

Appendix E

Transportation Evaluation

GRAND AVENUE VISION

Transportation Evaluation

JUNE 2021

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1 INTRODUCTION

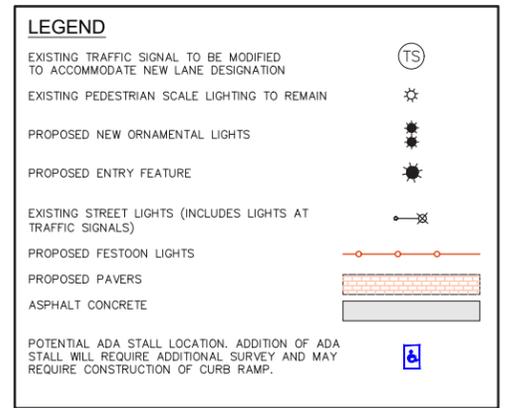
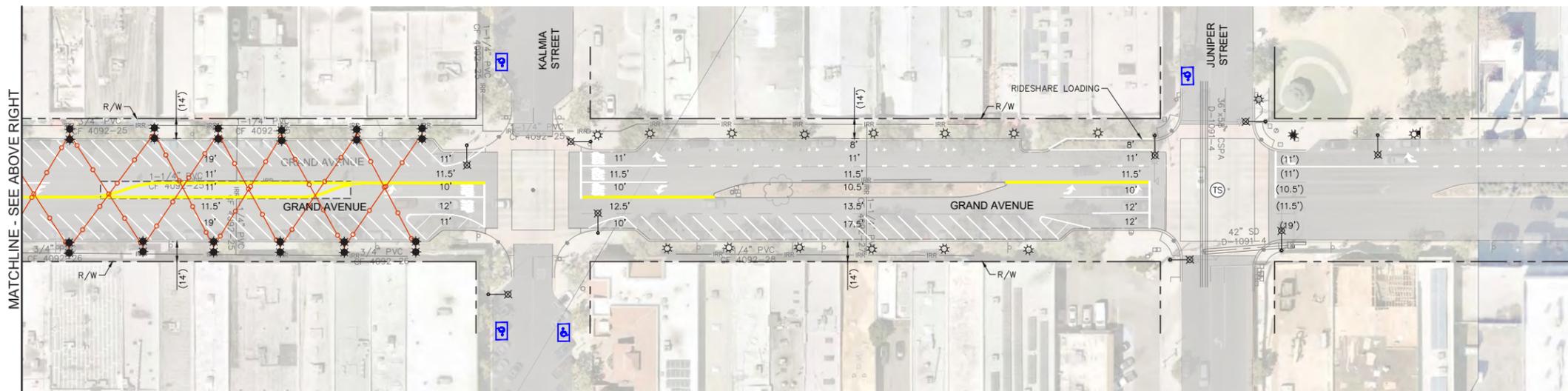
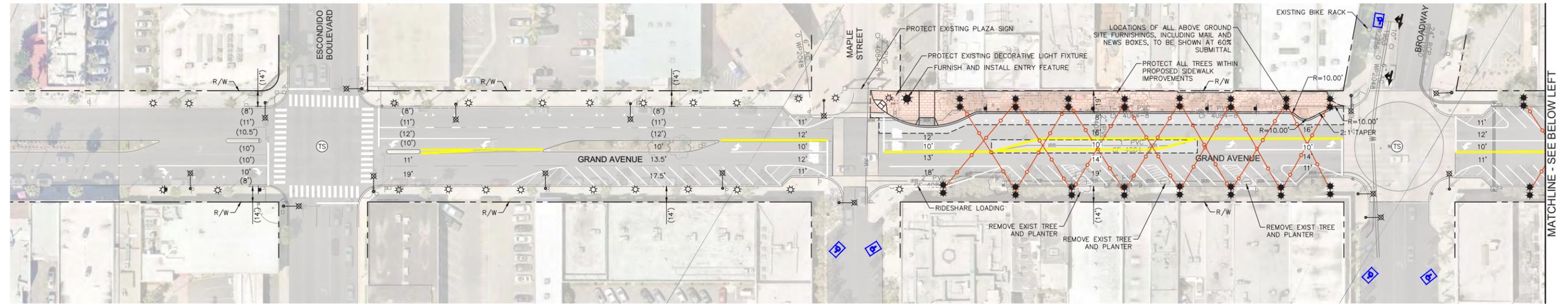
The City of Escondido is developing the first phase of the Grand Avenue Vision project. This plan aims to improve the economic vitality of Grand Avenue by creating a pedestrian-friendly and aesthetically appealing corridor. The project intends to develop and implement the first phase of the community's Vision Plan for Grand Avenue. The goal of the Vision Plan is to build on the identity of Grand Avenue as a charming historic street by improving the comfort and experience of its patrons. The Vision Plan maintains key historic aspects of downtown by providing period-appropriate light fixtures, street furnishings and fencing while adding to the vibrancy by improving walkability and accessibility.

