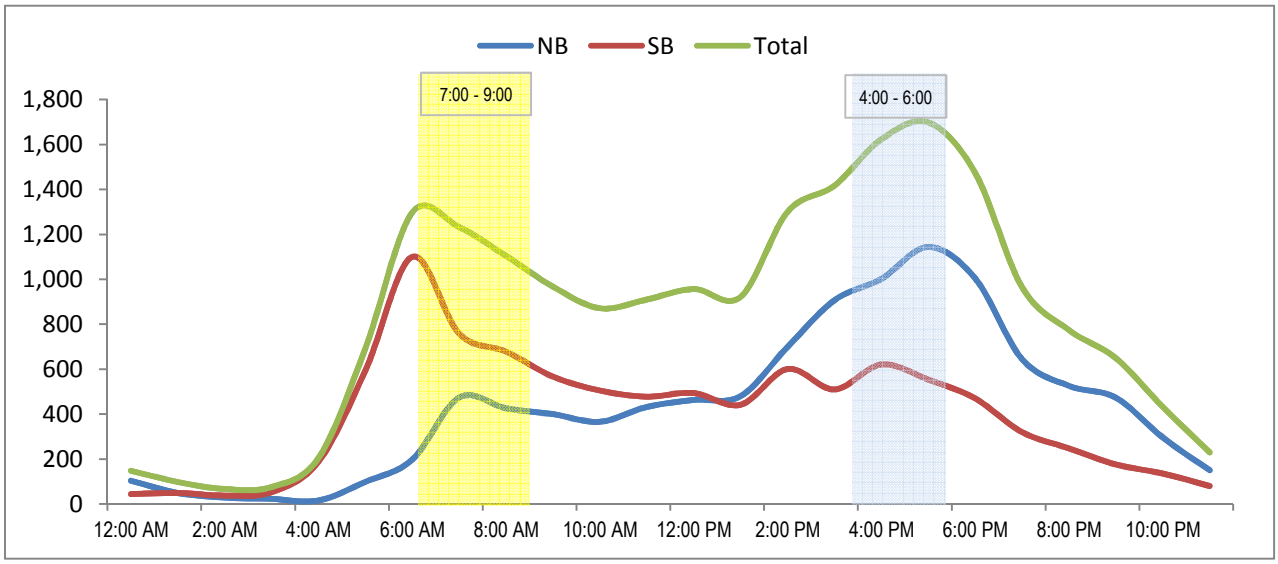
**AVC Proj. No:** *14-0168*

| 24 Hour Segment Volume | | | 20,111 |
|---|---|---|---|

| Time | Hourly Volume | | |
|---|---|---|---|
| | NB | SB | Total |
| 12:00 AM - 1:00 AM | 104 | 44 | 148 |
| 1:00 AM - 2:00 AM | 49 | 49 | 98 |
| 2:00 AM - 3:00 AM | 29 | 38 | 67 |
| 3:00 AM - 4:00 AM | 23 | 53 | 76 |
| 4:00 AM - 5:00 AM | 16 | 189 | 205 |
| 5:00 AM - 6:00 AM | 99 | 595 | 694 |
| 6:00 AM - 7:00 AM | 198 | 1,100 | 1,298 |
| 7:00 AM - 8:00 AM | 474 | 758 | 1,232 |
| 8:00 AM - 9:00 AM | 426 | 678 | 1,104 |
| 9:00 AM - 10:00 AM | 400 | 567 | 967 |
| 10:00 AM - 11:00 AM | 366 | 505 | 871 |
| 11:00 AM - 12:00 PM | 432 | 478 | 910 |
| **Total** | **2,616** | **5,054** | **7,670** |

| Time | Hourly Volume | | |
|---|---|---|---|
| | NB | SB | Total |
| 12:00 PM - 1:00 PM | 463 | 494 | 957 |
| 1:00 PM - 2:00 PM | 480 | 442 | 922 |
| 2:00 PM - 3:00 PM | 699 | 601 | 1,300 |
| 3:00 PM - 4:00 PM | 907 | 510 | 1,417 |
| 4:00 PM - 5:00 PM | 1,002 | 621 | 1,623 |
| 5:00 PM - 6:00 PM | 1,144 | 554 | 1,698 |
| 6:00 PM - 7:00 PM | 1,004 | 470 | 1,474 |
| 7:00 PM - 8:00 PM | 645 | 320 | 965 |
| 8:00 PM - 9:00 PM | 526 | 248 | 774 |
| 9:00 PM - 10:00 PM | 473 | 176 | 649 |
| 10:00 PM - 11:00 PM | 296 | 136 | 432 |
| 11:00 PM - 12:00 AM | 150 | 80 | 230 |
| **Total** | **7,789** | **4,652** | **12,441** |

| 24-Hour NB Volume | 10,405 | 24-Hour SB Volume | 9,706 |
|---|---|---|---|



# 24 Hour Segment Count

**Accurate Video Counts Inc**
**info@accuratevideocounts.com**
**(619) 987-5136**

***Location:*** 3. Bear Valley Parkway btw Sunset Dr to Encino Dr

***Orientation:*** *North-South*

***Date of Count:*** *Wednesday, February 26, 2014*

***Analysts:*** *DASH*

***Weather:*** *Sunny*

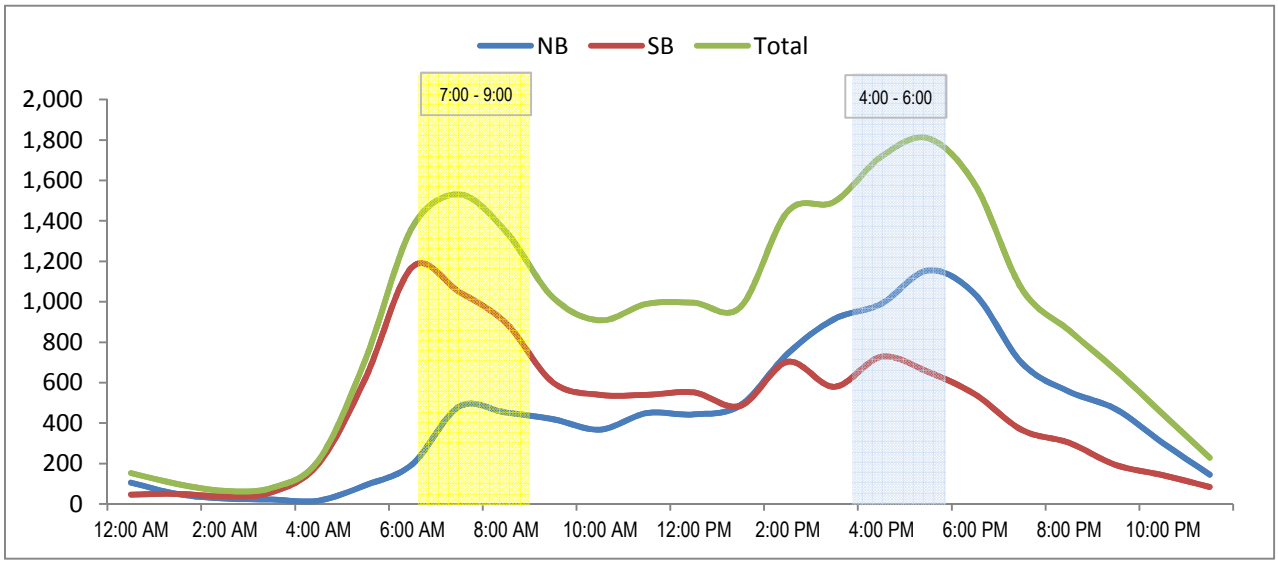
***AVC Proj. No:*** *14-0168*

| *24 Hour Segment Volume* | | | *21,766* |
|---|---|---|---|

| Time | Hourly Volume | | |
|---|---|---|---|
| | NB | SB | Total |
| 12:00 AM - 1:00 AM | 106 | 47 | 153 |
| 1:00 AM - 2:00 AM | 49 | 50 | 99 |
| 2:00 AM - 3:00 AM | 27 | 38 | 65 |
| 3:00 AM - 4:00 AM | 22 | 58 | 80 |
| 4:00 AM - 5:00 AM | 17 | 200 | 217 |
| 5:00 AM - 6:00 AM | 93 | 622 | 715 |
| 6:00 AM - 7:00 AM | 197 | 1,172 | 1,369 |
| 7:00 AM - 8:00 AM | 482 | 1,049 | 1,531 |
| 8:00 AM - 9:00 AM | 452 | 894 | 1,346 |
| 9:00 AM - 10:00 AM | 420 | 601 | 1,021 |
| 10:00 AM - 11:00 AM | 368 | 540 | 908 |
| 11:00 AM - 12:00 PM | 450 | 540 | 990 |
| **Total** | **2,683** | **5,811** | **8,494** |

| Time | Hourly Volume | | |
|---|---|---|---|
| | NB | SB | Total |
| 12:00 PM - 1:00 PM | 443 | 552 | 995 |
| 1:00 PM - 2:00 PM | 489 | 486 | 975 |
| 2:00 PM - 3:00 PM | 743 | 703 | 1,446 |
| 3:00 PM - 4:00 PM | 915 | 580 | 1,495 |
| 4:00 PM - 5:00 PM | 990 | 728 | 1,718 |
| 5:00 PM - 6:00 PM | 1,155 | 653 | 1,808 |
| 6:00 PM - 7:00 PM | 1,036 | 542 | 1,578 |
| 7:00 PM - 8:00 PM | 696 | 366 | 1,062 |
| 8:00 PM - 9:00 PM | 556 | 303 | 859 |
| 9:00 PM - 10:00 PM | 469 | 193 | 662 |
| 10:00 PM - 11:00 PM | 302 | 143 | 445 |
| 11:00 PM - 12:00 AM | 145 | 84 | 229 |
| **Total** | **7,939** | **5,333** | **13,272** |

| *24-Hour* | *NB* | *Volume* | *10,622* | *24-Hour* | *SB* | *Volume* | *11,144* |
|---|---|---|---|---|---|---|---|



# 24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136

**Location:** 4. Bear Valley Parkway btw Royal Crest Dr to Old Spanish Trail

**Orientation:** *North-South*

**Date of Count:** *Wednesday, February 26, 2014*

**Analysts:** *DASH*

**Weather:** *Sunny*

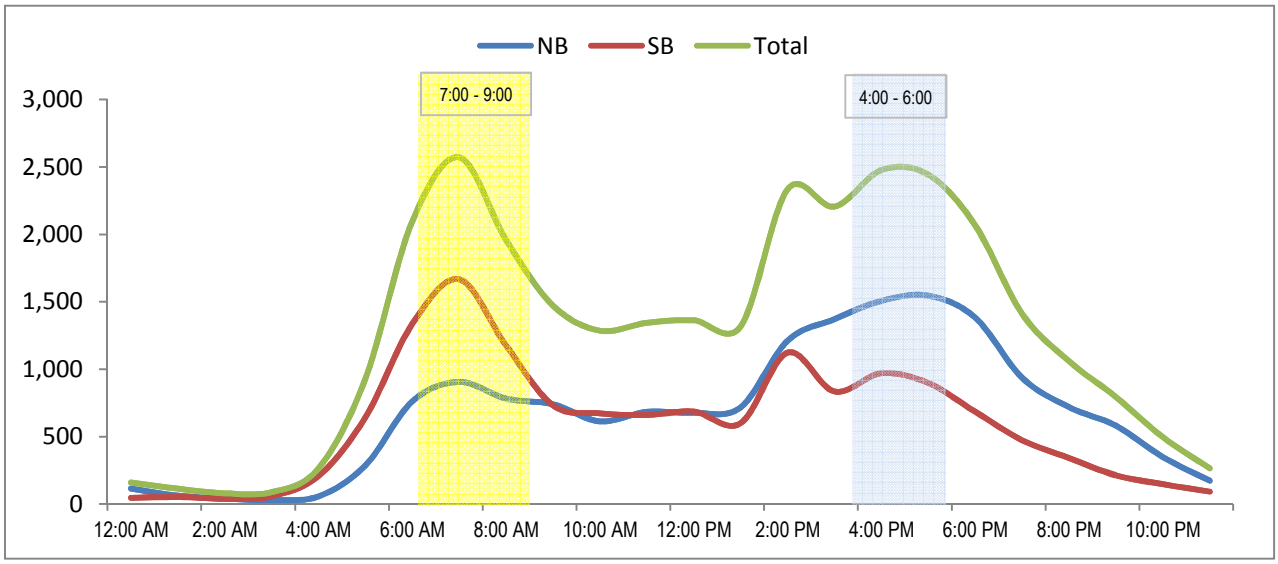
**AVC Proj. No:** *14-0168*

| 24 Hour Segment Volume | | | 30,600 |
|---|---|---|---|

| Time | Hourly Volume | | |
|---|---|---|---|
| | NB | SB | Total |
| 12:00 AM - 1:00 AM | 115 | 45 | 160 |
| 1:00 AM - 2:00 AM | 62 | 52 | 114 |
| 2:00 AM - 3:00 AM | 41 | 39 | 80 |
| 3:00 AM - 4:00 AM | 30 | 58 | 88 |
| 4:00 AM - 5:00 AM | 57 | 208 | 265 |
| 5:00 AM - 6:00 AM | 287 | 644 | 931 |
| 6:00 AM - 7:00 AM | 762 | 1,336 | 2,098 |
| 7:00 AM - 8:00 AM | 905 | 1,666 | 2,571 |
| 8:00 AM - 9:00 AM | 782 | 1,176 | 1,958 |
| 9:00 AM - 10:00 AM | 740 | 731 | 1,471 |
| 10:00 AM - 11:00 AM | 613 | 673 | 1,286 |
| 11:00 AM - 12:00 PM | 684 | 660 | 1344 |
| **Total** | **5,078** | **7,288** | **12,366** |

| Time | Hourly Volume | | |
|---|---|---|---|
| | NB | SB | Total |
| 12:00 PM - 1:00 PM | 677 | 686 | 1,363 |
| 1:00 PM - 2:00 PM | 717 | 600 | 1,317 |
| 2:00 PM - 3:00 PM | 1,211 | 1,123 | 2,334 |
| 3:00 PM - 4:00 PM | 1,371 | 835 | 2,206 |
| 4:00 PM - 5:00 PM | 1,507 | 970 | 2,477 |
| 5:00 PM - 6:00 PM | 1,545 | 898 | 2,443 |
| 6:00 PM - 7:00 PM | 1,383 | 685 | 2,068 |
| 7:00 PM - 8:00 PM | 937 | 474 | 1,411 |
| 8:00 PM - 9:00 PM | 719 | 341 | 1,060 |
| 9:00 PM - 10:00 PM | 581 | 213 | 794 |
| 10:00 PM - 11:00 PM | 349 | 147 | 496 |
| 11:00 PM - 12:00 AM | 173 | 92 | 265 |
| **Total** | **11,170** | **7,064** | **18,234** |

| 24-Hour NB Volume | 16,248 | 24-Hour SB Volume | 14,352 |
|---|---|---|---|



# 24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136

**Location:** 5. Bear Valley Parkway btw Mary Ln to Alamo Ln

**Orientation:** *North-South*

**Date of Count:** *Wednesday, February 26, 2014*

**Analysts:** *DASH*

**Weather:** *Sunny*

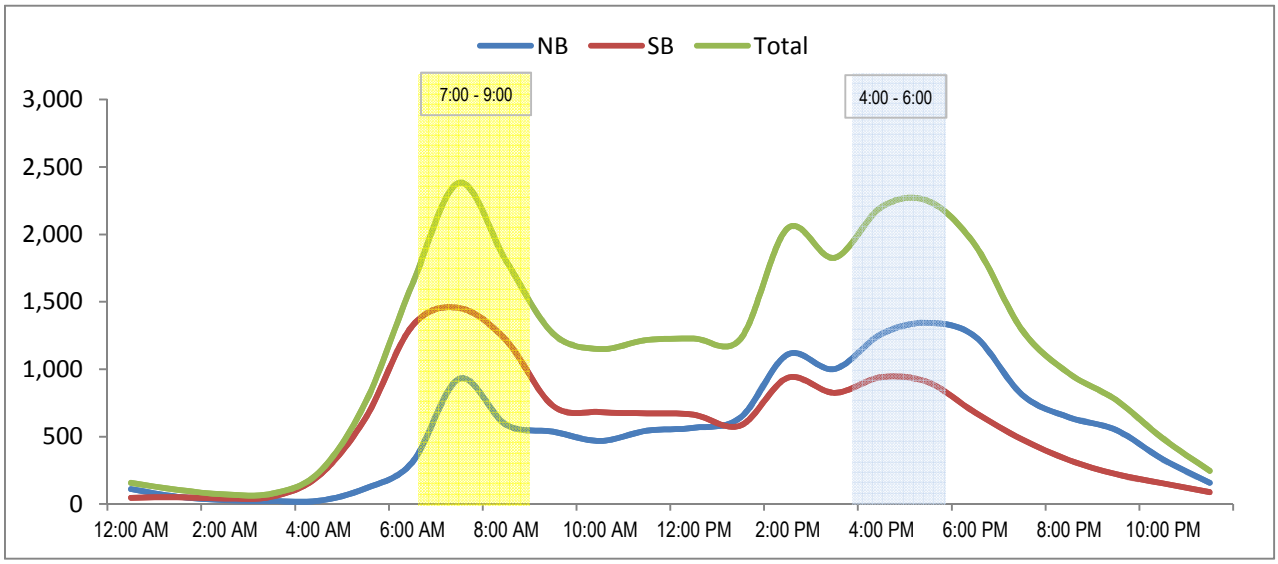
**AVC Proj. No:** *14-0168*

| 24 Hour Segment Volume | | | 27,301 |
|---|---|---|---|

| Time | Hourly Volume | | |
|---|---|---|---|
| | NB | SB | Total |
| 12:00 AM - 1:00 AM | 111 | 46 | 157 |
| 1:00 AM - 2:00 AM | 54 | 51 | 105 |
| 2:00 AM - 3:00 AM | 30 | 42 | 72 |
| 3:00 AM - 4:00 AM | 23 | 54 | 77 |
| 4:00 AM - 5:00 AM | 24 | 208 | 232 |
| 5:00 AM - 6:00 AM | 116 | 637 | 753 |
| 6:00 AM - 7:00 AM | 310 | 1,321 | 1,631 |
| 7:00 AM - 8:00 AM | 929 | 1,454 | 2,383 |
| 8:00 AM - 9:00 AM | 588 | 1,215 | 1,803 |
| 9:00 AM - 10:00 AM | 537 | 728 | 1,265 |
| 10:00 AM - 11:00 AM | 468 | 682 | 1,150 |
| 11:00 AM - 12:00 PM | 544 | 673 | 1217 |
| **Total** | **3,734** | **7,111** | **10,845** |

| Time | Hourly Volume | | |
|---|---|---|---|
| | NB | SB | Total |
| 12:00 PM - 1:00 PM | 565 | 662 | 1,227 |
| 1:00 PM - 2:00 PM | 643 | 583 | 1,226 |
| 2:00 PM - 3:00 PM | 1,109 | 936 | 2,045 |
| 3:00 PM - 4:00 PM | 1,001 | 825 | 1,826 |
| 4:00 PM - 5:00 PM | 1,261 | 941 | 2,202 |
| 5:00 PM - 6:00 PM | 1,344 | 903 | 2,247 |
| 6:00 PM - 7:00 PM | 1,242 | 678 | 1,920 |
| 7:00 PM - 8:00 PM | 811 | 479 | 1,290 |
| 8:00 PM - 9:00 PM | 643 | 326 | 969 |
| 9:00 PM - 10:00 PM | 550 | 222 | 772 |
| 10:00 PM - 11:00 PM | 332 | 154 | 486 |
| 11:00 PM - 12:00 AM | 158 | 88 | 246 |
| **Total** | **9,659** | **6,797** | **16,456** |

| 24-Hour NB Volume | 13,393 | 24-Hour SB Volume | 13,908 |
|---|---|---|---|



# 24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136

**Location:** 6. Bear Valley Parkway btw San Pasqual Rd to Mary Ln

**Orientation:** *North-South*

**Date of Count:** *Wednesday, February 26, 2014*

**Analysts:** *DASH*

**Weather:** *Sunny*

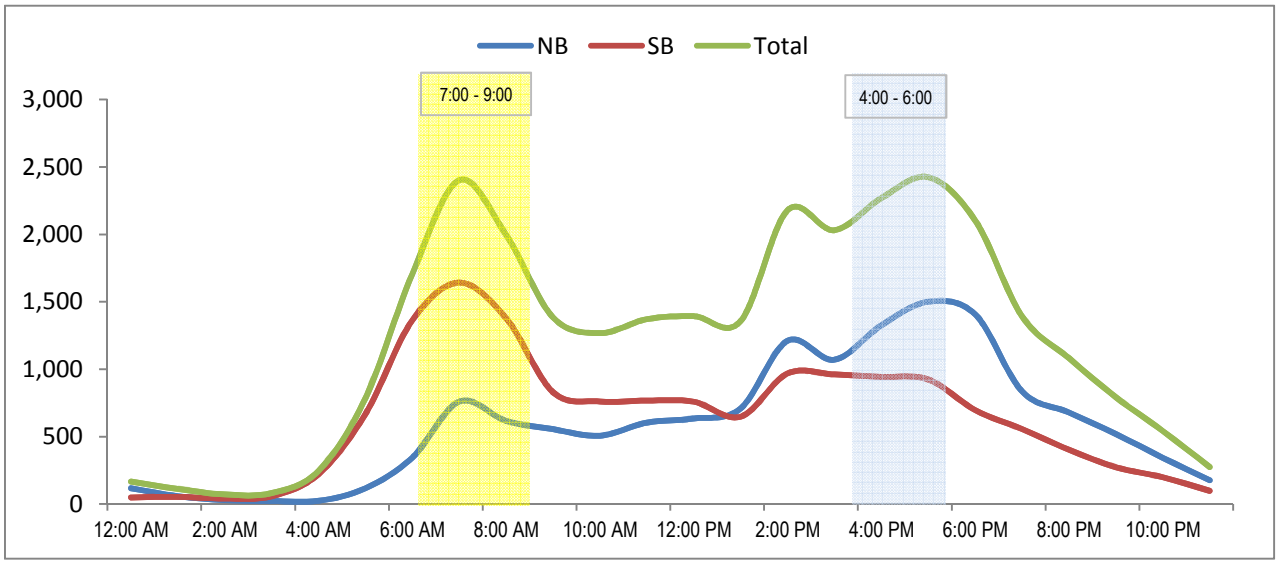
**AVC Proj. No:** *14-0168*

| 24 Hour Segment Volume | | | 29,428 |
|---|---|---|---|

| Time | Hourly Volume | | |
|---|---|---|---|
| | NB | SB | Total |
| 12:00 AM - 1:00 AM | 117 | 49 | 166 |
| 1:00 AM - 2:00 AM | 58 | 54 | 112 |
| 2:00 AM - 3:00 AM | 30 | 41 | 71 |
| 3:00 AM - 4:00 AM | 23 | 58 | 81 |
| 4:00 AM - 5:00 AM | 24 | 222 | 246 |
| 5:00 AM - 6:00 AM | 117 | 668 | 785 |
| 6:00 AM - 7:00 AM | 344 | 1,363 | 1,707 |
| 7:00 AM - 8:00 AM | 760 | 1,642 | 2,402 |
| 8:00 AM - 9:00 AM | 617 | 1,378 | 1,995 |
| 9:00 AM - 10:00 AM | 555 | 829 | 1,384 |
| 10:00 AM - 11:00 AM | 507 | 761 | 1,268 |
| 11:00 AM - 12:00 PM | 604 | 767 | 1371 |
| **Total** | **3,756** | **7,832** | **11,588** |