1.1 PROJECT DESCRIPTION

The first phase of the project focuses on Grand Avenue between Escondido Blvd. and Juniper Street. Lane reductions on Grand Ave provide the opportunity to widen sidewalks to expand outdoor dining; install curb rounding to reduce pedestrian crossing distances and calm traffic; add diagonal parking and enhance pedestrian-scale lighting, which adds to pedestrian safety, ambiance and aesthetics. The complete corridor will include mini-roundabouts or traffic circles at three locations (Maple Street, Broadway, and Kalmia Street); streetscape improvements; public art features; narrowing of Grand Avenue to one lane in each direction and using the excess width to create wider, 20-foot sidewalks; and diagonal parking on one side of the street resulting in increased parking.

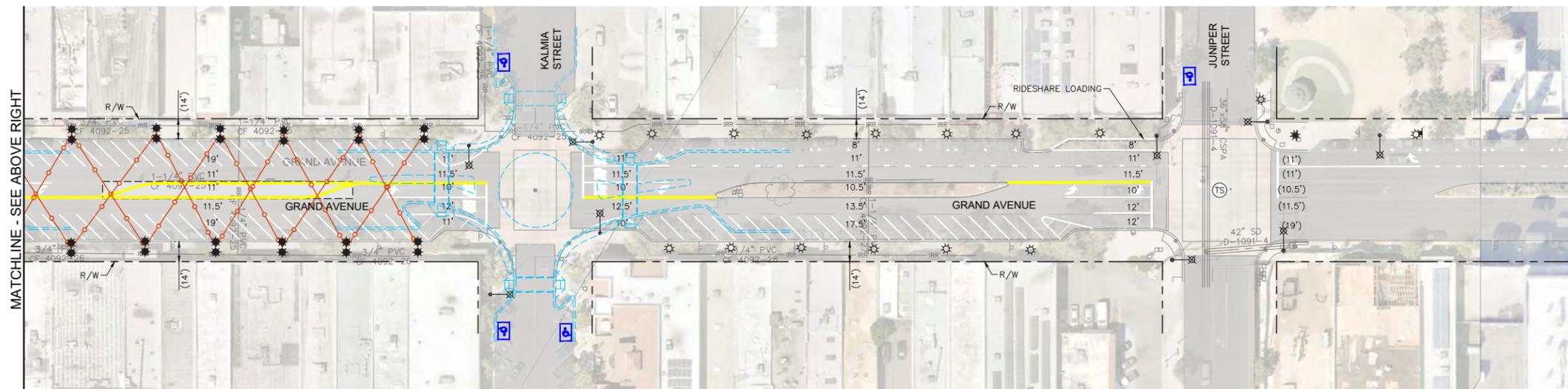
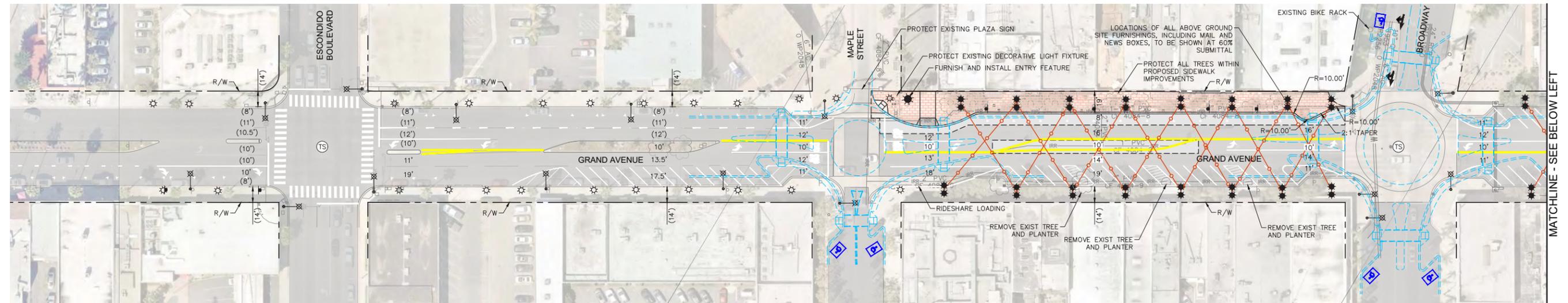
Figures 1-1 and 1-2 show the proposed project concept.

FIGURE 1-1 PROJECT CONCEPT - PHASE 1



NOT TO SCALE

FIGURE 1-2 PROJECT CONCEPT - PHASE 2



LEGEND	
EXISTING TRAFFIC SIGNAL TO BE MODIFIED TO ACCOMMODATE NEW LANE DESIGNATION	(TS)
EXISTING PEDESTRIAN SCALE LIGHTING TO REMAIN	☼
PROPOSED NEW ORNAMENTAL LIGHTS	⬤
PROPOSED ENTRY FEATURE	⬤
EXISTING STREET LIGHTS (INCLUDES LIGHTS AT TRAFFIC SIGNALS)	⊗
PROPOSED FESTOON LIGHTS	—○—
PROPOSED PAVERS	▨
ASPHALT CONCRETE	▭
POTENTIAL ADA STALL LOCATION. ADDITION OF ADA STALL WILL REQUIRE ADDITIONAL SURVEY AND MAY REQUIRE CONSTRUCTION OF CURB RAMP.	♿



1.2 ANALYSIS SCENARIOS

Six scenarios were analyzed as part of this study, listed below:

- **Existing Conditions:** Represents the traffic conditions of the existing street network. Traffic counts were collected on November 1, 2017 and new counts were taken on August 19, 2020 and adjusted to account for irregular travel patterns due to the current COVID-19 Pandemic. This scenario is used to establish a baseline (without project) for comparison.
- **Existing with Project Conditions:** Represents the traffic conditions of the existing street network with the construction of the proposed project. Comparison of this scenario to Existing Conditions scenario determines project impacts associated with the project.
- **Near Term Year (2022) Baseline Conditions:** Represents the traffic conditions of the existing street network assumed in year 2022. This scenario is used to establish a baseline (without project) for comparison.
- **Near Term Year (2022) with Project Conditions:** Represents the traffic conditions of the street network in year 2022 with the construction of the proposed project. Comparison of this scenario to 2022 Baseline Conditions scenario determines project impacts associated with the project.
- **Horizon Year 2035 Baseline Conditions:** Represents the traffic conditions of the existing street network assumed in year 2035. This scenario is used to establish a baseline (without project) for comparison.
- **Horizon Year 2035 with Project Conditions:** Represents the traffic conditions of the street network in year 2035 with the construction of the proposed project. Comparison of this scenario to 2035 Baseline Conditions scenario determines project impacts associated with the project.

2 METHODOLOGY

The following section describes the methodology used to analyze the study area conditions.

2.1 STUDY AREA

The following eleven (11) intersections and eight (8) roadway segments were defined as key study area intersections and are shown in **Table 2-1** and **Table 2-2**. The study area includes all intersection and roadways adjacent to the proposed improvements along Grand Avenue. **Figure 2-1** illustrates the study area and intersection geometries at the time the counts were collected.

Table 2-1 Study Intersections

	Intersection	Traffic Control (a)
1	Escondido Blvd and Grand Ave	Signal
2	Maple St and Grand Ave	AWSC
3	Broadway and Grand Ave	Signal
4	Kalmia St and Grand Ave	AWSC
5	Juniper Street and Grand Avenue	Signal
6	Escondido Blvd and Valley Pkwy	Signal
7	Broadway and Valley Pkwy	Signal
8	Juniper St and Valley Pkwy	Signal
9	Escondido Blvd and 2 nd Ave	Signal
10	Broadway and 2 nd Ave	Signal
11	Juniper St and 2 nd Ave	Signal