| Time | Hourly Volume | | |
|---|---|---|---|
| | NB | SB | Total |
| 12:00 PM - 1:00 PM | 634 | 759 | 1,393 |
| 1:00 PM - 2:00 PM | 709 | 648 | 1,357 |
| 2:00 PM - 3:00 PM | 1,211 | 968 | 2,179 |
| 3:00 PM - 4:00 PM | 1,070 | 961 | 2,031 |
| 4:00 PM - 5:00 PM | 1,326 | 943 | 2,269 |
| 5:00 PM - 6:00 PM | 1,500 | 924 | 2,424 |
| 6:00 PM - 7:00 PM | 1,407 | 697 | 2,104 |
| 7:00 PM - 8:00 PM | 836 | 556 | 1,392 |
| 8:00 PM - 9:00 PM | 679 | 403 | 1,082 |
| 9:00 PM - 10:00 PM | 519 | 273 | 792 |
| 10:00 PM - 11:00 PM | 343 | 199 | 542 |
| 11:00 PM - 12:00 AM | 177 | 98 | 275 |
| **Total** | **10,411** | **7,429** | **17,840** |

| 24-Hour NB Volume | 14,167 | 24-Hour SB Volume | 15,261 |
|---|---|---|---|



# 24 Hour Segment Count

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136

**Location:** 7. Encino Drive btw Rancho Verde Drive to Amparo Drive

**Orientation:** *North-South*

**Date of Count:** *Wednesday, February 26, 2014*

**Analysts:** *DASH*

**Weather:** *Sunny*

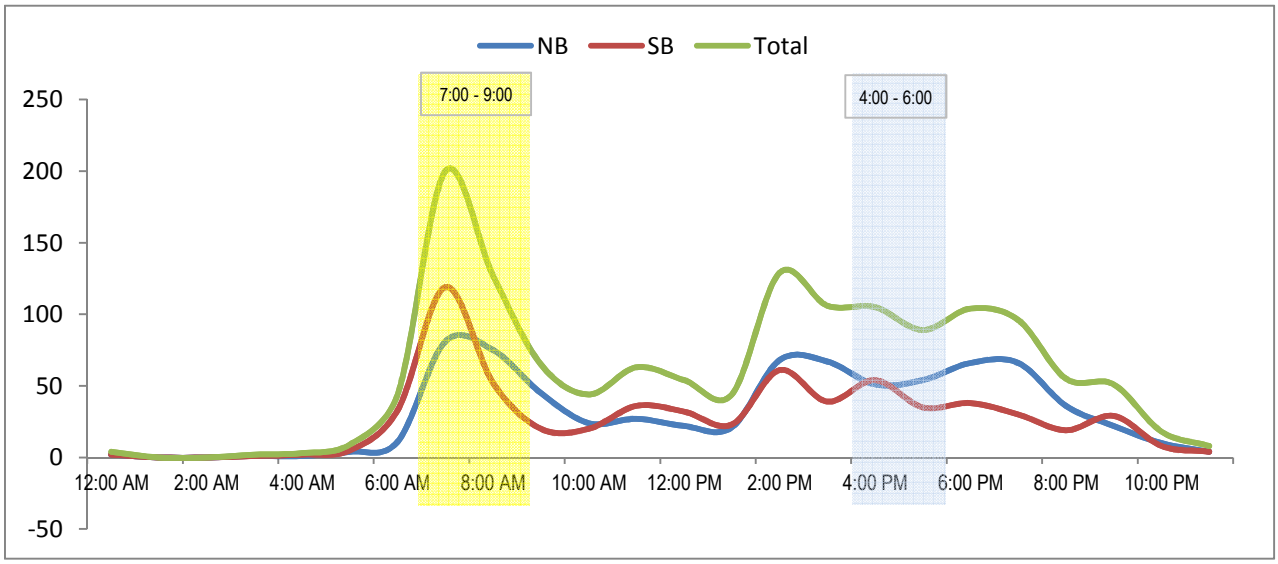
**AVC Proj. No:** *14-0168*

| 24 Hour Segment Volume | | | 1,420 |
|---|---|---|---|

| Time | Hourly Volume | | |
|---|---|---|---|
| | NB | SB | Total |
| 12:00 AM - 1:00 AM | 2 | 2 | 4 |
| 1:00 AM - 2:00 AM | 0 | 0 | 0 |
| 2:00 AM - 3:00 AM | 0 | 0 | 0 |
| 3:00 AM - 4:00 AM | 1 | 1 | 2 |
| 4:00 AM - 5:00 AM | 1 | 2 | 3 |
| 5:00 AM - 6:00 AM | 4 | 5 | 9 |
| 6:00 AM - 7:00 AM | 11 | 33 | 44 |
| 7:00 AM - 8:00 AM | 81 | 119 | 200 |
| 8:00 AM - 9:00 AM | 75 | 52 | 127 |
| 9:00 AM - 10:00 AM | 45 | 20 | 65 |
| 10:00 AM - 11:00 AM | 24 | 20 | 44 |
| 11:00 AM - 12:00 PM | 27 | 36 | 63 |
| **Total** | **271** | **290** | **561** |

| Time | Hourly Volume | | |
|---|---|---|---|
| | NB | SB | Total |
| 12:00 PM - 1:00 PM | 22 | 32 | 54 |
| 1:00 PM - 2:00 PM | 21 | 23 | 44 |
| 2:00 PM - 3:00 PM | 68 | 61 | 129 |
| 3:00 PM - 4:00 PM | 67 | 39 | 106 |
| 4:00 PM - 5:00 PM | 51 | 54 | 105 |
| 5:00 PM - 6:00 PM | 54 | 35 | 89 |
| 6:00 PM - 7:00 PM | 66 | 38 | 104 |
| 7:00 PM - 8:00 PM | 66 | 30 | 96 |
| 8:00 PM - 9:00 PM | 36 | 19 | 55 |
| 9:00 PM - 10:00 PM | 22 | 29 | 51 |
| 10:00 PM - 11:00 PM | 10 | 8 | 18 |
| 11:00 PM - 12:00 AM | 4 | 4 | 8 |
| **Total** | **487** | **372** | **859** |

| 24-Hour NB Volume | 758 | 24-Hour SB Volume | 662 |
|---|---|---|---|



# 24 Hour Segment Count

**Accurate Video Counts Inc**
**info@accuratevideocounts.com**
**(619) 987-5136**

***Location:*** 8. Sunset Drive btw Bear Valley Parkway to Reill View Dr

***Orientation:*** *East-West*

***Date of Count:*** *Wednesday, February 26, 2014*

***Analysts:*** *DASH*

***Weather:*** *Sunny*

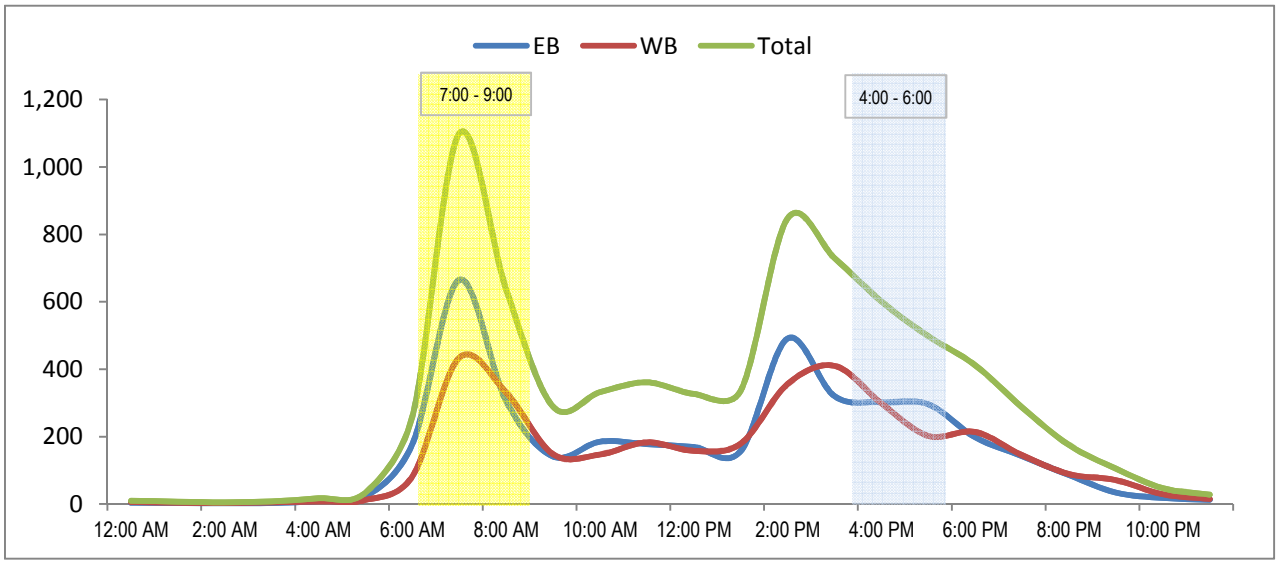
***AVC Proj. No:*** *14-0168*

| *24 Hour Segment Volume* | | | *7,452* |
|---|---|---|---|

| Time | Hourly Volume | | |
|---|---|---|---|
| | EB | WB | Total |
| 12:00 AM - 1:00 AM | 4 | 6 | 10 |
| 1:00 AM - 2:00 AM | 3 | 4 | 7 |
| 2:00 AM - 3:00 AM | 2 | 3 | 5 |
| 3:00 AM - 4:00 AM | 3 | 5 | 8 |
| 4:00 AM - 5:00 AM | 9 | 8 | 17 |
| 5:00 AM - 6:00 AM | 22 | 12 | 34 |
| 6:00 AM - 7:00 AM | 178 | 82 | 260 |
| 7:00 AM - 8:00 AM | 665 | 434 | 1,099 |
| 8:00 AM - 9:00 AM | 306 | 331 | 637 |
| 9:00 AM - 10:00 AM | 141 | 148 | 289 |
| 10:00 AM - 11:00 AM | 185 | 147 | 332 |
| 11:00 AM - 12:00 PM | 178 | 183 | 361 |
| **Total** | **1,696** | **1,363** | **3,059** |

| Time | Hourly Volume | | |
|---|---|---|---|
| | EB | WB | Total |
| 12:00 PM - 1:00 PM | 169 | 158 | 327 |
| 1:00 PM - 2:00 PM | 157 | 179 | 336 |
| 2:00 PM - 3:00 PM | 491 | 356 | 847 |
| 3:00 PM - 4:00 PM | 320 | 410 | 730 |
| 4:00 PM - 5:00 PM | 302 | 299 | 601 |
| 5:00 PM - 6:00 PM | 296 | 202 | 498 |
| 6:00 PM - 7:00 PM | 198 | 214 | 412 |
| 7:00 PM - 8:00 PM | 142 | 145 | 287 |
| 8:00 PM - 9:00 PM | 86 | 89 | 175 |
| 9:00 PM - 10:00 PM | 34 | 71 | 105 |
| 10:00 PM - 11:00 PM | 18 | 29 | 47 |
| 11:00 PM - 12:00 AM | 13 | 15 | 28 |
| **Total** | **2,226** | **2,167** | **4,393** |

| *24-Hour* | *EB* | *Volume* | *3,922* | *24-Hour* | *WB* | *Volume* | *3,530* |
|---|---|---|---|---|---|---|---|



# APPENDIX B

## PEAK HOUR INTERSECTION ANALYSIS WORKSHEETS

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# 2010 HIGHWAY CAPACITY MANUAL LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

In the 2010 Highway Capacity Manual (HCM), Level of Service for signalized intersections is defined in terms of delay. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Specifically, Level of Service criteria are stated in terms of the average control delay per vehicle for a 15-minute analysis period. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

Delay is a complex measure, and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group or approach in question.

| LEVEL OF SERVICE | CONTROLLED DELAY PER VEHICLE (SEC) | | |
|---|---|---|---|
| A | | $\leq$ | 10.0 |
| B | 10.1 | to | 20.0 |
| C | 20.1 | to | 35.0 |
| D | 35.1 | to | 55.0 |
| E | 55.1 | to | 80.0 |
| F | | > | 80.0 |

Level of Service A describes operations with very low delay, (i.e. less than 10.0 seconds per vehicle). This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.

Level of Service B describes operations with delay in the range of 10.1 to 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.

Level of Service C describes operations with delay in the range of 20.1 to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in the level. The number of vehicles stopping is significant at this level, although many still pass through the intersections without stopping.

Level of Service D describes operations with delay in the range of 35.1 to 55.0 seconds per vehicle. At Level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

Level of Service E describes operations with delay in the range of 55.1 to 80.0 seconds per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.

Level of Service F describes operations with delay in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation (i.e. when arrival flow rates exceed the capacity of the intersection). It may also occur at high v/c ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

# 2010 HIGHWAY CAPACITY MANUAL LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

In the 2010 Highway Capacity Manual (HCM), Level of Service for unsignalized intersections is determined by the computed or measured control delay and is defined for each minor movement. Level of Service is not defined for the intersection as a whole. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. The criteria are given in the following the table, and are based on the average control delay for any particular minor movement.

| LEVEL OF SERVICE | AVERAGE CONTROL DELAY SEC/VEH | | | EXPECTED DELAY TO MINOR STREET TRAFFIC |
|---|---|---|---|---|
| A | 0.0 | ≤ | 10.0 | Little or no delay |
| B | 10.1 | to | 15.0 | Short traffic delays |
| C | 15.1 | to | 25.0 | Average traffic delays |
| D | 25.1 | to | 35.0 | Long traffic delays |
| E | 35.1 | to | 50.0 | Very long traffic delays |
| F | | > | 50.0 | Severe congestion |

Level of Service F exists when there are insufficient gaps of suitable size to allow a side street demand to safely cross through a major street traffic stream. This Level of Service is generally evident from extremely long control delays experienced by side-street traffic and by queuing on the minor-street approaches. The method, however, is based on a constant critical gap size; that is, the critical gap remains constant no matter how long the side-street motorist waits. LOS F may also appear in the form on side-street vehicles selecting smaller-than-usual gaps. In such cases, safety may be a problem, and some disruption to the major traffic stream may result. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal gap acceptance behavior, which are more difficult to observe in the field than queuing.

In most cases at Two-Way Stop Controlled (TWSC) intersections, the critical movement is the minor-street left-turn movement. As such, the minor-street left-turn movement can generally be considered the primary factor affecting overall intersection performance. The lower threshold for LOS F is set at 50 seconds of delay per vehicle. There are many instances, particularly in urban areas, in which the delay equations will predict delays of 50 seconds (LOS F) or more for minor-street movements under very low volume conditions on the minor street (less than 25 vehicle/hour). Since the first term of the equation is a function only of the capacity, the LOS F threshold of 50 sec/vehicle is reached with a movement capacity of approximately 85 vehicle/hour or less.

This procedure assumes random arrivals on the major street. For a typical four-lane arterial with average daily traffic volumes in the range of 15,000 to 20,000 vehicles per day (peak hour, 1,500 to 2,000 vehicle/hour), the delay equation used in the TWSC capacity analysis procedure will predict 50 seconds of delay or more (LOS F) for many urban TWSC intersections that allow minor-street left-turn movements. **The LOS F threshold will be reached regardless of the volume of minor-street left-turn traffic.** Not-withstanding this fact, most low-volume minor-street approaches would not meet any of the volume or delay warrants for signalization of the *Manual on Uniform Traffic Control Devices* (MUTCD) since the warrants define an asymptote at 100 vehicle/hour on the minor approach. As a result, many public agencies that use the HCM Level of Service thresholds to determine the design adequacy of TWSC intersections may be forced to eliminate the minor-street left-turn movement, even when the movement may not present any operational problem, such as the formation of long queues on the minor street or driveway approach.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 18 | 358 | 126 | 154 | 508 | 82 | 104 | 323 | 99 | 84 | 659 | 18 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 19 | 381 | 134 | 181 | 598 | 96 | 114 | 355 | 109 | 98 | 766 | 21 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 2 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.85 | 0.85 | 0.85 | 0.91 | 0.91 | 0.91 | 0.86 | 0.86 | 0.86 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 65 | 977 | 437 | 212 | 1097 | 176 | 346 | 775 | 235 | 159 | 978 | 27 |
| Arrive On Green | 0.04 | 0.28 | 0.28 | 0.12 | 0.36 | 0.36 | 0.10 | 0.29 | 0.29 | 0.09 | 0.28 | 0.28 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 1774 | 3056 | 490 | 3442 | 2678 | 811 | 1774 | 3519 | 96 |
| Grp Volume(v), veh/h | 19 | 381 | 134 | 181 | 346 | 348 | 114 | 233 | 231 | 98 | 385 | 402 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1774 | 1770 | 1776 | 1721 | 1770 | 1720 | 1774 | 1770 | 1846 |
| Q Serve(g_s), s | 1.1 | 9.2 | 7.1 | 10.5 | 16.4 | 16.5 | 3.2 | 11.3 | 11.6 | 5.6 | 21.2 | 21.2 |
| Cycle Q Clear(g_c), s | 1.1 | 9.2 | 7.1 | 10.5 | 16.4 | 16.5 | 3.2 | 11.3 | 11.6 | 5.6 | 21.2 | 21.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.28 | 1.00 | | 0.47 | 1.00 | | 0.05 |
| Lane Grp Cap(c), veh/h | 65 | 977 | 437 | 212 | 635 | 638 | 346 | 512 | 497 | 159 | 492 | 513 |
| V/C Ratio(X) | 0.29 | 0.39 | 0.31 | 0.86 | 0.54 | 0.55 | 0.33 | 0.45 | 0.46 | 0.62 | 0.78 | 0.78 |
| Avail Cap(c_a), veh/h | 152 | 977 | 437 | 283 | 635 | 638 | 359 | 512 | 497 | 212 | 492 | 513 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 49.5 | 30.9 | 30.2 | 45.5 | 26.9 | 26.9 | 44.1 | 30.7 | 30.8 | 46.2 | 35.1 | 35.1 |
| Incr Delay (d2), s/veh | 0.9 | 1.2 | 1.8 | 14.0 | 3.3 | 3.3 | 0.2 | 2.9 | 3.1 | 1.5 | 11.8 | 11.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.6 | 4.7 | 3.3 | 6.0 | 8.6 | 8.6 | 1.6 | 6.0 | 6.0 | 2.8 | 11.9 | 12.4 |
| LnGrp Delay(d),s/veh | 50.4 | 32.1 | 32.0 | 59.5 | 30.2 | 30.3 | 44.3 | 33.6 | 33.9 | 47.7 | 46.9 | 46.4 |
| LnGrp LOS | D | C | C | E | C | C | D | C | C | D | D | D |
| Approach Vol, veh/h | | 534 | | | 875 | | | 578 | | | 885 | |
| Approach Delay, s/veh | | 32.7 | | | 36.3 | | | 35.8 | | | 46.8 | |
| Approach LOS | | C | | | D | | | D | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 17.8 | 35.8 | 15.8 | 36.0 | 9.0 | 44.5 | 14.6 | 37.2 |
| Change Period (Y+Rc), s | * 5.2 | 6.7 | * 5.2 | 6.7 | * 5.2 | 6.7 | * 5.2 | 6.7 |
| Max Green Setting (Gmax), s | * 17 | 29.1 | * 11 | 29.3 | * 9 | 36.9 | * 13 | 27.7 |
| Max Q Clear Time (g_c+I1), s | 12.5 | 11.2 | 5.2 | 23.2 | 3.1 | 18.5 | 7.6 | 13.6 |
| Green Ext Time (p_c), s | 0.1 | 12.7 | 0.1 | 5.1 | 0.0 | 12.9 | 0.0 | 10.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 38.8 |
| HCM 2010 LOS | D |