- (a) Signal = Traffic Signal
AWSC = All-Way Stop Control

Table 2-2 Study Roadway Segments

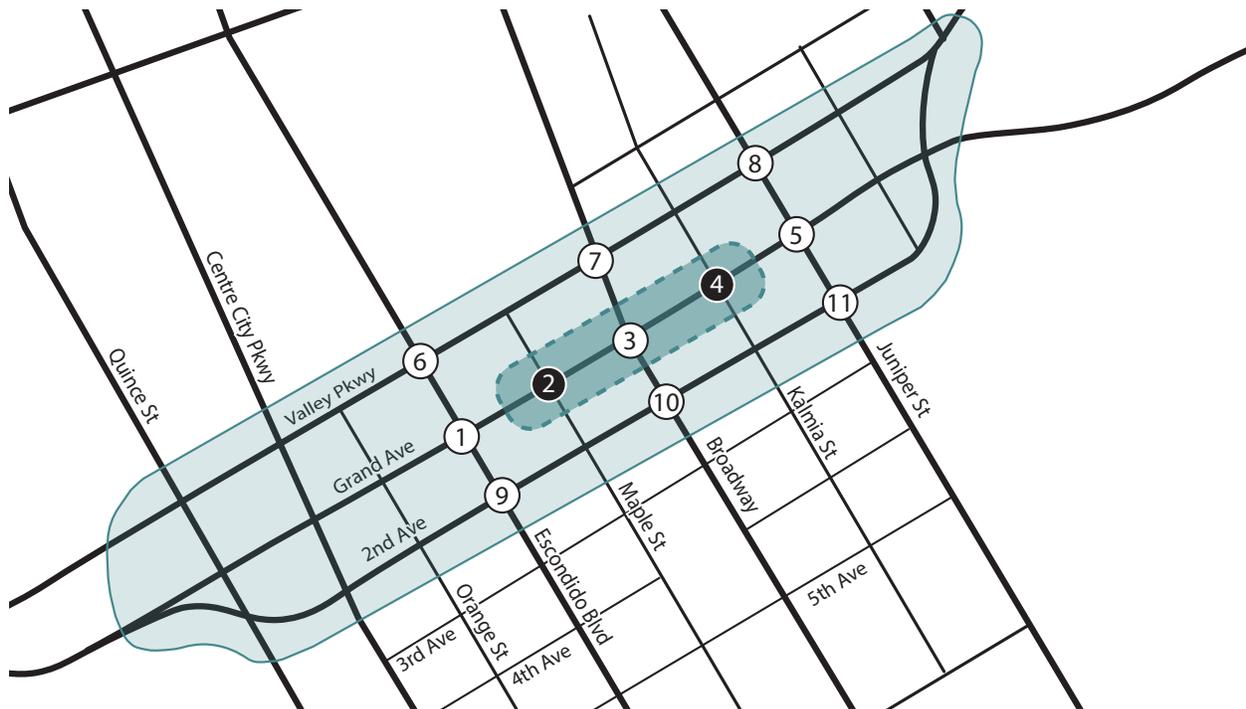
Roadway Segment	Current Classification
Grand Avenue	
Between Orange St and Escondido Blvd	4 Lane Collector
Between Escondido Blvd and Broadway	4 Lane Collector
Between Broadway and Juniper St	4 Lane Collector
Between Juniper St and Ivy St	4 Lane Collector
Valley Parkway	
Between Escondido Blvd and Broadway	3 Lane Collector
Between Broadway and Juniper St	3 Lane Collector
2nd Avenue	
Between Escondido Blvd and Broadway	3 Lane Collector
Between Broadway and Juniper St	3 Lane Collector

- (a) Signal = Traffic Signal
 AWSC = All-Way Stop Control

FIGURE 2-1 PROJECT STUDY AREA

Escondido Blvd and Grand Ave	Maple St and Grand Ave	Broadway and Grand Ave	Kalmia St and Grand Ave
Juniper St and Grand Ave	Escondido Blvd and Valley Pkwy	Broadway and Valley Pkwy	Juniper St and Valley Parkway
Escondido Blvd and 2nd Ave	Broadway and 2nd Ave	Juniper St and 2nd Ave	

			<p>LEGEND</p> <ul style="list-style-type: none"> Study Area Future Mini-Roundabout Locations Signalized Intersection Unsignalized Intersection <p>NOT TO SCALE</p>



2.2 ANALYSIS PROCESS

Senate Bill (SB) 743 was approved by the California legislature in September 2013, requiring changes to the California Environmental Quality Act (CEQA) methodology, specifically directing the Governor's Office of Planning and Research (OPR) to develop alternative metrics to the use of vehicular "level of service" (LOS) for evaluating transportation projects. OPR published the Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory) in December 2018 providing recommendations for the preparation of transportation impact analysis under SB 743, suggesting Vehicle Miles Traveled (VMT) to replace LOS as the primary measure of transportation impacts. In April 21st, 2021, the City of Escondido adopted the *Transportation Impact Analysis Guidelines*, which provides guidance for VMT analysis methodology and thresholds for determining project significance with regards to VMT.

SB 743 does not prevent a city or county from continuing to analyze local mobility in terms of delay or LOS as part of other plans (e.g., general plans); studies; congestion management plans; or transportation improvement plans, but these metrics may no longer constitute the basis for CEQA transportation impacts as of July 1, 2020.

The analysis process includes evaluating Vehicle Miles Travel in compliance with State Bill 743 and City Guidelines, in addition to the operations at the intersections for the a.m. and p.m. peak periods. Intersection analyses were measured and quantified using Synchro traffic analysis software package.

2.2.1 ANALYSIS SOFTWARE

To analyze the operations of both signalized and unsignalized intersections, Synchro 10 (Trafficware), using the methodologies outlined in the *Highway Capacity Manual (HCM) 6th Edition*, was used for the analysis.