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 2 | 9 | 3 | 493 | 895 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | 30 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 2 | 10 | 3 | 536 | 973 | 0 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1515 | 973 | 973 | 0 | - | 0 |
| Stage 1 | 973 | - | - | - | - | - |
| Stage 2 | 542 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 132 | 306 | 709 | - | - | - |
| Stage 1 | 366 | - | - | - | - | - |
| Stage 2 | 583 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 131 | 306 | 709 | - | - | - |
| Mov Cap-2 Maneuver | 260 | - | - | - | - | - |
| Stage 1 | 366 | - | - | - | - | - |
| Stage 2 | 581 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 17.7 | 0.1 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 709 | - | 296 | - | - |
| HCM Lane V/C Ratio | 0.005 | - | 0.04 | - | - |
| HCM Control Delay (s) | 10.1 | - | 17.7 | - | - |
| HCM Lane LOS | B | - | C | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.4 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 2 | 101 | 90 | 494 | 892 | 12 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | Stop |
| Storage Length | 110 | 0 | 130 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 63 | 63 | 91 | 91 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 3 | 160 | 99 | 543 | 991 | 13 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1732 | 991 | 991 | 0 | - | 0 |
| Stage 1 | 991 | - | - | - | - | - |
| Stage 2 | 741 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 97 | 299 | 698 | - | - | - |
| Stage 1 | 359 | - | - | - | - | - |
| Stage 2 | 471 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 83 | 299 | 698 | - | - | - |
| Mov Cap-2 Maneuver | 83 | - | - | - | - | - |
| Stage 1 | 359 | - | - | - | - | - |
| Stage 2 | 404 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 30.5 | 1.7 | 0 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 698 | - | 83 | 299 | - | - |
| HCM Lane V/C Ratio | 0.142 | - | 0.038 | 0.536 | - | - |
| HCM Control Delay (s) | 11 | - | 50.1 | 30.1 | - | - |
| HCM Lane LOS | B | - | F | D | - | - |
| HCM 95th %tile Q(veh) | 0.5 | - | 0.1 | 3 | - | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 12 | 4 | 674 | 13 | 33 | 17 | 398 | 575 | 4 | 3 | 1023 | 7 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 14 | 5 | 784 | 21 | 52 | 27 | 428 | 618 | 4 | 3 | 1088 | 7 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.63 | 0.63 | 0.63 | 0.93 | 0.93 | 0.93 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 423 | 3 | 472 | 72 | 347 | 180 | 444 | 1074 | 913 | 6 | 1190 | 8 |
| Arrive On Green | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 | 0.25 | 0.58 | 0.58 | 0.00 | 0.33 | 0.33 |
| Sat Flow, veh/h | 1314 | 10 | 1575 | 684 | 1156 | 600 | 1774 | 1863 | 1583 | 1774 | 3605 | 23 |
| Grp Volume(v), veh/h | 14 | 0 | 789 | 21 | 0 | 79 | 428 | 618 | 4 | 3 | 534 | 561 |
| Grp Sat Flow(s),veh/h/ln | 1314 | 0 | 1585 | 684 | 0 | 1757 | 1774 | 1863 | 1583 | 1774 | 1770 | 1859 |
| Q Serve(g_s), s | 0.8 | 0.0 | 30.0 | 0.0 | 0.0 | 3.3 | 23.8 | 21.0 | 0.1 | 0.2 | 29.0 | 29.0 |
| Cycle Q Clear(g_c), s | 4.1 | 0.0 | 30.0 | 30.0 | 0.0 | 3.3 | 23.8 | 21.0 | 0.1 | 0.2 | 29.0 | 29.0 |
| Prop In Lane | 1.00 | | 0.99 | 1.00 | | 0.34 | 1.00 | | 1.00 | 1.00 | | 0.01 |
| Lane Grp Cap(c), veh/h | 423 | 0 | 475 | 72 | 0 | 527 | 444 | 1074 | 913 | 6 | 584 | 613 |
| V/C Ratio(X) | 0.03 | 0.00 | 1.66 | 0.29 | 0.00 | 0.15 | 0.97 | 0.58 | 0.00 | 0.53 | 0.91 | 0.91 |
| Avail Cap(c_a), veh/h | 423 | 0 | 475 | 72 | 0 | 527 | 444 | 1074 | 913 | 71 | 584 | 613 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 27.2 | 0.0 | 35.0 | 50.0 | 0.0 | 25.7 | 37.1 | 13.4 | 9.0 | 49.8 | 32.1 | 32.1 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 306.0 | 2.2 | 0.0 | 0.1 | 33.7 | 2.2 | 0.0 | 60.0 | 21.2 | 20.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.3 | 0.0 | 53.5 | 0.6 | 0.0 | 1.6 | 15.8 | 11.3 | 0.0 | 0.2 | 17.5 | 18.3 |
| LnGrp Delay(d),s/veh | 27.2 | 0.0 | 341.0 | 52.2 | 0.0 | 25.8 | 70.8 | 15.6 | 9.0 | 109.7 | 53.4 | 52.6 |
| LnGrp LOS | C | | F | D | | C | E | B | A | F | D | D |
| Approach Vol, veh/h | | 803 | | | 100 | | | 1050 | | | 1098 | |
| Approach Delay, s/veh | | 335.5 | | | 31.3 | | | 38.1 | | | 53.2 | |
| Approach LOS | | F | | | C | | | D | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 4.3 | 61.7 | | 34.0 | 29.0 | 37.0 | | 34.0 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | 4.0 | 54.0 | | 30.0 | 25.0 | 33.0 | | 30.0 |
| Max Q Clear Time (g_c+I1), s | 2.2 | 23.0 | | 32.0 | 25.8 | 31.0 | | 32.0 |
| Green Ext Time (p_c), s | 0.0 | 14.2 | | 0.0 | 0.0 | 1.7 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 121.6 |
| HCM 2010 LOS | F |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 219 | 17 | 139 | 29 | 10 | 5 | 140 | 795 | 16 | 5 | 1373 | 341 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 322 | 25 | 204 | 53 | 18 | 9 | 189 | 1074 | 22 | 6 | 1543 | 383 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.68 | 0.68 | 0.68 | 0.55 | 0.55 | 0.55 | 0.74 | 0.74 | 0.74 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 372 | 40 | 330 | 189 | 270 | 135 | 195 | 2284 | 47 | 11 | 1531 | 366 |
| Arrive On Green | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.11 | 0.64 | 0.64 | 0.01 | 0.54 | 0.54 |
| Sat Flow, veh/h | 1378 | 176 | 1434 | 1147 | 1173 | 586 | 1774 | 3547 | 73 | 1774 | 2836 | 677 |
| Grp Volume(v), veh/h | 322 | 0 | 229 | 53 | 0 | 27 | 189 | 536 | 560 | 6 | 940 | 986 |
| Grp Sat Flow(s),veh/h/ln | 1378 | 0 | 1610 | 1147 | 0 | 1759 | 1774 | 1770 | 1850 | 1774 | 1770 | 1743 |
| Q Serve(g_s), s | 21.8 | 0.0 | 12.8 | 4.3 | 0.0 | 1.2 | 10.6 | 15.5 | 15.5 | 0.3 | 52.1 | 54.0 |
| Cycle Q Clear(g_c), s | 23.0 | 0.0 | 12.8 | 17.1 | 0.0 | 1.2 | 10.6 | 15.5 | 15.5 | 0.3 | 52.1 | 54.0 |
| Prop In Lane | 1.00 | | 0.89 | 1.00 | | 0.33 | 1.00 | | 0.04 | 1.00 | | 0.39 |
| Lane Grp Cap(c), veh/h | 372 | 0 | 370 | 189 | 0 | 405 | 195 | 1139 | 1191 | 11 | 956 | 941 |
| V/C Ratio(X) | 0.86 | 0.00 | 0.62 | 0.28 | 0.00 | 0.07 | 0.97 | 0.47 | 0.47 | 0.55 | 0.98 | 1.05 |
| Avail Cap(c_a), veh/h | 372 | 0 | 370 | 189 | 0 | 405 | 195 | 1139 | 1191 | 71 | 956 | 941 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 39.8 | 0.0 | 34.6 | 42.2 | 0.0 | 30.1 | 44.3 | 9.1 | 9.1 | 49.6 | 22.6 | 23.0 |
| Incr Delay (d2), s/veh | 18.6 | 0.0 | 3.1 | 0.8 | 0.0 | 0.1 | 55.1 | 1.4 | 1.3 | 37.0 | 25.4 | 42.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 10.8 | 0.0 | 6.0 | 1.4 | 0.0 | 0.6 | 8.2 | 7.9 | 8.2 | 0.3 | 31.8 | 36.8 |
| LnGrp Delay(d),s/veh | 58.5 | 0.0 | 37.7 | 43.0 | 0.0 | 30.2 | 99.5 | 10.5 | 10.4 | 86.6 | 47.9 | 65.6 |
| LnGrp LOS | E | | D | D | | C | F | B | B | F | D | F |
| Approach Vol, veh/h | | 551 | | | 80 | | | 1285 | | | 1932 | |
| Approach Delay, s/veh | | 49.8 | | | 38.7 | | | 23.6 | | | 57.1 | |
| Approach LOS | | D | | | D | | | C | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 4.6 | 68.4 | | 27.0 | 15.0 | 58.0 | | 27.0 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | 4.0 | 61.0 | | 23.0 | 11.0 | 54.0 | | 23.0 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 17.5 | | 25.0 | 12.6 | 56.0 | | 19.1 |
| Green Ext Time (p_c), s | 0.0 | 33.3 | | 0.0 | 0.0 | 0.0 | | 1.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 44.5 |
| HCM 2010 LOS | D |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 26 | 498 | 106 | 111 | 448 | 65 | 105 | 798 | 211 | 63 | 418 | 29 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 30 | 566 | 120 | 118 | 477 | 69 | 117 | 887 | 234 | 73 | 486 | 34 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 2 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.94 | 0.94 | 0.94 | 0.90 | 0.90 | 0.90 | 0.86 | 0.86 | 0.86 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 88 | 911 | 408 | 159 | 925 | 133 | 339 | 974 | 257 | 146 | 1124 | 78 |
| Arrive On Green | 0.05 | 0.26 | 0.26 | 0.09 | 0.30 | 0.30 | 0.10 | 0.35 | 0.35 | 0.08 | 0.33 | 0.33 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 1774 | 3106 | 447 | 3442 | 2773 | 731 | 1774 | 3357 | 234 |
| Grp Volume(v), veh/h | 30 | 566 | 120 | 118 | 271 | 275 | 117 | 566 | 555 | 73 | 256 | 264 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1774 | 1770 | 1784 | 1721 | 1770 | 1734 | 1774 | 1770 | 1821 |
| Q Serve(g_s), s | 1.8 | 15.3 | 6.6 | 7.0 | 13.8 | 13.9 | 3.4 | 33.0 | 33.1 | 4.3 | 12.2 | 12.2 |
| Cycle Q Clear(g_c), s | 1.8 | 15.3 | 6.6 | 7.0 | 13.8 | 13.9 | 3.4 | 33.0 | 33.1 | 4.3 | 12.2 | 12.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.25 | 1.00 | | 0.42 | 1.00 | | 0.13 |
| Lane Grp Cap(c), veh/h | 88 | 911 | 408 | 159 | 527 | 531 | 339 | 622 | 609 | 146 | 593 | 610 |
| V/C Ratio(X) | 0.34 | 0.62 | 0.29 | 0.74 | 0.51 | 0.52 | 0.35 | 0.91 | 0.91 | 0.50 | 0.43 | 0.43 |
| Avail Cap(c_a), veh/h | 147 | 911 | 408 | 180 | 527 | 531 | 349 | 622 | 609 | 164 | 593 | 610 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 49.8 | 35.6 | 32.3 | 48.1 | 31.6 | 31.6 | 45.6 | 33.5 | 33.5 | 47.6 | 28.0 | 28.0 |
| Incr Delay (d2), s/veh | 0.9 | 3.2 | 1.8 | 10.9 | 3.6 | 3.6 | 0.2 | 19.7 | 20.2 | 1.0 | 2.3 | 2.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.9 | 7.9 | 3.1 | 3.9 | 7.2 | 7.3 | 1.7 | 19.6 | 19.3 | 2.1 | 6.3 | 6.5 |
| LnGrp Delay(d),s/veh | 50.7 | 38.8 | 34.2 | 59.0 | 35.1 | 35.2 | 45.8 | 53.2 | 53.7 | 48.6 | 30.3 | 30.3 |
| LnGrp LOS | D | D | C | E | D | D | D | D | D | D | C | C |
| Approach Vol, veh/h | | 716 | | | 664 | | | 1238 | | | 593 | |
| Approach Delay, s/veh | | 38.5 | | | 39.4 | | | 52.7 | | | 32.5 | |
| Approach LOS | | D | | | D | | | D | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 14.9 | 34.6 | 15.9 | 43.0 | 10.6 | 39.0 | 14.1 | 44.8 |
| Change Period (Y+Rc), s | * 5.2 | 6.7 | * 5.2 | 6.7 | * 5.2 | 6.7 | * 5.2 | 6.7 |
| Max Green Setting (Gmax), s | * 11 | 27.9 | * 11 | 36.3 | * 9 | 29.9 | * 10 | 37.3 |
| Max Q Clear Time (g_c+I1), s | 9.0 | 17.3 | 5.4 | 14.2 | 3.8 | 15.9 | 6.3 | 35.1 |
| Green Ext Time (p_c), s | 0.0 | 8.3 | 0.1 | 18.6 | 0.0 | 10.5 | 0.0 | 2.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 43.1 |
| HCM 2010 LOS | D |

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 1 | 3 | 6 | 1106 | 626 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | 30 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 3 | 7 | 1202 | 680 | 1 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1896 | 681 | 682 | 0 | - | 0 |
| Stage 1 | 681 | - | - | - | - | - |
| Stage 2 | 1215 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 76 | 450 | 911 | - | - | - |
| Stage 1 | 503 | - | - | - | - | - |
| Stage 2 | 281 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 75 | 450 | 911 | - | - | - |
| Mov Cap-2 Maneuver | 195 | - | - | - | - | - |
| Stage 1 | 503 | - | - | - | - | - |
| Stage 2 | 279 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 15.8 | 0 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 911 | - | 339 | - | - |
| HCM Lane V/C Ratio | 0.007 | - | 0.013 | - | - |
| HCM Control Delay (s) | 9 | - | 15.8 | - | - |
| HCM Lane LOS | A | - | C | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 4 | 35 | 69 | 1108 | 624 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | Stop |
| Storage Length | 110 | 0 | 130 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 57 | 57 | 95 | 95 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 7 | 61 | 73 | 1166 | 693 | 6 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2005 | 693 | 693 | 0 | - | 0 |
| Stage 1 | 693 | - | - | - | - | - |
| Stage 2 | 1312 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 65 | 443 | 902 | - | - | - |
| Stage 1 | 496 | - | - | - | - | - |
| Stage 2 | 252 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 60 | 443 | 902 | - | - | - |
| Mov Cap-2 Maneuver | 60 | - | - | - | - | - |
| Stage 1 | 496 | - | - | - | - | - |
| Stage 2 | 232 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 20.4 | 0.5 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 902 | - | 60 | 443 | - | - |
| HCM Lane V/C Ratio | 0.081 | - | 0.117 | 0.139 | - | - |
| HCM Control Delay (s) | 9.3 | - | 72.8 | 14.4 | - | - |
| HCM Lane LOS | A | - | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | 0.4 | 0.5 | - | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 12 | 25 | 280 | 4 | 23 | 18 | 195 | 1150 | 4 | 4 | 654 | 11 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 13 | 27 | 301 | 5 | 29 | 22 | 203 | 1198 | 4 | 5 | 760 | 13 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.80 | 0.80 | 0.80 | 0.96 | 0.96 | 0.96 | 0.86 | 0.86 | 0.86 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 264 | 22 | 244 | 75 | 163 | 124 | 239 | 1313 | 1116 | 9 | 2047 | 35 |
| Arrive On Green | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.13 | 0.70 | 0.70 | 0.01 | 0.57 | 0.57 |
| Sat Flow, veh/h | 1348 | 132 | 1471 | 1048 | 984 | 747 | 1774 | 1863 | 1583 | 1774 | 3561 | 61 |
| Grp Volume(v), veh/h | 13 | 0 | 328 | 5 | 0 | 51 | 203 | 1198 | 4 | 5 | 378 | 395 |
| Grp Sat Flow(s),veh/h/ln | 1348 | 0 | 1603 | 1048 | 0 | 1731 | 1774 | 1863 | 1583 | 1774 | 1770 | 1852 |
| Q Serve(g_s), s | 0.8 | 0.0 | 16.0 | 0.0 | 0.0 | 2.4 | 10.8 | 51.4 | 0.1 | 0.3 | 11.1 | 11.1 |
| Cycle Q Clear(g_c), s | 3.3 | 0.0 | 16.0 | 16.0 | 0.0 | 2.4 | 10.8 | 51.4 | 0.1 | 0.3 | 11.1 | 11.1 |
| Prop In Lane | 1.00 | | 0.92 | 1.00 | | 0.43 | 1.00 | | 1.00 | 1.00 | | 0.03 |
| Lane Grp Cap(c), veh/h | 264 | 0 | 266 | 75 | 0 | 287 | 239 | 1313 | 1116 | 9 | 1017 | 1065 |
| V/C Ratio(X) | 0.05 | 0.00 | 1.23 | 0.07 | 0.00 | 0.18 | 0.85 | 0.91 | 0.00 | 0.54 | 0.37 | 0.37 |
| Avail Cap(c_a), veh/h | 264 | 0 | 266 | 75 | 0 | 287 | 368 | 1313 | 1116 | 74 | 1017 | 1065 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 36.0 | 0.0 | 40.3 | 48.3 | 0.0 | 34.6 | 40.8 | 11.8 | 4.2 | 47.9 | 11.1 | 11.1 |
| Incr Delay (d2), s/veh | 0.1 | 0.0 | 133.5 | 0.4 | 0.0 | 0.3 | 10.8 | 11.2 | 0.0 | 41.5 | 1.0 | 1.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.3 | 0.0 | 16.9 | 0.1 | 0.0 | 1.2 | 6.0 | 30.0 | 0.0 | 0.2 | 5.6 | 5.9 |
| LnGrp Delay(d),s/veh | 36.1 | 0.0 | 173.7 | 48.6 | 0.0 | 34.9 | 51.6 | 23.0 | 4.2 | 89.4 | 12.1 | 12.1 |
| LnGrp LOS | D | | F | D | | C | D | C | A | F | B | B |
| Approach Vol, veh/h | | 341 | | | 56 | | | 1405 | | | 778 | |
| Approach Delay, s/veh | | 168.5 | | | 36.1 | | | 27.0 | | | 12.6 | |
| Approach LOS | | F | | | D | | | C | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 4.5 | 72.0 | | 20.0 | 17.0 | 59.5 | | 20.0 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | 4.0 | 68.0 | | 16.0 | 20.0 | 52.0 | | 16.0 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 53.4 | | 18.0 | 12.8 | 13.1 | | 18.0 |
| Green Ext Time (p_c), s | 0.0 | 11.1 | | 0.0 | 0.3 | 21.9 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 41.6 |
| HCM 2010 LOS | D |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 49 | 3 | 23 | 17 | 0 | 1 | 21 | 1299 | 26 | 4 | 856 | 47 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 65 | 4 | 31 | 27 | 0 | 2 | 24 | 1460 | 29 | 4 | 941 | 52 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.75 | 0.75 | 0.75 | 0.64 | 0.64 | 0.64 | 0.89 | 0.89 | 0.89 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 193 | 13 | 101 | 164 | 0 | 112 | 37 | 2722 | 54 | 8 | 2558 | 141 |
| Arrive On Green | 0.07 | 0.07 | 0.07 | 0.07 | 0.00 | 0.07 | 0.02 | 0.77 | 0.77 | 0.00 | 0.75 | 0.75 |
| Sat Flow, veh/h | 1409 | 184 | 1427 | 1368 | 0 | 1583 | 1774 | 3549 | 70 | 1774 | 3411 | 188 |
| Grp Volume(v), veh/h | 65 | 0 | 35 | 27 | 0 | 2 | 24 | 727 | 762 | 4 | 488 | 505 |
| Grp Sat Flow(s),veh/h/ln | 1409 | 0 | 1611 | 1368 | 0 | 1583 | 1774 | 1770 | 1850 | 1774 | 1770 | 1829 |
| Q Serve(g_s), s | 3.4 | 0.0 | 1.6 | 1.5 | 0.0 | 0.1 | 1.0 | 12.4 | 12.4 | 0.2 | 7.2 | 7.2 |
| Cycle Q Clear(g_c), s | 3.5 | 0.0 | 1.6 | 3.0 | 0.0 | 0.1 | 1.0 | 12.4 | 12.4 | 0.2 | 7.2 | 7.2 |
| Prop In Lane | 1.00 | | 0.89 | 1.00 | | 1.00 | 1.00 | | 0.04 | 1.00 | | 0.10 |
| Lane Grp Cap(c), veh/h | 193 | 0 | 114 | 164 | 0 | 112 | 37 | 1357 | 1419 | 8 | 1327 | 1372 |
| V/C Ratio(X) | 0.34 | 0.00 | 0.31 | 0.16 | 0.00 | 0.02 | 0.65 | 0.54 | 0.54 | 0.53 | 0.37 | 0.37 |
| Avail Cap(c_a), veh/h | 390 | 0 | 339 | 355 | 0 | 333 | 117 | 1357 | 1419 | 93 | 1327 | 1372 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 34.5 | 0.0 | 33.5 | 35.0 | 0.0 | 32.8 | 36.9 | 3.5 | 3.5 | 37.8 | 3.3 | 3.3 |
| Incr Delay (d2), s/veh | 1.0 | 0.0 | 1.5 | 0.5 | 0.0 | 0.1 | 17.3 | 1.5 | 1.5 | 47.2 | 0.8 | 0.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.4 | 0.0 | 0.7 | 0.6 | 0.0 | 0.0 | 0.7 | 6.4 | 6.7 | 0.2 | 3.7 | 3.8 |
| LnGrp Delay(d),s/veh | 35.5 | 0.0 | 35.0 | 35.4 | 0.0 | 32.9 | 54.2 | 5.0 | 5.0 | 85.0 | 4.1 | 4.0 |
| LnGrp LOS | D | | D | D | | C | D | A | A | F | A | A |
| Approach Vol, veh/h | | 100 | | | 29 | | | 1513 | | | 997 | |
| Approach Delay, s/veh | | 35.3 | | | 35.2 | | | 5.8 | | | 4.4 | |
| Approach LOS | | D | | | D | | | A | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 4.3 | 62.3 | | 9.4 | 5.6 | 61.0 | | 9.4 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | 4.0 | 58.0 | | 16.0 | 5.0 | 57.0 | | 16.0 |
| Max Q Clear Time (g_c+I1), s | 2.2 | 14.4 | | 5.5 | 3.0 | 9.2 | | 5.0 |
| Green Ext Time (p_c), s | 0.0 | 24.6 | | 0.3 | 0.0 | 25.8 | | 0.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 6.7 |
| HCM 2010 LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 18 | 358 | 129 | 154 | 508 | 82 | 106 | 325 | 100 | 84 | 660 | 18 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 19 | 381 | 137 | 181 | 598 | 96 | 116 | 357 | 110 | 98 | 767 | 21 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 2 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.85 | 0.85 | 0.85 | 0.91 | 0.91 | 0.91 | 0.86 | 0.86 | 0.86 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 65 | 977 | 437 | 212 | 1097 | 176 | 347 | 774 | 235 | 159 | 978 | 27 |
| Arrive On Green | 0.04 | 0.28 | 0.28 | 0.12 | 0.36 | 0.36 | 0.10 | 0.29 | 0.29 | 0.09 | 0.28 | 0.28 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 1774 | 3056 | 490 | 3442 | 2676 | 813 | 1774 | 3519 | 96 |
| Grp Volume(v), veh/h | 19 | 381 | 137 | 181 | 346 | 348 | 116 | 234 | 233 | 98 | 386 | 402 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1774 | 1770 | 1776 | 1721 | 1770 | 1719 | 1774 | 1770 | 1846 |
| Q Serve(g_s), s | 1.1 | 9.2 | 7.2 | 10.5 | 16.4 | 16.5 | 3.3 | 11.4 | 11.7 | 5.6 | 21.2 | 21.2 |
| Cycle Q Clear(g_c), s | 1.1 | 9.2 | 7.2 | 10.5 | 16.4 | 16.5 | 3.3 | 11.4 | 11.7 | 5.6 | 21.2 | 21.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.28 | 1.00 | | 0.47 | 1.00 | | 0.05 |
| Lane Grp Cap(c), veh/h | 65 | 977 | 437 | 212 | 635 | 638 | 347 | 512 | 497 | 159 | 492 | 513 |
| V/C Ratio(X) | 0.29 | 0.39 | 0.31 | 0.86 | 0.54 | 0.55 | 0.33 | 0.46 | 0.47 | 0.62 | 0.78 | 0.78 |
| Avail Cap(c_a), veh/h | 151 | 977 | 437 | 283 | 635 | 638 | 359 | 512 | 497 | 212 | 492 | 513 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 49.5 | 31.0 | 30.2 | 45.5 | 26.9 | 26.9 | 44.1 | 30.7 | 30.8 | 46.2 | 35.1 | 35.1 |
| Incr Delay (d2), s/veh | 0.9 | 1.2 | 1.9 | 14.0 | 3.3 | 3.3 | 0.2 | 2.9 | 3.1 | 1.5 | 11.8 | 11.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(-26165%),veh/ln | 0.6 | 4.7 | 3.4 | 6.0 | 8.6 | 8.6 | 1.6 | 6.0 | 6.0 | 2.8 | 12.0 | 12.5 |
| LnGrp Delay(d),s/veh | 50.4 | 32.1 | 32.1 | 59.5 | 30.2 | 30.3 | 44.3 | 33.6 | 33.9 | 47.7 | 47.0 | 46.5 |
| LnGrp LOS | D | C | C | E | C | C | D | C | C | D | D | D |
| Approach Vol, veh/h | | 537 | | | 875 | | | 583 | | | 886 | |
| Approach Delay, s/veh | | 32.8 | | | 36.3 | | | 35.9 | | | 46.9 | |
| Approach LOS | | C | | | D | | | D | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 17.8 | 35.8 | 15.8 | 36.0 | 9.0 | 44.5 | 14.6 | 37.2 |
| Change Period (Y+Rc), s | * 5.2 | 6.7 | * 5.2 | 6.7 | * 5.2 | 6.7 | * 5.2 | 6.7 |
| Max Green Setting (Gmax), s | * 17 | 29.1 | * 11 | 29.3 | * 9 | 36.9 | * 13 | 27.7 |
| Max Q Clear Time (g_c+I1), s | 12.5 | 11.2 | 5.3 | 23.2 | 3.1 | 18.5 | 7.6 | 13.7 |
| Green Ext Time (p_c), s | 0.1 | 12.7 | 0.1 | 5.1 | 0.0 | 13.0 | 0.0 | 10.6 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 38.8 |
| HCM 2010 LOS | D |

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 2 | 0 | 9 | 26 | 0 | 5 | 3 | 493 | 9 | 4 | 895 | 0 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1900 | 1863 | 1900 | 1900 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 2 | 0 | 10 | 28 | 0 | 5 | 3 | 536 | 10 | 4 | 973 | 0 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 187 | 0 | 61 | 331 | 0 | 10 | 422 | 1162 | 987 | 704 | 1162 | 0 |
| Arrive On Green | 0.04 | 0.00 | 0.04 | 0.04 | 0.00 | 0.04 | 0.62 | 0.62 | 0.62 | 0.62 | 0.62 | 0.00 |
| Sat Flow, veh/h | 283 | 0 | 1413 | 1253 | 0 | 224 | 576 | 1863 | 1583 | 857 | 1863 | 0 |
| Grp Volume(v), veh/h | 12 | 0 | 0 | 33 | 0 | 0 | 3 | 536 | 10 | 4 | 973 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1695 | 0 | 0 | 1477 | 0 | 0 | 576 | 1863 | 1583 | 857 | 1863 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.1 | 3.7 | 0.1 | 0.1 | 9.9 | 0.0 |
| Cycle Q Clear(g_c), s | 0.2 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 10.0 | 3.7 | 0.1 | 3.7 | 9.9 | 0.0 |
| Prop In Lane | 0.17 | | 0.83 | 0.85 | | 0.15 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 248 | 0 | 0 | 341 | 0 | 0 | 422 | 1162 | 987 | 704 | 1162 | 0 |
| V/C Ratio(X) | 0.05 | 0.00 | 0.00 | 0.10 | 0.00 | 0.00 | 0.01 | 0.46 | 0.01 | 0.01 | 0.84 | 0.00 |
| Avail Cap(c_a), veh/h | 1215 | 0 | 0 | 1229 | 0 | 0 | 447 | 1241 | 1055 | 741 | 1241 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 11.1 | 0.0 | 0.0 | 11.2 | 0.0 | 0.0 | 7.5 | 2.4 | 1.7 | 3.4 | 3.6 | 0.0 |
| Incr Delay (d2), s/veh | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 4.9 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(-26165%),veh/ln | 0.1 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 1.9 | 0.0 | 0.0 | 6.2 | 0.0 |
| LnGrp Delay(d),s/veh | 11.1 | 0.0 | 0.0 | 11.3 | 0.0 | 0.0 | 7.5 | 2.7 | 1.7 | 3.4 | 8.5 | 0.0 |
| LnGrp LOS | B | | | B | | | A | A | A | A | A | |
| Approach Vol, veh/h | | 12 | | | 33 | | | 549 | | | 977 | |
| Approach Delay, s/veh | | 11.1 | | | 11.3 | | | 2.7 | | | 8.5 | |
| Approach LOS | | B | | | B | | | A | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 19.0 | | 5.0 | | 19.0 | | 5.0 |
| Change Period (Y+Rc), s | | 4.0 | | 4.0 | | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | | 16.0 | | 16.0 | | 16.0 | | 16.0 |
| Max Q Clear Time (g_c+I1), s | | 12.0 | | 2.2 | | 11.9 | | 2.5 |
| Green Ext Time (p_c), s | | 3.0 | | 0.1 | | 3.1 | | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 6.5 |
| HCM 2010 LOS | A |

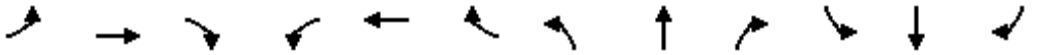
| Intersection | |
|---|---|
| Int Delay, s/veh | 3.5 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 3 | 101 | 90 | 502 | 906 | 24 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | Stop |
| Storage Length | 110 | 0 | 130 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 63 | 63 | 91 | 91 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 5 | 160 | 99 | 552 | 1007 | 27 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1756 | 1007 | 1007 | 0 | - | 0 |
| Stage 1 | 1007 | - | - | - | - | - |
| Stage 2 | 749 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 93 | 292 | 688 | - | - | - |
| Stage 1 | 353 | - | - | - | - | - |
| Stage 2 | 467 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 80 | 292 | 688 | - | - | - |
| Mov Cap-2 Maneuver | 80 | - | - | - | - | - |
| Stage 1 | 353 | - | - | - | - | - |
| Stage 2 | 400 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 32 | 1.7 | 0 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 688 | - | 80 | 292 | - | - |
| HCM Lane V/C Ratio | 0.144 | - | 0.06 | 0.549 | - | - |
| HCM Control Delay (s) | 11.1 | - | 52.8 | 31.4 | - | - |
| HCM Lane LOS | B | - | F | D | - | - |
| HCM 95th %tile Q(veh) | 0.5 | - | 0.2 | 3.1 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 16 | 4 | 674 | 13 | 33 | 17 | 398 | 579 | 4 | 3 | 1034 | 10 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 19 | 5 | 784 | 21 | 52 | 27 | 428 | 623 | 4 | 3 | 1100 | 11 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.63 | 0.63 | 0.63 | 0.93 | 0.93 | 0.93 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 423 | 3 | 472 | 72 | 347 | 180 | 444 | 1074 | 913 | 6 | 1185 | 12 |
| Arrive On Green | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 | 0.25 | 0.58 | 0.58 | 0.00 | 0.33 | 0.33 |
| Sat Flow, veh/h | 1314 | 10 | 1575 | 684 | 1156 | 600 | 1774 | 1863 | 1583 | 1774 | 3590 | 36 |
| Grp Volume(v), veh/h | 19 | 0 | 789 | 21 | 0 | 79 | 428 | 623 | 4 | 3 | 542 | 569 |
| Grp Sat Flow(s),veh/h/ln | 1314 | 0 | 1585 | 684 | 0 | 1757 | 1774 | 1863 | 1583 | 1774 | 1770 | 1856 |
| Q Serve(g_s), s | 1.1 | 0.0 | 30.0 | 0.0 | 0.0 | 3.3 | 23.8 | 21.3 | 0.1 | 0.2 | 29.6 | 29.6 |
| Cycle Q Clear(g_c), s | 4.4 | 0.0 | 30.0 | 30.0 | 0.0 | 3.3 | 23.8 | 21.3 | 0.1 | 0.2 | 29.6 | 29.6 |
| Prop In Lane | 1.00 | | 0.99 | 1.00 | | 0.34 | 1.00 | | 1.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 423 | 0 | 475 | 72 | 0 | 527 | 444 | 1074 | 913 | 6 | 584 | 613 |
| V/C Ratio(X) | 0.04 | 0.00 | 1.66 | 0.29 | 0.00 | 0.15 | 0.97 | 0.58 | 0.00 | 0.53 | 0.93 | 0.93 |
| Avail Cap(c_a), veh/h | 423 | 0 | 475 | 72 | 0 | 527 | 444 | 1074 | 913 | 71 | 584 | 613 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 27.3 | 0.0 | 35.0 | 50.0 | 0.0 | 25.7 | 37.1 | 13.5 | 9.0 | 49.8 | 32.4 | 32.4 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 306.0 | 2.2 | 0.0 | 0.1 | 33.7 | 2.3 | 0.0 | 60.0 | 23.2 | 22.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(-26165%),veh/ln | 0.4 | 0.0 | 53.5 | 0.6 | 0.0 | 1.6 | 15.8 | 11.6 | 0.0 | 0.2 | 18.2 | 19.0 |
| LnGrp Delay(d),s/veh | 27.3 | 0.0 | 341.0 | 52.2 | 0.0 | 25.8 | 70.8 | 15.7 | 9.0 | 109.7 | 55.6 | 54.8 |
| LnGrp LOS | C | | F | D | | C | E | B | A | F | E | D |
| Approach Vol, veh/h | | 808 | | | 100 | | | 1055 | | | 1114 | |
| Approach Delay, s/veh | | 333.6 | | | 31.3 | | | 38.0 | | | 55.3 | |
| Approach LOS | | F | | | C | | | D | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 4.3 | 61.7 | | 34.0 | 29.0 | 37.0 | | 34.0 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | 4.0 | 54.0 | | 30.0 | 25.0 | 33.0 | | 30.0 |
| Max Q Clear Time (g_c+I1), s | 2.2 | 23.3 | | 32.0 | 25.8 | 31.6 | | 32.0 |
| Green Ext Time (p_c), s | 0.0 | 14.4 | | 0.0 | 0.0 | 1.2 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 121.7 |
| HCM 2010 LOS | F |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 220 | 17 | 139 | 29 | 10 | 5 | 140 | 798 | 16 | 5 | 1382 | 343 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 324 | 25 | 204 | 53 | 18 | 9 | 189 | 1078 | 22 | 6 | 1553 | 385 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.68 | 0.68 | 0.68 | 0.55 | 0.55 | 0.55 | 0.74 | 0.74 | 0.74 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 372 | 40 | 330 | 189 | 270 | 135 | 195 | 2284 | 47 | 11 | 1532 | 365 |
| Arrive On Green | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.11 | 0.64 | 0.64 | 0.01 | 0.54 | 0.54 |
| Sat Flow, veh/h | 1378 | 176 | 1434 | 1147 | 1173 | 586 | 1774 | 3547 | 72 | 1774 | 2837 | 676 |
| Grp Volume(v), veh/h | 324 | 0 | 229 | 53 | 0 | 27 | 189 | 538 | 562 | 6 | 945 | 993 |
| Grp Sat Flow(s),veh/h/ln | 1378 | 0 | 1610 | 1147 | 0 | 1759 | 1774 | 1770 | 1850 | 1774 | 1770 | 1743 |
| Q Serve(g_s), s | 21.8 | 0.0 | 12.8 | 4.3 | 0.0 | 1.2 | 10.6 | 15.5 | 15.5 | 0.3 | 52.7 | 54.0 |
| Cycle Q Clear(g_c), s | 23.0 | 0.0 | 12.8 | 17.1 | 0.0 | 1.2 | 10.6 | 15.5 | 15.5 | 0.3 | 52.7 | 54.0 |
| Prop In Lane | 1.00 | | 0.89 | 1.00 | | 0.33 | 1.00 | | 0.04 | 1.00 | | 0.39 |
| Lane Grp Cap(c), veh/h | 372 | 0 | 370 | 189 | 0 | 405 | 195 | 1139 | 1191 | 11 | 956 | 941 |
| V/C Ratio(X) | 0.87 | 0.00 | 0.62 | 0.28 | 0.00 | 0.07 | 0.97 | 0.47 | 0.47 | 0.55 | 0.99 | 1.06 |
| Avail Cap(c_a), veh/h | 372 | 0 | 370 | 189 | 0 | 405 | 195 | 1139 | 1191 | 71 | 956 | 941 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 39.9 | 0.0 | 34.6 | 42.2 | 0.0 | 30.1 | 44.3 | 9.1 | 9.1 | 49.6 | 22.7 | 23.0 |
| Incr Delay (d2), s/veh | 19.4 | 0.0 | 3.1 | 0.8 | 0.0 | 0.1 | 55.1 | 1.4 | 1.3 | 37.0 | 26.5 | 45.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(-26165%),veh/ln | 10.9 | 0.0 | 6.0 | 1.4 | 0.0 | 0.6 | 8.2 | 7.9 | 8.3 | 0.3 | 32.5 | 37.4 |
| LnGrp Delay(d),s/veh | 59.3 | 0.0 | 37.7 | 43.0 | 0.0 | 30.2 | 99.5 | 10.5 | 10.5 | 86.6 | 49.2 | 68.0 |
| LnGrp LOS | E | | D | D | | C | F | B | B | F | D | F |
| Approach Vol, veh/h | | 553 | | | 80 | | | 1289 | | | 1944 | |
| Approach Delay, s/veh | | 50.3 | | | 38.7 | | | 23.5 | | | 58.9 | |
| Approach LOS | | D | | | D | | | C | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 4.6 | 68.4 | | 27.0 | 15.0 | 58.0 | | 27.0 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | 4.6 | 61.0 | | 23.0 | 11.0 | 54.0 | | 23.0 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 17.5 | | 25.0 | 12.6 | 56.0 | | 19.1 |
| Green Ext Time (p_c), s | 0.0 | 33.5 | | 0.0 | 0.0 | 0.0 | | 1.1 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | 45.5 | |
| HCM 2010 LOS | D | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 26 | 498 | 114 | 112 | 448 | 65 | 106 | 799 | 211 | 63 | 420 | 29 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 30 | 566 | 130 | 119 | 477 | 69 | 118 | 888 | 234 | 73 | 488 | 34 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 2 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.94 | 0.94 | 0.94 | 0.90 | 0.90 | 0.90 | 0.86 | 0.86 | 0.86 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 88 | 911 | 407 | 159 | 925 | 133 | 339 | 975 | 257 | 145 | 1124 | 78 |
| Arrive On Green | 0.05 | 0.26 | 0.26 | 0.09 | 0.30 | 0.30 | 0.10 | 0.35 | 0.35 | 0.08 | 0.33 | 0.33 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 1774 | 3106 | 447 | 3442 | 2773 | 730 | 1774 | 3358 | 233 |
| Grp Volume(v), veh/h | 30 | 566 | 130 | 119 | 271 | 275 | 118 | 566 | 556 | 73 | 257 | 265 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1774 | 1770 | 1784 | 1721 | 1770 | 1734 | 1774 | 1770 | 1822 |
| Q Serve(g_s), s | 1.8 | 15.3 | 7.2 | 7.1 | 13.8 | 13.9 | 3.5 | 33.1 | 33.2 | 4.3 | 12.2 | 12.3 |
| Cycle Q Clear(g_c), s | 1.8 | 15.3 | 7.2 | 7.1 | 13.8 | 13.9 | 3.5 | 33.1 | 33.2 | 4.3 | 12.2 | 12.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.25 | 1.00 | | 0.42 | 1.00 | | 0.13 |
| Lane Grp Cap(c), veh/h | 88 | 911 | 407 | 159 | 527 | 531 | 339 | 622 | 609 | 145 | 593 | 610 |
| V/C Ratio(X) | 0.34 | 0.62 | 0.32 | 0.75 | 0.51 | 0.52 | 0.35 | 0.91 | 0.91 | 0.50 | 0.43 | 0.44 |
| Avail Cap(c_a), veh/h | 147 | 911 | 407 | 180 | 527 | 531 | 349 | 622 | 609 | 164 | 593 | 610 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 49.8 | 35.6 | 32.6 | 48.1 | 31.6 | 31.6 | 45.6 | 33.5 | 33.6 | 47.6 | 28.0 | 28.1 |
| Incr Delay (d2), s/veh | 0.9 | 3.2 | 2.1 | 11.5 | 3.6 | 3.6 | 0.2 | 19.8 | 20.3 | 1.0 | 2.3 | 2.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(-26165%),veh/ln | 0.9 | 7.9 | 3.4 | 4.0 | 7.2 | 7.3 | 1.7 | 19.6 | 19.3 | 2.1 | 6.4 | 6.6 |
| LnGrp Delay(d),s/veh | 50.7 | 38.8 | 34.6 | 59.6 | 35.1 | 35.2 | 45.8 | 53.3 | 53.8 | 48.6 | 30.3 | 30.3 |
| LnGrp LOS | D | D | C | E | D | D | D | D | D | D | C | C |
| Approach Vol, veh/h | | 726 | | | 665 | | | 1240 | | | 595 | |
| Approach Delay, s/veh | | 38.5 | | | 39.5 | | | 52.8 | | | 32.6 | |
| Approach LOS | | D | | | D | | | D | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 14.9 | 34.6 | 15.9 | 43.0 | 10.6 | 39.0 | 14.1 | 44.8 |
| Change Period (Y+Rc), s | * 5.2 | 6.7 | * 5.2 | 6.7 | * 5.2 | 6.7 | * 5.2 | 6.7 |
| Max Green Setting (Gmax), s | * 11 | 27.9 | * 11 | 36.3 | * 9 | 29.9 | * 10 | 37.3 |
| Max Q Clear Time (g_c+I1), s | 9.1 | 17.3 | 5.5 | 14.3 | 3.8 | 15.9 | 6.3 | 35.2 |
| Green Ext Time (p_c), s | 0.0 | 8.3 | 0.1 | 18.5 | 0.0 | 10.6 | 0.0 | 2.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 43.1 |
| HCM 2010 LOS | D |