2.2.2 SIGNALIZED AND UNSIGNALIZED INTERSECTIONS

The Highway Capacity Manual (*HCM*), published by the Transportation Research Board, establishes procedures to evaluate highway facilities and rate their ability to process traffic volumes. The terminology "level of service" is used to provide a qualitative evaluation based on certain quantitative calculations, which are related to empirical values. The criteria for the various levels of service designations for intersections are given in **Table 2-2**.

Level of service (LOS) for signalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and loss of travel time. Specifically, LOS criteria are stated in terms of the average control delay per vehicle for the peak 15-minute period within the hour analyzed. The average control delay includes initial deceleration delay, queue move-up time, final acceleration time, and stop delay.

LOS for unsignalized intersections is determined by the computed or measured control delay and is defined for each movement. At an all-way stop control intersection, the delay reported is the average control delay of all movements at the intersection. At a one-way or two-way stop-controlled intersection, delay is reported for each stop-controlled movement.

The following list contains the assumptions used for the intersection analyses:

- HCM 6th Edition methodology
- Intersection peak-hour factor (PHF) data calculated from existing traffic data were used for the Existing and Near Term (2022) scenarios

- Current traffic signal timing parameters were obtained from the City of Escondido and input into analysis software
- Percent of heavy vehicle (PHV) = 2 percent

The acceptable LOS standard for intersections in the City of Escondido is LOS D.

Table 2-3 LOS Criteria for Intersections

LOS	Control Delay (sec/veh)			Description
	Signalized Intersections (a)	Two-Way Stop Controlled Intersections (b)	All-Way Stop Controlled Intersections (c)	
A	≤10.0	≤10.0	≤10.0	Operations with very low delay and most vehicles do not stop.
B	>10.0 and ≤20.0	>10.0 and ≤15.0	>10.0 and ≤15.0	Operations with good progression but with some restricted movement.
C	>20.0 and ≤35.0	>15.0 and ≤25.0	>15.0 and ≤25.0	Operations where a significant number of vehicles are stopping with some backup and light congestion.
D	>35.0 and ≤55.0	>25.0 and ≤35.0	>25.0 and ≤35.0	Operations where congestion is noticeable, longer delays occur, and many vehicles stop. The proportion of vehicles not stopping declines
E	>55.0 and ≤80.0	>35.0 and ≤50.0	>35.0 and ≤50.0	Operations where there is significant delay, extensive queuing, and poor progression.
F	>80.0	>50.0	>50.0	Operations that is unacceptable to most drivers, when the arrival rates exceed the capacity of the intersection.

Notes:

- (a) Highway Capacity Manual 6th Edition, Chapter 19, Page 16, Exhibit 19-8
- (b) Highway Capacity Manual 6th Edition, Chapter 20, Page 6, Exhibit 20-2
- (c) Highway Capacity Manual 6th Edition, Chapter 21, Page 8, Exhibit 21-6

The intersection and roadway segment analysis included in this report follows the methodology and thresholds outlined in Chapter 4 - Local Mobility Analysis of the City's *Transportation Impact Analysis Guidelines, April 2021*.

3 SB 743 VEHICLE MILES TRAVELED (VMT) EVALUATION

For transportation projects like the Grand Avenue Vision, the VMT analysis must evaluate whether a project would induce vehicle travel. Per Section 3.4 (VMT Analysis for Transportation Projects) of the City's *Transportation Impact Analysis Guidelines*, April 2021, projects that result in an increase in additional motor vehicle capacity (such as constructing a new roadway or adding more vehicle travel lanes to an existing roadway) has the potential to increase vehicle travel, referred to as "induced vehicle travel". The effect of induced vehicle travel typically manifests over several years. Lower travel times make the modified facility more attractive to travelers resulting in additional vehicle miles for the system.

Appendix E of the City's *Transportation Impact Analysis Guidelines* contains a list of transportation projects that, absent substantial evidence to the contrary, do not require an induced travel/VMT analysis since they typically do not cause a substantial or measurable increase in VMT. The Grand Avenue Vision includes the following elements listed as examples of projects exempted from VMT evaluation:

- Reduction in number of through lanes;
- Installation of roundabout or traffic circles; and
- Addition of new or enhanced bike or pedestrian facilities on existing streets/highways or within existing public rights-of-way.

The above listed features would enhance and encourage the use of active transportation modes within the project footprint, while discouraging vehicular traffic by implementing traffic calming measures. In addition, as shown in future sections of this document, roadway segments surrounding the project (Valley Parkway and Second Avenue) would operate at acceptable LOS during the Horizon Year 2040 with Project Conditions, indicating that the Grand Avenue Vision would not likely generate any induced vehicle travel in the area, generated by vehicular traffic looking for a less congested option.