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 1 | 0 | 3 | 14 | 0 | 2 | 6 | 1106 | 27 | 12 | 626 | 1 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1900 | 1863 | 1900 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 1 | 0 | 3 | 15 | 0 | 2 | 7 | 1202 | 29 | 13 | 680 | 1 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 189 | 0 | 15 | 328 | 0 | 34 | 635 | 1215 | 1033 | 302 | 1213 | 2 |
| Arrive On Green | 0.02 | 0.00 | 0.02 | 0.02 | 0.00 | 0.02 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| Sat Flow, veh/h | 237 | 0 | 710 | 1592 | 0 | 1583 | 756 | 1863 | 1583 | 451 | 1860 | 3 |
| Grp Volume(v), veh/h | 4 | 0 | 0 | 15 | 0 | 2 | 7 | 1202 | 29 | 13 | 0 | 681 |
| Grp Sat Flow(s),veh/h/ln | 947 | 0 | 0 | 1592 | 0 | 1583 | 756 | 1863 | 1583 | 451 | 0 | 1862 |
| Q Serve(g_s), s | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 15.5 | 0.2 | 0.5 | 0.0 | 4.9 |
| Cycle Q Clear(g_c), s | 0.3 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 5.0 | 15.5 | 0.2 | 16.0 | 0.0 | 4.9 |
| Prop In Lane | 0.25 | | 0.75 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 204 | 0 | 0 | 328 | 0 | 34 | 635 | 1215 | 1033 | 302 | 0 | 1215 |
| V/C Ratio(X) | 0.02 | 0.00 | 0.00 | 0.05 | 0.00 | 0.06 | 0.01 | 0.99 | 0.03 | 0.04 | 0.00 | 0.56 |
| Avail Cap(c_a), veh/h | 1172 | 0 | 0 | 1216 | 0 | 1033 | 635 | 1215 | 1033 | 302 | 0 | 1215 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 12.0 | 0.0 | 0.0 | 11.8 | 0.0 | 11.8 | 3.7 | 4.2 | 1.5 | 12.1 | 0.0 | 2.3 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.7 | 0.0 | 23.2 | 0.0 | 0.1 | 0.0 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(-26165%),veh/ln | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 15.2 | 0.1 | 0.1 | 0.0 | 2.5 |
| LnGrp Delay(d),s/veh | 12.0 | 0.0 | 0.0 | 11.9 | 0.0 | 12.4 | 3.7 | 27.4 | 1.5 | 12.2 | 0.0 | 2.9 |
| LnGrp LOS | B | | | B | | B | A | C | A | B | | A |
| Approach Vol, veh/h | | 4 | | | 17 | | | 1238 | | | 694 | |
| Approach Delay, s/veh | | 12.0 | | | 12.0 | | | 26.6 | | | 3.1 | |
| Approach LOS | | B | | | B | | | C | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 20.0 | | 4.5 | | 20.0 | | 4.5 |
| Change Period (Y+Rc), s | | 4.0 | | 4.0 | | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | | 16.0 | | 16.0 | | 16.0 | | 16.0 |
| Max Q Clear Time (g_c+I1), s | | 17.5 | | 2.3 | | 18.0 | | 2.2 |
| Green Ext Time (p_c), s | | 0.0 | | 0.0 | | 0.0 | | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 18.1 |
| HCM 2010 LOS | | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.2 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 6 | 35 | 69 | 1133 | 632 | 11 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | Stop |
| Storage Length | 110 | 0 | 130 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 57 | 57 | 95 | 95 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 61 | 73 | 1193 | 702 | 12 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2040 | 702 | 702 | 0 | - | 0 |
| Stage 1 | 702 | - | - | - | - | - |
| Stage 2 | 1338 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 62 | 438 | 895 | - | - | - |
| Stage 1 | 491 | - | - | - | - | - |
| Stage 2 | 245 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 57 | 438 | 895 | - | - | - |
| Mov Cap-2 Maneuver | 57 | - | - | - | - | - |
| Stage 1 | 491 | - | - | - | - | - |
| Stage 2 | 225 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 24.4 | 0.5 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 895 | - | 57 | 438 | - | - |
| HCM Lane V/C Ratio | 0.081 | - | 0.185 | 0.14 | - | - |
| HCM Control Delay (s) | 9.4 | - | 81.9 | 14.6 | - | - |
| HCM Lane LOS | A | - | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | 0.6 | 0.5 | - | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 23 | 25 | 280 | 4 | 23 | 18 | 195 | 1164 | 4 | 4 | 660 | 13 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 25 | 27 | 301 | 5 | 29 | 22 | 203 | 1212 | 4 | 5 | 767 | 15 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.80 | 0.80 | 0.80 | 0.96 | 0.96 | 0.96 | 0.86 | 0.86 | 0.86 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 264 | 22 | 244 | 75 | 163 | 124 | 239 | 1313 | 1116 | 9 | 2041 | 40 |
| Arrive On Green | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.13 | 0.70 | 0.70 | 0.01 | 0.57 | 0.57 |
| Sat Flow, veh/h | 1348 | 132 | 1471 | 1048 | 984 | 747 | 1774 | 1863 | 1583 | 1774 | 3551 | 69 |
| Grp Volume(v), veh/h | 25 | 0 | 328 | 5 | 0 | 51 | 203 | 1212 | 4 | 5 | 382 | 400 |
| Grp Sat Flow(s),veh/h/ln | 1348 | 0 | 1603 | 1048 | 0 | 1731 | 1774 | 1863 | 1583 | 1774 | 1770 | 1850 |
| Q Serve(g_s), s | 1.6 | 0.0 | 16.0 | 0.0 | 0.0 | 2.4 | 10.8 | 53.1 | 0.1 | 0.3 | 11.3 | 11.3 |
| Cycle Q Clear(g_c), s | 4.0 | 0.0 | 16.0 | 16.0 | 0.0 | 2.4 | 10.8 | 53.1 | 0.1 | 0.3 | 11.3 | 11.3 |
| Prop In Lane | 1.00 | | 0.92 | 1.00 | | 0.43 | 1.00 | | 1.00 | 1.00 | | 0.04 |
| Lane Grp Cap(c), veh/h | 264 | 0 | 266 | 75 | 0 | 287 | 239 | 1313 | 1116 | 9 | 1017 | 1064 |
| V/C Ratio(X) | 0.09 | 0.00 | 1.23 | 0.07 | 0.00 | 0.18 | 0.85 | 0.92 | 0.00 | 0.54 | 0.38 | 0.38 |
| Avail Cap(c_a), veh/h | 264 | 0 | 266 | 75 | 0 | 287 | 368 | 1313 | 1116 | 74 | 1017 | 1064 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 36.3 | 0.0 | 40.3 | 48.3 | 0.0 | 34.6 | 40.8 | 12.0 | 4.2 | 47.9 | 11.1 | 11.1 |
| Incr Delay (d2), s/veh | 0.2 | 0.0 | 133.5 | 0.4 | 0.0 | 0.3 | 10.8 | 12.2 | 0.0 | 41.5 | 1.1 | 1.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(-26165%),veh/ln | 0.6 | 0.0 | 16.9 | 0.1 | 0.0 | 1.2 | 6.0 | 31.4 | 0.0 | 0.2 | 5.8 | 6.1 |
| LnGrp Delay(d),s/veh | 36.5 | 0.0 | 173.7 | 48.6 | 0.0 | 34.9 | 51.6 | 24.3 | 4.2 | 89.4 | 12.2 | 12.1 |
| LnGrp LOS | D | | F | D | | C | D | C | A | F | B | B |
| Approach Vol, veh/h | | 353 | | | 56 | | | 1419 | | | 787 | |
| Approach Delay, s/veh | | 164.0 | | | 36.1 | | | 28.1 | | | 12.7 | |
| Approach LOS | | F | | | D | | | C | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 4.5 | 72.0 | | 20.0 | 17.0 | 59.5 | | 20.0 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | 4.0 | 68.0 | | 16.0 | 20.0 | 52.0 | | 16.0 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 55.1 | | 18.0 | 12.8 | 13.3 | | 18.0 |
| Green Ext Time (p_c), s | 0.0 | 10.1 | | 0.0 | 0.3 | 22.3 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 42.0 |
| HCM 2010 LOS | D |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 51 | 3 | 23 | 17 | 0 | 1 | 21 | 1311 | 26 | 4 | 861 | 48 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 68 | 4 | 31 | 27 | 0 | 2 | 24 | 1473 | 29 | 4 | 946 | 53 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.75 | 0.75 | 0.75 | 0.64 | 0.64 | 0.64 | 0.89 | 0.89 | 0.89 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 196 | 13 | 105 | 167 | 0 | 116 | 37 | 2716 | 53 | 8 | 2550 | 143 |
| Arrive On Green | 0.07 | 0.07 | 0.07 | 0.07 | 0.00 | 0.07 | 0.02 | 0.76 | 0.76 | 0.00 | 0.75 | 0.75 |
| Sat Flow, veh/h | 1409 | 184 | 1427 | 1368 | 0 | 1583 | 1774 | 3550 | 70 | 1774 | 3408 | 191 |
| Grp Volume(v), veh/h | 68 | 0 | 35 | 27 | 0 | 2 | 24 | 733 | 769 | 4 | 491 | 508 |
| Grp Sat Flow(s),veh/h/ln | 1409 | 0 | 1611 | 1368 | 0 | 1583 | 1774 | 1770 | 1850 | 1774 | 1770 | 1829 |
| Q Serve(g_s), s | 3.6 | 0.0 | 1.6 | 1.5 | 0.0 | 0.1 | 1.0 | 12.7 | 12.7 | 0.2 | 7.4 | 7.4 |
| Cycle Q Clear(g_c), s | 3.7 | 0.0 | 1.6 | 3.0 | 0.0 | 0.1 | 1.0 | 12.7 | 12.7 | 0.2 | 7.4 | 7.4 |
| Prop In Lane | 1.00 | | 0.89 | 1.00 | | 1.00 | 1.00 | | 0.04 | 1.00 | | 0.10 |
| Lane Grp Cap(c), veh/h | 196 | 0 | 118 | 167 | 0 | 116 | 37 | 1354 | 1415 | 8 | 1324 | 1369 |
| V/C Ratio(X) | 0.35 | 0.00 | 0.30 | 0.16 | 0.00 | 0.02 | 0.65 | 0.54 | 0.54 | 0.53 | 0.37 | 0.37 |
| Avail Cap(c_a), veh/h | 389 | 0 | 338 | 354 | 0 | 333 | 116 | 1354 | 1415 | 93 | 1324 | 1369 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 34.5 | 0.0 | 33.4 | 34.9 | 0.0 | 32.8 | 37.0 | 3.6 | 3.6 | 37.8 | 3.3 | 3.3 |
| Incr Delay (d2), s/veh | 1.0 | 0.0 | 1.4 | 0.5 | 0.0 | 0.1 | 17.3 | 1.6 | 1.5 | 47.3 | 0.8 | 0.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(-26165%),veh/ln | 1.5 | 0.0 | 0.7 | 0.6 | 0.0 | 0.0 | 0.7 | 6.7 | 7.0 | 0.2 | 3.8 | 4.0 |
| LnGrp Delay(d),s/veh | 35.5 | 0.0 | 34.8 | 35.3 | 0.0 | 32.8 | 54.3 | 5.2 | 5.1 | 85.1 | 4.1 | 4.1 |
| LnGrp LOS | D | | C | D | | C | D | A | A | F | A | A |
| Approach Vol, veh/h | | 103 | | | 29 | | | 1526 | | | 1003 | |
| Approach Delay, s/veh | | 35.3 | | | 35.1 | | | 5.9 | | | 4.4 | |
| Approach LOS | | D | | | D | | | A | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 4.3 | 62.3 | | 9.6 | 5.6 | 61.0 | | 9.6 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | 4.3 | 58.0 | | 16.0 | 5.0 | 57.0 | | 16.0 |
| Max Q Clear Time (g_c+I1), s | 2.2 | 14.7 | | 5.7 | 3.0 | 9.4 | | 5.0 |
| Green Ext Time (p_c), s | 0.0 | 24.8 | | 0.3 | 0.0 | 26.1 | | 0.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 6.8 |
| HCM 2010 LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 18 | 371 | 139 | 176 | 525 | 89 | 115 | 373 | 112 | 90 | 711 | 18 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 19 | 395 | 148 | 207 | 618 | 105 | 126 | 410 | 123 | 105 | 827 | 21 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 2 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.85 | 0.85 | 0.85 | 0.91 | 0.91 | 0.91 | 0.86 | 0.86 | 0.86 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 64 | 960 | 430 | 237 | 1116 | 189 | 345 | 765 | 227 | 158 | 963 | 24 |
| Arrive On Green | 0.04 | 0.27 | 0.27 | 0.13 | 0.37 | 0.37 | 0.10 | 0.28 | 0.28 | 0.09 | 0.27 | 0.27 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 1774 | 3028 | 514 | 3442 | 2692 | 799 | 1774 | 3527 | 90 |
| Grp Volume(v), veh/h | 19 | 395 | 148 | 207 | 361 | 362 | 126 | 268 | 265 | 105 | 415 | 433 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1774 | 1770 | 1772 | 1721 | 1770 | 1722 | 1774 | 1770 | 1847 |
| Q Serve(g_s), s | 1.1 | 9.8 | 8.1 | 12.3 | 17.3 | 17.4 | 3.7 | 13.7 | 14.0 | 6.1 | 23.9 | 23.9 |
| Cycle Q Clear(g_c), s | 1.1 | 9.8 | 8.1 | 12.3 | 17.3 | 17.4 | 3.7 | 13.7 | 14.0 | 6.1 | 23.9 | 23.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.29 | 1.00 | | 0.46 | 1.00 | | 0.05 |
| Lane Grp Cap(c), veh/h | 64 | 960 | 430 | 237 | 652 | 653 | 345 | 503 | 489 | 158 | 483 | 505 |
| V/C Ratio(X) | 0.30 | 0.41 | 0.34 | 0.87 | 0.55 | 0.55 | 0.37 | 0.53 | 0.54 | 0.66 | 0.86 | 0.86 |
| Avail Cap(c_a), veh/h | 149 | 960 | 430 | 278 | 652 | 653 | 353 | 503 | 489 | 208 | 483 | 505 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 50.3 | 32.1 | 31.4 | 45.6 | 26.9 | 26.9 | 45.1 | 32.4 | 32.5 | 47.3 | 37.0 | 37.0 |
| Incr Delay (d2), s/veh | 0.9 | 1.3 | 2.2 | 20.6 | 3.4 | 3.4 | 0.2 | 4.0 | 4.3 | 1.9 | 17.7 | 17.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.6 | 4.9 | 3.8 | 7.4 | 9.0 | 9.1 | 1.8 | 7.3 | 7.2 | 3.1 | 14.0 | 14.5 |
| LnGrp Delay(d),s/veh | 51.3 | 33.4 | 33.6 | 66.1 | 30.2 | 30.3 | 45.3 | 36.4 | 36.7 | 49.2 | 54.7 | 54.1 |
| LnGrp LOS | D | C | C | E | C | C | D | D | D | D | D | D |
| Approach Vol, veh/h | | 562 | | | 930 | | | 659 | | | 953 | |
| Approach Delay, s/veh | | 34.0 | | | 38.2 | | | 38.2 | | | 53.8 | |
| Approach LOS | | C | | | D | | | D | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 19.5 | 35.8 | 15.9 | 36.0 | 9.1 | 46.2 | 14.8 | 37.2 |
| Change Period (Y+Rc), s | * 5.2 | 6.7 | * 5.2 | 6.7 | * 5.2 | 6.7 | * 5.2 | 6.7 |
| Max Green Setting (Gmax), s | * 17 | 29.1 | * 11 | 29.3 | * 9 | 36.9 | * 13 | 27.7 |
| Max Q Clear Time (g_c+I1), s | 14.3 | 11.8 | 5.7 | 25.9 | 3.1 | 19.4 | 8.1 | 16.0 |
| Green Ext Time (p_c), s | 0.1 | 12.7 | 0.1 | 3.1 | 0.0 | 12.8 | 0.0 | 9.6 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 42.3 |
| HCM 2010 LOS | D |

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 3 | 9 | 4 | 565 | 983 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | 30 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 3 | 10 | 4 | 614 | 1068 | 0 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1691 | 1068 | 1068 | 0 | - | 0 |
| Stage 1 | 1068 | - | - | - | - | - |
| Stage 2 | 623 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 103 | 269 | 653 | - | - | - |
| Stage 1 | 330 | - | - | - | - | - |
| Stage 2 | 535 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 102 | 269 | 653 | - | - | - |
| Mov Cap-2 Maneuver | 229 | - | - | - | - | - |
| Stage 1 | 330 | - | - | - | - | - |
| Stage 2 | 532 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 19.7 | 0.1 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 653 | - | 258 | - | - |
| HCM Lane V/C Ratio | 0.007 | - | 0.051 | - | - |
| HCM Control Delay (s) | 10.6 | - | 19.7 | - | - |
| HCM Lane LOS | B | - | C | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.2 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 6.7 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 3 | 133 | 111 | 566 | 975 | 17 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | Stop |
| Storage Length | 110 | 0 | 130 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 63 | 63 | 91 | 91 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 5 | 211 | 122 | 622 | 1083 | 19 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1949 | 1083 | 1083 | 0 | - | 0 |
| Stage 1 | 1083 | - | - | - | - | - |
| Stage 2 | 866 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 71 | 264 | 644 | - | - | - |
| Stage 1 | 325 | - | - | - | - | - |
| Stage 2 | 412 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 58 | 264 | 644 | - | - | - |
| Mov Cap-2 Maneuver | 58 | - | - | - | - | - |
| Stage 1 | 325 | - | - | - | - | - |
| Stage 2 | 334 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 57.2 | 1.9 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 644 | - | 58 | 264 | - | - |
| HCM Lane V/C Ratio | 0.189 | - | 0.082 | 0.8 | - | - |
| HCM Control Delay (s) | 11.9 | - | 72.5 | 56.9 | - | - |
| HCM Lane LOS | B | - | F | F | - | - |
| HCM 95th %tile Q(veh) | 0.7 | - | 0.3 | 6.2 | - | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 14 | 6 | 705 | 18 | 46 | 26 | 415 | 667 | 6 | 5 | 1134 | 8 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 16 | 7 | 820 | 29 | 73 | 41 | 446 | 717 | 6 | 5 | 1206 | 9 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.63 | 0.63 | 0.63 | 0.93 | 0.93 | 0.93 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 392 | 4 | 472 | 72 | 336 | 189 | 444 | 1071 | 910 | 9 | 1188 | 9 |
| Arrive On Green | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 | 0.25 | 0.57 | 0.57 | 0.01 | 0.33 | 0.33 |
| Sat Flow, veh/h | 1273 | 13 | 1572 | 660 | 1122 | 630 | 1774 | 1863 | 1583 | 1774 | 3601 | 27 |
| Grp Volume(v), veh/h | 16 | 0 | 827 | 29 | 0 | 114 | 446 | 717 | 6 | 5 | 593 | 622 |
| Grp Sat Flow(s),veh/h/ln | 1273 | 0 | 1585 | 660 | 0 | 1752 | 1774 | 1863 | 1583 | 1774 | 1770 | 1858 |
| Q Serve(g_s), s | 1.0 | 0.0 | 30.0 | 0.0 | 0.0 | 4.9 | 25.0 | 26.6 | 0.2 | 0.3 | 33.0 | 33.0 |
| Cycle Q Clear(g_c), s | 5.8 | 0.0 | 30.0 | 30.0 | 0.0 | 4.9 | 25.0 | 26.6 | 0.2 | 0.3 | 33.0 | 33.0 |
| Prop In Lane | 1.00 | | 0.99 | 1.00 | | 0.36 | 1.00 | | 1.00 | 1.00 | | 0.01 |
| Lane Grp Cap(c), veh/h | 392 | 0 | 476 | 72 | 0 | 525 | 444 | 1071 | 910 | 9 | 584 | 613 |
| V/C Ratio(X) | 0.04 | 0.00 | 1.74 | 0.40 | 0.00 | 0.22 | 1.01 | 0.67 | 0.01 | 0.54 | 1.01 | 1.02 |
| Avail Cap(c_a), veh/h | 392 | 0 | 476 | 72 | 0 | 525 | 444 | 1071 | 910 | 71 | 584 | 613 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 28.4 | 0.0 | 35.0 | 50.0 | 0.0 | 26.2 | 37.5 | 14.7 | 9.1 | 49.6 | 33.5 | 33.5 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 341.2 | 3.6 | 0.0 | 0.2 | 44.1 | 3.3 | 0.0 | 41.8 | 41.0 | 40.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.3 | 0.0 | 58.2 | 0.9 | 0.0 | 2.4 | 17.6 | 14.5 | 0.1 | 0.2 | 22.7 | 23.7 |
| LnGrp Delay(d),s/veh | 28.4 | 0.0 | 376.2 | 53.6 | 0.0 | 26.4 | 81.7 | 18.0 | 9.1 | 91.4 | 74.5 | 73.7 |
| LnGrp LOS | C | | F | D | | C | F | B | A | F | F | F |
| Approach Vol, veh/h | | 843 | | | 143 | | | 1169 | | | 1220 | |
| Approach Delay, s/veh | | 369.6 | | | 31.9 | | | 42.3 | | | 74.1 | |
| Approach LOS | | F | | | C | | | D | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 4.5 | 61.5 | | 34.0 | 29.0 | 37.0 | | 34.0 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | 4.0 | 54.0 | | 30.0 | 25.0 | 33.0 | | 30.0 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 28.6 | | 32.0 | 27.0 | 35.0 | | 32.0 |
| Green Ext Time (p_c), s | 0.0 | 15.0 | | 0.0 | 0.0 | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 135.1 |
| HCM 2010 LOS | F |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 239 | 20 | 154 | 37 | 13 | 6 | 155 | 883 | 20 | 6 | 1503 | 355 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 351 | 29 | 226 | 67 | 24 | 11 | 209 | 1193 | 27 | 7 | 1689 | 399 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.68 | 0.68 | 0.68 | 0.55 | 0.55 | 0.55 | 0.74 | 0.74 | 0.74 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 365 | 42 | 328 | 167 | 278 | 128 | 195 | 2275 | 51 | 13 | 1548 | 352 |
| Arrive On Green | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.11 | 0.64 | 0.64 | 0.01 | 0.54 | 0.54 |
| Sat Flow, veh/h | 1368 | 183 | 1428 | 1120 | 1210 | 555 | 1774 | 3538 | 80 | 1774 | 2866 | 651 |
| Grp Volume(v), veh/h | 351 | 0 | 255 | 67 | 0 | 35 | 209 | 597 | 623 | 7 | 1017 | 1071 |
| Grp Sat Flow(s),veh/h/ln | 1368 | 0 | 1611 | 1120 | 0 | 1765 | 1774 | 1770 | 1849 | 1774 | 1770 | 1748 |
| Q Serve(g_s), s | 21.4 | 0.0 | 14.5 | 5.8 | 0.0 | 1.6 | 11.0 | 18.2 | 18.2 | 0.4 | 54.0 | 54.0 |
| Cycle Q Clear(g_c), s | 23.0 | 0.0 | 14.5 | 20.3 | 0.0 | 1.6 | 11.0 | 18.2 | 18.2 | 0.4 | 54.0 | 54.0 |
| Prop In Lane | 1.00 | | 0.89 | 1.00 | | 0.31 | 1.00 | | 0.04 | 1.00 | | 0.37 |
| Lane Grp Cap(c), veh/h | 365 | 0 | 370 | 167 | 0 | 406 | 195 | 1138 | 1189 | 13 | 956 | 944 |
| V/C Ratio(X) | 0.96 | 0.00 | 0.69 | 0.40 | 0.00 | 0.09 | 1.07 | 0.52 | 0.52 | 0.56 | 1.06 | 1.13 |
| Avail Cap(c_a), veh/h | 365 | 0 | 370 | 167 | 0 | 406 | 195 | 1138 | 1189 | 71 | 956 | 944 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 41.0 | 0.0 | 35.2 | 44.5 | 0.0 | 30.2 | 44.5 | 9.6 | 9.6 | 49.5 | 23.0 | 23.0 |
| Incr Delay (d2), s/veh | 36.8 | 0.0 | 5.3 | 1.5 | 0.0 | 0.1 | 84.5 | 1.7 | 1.7 | 33.5 | 47.9 | 73.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 13.4 | 0.0 | 7.0 | 1.9 | 0.0 | 0.8 | 9.9 | 9.3 | 9.7 | 0.3 | 38.7 | 45.0 |
| LnGrp Delay(d),s/veh | 77.8 | 0.0 | 40.5 | 46.0 | 0.0 | 30.3 | 129.0 | 11.3 | 11.3 | 83.0 | 70.9 | 96.7 |
| LnGrp LOS | E | | D | D | | C | F | B | B | F | F | F |
| Approach Vol, veh/h | | 606 | | | 102 | | | 1429 | | | 2095 | |
| Approach Delay, s/veh | | 62.1 | | | 40.7 | | | 28.5 | | | 84.1 | |
| Approach LOS | | E | | | D | | | C | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 4.7 | 68.3 | | 27.0 | 15.0 | 58.0 | | 27.0 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | 4.0 | 61.0 | | 23.0 | 11.0 | 54.0 | | 23.0 |
| Max Q Clear Time (g_c+I1), s | 2.4 | 20.2 | | 25.0 | 13.0 | 56.0 | | 22.3 |
| Green Ext Time (p_c), s | 0.0 | 34.6 | | 0.0 | 0.0 | 0.0 | | 0.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 61.2 |
| HCM 2010 LOS | E |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 27 | 515 | 117 | 126 | 463 | 69 | 116 | 820 | 241 | 67 | 484 | 29 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 29 | 548 | 124 | 148 | 545 | 81 | 127 | 901 | 265 | 78 | 563 | 34 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 2 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.85 | 0.85 | 0.85 | 0.91 | 0.91 | 0.91 | 0.86 | 0.86 | 0.86 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 87 | 1051 | 470 | 178 | 1078 | 160 | 349 | 791 | 232 | 151 | 938 | 57 |
| Arrive On Green | 0.05 | 0.30 | 0.30 | 0.10 | 0.35 | 0.35 | 0.10 | 0.29 | 0.29 | 0.08 | 0.28 | 0.28 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 1774 | 3093 | 458 | 3442 | 2700 | 793 | 1774 | 3392 | 205 |
| Grp Volume(v), veh/h | 29 | 548 | 124 | 148 | 311 | 315 | 127 | 590 | 576 | 78 | 293 | 304 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1774 | 1770 | 1782 | 1721 | 1770 | 1723 | 1774 | 1770 | 1827 |
| Q Serve(g_s), s | 1.7 | 13.6 | 6.3 | 8.7 | 14.7 | 14.8 | 3.6 | 31.0 | 31.0 | 4.5 | 15.2 | 15.3 |
| Cycle Q Clear(g_c), s | 1.7 | 13.6 | 6.3 | 8.7 | 14.7 | 14.8 | 3.6 | 31.0 | 31.0 | 4.5 | 15.2 | 15.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.26 | 1.00 | | 0.46 | 1.00 | | 0.11 |
| Lane Grp Cap(c), veh/h | 87 | 1051 | 470 | 178 | 617 | 621 | 349 | 519 | 505 | 151 | 490 | 505 |
| V/C Ratio(X) | 0.34 | 0.52 | 0.26 | 0.83 | 0.50 | 0.51 | 0.36 | 1.14 | 1.14 | 0.52 | 0.60 | 0.60 |
| Avail Cap(c_a), veh/h | 151 | 1051 | 470 | 281 | 617 | 621 | 357 | 519 | 505 | 211 | 490 | 505 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 48.7 | 31.0 | 28.4 | 46.8 | 27.3 | 27.3 | 44.4 | 37.4 | 37.4 | 46.4 | 33.2 | 33.2 |
| Incr Delay (d2), s/veh | 0.8 | 1.9 | 1.4 | 5.9 | 2.9 | 2.9 | 0.2 | 83.1 | 84.8 | 1.0 | 5.3 | 5.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.8 | 6.9 | 2.9 | 4.5 | 7.7 | 7.8 | 1.7 | 27.1 | 26.6 | 2.2 | 8.1 | 8.4 |
| LnGrp Delay(d),s/veh | 49.5 | 32.8 | 29.8 | 52.7 | 30.2 | 30.3 | 44.6 | 120.5 | 122.2 | 47.4 | 38.5 | 38.4 |
| LnGrp LOS | D | C | C | D | C | C | D | F | F | D | D | D |
| Approach Vol, veh/h | | 701 | | | 774 | | | 1293 | | | 675 | |
| Approach Delay, s/veh | | 33.0 | | | 34.5 | | | 113.8 | | | 39.5 | |
| Approach LOS | | C | | | C | | | F | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 15.8 | 38.1 | 15.9 | 36.0 | 10.4 | 43.6 | 14.2 | 37.7 |
| Change Period (Y+Rc), s | * 5.2 | 6.7 | * 5.2 | 6.7 | * 5.2 | 6.7 | * 5.2 | 6.7 |
| Max Green Setting (Gmax), s | * 17 | 29.1 | * 11 | 29.3 | * 9 | 36.9 | * 13 | 27.7 |
| Max Q Clear Time (g_c+I1), s | 10.7 | 15.6 | 5.6 | 17.3 | 3.7 | 16.8 | 6.5 | 33.0 |
| Green Ext Time (p_c), s | 0.1 | 10.5 | 0.1 | 11.0 | 0.0 | 14.6 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 65.0 |
| HCM 2010 LOS | E |