In addition, when examining the OPR Technical Advisory and the City's Guidelines for VMT analysis, the project falls under several screening criteria that confirms that the VMT impact would be slight, if any. According to these criteria, the project is located in a Low VMT Generating Area (10.7 VMT per capita which represents 56.5% of mean); because of its lane-reduction configuration it should generate fewer than 200 daily trips, and it is located near Major High-Quality Transit (Near major transit stops along Escondido Blvd served by NCTD Route 350). Because of these elements, the project would clearly be screened out from further VMT analysis.

3.1 FINDINGS AND CONCLUSIONS

The proposed project will reduce the number of through lanes, install traffic circles and enhanced bike and pedestrian facilities, hence would not be likely to lead to a substantial or measurable increase in vehicle travel. Because of the nature and location of the project, the improvement meets the criteria for 'screening out,' and would not require additional VMT analysis.

4 EXISTING CONDITIONS

This section summarizes the existing roadway circulation network, peak-hour traffic volumes, and operations at the study intersections.

4.1 ROAD NETWORK

The primary extents of the study area include Grand Avenue and the one-way couplet parallel roadways (2nd Avenue and Valley Parkway) between Escondido Boulevard and Juniper Street. The study area encompasses all intersection adjacent to the propose improvements. The following provides a description of the project area roadways within the limits of the study area, as of February 2021. The broader study area begins west of Quince Street and extends to Valley Parkway and East Valley Parkway.

Grand Avenue is currently built as a 4-lane roadway with raised medians within the study area. The posted speed limit is 30 mph and parking is permitted on both sides of the roadway. Bike lanes are not provided. Sidewalks and marked crosswalks are provided throughout the roadway. Transit service is available through North County Transit District (NCTD) Route 351/352. Transit Route information is located in **Appendix D**.

2nd Avenue is currently built as a 3-lane one-way roadway (Eastbound) within the study area. Bike facilities are not provided, and parking is generally permitted on both sides of the road but not frequently utilized. Bike lanes are not provided. Sidewalks and marked crosswalks are provided throughout the roadway. The posted speed limit is 30 mph. Transit service is available through NCTD Route 355, 371, and 388.

Valley Parkway is currently built as a 3-lane one-way roadway (Westbound) within the study area. Bike facilities are not provided, and parking is generally permitted on both sides of the road. The posted speed limit is 35 mph. Bike lanes are not provided. Sidewalks and marked crosswalks are provided throughout the roadway. Transit service is available through NCTD Route 357, 371, and 388.

Grand Avenue Temporary Lane Changes: Due to COVID-19 pandemic, the City implemented lane reductions / parking lane removals on both sides of Grand Avenue at the beginning of summer 2020 to accommodate for outdoor dining. Additionally, signals along the roadway are set to flash and act as all-way stop-controlled intersections.

4.2 TRAFFIC VOLUMES

Peak-Hour intersection vehicle turning movement counts and 24-hour roadway counts were obtained by the City of Escondido and collected on November 1, 2017. These counts were collected prior to the temporary lane reduction along Grand Avenue implemented as a temporary measure to provide more outdoor space to restaurant in the area during the COVID-19 pandemic. Counts at the intersections below were collected by National Data & Surveying Services (NDS) on August 19, 2020.

- Escondido Boulevard and Valley Parkway
- Broadway and Valley Parkway
- Escondido Boulevard and 2nd Avenue
- Broadway and 2nd Avenue

Additionally, the city provided counts for the following two locations from Palomar Heights Traffic Impact Analysis Dated March 2018.

- Juniper Street and Valley Parkway
- Juniper Street and 2nd Avenue

Because traffic data was collected on different dates, and the traffic data collected in 2020 is lower than 2017 data due to COVID-19, the traffic volumes were normalized to reflect 2017 conditions as the best representation of the existing traffic patterns within the study area.

Appendix A contains the existing traffic volume data at the study intersections. **Figure 4-2** illustrates the existing traffic volumes at the study intersections.

4.3 INTERSECTION AND ROADWAY ANALYSIS

Table 4-1 and Table 4-2 displays the intersection and roadway analysis results respectively for the study intersections and roadways under Existing Conditions. As shown in the table, all intersections and roadways currently operate at LOS C or better.

Appendix B contains the intersections LOS calculation worksheets.

FIGURE 4-1 EXISTING TRAFFIC VOLUMES

<p>1</p> <p>Escondido Blvd.</p> <p>11 / 22 302 / 439 41 / 83</p> <p>29 / 58 189 / 280 31 / 57</p> <p>Grand Ave.</p> <p>69 / 79 150 / 279 5 / 25</p>	<p>2</p> <p>Maple St.</p> <p>7 / 11 210 / 331 47 / 17</p> <p>Grand Ave.</p> <p>16 / 17 176 / 374 18 / 9</p>	<p>3</p> <p>S. Broadway</p> <p>48 / 46 151 / 136 97 / 99</p> <p>Grand Ave.</p> <p>54 / 93 128 / 281 5 / 16</p>	<p>4</p> <p>Kalmia St.</p> <p>5 / 14 40 / 26 5 / 16</p> <p>Grand Ave.</p> <p>10 / 38 192 / 336 24 / 21</p>
<p>5</p> <p>Juniper St.</p> <p>8 / 15 125 / 100 9 / 19</p> <p>Grand Ave.</p> <p>16 / 21 150 / 300 23 / 31</p>	<p>6</p> <p>Escondido Blvd.</p> <p>75 / 129 239 / 331</p> <p>Valley Pkwy.</p> <p>45 / 69 989 / 940 41 / 80</p>	<p>7</p> <p>Broadway</p> <p>176 / 120 214 / 212</p> <p>Valley Pkwy.</p> <p>56 / 107 944 / 872 12 / 20</p>	<p>8</p> <p>Juniper St.</p> <p>105 / 43 112 / 76</p> <p>Valley Pkwy.</p> <p>1 / 5 1387 / 977 31 / 27</p>
<p>9</p> <p>Escondido Blvd.</p> <p>239 / 339 40 / 87</p> <p>2nd Ave.</p> <p>13 / 38 532 / 1069 31 / 48</p>	<p>10</p> <p>Broadway</p> <p>61 / 81 39 / 46</p> <p>2nd Ave.</p> <p>36 / 66 562 / 1189 14 / 17</p>	<p>11</p> <p>Juniper St.</p> <p>224 / 186 11 / 10</p> <p>2nd Ave.</p> <p>56 / 59 732 / 1190 68 / 86</p>	<p>Legend</p> <p>X / Y = AM / PM PEAK HOUR TURNING VOLUMES</p>