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 2 | 4 | 7 | 1168 | 715 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | 30 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 2 | 4 | 8 | 1270 | 777 | 2 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2063 | 778 | 779 | 0 | - | 0 |
| Stage 1 | 778 | - | - | - | - | - |
| Stage 2 | 1285 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 60 | 396 | 838 | - | - | - |
| Stage 1 | 453 | - | - | - | - | - |
| Stage 2 | 260 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 59 | 396 | 838 | - | - | - |
| Mov Cap-2 Maneuver | 175 | - | - | - | - | - |
| Stage 1 | 453 | - | - | - | - | - |
| Stage 2 | 258 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 18.2 | 0.1 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 838 | - | 279 | - | - |
| HCM Lane V/C Ratio | 0.009 | - | 0.023 | - | - |
| HCM Control Delay (s) | 9.3 | - | 18.2 | - | - |
| HCM Lane LOS | A | - | C | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.5 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 6 | 47 | 91 | 1169 | 711 | 8 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | Stop |
| Storage Length | 110 | 0 | 130 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 63 | 63 | 91 | 91 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 10 | 75 | 100 | 1285 | 790 | 9 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2275 | 790 | 790 | 0 | - | 0 |
| Stage 1 | 790 | - | - | - | - | - |
| Stage 2 | 1485 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 44 | 390 | 830 | - | - | - |
| Stage 1 | 447 | - | - | - | - | - |
| Stage 2 | 207 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 39 | 390 | 830 | - | - | - |
| Mov Cap-2 Maneuver | 39 | - | - | - | - | - |
| Stage 1 | 447 | - | - | - | - | - |
| Stage 2 | 182 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 28.7 | 0.7 | 0 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 830 | - | 39 | 390 | - | - |
| HCM Lane V/C Ratio | 0.12 | - | 0.244 | 0.191 | - | - |
| HCM Control Delay (s) | 9.9 | - | 124.9 | 16.4 | - | - |
| HCM Lane LOS | A | - | F | C | - | - |
| HCM 95th %tile Q(veh) | 0.4 | - | 0.8 | 0.7 | - | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 14 | 35 | 292 | 6 | 33 | 27 | 203 | 1221 | 6 | 6 | 749 | 13 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 16 | 41 | 340 | 10 | 52 | 43 | 218 | 1313 | 6 | 6 | 797 | 14 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.63 | 0.63 | 0.63 | 0.93 | 0.93 | 0.93 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 226 | 29 | 238 | 75 | 156 | 129 | 255 | 1311 | 1115 | 11 | 2016 | 35 |
| Arrive On Green | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.14 | 0.70 | 0.70 | 0.01 | 0.57 | 0.57 |
| Sat Flow, veh/h | 1295 | 173 | 1436 | 998 | 944 | 781 | 1774 | 1863 | 1583 | 1774 | 3559 | 63 |
| Grp Volume(v), veh/h | 16 | 0 | 381 | 10 | 0 | 95 | 218 | 1313 | 6 | 6 | 396 | 415 |
| Grp Sat Flow(s),veh/h/ln | 1295 | 0 | 1609 | 998 | 0 | 1725 | 1774 | 1863 | 1583 | 1774 | 1770 | 1852 |
| Q Serve(g_s), s | 1.1 | 0.0 | 16.0 | 0.0 | 0.0 | 4.7 | 11.6 | 68.0 | 0.1 | 0.3 | 12.1 | 12.1 |
| Cycle Q Clear(g_c), s | 5.8 | 0.0 | 16.0 | 16.0 | 0.0 | 4.7 | 11.6 | 68.0 | 0.1 | 0.3 | 12.1 | 12.1 |
| Prop In Lane | 1.00 | | 0.89 | 1.00 | | 0.45 | 1.00 | | 1.00 | 1.00 | | 0.03 |
| Lane Grp Cap(c), veh/h | 226 | 0 | 267 | 75 | 0 | 286 | 255 | 1311 | 1115 | 11 | 1002 | 1049 |
| V/C Ratio(X) | 0.07 | 0.00 | 1.43 | 0.13 | 0.00 | 0.33 | 0.86 | 1.00 | 0.01 | 0.55 | 0.40 | 0.40 |
| Avail Cap(c_a), veh/h | 226 | 0 | 267 | 75 | 0 | 286 | 386 | 1311 | 1115 | 73 | 1002 | 1049 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 38.1 | 0.0 | 40.3 | 48.3 | 0.0 | 35.6 | 40.4 | 14.3 | 4.2 | 47.9 | 11.7 | 11.7 |
| Incr Delay (d2), s/veh | 0.1 | 0.0 | 213.5 | 0.8 | 0.0 | 0.7 | 11.3 | 25.2 | 0.0 | 36.7 | 1.2 | 1.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.4 | 0.0 | 22.8 | 0.3 | 0.0 | 2.3 | 6.5 | 43.4 | 0.0 | 0.3 | 6.2 | 6.4 |
| LnGrp Delay(d),s/veh | 38.3 | 0.0 | 253.8 | 49.1 | 0.0 | 36.3 | 51.7 | 39.5 | 4.3 | 84.6 | 12.9 | 12.8 |
| LnGrp LOS | D | | F | D | | D | D | F | A | F | B | B |
| Approach Vol, veh/h | | 397 | | | 105 | | | 1537 | | | 817 | |
| Approach Delay, s/veh | | 245.1 | | | 37.5 | | | 41.1 | | | 13.4 | |
| Approach LOS | | F | | | D | | | D | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 4.6 | 72.0 | | 20.0 | 17.9 | 58.7 | | 20.0 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | 4.0 | 68.0 | | 16.0 | 21.0 | 51.0 | | 16.0 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 70.0 | | 18.0 | 13.6 | 14.1 | | 18.0 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | | 0.0 | 0.3 | 24.5 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 61.4 |
| HCM 2010 LOS | E |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 54 | 5 | 25 | 20 | 0 | 2 | 23 | 1375 | 32 | 6 | 957 | 53 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 79 | 7 | 37 | 36 | 0 | 4 | 31 | 1858 | 43 | 7 | 1075 | 60 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.68 | 0.68 | 0.68 | 0.55 | 0.55 | 0.55 | 0.74 | 0.74 | 0.74 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 206 | 22 | 116 | 171 | 0 | 135 | 44 | 2682 | 62 | 13 | 2525 | 141 |
| Arrive On Green | 0.09 | 0.09 | 0.09 | 0.09 | 0.00 | 0.09 | 0.02 | 0.76 | 0.76 | 0.01 | 0.74 | 0.74 |
| Sat Flow, veh/h | 1407 | 258 | 1364 | 1357 | 0 | 1583 | 1774 | 3536 | 82 | 1774 | 3409 | 190 |
| Grp Volume(v), veh/h | 79 | 0 | 44 | 36 | 0 | 4 | 31 | 926 | 975 | 7 | 558 | 577 |
| Grp Sat Flow(s),veh/h/ln | 1407 | 0 | 1622 | 1357 | 0 | 1583 | 1774 | 1770 | 1848 | 1774 | 1770 | 1829 |
| Q Serve(g_s), s | 4.4 | 0.0 | 2.1 | 2.1 | 0.0 | 0.2 | 1.4 | 21.4 | 21.7 | 0.3 | 9.6 | 9.6 |
| Cycle Q Clear(g_c), s | 4.6 | 0.0 | 2.1 | 4.1 | 0.0 | 0.2 | 1.4 | 21.4 | 21.7 | 0.3 | 9.6 | 9.6 |
| Prop In Lane | 1.00 | | 0.84 | 1.00 | | 1.00 | 1.00 | | 0.04 | 1.00 | | 0.10 |
| Lane Grp Cap(c), veh/h | 206 | 0 | 138 | 171 | 0 | 135 | 44 | 1342 | 1402 | 13 | 1311 | 1355 |
| V/C Ratio(X) | 0.38 | 0.00 | 0.32 | 0.21 | 0.00 | 0.03 | 0.70 | 0.69 | 0.70 | 0.55 | 0.43 | 0.43 |
| Avail Cap(c_a), veh/h | 488 | 0 | 464 | 443 | 0 | 453 | 243 | 1342 | 1402 | 88 | 1311 | 1355 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 35.8 | 0.0 | 34.6 | 36.5 | 0.0 | 33.7 | 38.9 | 4.9 | 5.0 | 39.8 | 4.0 | 4.0 |
| Incr Delay (d2), s/veh | 1.2 | 0.0 | 1.3 | 0.6 | 0.0 | 0.1 | 18.4 | 2.9 | 2.9 | 31.9 | 1.0 | 1.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.8 | 0.0 | 1.0 | 0.8 | 0.0 | 0.1 | 0.9 | 11.1 | 11.9 | 0.3 | 5.0 | 5.2 |
| LnGrp Delay(d),s/veh | 37.0 | 0.0 | 35.9 | 37.1 | 0.0 | 33.8 | 57.3 | 7.9 | 7.8 | 71.7 | 5.0 | 4.9 |
| LnGrp LOS | D | | D | D | | C | E | A | A | E | A | A |
| Approach Vol, veh/h | | 123 | | | 40 | | | 1932 | | | 1142 | |
| Approach Delay, s/veh | | 36.6 | | | 36.8 | | | 8.6 | | | 5.4 | |
| Approach LOS | | D | | | D | | | A | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 4.6 | 65.0 | | 10.9 | 6.0 | 63.6 | | 10.9 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | 4.0 | 61.0 | | 23.0 | 11.0 | 54.0 | | 23.0 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 23.7 | | 6.6 | 3.4 | 11.6 | | 6.1 |
| Green Ext Time (p_c), s | 0.0 | 29.3 | | 0.5 | 0.0 | 32.4 | | 0.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 8.9 |
| HCM 2010 LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 18 | 371 | 142 | 176 | 525 | 89 | 117 | 375 | 113 | 90 | 712 | 18 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 19 | 395 | 151 | 207 | 618 | 105 | 129 | 412 | 124 | 105 | 828 | 21 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 2 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.85 | 0.85 | 0.85 | 0.91 | 0.91 | 0.91 | 0.86 | 0.86 | 0.86 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 64 | 960 | 429 | 237 | 1116 | 189 | 345 | 765 | 228 | 158 | 963 | 24 |
| Arrive On Green | 0.04 | 0.27 | 0.27 | 0.13 | 0.37 | 0.37 | 0.10 | 0.28 | 0.28 | 0.09 | 0.27 | 0.27 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 1774 | 3028 | 514 | 3442 | 2690 | 801 | 1774 | 3527 | 89 |
| Grp Volume(v), veh/h | 19 | 395 | 151 | 207 | 361 | 362 | 129 | 270 | 266 | 105 | 415 | 434 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1774 | 1770 | 1772 | 1721 | 1770 | 1721 | 1774 | 1770 | 1847 |
| Q Serve(g_s), s | 1.1 | 9.8 | 8.2 | 12.3 | 17.3 | 17.4 | 3.8 | 13.8 | 14.1 | 6.1 | 23.9 | 23.9 |
| Cycle Q Clear(g_c), s | 1.1 | 9.8 | 8.2 | 12.3 | 17.3 | 17.4 | 3.8 | 13.8 | 14.1 | 6.1 | 23.9 | 23.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.29 | 1.00 | | 0.47 | 1.00 | | 0.05 |
| Lane Grp Cap(c), veh/h | 64 | 960 | 429 | 237 | 652 | 653 | 345 | 503 | 489 | 158 | 483 | 504 |
| V/C Ratio(X) | 0.30 | 0.41 | 0.35 | 0.87 | 0.55 | 0.55 | 0.37 | 0.54 | 0.54 | 0.66 | 0.86 | 0.86 |
| Avail Cap(c_a), veh/h | 149 | 960 | 429 | 278 | 652 | 653 | 353 | 503 | 489 | 208 | 483 | 504 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 50.4 | 32.1 | 31.5 | 45.6 | 26.9 | 26.9 | 45.1 | 32.4 | 32.5 | 47.3 | 37.0 | 37.0 |
| Incr Delay (d2), s/veh | 0.9 | 1.3 | 2.3 | 20.6 | 3.4 | 3.4 | 0.2 | 4.1 | 4.3 | 1.9 | 17.8 | 17.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(-26165%),veh/ln | 0.6 | 4.9 | 3.9 | 7.4 | 9.0 | 9.1 | 1.8 | 7.3 | 7.2 | 3.1 | 14.0 | 14.6 |
| LnGrp Delay(d),s/veh | 51.3 | 33.4 | 33.7 | 66.2 | 30.2 | 30.3 | 45.4 | 36.5 | 36.8 | 49.3 | 54.8 | 54.2 |
| LnGrp LOS | D | C | C | E | C | C | D | D | D | D | D | D |
| Approach Vol, veh/h | | 565 | | | 930 | | | 665 | | | 954 | |
| Approach Delay, s/veh | | 34.1 | | | 38.2 | | | 38.3 | | | 53.9 | |
| Approach LOS | | C | | | D | | | D | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 19.5 | 35.8 | 16.0 | 36.0 | 9.1 | 46.2 | 14.8 | 37.2 |
| Change Period (Y+Rc), s | * 5.2 | 6.7 | * 5.2 | 6.7 | * 5.2 | 6.7 | * 5.2 | 6.7 |
| Max Green Setting (Gmax), s | * 17 | 29.1 | * 11 | 29.3 | * 9 | 36.9 | * 13 | 27.7 |
| Max Q Clear Time (g_c+I1), s | 14.3 | 11.8 | 5.8 | 25.9 | 3.1 | 19.4 | 8.1 | 16.1 |
| Green Ext Time (p_c), s | 0.1 | 12.7 | 0.1 | 3.0 | 0.0 | 12.8 | 0.0 | 9.6 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 42.3 |
| HCM 2010 LOS | D |

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 3 | 0 | 9 | 26 | 0 | 5 | 4 | 565 | 9 | 4 | 983 | 0 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1900 | 1863 | 1900 | 1900 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 3 | 0 | 10 | 28 | 0 | 5 | 4 | 614 | 10 | 4 | 1068 | 0 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 195 | 0 | 57 | 323 | 0 | 10 | 365 | 1181 | 1004 | 652 | 1181 | 0 |
| Arrive On Green | 0.04 | 0.00 | 0.04 | 0.04 | 0.00 | 0.04 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.00 |
| Sat Flow, veh/h | 388 | 0 | 1295 | 1256 | 0 | 224 | 526 | 1863 | 1583 | 797 | 1863 | 0 |
| Grp Volume(v), veh/h | 13 | 0 | 0 | 33 | 0 | 0 | 4 | 614 | 10 | 4 | 1068 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1683 | 0 | 0 | 1480 | 0 | 0 | 526 | 1863 | 1583 | 797 | 1863 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.2 | 4.5 | 0.1 | 0.1 | 12.2 | 0.0 |
| Cycle Q Clear(g_c), s | 0.2 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 12.4 | 4.5 | 0.1 | 4.5 | 12.2 | 0.0 |
| Prop In Lane | 0.23 | | 0.77 | 0.85 | | 0.15 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 252 | 0 | 0 | 333 | 0 | 0 | 365 | 1181 | 1004 | 652 | 1181 | 0 |
| V/C Ratio(X) | 0.05 | 0.00 | 0.00 | 0.10 | 0.00 | 0.00 | 0.01 | 0.52 | 0.01 | 0.01 | 0.90 | 0.00 |
| Avail Cap(c_a), veh/h | 1176 | 0 | 0 | 1188 | 0 | 0 | 370 | 1200 | 1020 | 660 | 1200 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 11.4 | 0.0 | 0.0 | 11.6 | 0.0 | 0.0 | 9.2 | 2.5 | 1.7 | 3.7 | 3.9 | 0.0 |
| Incr Delay (d2), s/veh | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 9.7 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(-26165%),veh/ln | 0.1 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 2.3 | 0.0 | 0.0 | 8.8 | 0.0 |
| LnGrp Delay(d),s/veh | 11.5 | 0.0 | 0.0 | 11.7 | 0.0 | 0.0 | 9.2 | 2.9 | 1.7 | 3.7 | 13.6 | 0.0 |
| LnGrp LOS | B | | | B | | | A | A | A | A | B | |
| Approach Vol, veh/h | | 13 | | | 33 | | | 628 | | | 1072 | |
| Approach Delay, s/veh | | 11.5 | | | 11.7 | | | 2.9 | | | 13.6 | |
| Approach LOS | | B | | | B | | | A | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 19.7 | | 5.1 | | 19.7 | | 5.1 |
| Change Period (Y+Rc), s | | 4.0 | | 4.0 | | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | | 16.0 | | 16.0 | | 16.0 | | 16.0 |
| Max Q Clear Time (g_c+I1), s | | 14.4 | | 2.2 | | 14.2 | | 2.5 |
| Green Ext Time (p_c), s | | 1.4 | | 0.1 | | 1.5 | | 0.1 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 9.7 |
| HCM 2010 LOS | | A |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 4 | 133 | 111 | 574 | 989 | 29 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | Stop |
| Storage Length | 110 | 0 | 130 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 63 | 63 | 91 | 91 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 6 | 211 | 122 | 631 | 1099 | 32 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1974 | 1099 | 1099 | 0 | - | 0 |
| Stage 1 | 1099 | - | - | - | - | - |
| Stage 2 | 875 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 68 | 258 | 635 | - | - | - |
| Stage 1 | 319 | - | - | - | - | - |
| Stage 2 | 408 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 55 | 258 | 635 | - | - | - |
| Mov Cap-2 Maneuver | 55 | - | - | - | - | - |
| Stage 1 | 319 | - | - | - | - | - |
| Stage 2 | 330 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 61.1 | 1.9 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 635 | - | 55 | 258 | - | - |
| HCM Lane V/C Ratio | 0.192 | - | 0.115 | 0.818 | - | - |
| HCM Control Delay (s) | 12 | - | 78.8 | 60.6 | - | - |
| HCM Lane LOS | B | - | F | F | - | - |
| HCM 95th %tile Q(veh) | 0.7 | - | 0.4 | 6.4 | - | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 18 | 6 | 705 | 18 | 46 | 26 | 415 | 671 | 6 | 5 | 1145 | 11 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 21 | 7 | 820 | 29 | 73 | 41 | 446 | 722 | 6 | 5 | 1218 | 12 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.63 | 0.63 | 0.63 | 0.93 | 0.93 | 0.93 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 392 | 4 | 472 | 72 | 336 | 189 | 444 | 1071 | 910 | 9 | 1185 | 12 |
| Arrive On Green | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 | 0.25 | 0.57 | 0.57 | 0.01 | 0.33 | 0.33 |
| Sat Flow, veh/h | 1273 | 13 | 1572 | 660 | 1122 | 630 | 1774 | 1863 | 1583 | 1774 | 3591 | 35 |
| Grp Volume(v), veh/h | 21 | 0 | 827 | 29 | 0 | 114 | 446 | 722 | 6 | 5 | 600 | 630 |
| Grp Sat Flow(s),veh/h/ln | 1273 | 0 | 1585 | 660 | 0 | 1752 | 1774 | 1863 | 1583 | 1774 | 1770 | 1857 |
| Q Serve(g_s), s | 1.3 | 0.0 | 30.0 | 0.0 | 0.0 | 4.9 | 25.0 | 26.9 | 0.2 | 0.3 | 33.0 | 33.0 |
| Cycle Q Clear(g_c), s | 6.1 | 0.0 | 30.0 | 30.0 | 0.0 | 4.9 | 25.0 | 26.9 | 0.2 | 0.3 | 33.0 | 33.0 |
| Prop In Lane | 1.00 | | 0.99 | 1.00 | | 0.36 | 1.00 | | 1.00 | 1.00 | | 0.02 |
| Lane Grp Cap(c), veh/h | 392 | 0 | 476 | 72 | 0 | 525 | 444 | 1071 | 910 | 9 | 584 | 613 |
| V/C Ratio(X) | 0.05 | 0.00 | 1.74 | 0.40 | 0.00 | 0.22 | 1.01 | 0.67 | 0.01 | 0.54 | 1.03 | 1.03 |
| Avail Cap(c_a), veh/h | 392 | 0 | 476 | 72 | 0 | 525 | 444 | 1071 | 910 | 71 | 584 | 613 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 28.5 | 0.0 | 35.0 | 50.0 | 0.0 | 26.2 | 37.5 | 14.8 | 9.1 | 49.6 | 33.5 | 33.5 |
| Incr Delay (d2), s/veh | 0.1 | 0.0 | 341.2 | 3.6 | 0.0 | 0.2 | 44.1 | 3.4 | 0.0 | 41.8 | 44.5 | 43.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(-26165%),veh/ln | 0.4 | 0.0 | 58.2 | 0.9 | 0.0 | 2.4 | 17.6 | 14.6 | 0.1 | 0.2 | 23.3 | 24.3 |
| LnGrp Delay(d),s/veh | 28.6 | 0.0 | 376.2 | 53.6 | 0.0 | 26.4 | 81.7 | 18.2 | 9.1 | 91.4 | 78.0 | 77.2 |
| LnGrp LOS | C | | F | D | | C | F | B | A | F | F | F |
| Approach Vol, veh/h | | 848 | | | 143 | | | 1174 | | | 1235 | |
| Approach Delay, s/veh | | 367.6 | | | 31.9 | | | 42.2 | | | 77.7 | |
| Approach LOS | | F | | | C | | | D | | | E | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 4.5 | 61.5 | | 34.0 | 29.0 | 37.0 | | 34.0 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | 4.0 | 54.0 | | 30.0 | 25.0 | 33.0 | | 30.0 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 28.9 | | 32.0 | 27.0 | 35.0 | | 32.0 |
| Green Ext Time (p_c), s | 0.0 | 15.1 | | 0.0 | 0.0 | 0.0 | | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 135.8 |
| HCM 2010 LOS | | F |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 240 | 20 | 154 | 37 | 13 | 6 | 155 | 886 | 20 | 6 | 1512 | 357 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 353 | 29 | 226 | 67 | 24 | 11 | 209 | 1197 | 27 | 7 | 1699 | 401 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.68 | 0.68 | 0.68 | 0.55 | 0.55 | 0.55 | 0.74 | 0.74 | 0.74 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 365 | 42 | 328 | 167 | 278 | 128 | 195 | 2275 | 51 | 13 | 1548 | 351 |
| Arrive On Green | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.11 | 0.64 | 0.64 | 0.01 | 0.54 | 0.54 |
| Sat Flow, veh/h | 1368 | 183 | 1428 | 1120 | 1210 | 555 | 1774 | 3538 | 80 | 1774 | 2867 | 651 |
| Grp Volume(v), veh/h | 353 | 0 | 255 | 67 | 0 | 35 | 209 | 598 | 626 | 7 | 1023 | 1077 |
| Grp Sat Flow(s),veh/h/ln | 1368 | 0 | 1611 | 1120 | 0 | 1765 | 1774 | 1770 | 1849 | 1774 | 1770 | 1748 |
| Q Serve(g_s), s | 21.4 | 0.0 | 14.5 | 5.8 | 0.0 | 1.6 | 11.0 | 18.2 | 18.3 | 0.4 | 54.0 | 54.0 |
| Cycle Q Clear(g_c), s | 23.0 | 0.0 | 14.5 | 20.3 | 0.0 | 1.6 | 11.0 | 18.2 | 18.3 | 0.4 | 54.0 | 54.0 |
| Prop In Lane | 1.00 | | 0.89 | 1.00 | | 0.31 | 1.00 | | 0.04 | 1.00 | | 0.37 |
| Lane Grp Cap(c), veh/h | 365 | 0 | 370 | 167 | 0 | 406 | 195 | 1138 | 1189 | 13 | 956 | 944 |
| V/C Ratio(X) | 0.97 | 0.00 | 0.69 | 0.40 | 0.00 | 0.09 | 1.07 | 0.53 | 0.53 | 0.56 | 1.07 | 1.14 |
| Avail Cap(c_a), veh/h | 365 | 0 | 370 | 167 | 0 | 406 | 195 | 1138 | 1189 | 71 | 956 | 944 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 41.1 | 0.0 | 35.2 | 44.5 | 0.0 | 30.2 | 44.5 | 9.6 | 9.6 | 49.5 | 23.0 | 23.0 |
| Incr Delay (d2), s/veh | 38.1 | 0.0 | 5.3 | 1.5 | 0.0 | 0.1 | 84.5 | 1.7 | 1.7 | 33.5 | 49.9 | 76.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(-26165%),veh/ln | 16.6 | 0.0 | 7.0 | 1.9 | 0.0 | 0.8 | 9.9 | 9.4 | 9.8 | 0.3 | 39.3 | 45.7 |
| LnGrp Delay(d),s/veh | 79.2 | 0.0 | 40.5 | 46.0 | 0.0 | 30.3 | 129.0 | 11.4 | 11.3 | 83.0 | 72.9 | 99.3 |
| LnGrp LOS | E | | D | D | | C | F | B | B | F | F | F |
| Approach Vol, veh/h | | 608 | | | 102 | | | 1433 | | | 2107 | |
| Approach Delay, s/veh | | 63.0 | | | 40.7 | | | 28.5 | | | 86.4 | |
| Approach LOS | | E | | | D | | | C | | | F | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 4.7 | 68.3 | | 27.0 | 15.0 | 58.0 | | 27.0 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | 4.3 | 61.0 | | 23.0 | 11.0 | 54.0 | | 23.0 |
| Max Q Clear Time (g_c+I1), s | 2.4 | 20.3 | | 25.0 | 13.0 | 56.0 | | 22.3 |
| Green Ext Time (p_c), s | 0.0 | 34.7 | | 0.0 | 0.0 | 0.0 | | 0.3 |

| Intersection Summary | | |
|---|---|---|
| HCM 2010 Ctrl Delay | | 62.4 |
| HCM 2010 LOS | | E |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 27 | 515 | 125 | 127 | 463 | 69 | 117 | 821 | 241 | 67 | 486 | 29 |
| Number | 5 | 2 | 12 | 1 | 6 | 16 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 29 | 548 | 133 | 149 | 545 | 81 | 129 | 902 | 265 | 78 | 565 | 34 |
| Adj No. of Lanes | 1 | 2 | 1 | 1 | 2 | 0 | 2 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.85 | 0.85 | 0.85 | 0.91 | 0.91 | 0.91 | 0.86 | 0.86 | 0.86 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 87 | 1049 | 469 | 179 | 1078 | 160 | 349 | 792 | 232 | 151 | 938 | 56 |
| Arrive On Green | 0.05 | 0.30 | 0.30 | 0.10 | 0.35 | 0.35 | 0.10 | 0.29 | 0.29 | 0.08 | 0.28 | 0.28 |
| Sat Flow, veh/h | 1774 | 3539 | 1583 | 1774 | 3093 | 458 | 3442 | 2701 | 792 | 1774 | 3393 | 204 |
| Grp Volume(v), veh/h | 29 | 548 | 133 | 149 | 311 | 315 | 129 | 590 | 577 | 78 | 294 | 305 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1770 | 1583 | 1774 | 1770 | 1782 | 1721 | 1770 | 1723 | 1774 | 1770 | 1827 |
| Q Serve(g_s), s | 1.7 | 13.7 | 6.8 | 8.7 | 14.7 | 14.8 | 3.7 | 31.1 | 31.1 | 4.5 | 15.3 | 15.3 |
| Cycle Q Clear(g_c), s | 1.7 | 13.7 | 6.8 | 8.7 | 14.7 | 14.8 | 3.7 | 31.1 | 31.1 | 4.5 | 15.3 | 15.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.26 | 1.00 | | 0.46 | 1.00 | | 0.11 |
| Lane Grp Cap(c), veh/h | 87 | 1049 | 469 | 179 | 616 | 621 | 349 | 519 | 505 | 151 | 490 | 505 |
| V/C Ratio(X) | 0.34 | 0.52 | 0.28 | 0.83 | 0.50 | 0.51 | 0.37 | 1.14 | 1.14 | 0.52 | 0.60 | 0.60 |
| Avail Cap(c_a), veh/h | 151 | 1049 | 469 | 281 | 616 | 621 | 357 | 519 | 505 | 211 | 490 | 505 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 48.7 | 31.0 | 28.6 | 46.7 | 27.3 | 27.3 | 44.4 | 37.4 | 37.4 | 46.4 | 33.2 | 33.3 |
| Incr Delay (d2), s/veh | 0.8 | 1.9 | 1.5 | 6.2 | 2.9 | 2.9 | 0.2 | 83.3 | 85.0 | 1.0 | 5.4 | 5.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(-26165%),veh/ln | 0.8 | 7.0 | 3.2 | 4.6 | 7.7 | 7.8 | 1.8 | 27.1 | 26.7 | 2.2 | 8.2 | 8.4 |
| LnGrp Delay(d),s/veh | 49.6 | 32.9 | 30.1 | 53.0 | 30.2 | 30.3 | 44.7 | 120.7 | 122.5 | 47.4 | 38.6 | 38.5 |
| LnGrp LOS | D | C | C | D | C | C | D | F | F | D | D | D |
| Approach Vol, veh/h | | 710 | | | 775 | | | 1296 | | | 677 | |
| Approach Delay, s/veh | | 33.1 | | | 34.6 | | | 113.9 | | | 39.6 | |
| Approach LOS | | C | | | C | | | F | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 15.9 | 38.1 | 16.0 | 36.0 | 10.4 | 43.6 | 14.2 | 37.8 |
| Change Period (Y+Rc), s | * 5.2 | 6.7 | * 5.2 | 6.7 | * 5.2 | 6.7 | * 5.2 | 6.7 |
| Max Green Setting (Gmax), s | * 17 | 29.1 | * 11 | 29.3 | * 9 | 36.9 | * 13 | 27.7 |
| Max Q Clear Time (g_c+I1), s | 10.7 | 15.7 | 5.7 | 17.3 | 3.7 | 16.8 | 6.5 | 33.1 |
| Green Ext Time (p_c), s | 0.1 | 10.5 | 0.1 | 11.0 | 0.0 | 14.7 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 65.0 |
| HCM 2010 LOS | E |

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 2 | 0 | 4 | 14 | 0 | 2 | 7 | 1168 | 27 | 12 | 715 | 2 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1900 | 1863 | 1900 | 1900 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 2 | 0 | 4 | 15 | 0 | 2 | 8 | 1270 | 29 | 13 | 777 | 2 |
| Adj No. of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 208 | 0 | 26 | 306 | 0 | 4 | 569 | 1212 | 1031 | 293 | 1209 | 3 |
| Arrive On Green | 0.02 | 0.00 | 0.02 | 0.02 | 0.00 | 0.02 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 | 0.65 |
| Sat Flow, veh/h | 555 | 0 | 1110 | 1301 | 0 | 173 | 690 | 1863 | 1583 | 423 | 1857 | 5 |
| Grp Volume(v), veh/h | 6 | 0 | 0 | 17 | 0 | 0 | 8 | 1270 | 29 | 13 | 0 | 779 |
| Grp Sat Flow(s),veh/h/ln | 1665 | 0 | 0 | 1474 | 0 | 0 | 690 | 1863 | 1583 | 423 | 0 | 1862 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.2 | 16.0 | 0.2 | 0.0 | 0.0 | 6.2 |
| Cycle Q Clear(g_c), s | 0.1 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 6.3 | 16.0 | 0.2 | 16.0 | 0.0 | 6.2 |
| Prop In Lane | 0.33 | | 0.67 | 0.88 | | 0.12 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 235 | 0 | 0 | 311 | 0 | 0 | 569 | 1212 | 1031 | 293 | 0 | 1212 |
| V/C Ratio(X) | 0.03 | 0.00 | 0.00 | 0.05 | 0.00 | 0.00 | 0.01 | 1.05 | 0.03 | 0.04 | 0.00 | 0.64 |
| Avail Cap(c_a), veh/h | 1189 | 0 | 0 | 1205 | 0 | 0 | 569 | 1212 | 1031 | 293 | 0 | 1212 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 11.8 | 0.0 | 0.0 | 11.8 | 0.0 | 0.0 | 4.5 | 4.3 | 1.5 | 12.3 | 0.0 | 2.6 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 39.2 | 0.0 | 0.1 | 0.0 | 1.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(-26165%),veh/ln | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 20.6 | 0.1 | 0.1 | 0.0 | 3.4 |
| LnGrp Delay(d),s/veh | 11.8 | 0.0 | 0.0 | 11.9 | 0.0 | 0.0 | 4.5 | 43.5 | 1.5 | 12.4 | 0.0 | 3.7 |
| LnGrp LOS | B | | | B | | | A | F | A | B | | A |
| Approach Vol, veh/h | | 6 | | | 17 | | | 1307 | | | 792 | |
| Approach Delay, s/veh | | 11.8 | | | 11.9 | | | 42.3 | | | 3.9 | |
| Approach LOS | | B | | | B | | | D | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | | 20.0 | | 4.6 | | 20.0 | | 4.6 |
| Change Period (Y+Rc), s | | 4.0 | | 4.0 | | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | | 16.0 | | 16.0 | | 16.0 | | 16.0 |
| Max Q Clear Time (g_c+I1), s | | 18.0 | | 2.1 | | 18.0 | | 2.3 |
| Green Ext Time (p_c), s | | 0.0 | | 0.0 | | 0.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 27.6 |
| HCM 2010 LOS | C |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 8 | 47 | 91 | 1194 | 719 | 14 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | Stop |
| Storage Length | 110 | 0 | 130 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 63 | 63 | 91 | 91 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 13 | 75 | 100 | 1312 | 799 | 16 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2311 | 799 | 799 | 0 | - | 0 |
| Stage 1 | 799 | - | - | - | - | - |
| Stage 2 | 1512 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 42 | 386 | 824 | - | - | - |
| Stage 1 | 443 | - | - | - | - | - |
| Stage 2 | 201 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 37 | 386 | 824 | - | - | - |
| Mov Cap-2 Maneuver | 37 | - | - | - | - | - |
| Stage 1 | 443 | - | - | - | - | - |
| Stage 2 | 177 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 35.4 | 0.7 | 0 |
| HCM LOS | E | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 824 | - | 37 | 386 | - | - |
| HCM Lane V/C Ratio | 0.121 | - | 0.343 | 0.193 | - | - |
| HCM Control Delay (s) | 10 | - | 146.5 | 16.5 | - | - |
| HCM Lane LOS | A | - | F | C | - | - |
| HCM 95th %tile Q(veh) | 0.4 | - | 1.1 | 0.7 | - | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 25 | 35 | 292 | 6 | 33 | 27 | 203 | 1235 | 6 | 6 | 755 | 15 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 29 | 41 | 340 | 10 | 52 | 43 | 218 | 1328 | 6 | 6 | 803 | 16 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.63 | 0.63 | 0.63 | 0.93 | 0.93 | 0.93 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 226 | 29 | 238 | 75 | 156 | 129 | 255 | 1311 | 1115 | 11 | 2010 | 40 |
| Arrive On Green | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.17 | 0.14 | 0.70 | 0.70 | 0.01 | 0.57 | 0.57 |
| Sat Flow, veh/h | 1295 | 173 | 1436 | 998 | 944 | 781 | 1774 | 1863 | 1583 | 1774 | 3549 | 71 |
| Grp Volume(v), veh/h | 29 | 0 | 381 | 10 | 0 | 95 | 218 | 1328 | 6 | 6 | 400 | 419 |
| Grp Sat Flow(s),veh/h/ln | 1295 | 0 | 1609 | 998 | 0 | 1725 | 1774 | 1863 | 1583 | 1774 | 1770 | 1850 |
| Q Serve(g_s), s | 2.0 | 0.0 | 16.0 | 0.0 | 0.0 | 4.7 | 11.6 | 68.0 | 0.1 | 0.3 | 12.2 | 12.2 |
| Cycle Q Clear(g_c), s | 6.7 | 0.0 | 16.0 | 16.0 | 0.0 | 4.7 | 11.6 | 68.0 | 0.1 | 0.3 | 12.2 | 12.2 |
| Prop In Lane | 1.00 | | 0.89 | 1.00 | | 0.45 | 1.00 | | 1.00 | 1.00 | | 0.04 |
| Lane Grp Cap(c), veh/h | 226 | 0 | 267 | 75 | 0 | 286 | 255 | 1311 | 1115 | 11 | 1002 | 1048 |
| V/C Ratio(X) | 0.13 | 0.00 | 1.43 | 0.13 | 0.00 | 0.33 | 0.86 | 1.01 | 0.01 | 0.55 | 0.40 | 0.40 |
| Avail Cap(c_a), veh/h | 226 | 0 | 267 | 75 | 0 | 286 | 386 | 1311 | 1115 | 73 | 1002 | 1048 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 38.5 | 0.0 | 40.3 | 48.3 | 0.0 | 35.6 | 40.4 | 14.3 | 4.2 | 47.9 | 11.7 | 11.7 |
| Incr Delay (d2), s/veh | 0.3 | 0.0 | 213.5 | 0.8 | 0.0 | 0.7 | 11.3 | 28.0 | 0.0 | 36.7 | 1.2 | 1.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(-26165%),veh/ln | 0.7 | 0.0 | 22.8 | 0.3 | 0.0 | 2.3 | 6.5 | 44.5 | 0.0 | 0.3 | 6.2 | 6.5 |
| LnGrp Delay(d),s/veh | 38.8 | 0.0 | 253.8 | 49.1 | 0.0 | 36.3 | 51.7 | 42.3 | 4.3 | 84.6 | 12.9 | 12.9 |
| LnGrp LOS | D | | F | D | | D | D | F | A | F | B | B |
| Approach Vol, veh/h | | 410 | | | 105 | | | 1552 | | | 825 | |
| Approach Delay, s/veh | | 238.6 | | | 37.5 | | | 43.5 | | | 13.4 | |
| Approach LOS | | F | | | D | | | D | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 4.6 | 72.0 | | 20.0 | 17.9 | 58.7 | | 20.0 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | 4.0 | 68.0 | | 16.0 | 21.0 | 51.0 | | 16.0 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 70.0 | | 18.0 | 13.6 | 14.2 | | 18.0 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | | 0.0 | 0.3 | 24.9 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 62.4 |
| HCM 2010 LOS | E |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 56 | 5 | 25 | 20 | 0 | 2 | 23 | 1387 | 32 | 6 | 962 | 54 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 82 | 7 | 37 | 36 | 0 | 4 | 31 | 1874 | 43 | 7 | 1081 | 61 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 |
| Peak Hour Factor | 0.68 | 0.68 | 0.68 | 0.55 | 0.55 | 0.55 | 0.74 | 0.74 | 0.74 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 209 | 23 | 119 | 174 | 0 | 139 | 44 | 2676 | 61 | 13 | 2517 | 142 |
| Arrive On Green | 0.09 | 0.09 | 0.09 | 0.09 | 0.00 | 0.09 | 0.02 | 0.76 | 0.76 | 0.01 | 0.74 | 0.74 |
| Sat Flow, veh/h | 1407 | 258 | 1364 | 1357 | 0 | 1583 | 1774 | 3537 | 81 | 1774 | 3406 | 192 |
| Grp Volume(v), veh/h | 82 | 0 | 44 | 36 | 0 | 4 | 31 | 934 | 983 | 7 | 561 | 581 |
| Grp Sat Flow(s),veh/h/ln | 1407 | 0 | 1622 | 1357 | 0 | 1583 | 1774 | 1770 | 1848 | 1774 | 1770 | 1829 |
| Q Serve(g_s), s | 4.6 | 0.0 | 2.1 | 2.1 | 0.0 | 0.2 | 1.4 | 22.0 | 22.3 | 0.3 | 9.8 | 9.8 |
| Cycle Q Clear(g_c), s | 4.8 | 0.0 | 2.1 | 4.1 | 0.0 | 0.2 | 1.4 | 22.0 | 22.3 | 0.3 | 9.8 | 9.8 |
| Prop In Lane | 1.00 | | 0.84 | 1.00 | | 1.00 | 1.00 | | 0.04 | 1.00 | | 0.11 |
| Lane Grp Cap(c), veh/h | 209 | 0 | 142 | 174 | 0 | 139 | 44 | 1339 | 1398 | 13 | 1307 | 1351 |
| V/C Ratio(X) | 0.39 | 0.00 | 0.31 | 0.21 | 0.00 | 0.03 | 0.70 | 0.70 | 0.70 | 0.55 | 0.43 | 0.43 |
| Avail Cap(c_a), veh/h | 487 | 0 | 463 | 442 | 0 | 452 | 242 | 1339 | 1398 | 88 | 1307 | 1351 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 35.8 | 0.0 | 34.5 | 36.4 | 0.0 | 33.7 | 39.0 | 5.1 | 5.1 | 39.9 | 4.0 | 4.0 |
| Incr Delay (d2), s/veh | 1.2 | 0.0 | 1.2 | 0.6 | 0.0 | 0.1 | 18.4 | 3.0 | 3.0 | 31.9 | 1.0 | 1.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(-26165%),veh/ln | 1.8 | 0.0 | 1.0 | 0.8 | 0.0 | 0.1 | 0.9 | 11.5 | 12.1 | 0.3 | 5.1 | 5.2 |
| LnGrp Delay(d),s/veh | 37.0 | 0.0 | 35.7 | 37.0 | 0.0 | 33.7 | 57.4 | 8.1 | 8.1 | 71.8 | 5.1 | 5.0 |
| LnGrp LOS | D | | D | D | | C | E | A | A | E | A | A |
| Approach Vol, veh/h | | 126 | | | 40 | | | 1948 | | | 1149 | |
| Approach Delay, s/veh | | 36.6 | | | 36.7 | | | 8.9 | | | 5.5 | |
| Approach LOS | | D | | | D | | | A | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 4.6 | 65.0 | | 11.1 | 6.0 | 63.6 | | 11.1 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | 4.6 | 61.0 | | 23.0 | 11.0 | 54.0 | | 23.0 |
| Max Q Clear Time (g_c+I1), s | 2.2 | 24.3 | | 6.8 | 3.4 | 11.8 | | 6.1 |
| Green Ext Time (p_c), s | 0.0 | 29.2 | | 0.5 | 0.0 | 32.6 | | 0.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 9.1 |
| HCM 2010 LOS | A |

# APPENDIX C

## POST-MITIGATION ANALYSIS WORKSHEETS

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| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 4 | 133 | 111 | 574 | 989 | 29 |
| Number | 7 | 14 | 5 | 2 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | 1.00 | | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 6 | 211 | 122 | 631 | 1099 | 0 |
| Adj No. of Lanes | 1 | 1 | 1 | 2 | 1 | 0 |
| Peak Hour Factor | 0.63 | 0.63 | 0.91 | 0.91 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 274 | 244 | 148 | 2629 | 1132 | 0 |
| Arrive On Green | 0.15 | 0.15 | 0.08 | 0.74 | 0.61 | 0.00 |
| Sat Flow, veh/h | 1774 | 1583 | 1774 | 3632 | 1863 | 0 |
| Grp Volume(v), veh/h | 6 | 211 | 122 | 631 | 1099 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1583 | 1774 | 1770 | 1863 | 0 |
| Q Serve(g_s), s | 0.3 | 11.4 | 5.9 | 4.9 | 49.3 | 0.0 |
| Cycle Q Clear(g_c), s | 0.3 | 11.4 | 5.9 | 4.9 | 49.3 | 0.0 |
| Prop In Lane | 1.00 | 1.00 | 1.00 | | | 0.00 |
| Lane Grp Cap(c), veh/h | 274 | 244 | 148 | 2629 | 1132 | 0 |
| V/C Ratio(X) | 0.02 | 0.86 | 0.82 | 0.24 | 0.97 | 0.00 |
| Avail Cap(c_a), veh/h | 327 | 292 | 148 | 2629 | 1132 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 31.4 | 36.1 | 39.4 | 3.5 | 16.4 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 20.0 | 29.7 | 0.2 | 20.6 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(-26165%),veh/ln | 0.1 | 10.8 | 4.1 | 2.4 | 31.5 | 0.0 |
| LnGrp Delay(d),s/veh | 31.4 | 56.1 | 69.1 | 3.7 | 37.0 | 0.0 |
| LnGrp LOS | C | E | E | A | D | |
| Approach Vol, veh/h | 217 | | | 753 | 1099 | |
| Approach Delay, s/veh | 55.4 | | | 14.3 | 37.0 | |
| Approach LOS | E | | | B | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | |
| Phs Duration (G+Y+Rc), s | | 69.4 | | 18.0 | 11.8 | 57.6 | | |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | 4.5 | 4.5 | | |
| Max Green Setting (Gmax), s | | 64.9 | | 16.1 | 7.3 | 53.1 | | |
| Max Q Clear Time (g_c+I1), s | | 6.9 | | 13.4 | 7.9 | 51.3 | | |
| Green Ext Time (p_c), s | | 19.9 | | 0.2 | 0.0 | 1.5 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 30.7 |
| HCM 2010 LOS | C |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Volume (veh/h) | 8 | 47 | 91 | 1194 | 719 | 14 |
| Number | 7 | 14 | 5 | 2 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | 1.00 | | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1863 | 1863 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 13 | 75 | 100 | 1312 | 799 | 0 |
| Adj No. of Lanes | 1 | 1 | 1 | 2 | 1 | 0 |
| Peak Hour Factor | 0.63 | 0.63 | 0.91 | 0.91 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 112 | 100 | 128 | 2913 | 1293 | 0 |
| Arrive On Green | 0.06 | 0.06 | 0.07 | 0.82 | 0.69 | 0.00 |
| Sat Flow, veh/h | 1774 | 1583 | 1774 | 3632 | 1863 | 0 |
| Grp Volume(v), veh/h | 13 | 75 | 100 | 1312 | 799 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 1583 | 1774 | 1770 | 1863 | 0 |
| Q Serve(g_s), s | 0.5 | 3.7 | 4.4 | 8.2 | 18.2 | 0.0 |
| Cycle Q Clear(g_c), s | 0.5 | 3.7 | 4.4 | 8.2 | 18.2 | 0.0 |
| Prop In Lane | 1.00 | 1.00 | 1.00 | | | 0.00 |
| Lane Grp Cap(c), veh/h | 112 | 100 | 128 | 2913 | 1293 | 0 |
| V/C Ratio(X) | 0.12 | 0.75 | 0.78 | 0.45 | 0.62 | 0.00 |
| Avail Cap(c_a), veh/h | 359 | 321 | 191 | 2913 | 1293 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 34.9 | 36.4 | 36.0 | 2.0 | 6.5 | 0.0 |
| Incr Delay (d2), s/veh | 0.5 | 10.8 | 11.4 | 0.5 | 2.2 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(-26165%),veh/ln | 0.3 | 3.5 | 2.5 | 4.0 | 9.9 | 0.0 |
| LnGrp Delay(d),s/veh | 35.4 | 47.2 | 47.4 | 2.5 | 8.7 | 0.0 |
| LnGrp LOS | D | D | D | A | A | |
| Approach Vol, veh/h | 88 | | | 1412 | 799 | |
| Approach Delay, s/veh | 45.5 | | | 5.7 | 8.7 | |
| Approach LOS | D | | | A | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | | 4 | 5 | 6 | | |
| Phs Duration (G+Y+Rc), s | | 69.5 | | 9.5 | 10.2 | 59.3 | | |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | 4.5 | 4.5 | | |
| Max Green Setting (Gmax), s | | 65.0 | | 16.0 | 8.5 | 52.0 | | |
| Max Q Clear Time (g_c+I1), s | | 10.2 | | 5.7 | 6.4 | 20.2 | | |
| Green Ext Time (p_c), s | | 24.0 | | 0.1 | 0.0 | 18.5 | | |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 8.2 |
| HCM 2010 LOS | A |

# Appendix S Specific Alignment Plan Capacity Analysis – Traffic Analysis Memorandum (January 2017)

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# MEMORANDUM

| | | | |
|---|---|---|---|
| To: | Mr. Jack Henthorn.<br>Jack Henthorn & Associates | Date: | January 18, 2017 |
| From: | Chris Mendiara<br>LLG, Engineers | LLG Ref: | 3-13-2299 |
| Subject: | 661 Bear Valley Parkway – Specific Alignment Plan Capacity Impacts | | |

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Per your request, Linscott, Law & Greenspan, Engineers (LLG) is providing this memorandum to discuss the capacity (traffic) impacts associated with the Specific Alignment Plan (SAP) being prepared concurrently with the technical studies for the 661 Bear Valley Parkway residential project (Project). A traffic impact study has been prepared for the Project which evaluates its traffic impacts, design features and mitigation measures.

The City of Escondido and the property owner are formulating a development agreement that will provide for the installation of frontage improvements located between the southern property boundary of the 661 Bear Valley Parkway parcel and the existing north-bound full-width improvements. This will complete the improvements for the northbound lanes between the City limits on the north and Bear Valley Parkway/ Sunset Drive /Ranchito Drive intersection to the south. These features and improvements are a subset of the overall improvements associated with the SAP.

Generally, traffic impacts can be expected when traffic volumes exceed the roadway network's capacity. The purpose of the SAP is to increase roadway capacity by widening Bear Valley Parkway and improving intersections along it. Therefore, development of the SAP would not be expected to result in traffic impacts.

***Specific Alignment Plan Improvements***

The SAP addresses roadway network deficiencies along Bear Valley Parkway from the Project's northern boundary (just south of Choya Canyon Road) to the intersection of Bear Valley Parkway/ Sunset Drive/ Ranchito Drive, south of the southern Project boundary. The SAP proposes the following improvements not already evaluated in the traffic impact study:

1. Widen and improve Bear Valley Parkway to 4-lanes from the northern Project boundary to the existing 4-lane segment just north of the Bear Valley Parkway/ Sunset Drive/ Ranchito Drive signalized intersection;
2. Signalize and realign the Bear Valley Parkway/Encino Drive unsignalized intersection

The full improvement to four-lanes would not occur in the near-term condition, although additional right-of-way acquisition south of the site and the corresponding increase in the second northbound lane would result in an increased capacity of

LINSCOTT LAW & GREENSPAN engineers

18,000 ADT, which is greater than the 15,500 ADT provided with the existing two-lane roadway and the improved frontage as described in the traffic impact study.

***Analysis***

***Table A*** shows a comparison of the Bear Valley Parkway segments both without and with the SAP. This table shows that improved, LOS F operations are still forecasted to occur with both Project traffic volumes and the SAP improvements on the street segments affected by the SAP. As the table shows, the increased capacity of the SAP results in a decrease in V/C ratios on these segments. No significant impacts would occur with the SAP on Bear Valley Parkway segments.

**TABLE A**
**STREET SEGMENT OPERATIONS COMPARISON**

| Street Segment | Existing + Cumulative Projects + Project *(Without SAP)* | | | | Existing + Cumulative Projects + Project *(With SAP)* | | | | | Sig Impact ? |
|---|---|---|---|---|---|---|---|---|---|---|
| | Capacity [a] | ADT [b] | LOS [c] | V/C [d] | Capacity | ADT | LOS | V/C | Δ [e] | |
| **Bear Valley Parkway** | | | | | | | | | | |
| Eldorado Drive to Zlatibor Ranch Road | 15,000 | 26,001 | F | 1.733 | 18,000 | 26,001 | F | 1.445 | (0.288) | No |
| Zlatibor Ranch Road to Encino Drive | 15,500 | 24,469 | F | 1.579 | 18,000 | 24,469 | F | 1.359 | (0.220) | No |
| Encino Drive to Sunset Drive | 15,500 | 26,113 | F | 1.685 | 18,000 | 26,113 | F | 1.451 | (0.234) | No |

***Footnotes:***

a. Capacities based on the *City of Escondido Roadway Classification* (See *Table 4–3*). For "without SAP" evaluation, the "with Project" increased capacity of 15,500 is used to reflect the additional northbound lane that will be provided along the Project frontage as part of the Project development.
b. Average Daily Traffic
c. Level of Service
d. Volume to Capacity ratio
e. Δ denotes the SAP-induced increase in the Volume to Capacity (V/C) ratio.

***Table B*** shows a comparison of the Bear Valley Parkway/Encino Drive intersection both without and with the SAP. Traffic volumes are from the traffic impacts analysis (October 2016). This table shows that improved, LOS C or better operations are forecasted to occur with both Project traffic volumes and the SAP improvements for the Bear Valley Parkway/Encino Drive intersection. No significant impacts would occur with the SAP at this location.

LINSCOTT LAW & GREENSPAN engineers

**TABLE B**
**INTERSECTION OPERATIONS COMPARISON**

| Intersection | Peak Hour | Existing + Cumulative Projects + Project *(Without SAP)* | | | Existing + Cumulative Projects + Project *(With SAP)* | | |
|---|---|---|---|---|---|---|---|
| | | Control Type | Delay [a] | LOS [b] | Control Type | Delay | LOS |
| Bear Valley Parkway / Encino Drive | AM | *OWSC* [c] | 61.1 | F | *Traffic Signal* | 30.7 | C |
| | PM | | 35.4 | E | | 8.2 | A |

***Footnotes:***
a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. One-Way Stop Controlled intersection, Minor street left-turn delay is reported.

| SIGNALIZED | | UNSIGNALIZED | |
|---|---|---|---|
| DELAY/LOS THRESHOLDS | | DELAY/LOS THRESHOLDS | |
| Delay | LOS | Delay | LOS |
| 0.0 ≤ 10.0 | A | 0.0 ≤ 10.0 | A |
| 10.1 to 20.0 | B | 10.1 to 15.0 | B |
| 20.1 to 35.0 | C | 15.1 to 25.0 | C |
| 35.1 to 55.0 | D | 25.1 to 35.0 | D |
| 55.1 to 80.0 | E | 35.1 to 50.0 | E |
| ≥ 80.1 | F | ≥ 50.1 | F |

## *Conclusions*

Development of the Specific Alignment Plan will ultimately result in increased capacity for Bear Valley Parkway as it is improved to four-lanes from the northern Project boundary to the existing four-lane section north of the Sunset Drive/ Ranchito Drive intersection. Interim improvements will not achieve the full four-lane section, but will increase the second northbound lane from south of the Project through the northern Project boundary, thereby still increasing capacity and operations. Improvements (including signalization) to the Bear Valley Parkway/ Encino Drive intersection will result in improved operations as well.

No significant capacity impacts would occur with development of the SAP as proposed.

cc: File

# Appendix T "No Cumulative Impact" Project Alternative – Traffic Analysis Memorandum (May 2016)

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# MEMORANDUM

| | | | |
|---|---|---|---|
| To: | Jack Henthorn<br>Jack Henthorn & Associates | Date: | May 12, 2016 |
| From: | Chris Mendiara<br>LLG, Engineers | LLG Ref: | 3-13-2299 |
| Subject: | 661 Bear Valley Parkway – "No Cumulative Impact" Project Alternative | | |


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The Project Applicant for the 661 Bear Valley Parkway project (Project) has requested Linscott, Law & Greenspan, Engineers (LLG) determine the maximum project size that would result in no significant cumulative traffic impacts at the Bear Valley Parkway/Encino Drive unsignalized intersection. At present, the proposed Project consists of 55 single-family dwelling units and results in one (1) cumulative impact at this location.

The City of Escondido's significance threshold for intersections is a maximum of 2.0 seconds of delay added by the project during peak hour operations, if the intersection operates at Level of Service (LOS) D or worse. LLG used an iterative process to determine the maximum number of units that could be built without exceeding this threshold. The Project trip generation was reduced in increments until delay was within 2.0 seconds of without Project operations. As with the Traffic Impact Analysis report, intersection analysis was completed using *Synchro* (version 8), consistent with City standards.

***Table A***, on the following page, shows the peak hour operations for the Existing + Cumulative scenario "Without Project", "With Project" (55-units proposed), and with the "No Impact Alternative" (37-units). As shown in *Table A*, the 37-unit No Impact Alternative increases delay by no more than 2.0 seconds as compared to Without Project operations during both AM and PM peak hour operations.

The intersection calculation worksheets are included as attachments to this memo.

cc: File

## TABLE A
## "NO IMPACT ALTERNATIVE" INTERSECTION OPERATIONS

| Intersection | Control Type | Peak Hour | Existing + Cumulative [a] | | Existing + Cumulative + Proposed Project (55 Units) [a] | | | Existing + Cumulative + No Impact Alternative (37 Units) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Delay [b] | LOS [c] | Delay | LOS | Δ [d] | Delay | LOS | Δ |
| Bear Valley Parkway / Encino Drive | MSSC [e] | AM | 57.2 | F | 61.1 | F | 3.9 | 59.2 | F | 2.0 |
| | | PM | 28.7 | D | 35.4 | E | 6.7 | 30.6 | D | 1.9 |

***Footnotes:***

a. Source: Traffic Impact Analysis (LLG) 3-30-2016.
b. Average delay expressed in seconds per vehicle.
c. Level of Service.
d. Δ = Project-related increase in delay.
e. Minor Street Stop Controlled intersection. Minor street left-turn delay is reported.

UNSIGNALIZED

DELAY/LOS THRESHOLDS

| Delay | LOS |
|---|---|
| 0.0 ≤ 10.0 | A |
| 10.1 to 15.0 | B |
| 15.1 to 25.0 | C |
| 25.1 to 35.0 | D |
| 35.1 to 50.0 | E |
| ≥ 50.1 | F |

# ATTACHMENTS

## INTERSECTION ANALYSIS WORKSHEETS

| Intersection | |
|---|---|
| Int Delay, s/veh | 6.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Traffic Vol, veh/h | 4 | 133 | 111 | 571 | 984 | 25 |
| Future Vol, veh/h | 4 | 133 | 111 | 571 | 984 | 25 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | Stop |
| Storage Length | 110 | 0 | 130 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 63 | 63 | 91 | 91 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 6 | 211 | 122 | 627 | 1093 | 28 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1964 | 1093 | 1093 | 0 | - | 0 |
| Stage 1 | 1093 | - | - | - | - | - |
| Stage 2 | 871 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 69 | 261 | 638 | - | - | - |
| Stage 1 | 321 | - | - | - | - | - |
| Stage 2 | 410 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 56 | 261 | 638 | - | - | - |
| Mov Cap-2 Maneuver | 56 | - | - | - | - | - |
| Stage 1 | 321 | - | - | - | - | - |
| Stage 2 | 332 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 59.2 | 1.9 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 638 | - | 56 | 261 | - | - |
| HCM Lane V/C Ratio | 0.191 | - | 0.113 | 0.809 | - | - |
| HCM Control Delay (s) | 12 | - | 77.3 | 58.7 | - | - |
| HCM Lane LOS | B | - | F | F | - | - |
| HCM 95th %tile Q(veh) | 0.7 | - | 0.4 | 6.3 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.7 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Traffic Vol, veh/h | 7 | 47 | 91 | 1186 | 716 | 12 |
| Future Vol, veh/h | 7 | 47 | 91 | 1186 | 716 | 12 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | Stop |
| Storage Length | 110 | 0 | 130 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 57 | 57 | 95 | 95 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 12 | 82 | 96 | 1248 | 796 | 13 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2236 | 796 | 796 | 0 | - | 0 |
| Stage 1 | 796 | - | - | - | - | - |
| Stage 2 | 1440 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 47 | 387 | 826 | - | - | - |
| Stage 1 | 444 | - | - | - | - | - |
| Stage 2 | 218 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 42 | 387 | 826 | - | - | - |
| Mov Cap-2 Maneuver | 42 | - | - | - | - | - |
| Stage 1 | 444 | - | - | - | - | - |
| Stage 2 | 193 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 30.6 | 0.7 | 0 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 826 | - | 42 | 387 | - | - |
| HCM Lane V/C Ratio | 0.116 | - | 0.292 | 0.213 | - | - |
| HCM Control Delay (s) | 9.9 | - | 122.9 | 16.8 | - | - |
| HCM Lane LOS | A | - | F | C | - | - |
| HCM 95th %tile Q(veh) | 0.4 | - | 1 | 0.8 | - | - |