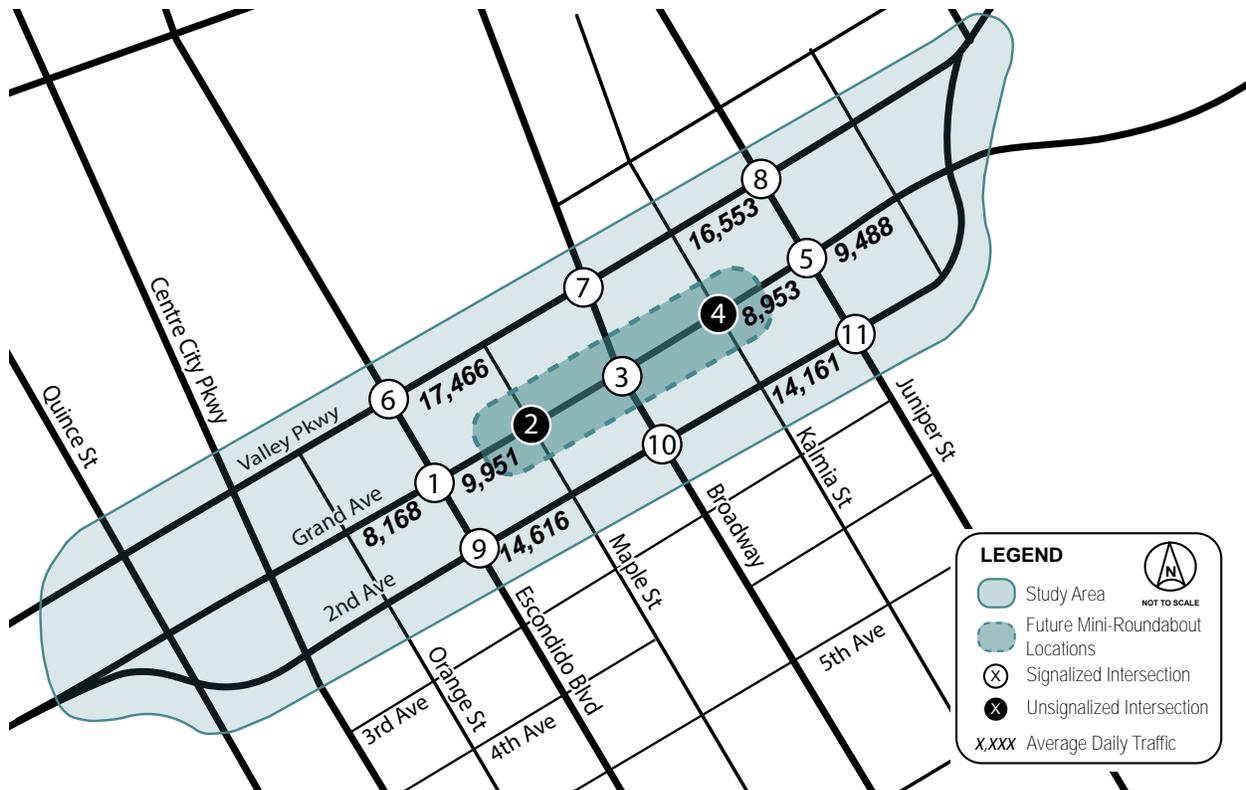


Table 4-1 Existing Conditions Peak-Hour Intersection Analysis

INTERSECTION		TRAFFIC CONTROL	PEAK HOUR	EXISTING	
				DELAY (a)	LOS (b)
1	Escondido Blvd & Grand Ave	Signal	AM	18.1	B
			PM	18.0	B
2	Maple St. & Grand Ave	All-Way Stop	AM	8.6	A
			PM	10.4	B
3	Broadway/S. Broadway & Grand Ave	Signal	AM	13.5	B
			PM	12.7	B
4	Kalmia St/Kalmia St. & Grand Ave	All-Way Stop	AM	9.4	A
			PM	10.6	B
5	Juniper St & Grand Ave	Signal	AM	18.1	B
			PM	19.7	B
6	Escondido Blvd & Valley Pkwy	Signal	AM	26.9	C
			PM	29.3	C
7	S. Broadway & Valley Pkwy	Signal	AM	17.7	B
			PM	16.7	B
8	Juniper St & Valley Pkwy	Signal	AM	22.1	C
			PM	18.7	B
9	Escondido Blvd & 2nd Ave	Signal	AM	27.7	C
			PM	32.4	C
10	Broadway & 2nd Ave	Signal	AM	19.0	B
			PM	20.2	C
11	Juniper St & 2nd Ave	Signal	AM	21.1	C
			PM	27.2	C

Notes:

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the 6th Edition of the Highway Capacity Manual and performed using Synchro 10

Table 4-2 Existing Conditions Roadway Segment Level Of Service Summary

ROADWAY SEGMENT	EXISTING ROADWAY CLASSIFICATION (a)	LOS E CAPACITY	ADT (b)	V/C RATIO (c)	LOS
Grand Avenue*					
Between Orange St and Escondido Blvd	4 Lane Collector (with Parking)	20,000	8,168	0.408	B
Between Escondido Blvd and Broadway	4 Lane Collector (with Parking)	20,000	9,951	0.498	B
Between Broadway and Juniper St	4 Lane Collector (with Parking)	20,000	8,935	0.447	B
Between Juniper St to Ivy St	4 Lane Collector (with Parking)	20,000	9,488	0.474	B
Valley Parkway					
Between Escondido Blvd and Broadway	3 Lane Collector (one-way)	30,000	17,466	0.582	C
Between Broadway and Juniper St	3 Lane Collector (one-way)	30,000	16,553	0.552	B
2nd Avenue					
Between Escondido Blvd and Broadway	3 Lane Collector (one-way)	30,000	14,616	0.487	B
Between Broadway and Juniper St	3 Lane Collector (one-way)	30,000	14,161	0.472	B
Notes:					
(a) Existing functional classification and LOS E Capacity is based on the City of Escondido General Plan					
(b) Average Daily Traffic (ADT) volumes for the roadway segments were provided by National Data & Surveying Services and measured in November 2017.					
(c) The v/c Ratio is calculated by dividing the ADT volume by each respective roadway segment's capacity.					
* Although Grand Avenue is classified as a Collector, it does not function as a Collector in the same way as Valley Pkwy & 2nd Ave, rather it functions more like a Local Collector					

5 EXISTING WITH PROJECT CONDITIONS

This section provides a description of the Existing Conditions with the construction of the proposed project.

5.1 TRAFFIC VOLUMES

The project is not expected to generate additional vehicular volumes nor a shift of existing traffic volumes due to the implementation of the proposed project. This assessment is based on the fact that during existing conditions, with and without project, the intersections and roadway segments were found to operate at acceptable LOS, and therefore, there is not a need for traffic volumes to shift due to the project. Thus, the traffic volumes for this scenario are the same as the Existing Conditions scenario.

Temporary lane changes along Grand Avenue have been implemented by the City to accommodate outdoor dining during the COVID-19 pandemic. The changes include removing parking lanes/ lane reductions on both sides of Grand Avenue. Signals have been set to flash and act as all-way stop controlled intersections. Few concerns were observed during this period thus, some of the 'with project' changes were tested at this time.

5.2 INTERSECTION CHANGES

Intersection changes are at the intersections along Grand Avenue between Escondido Blvd. and Juniper St. due to the narrowing of Grand Avenue to one lane in each direction.

Figure 5-1 illustrates the intersection geometries for the 'with project' conditions

5.3 INTERSECTION AND ROADWAY ANALYSIS

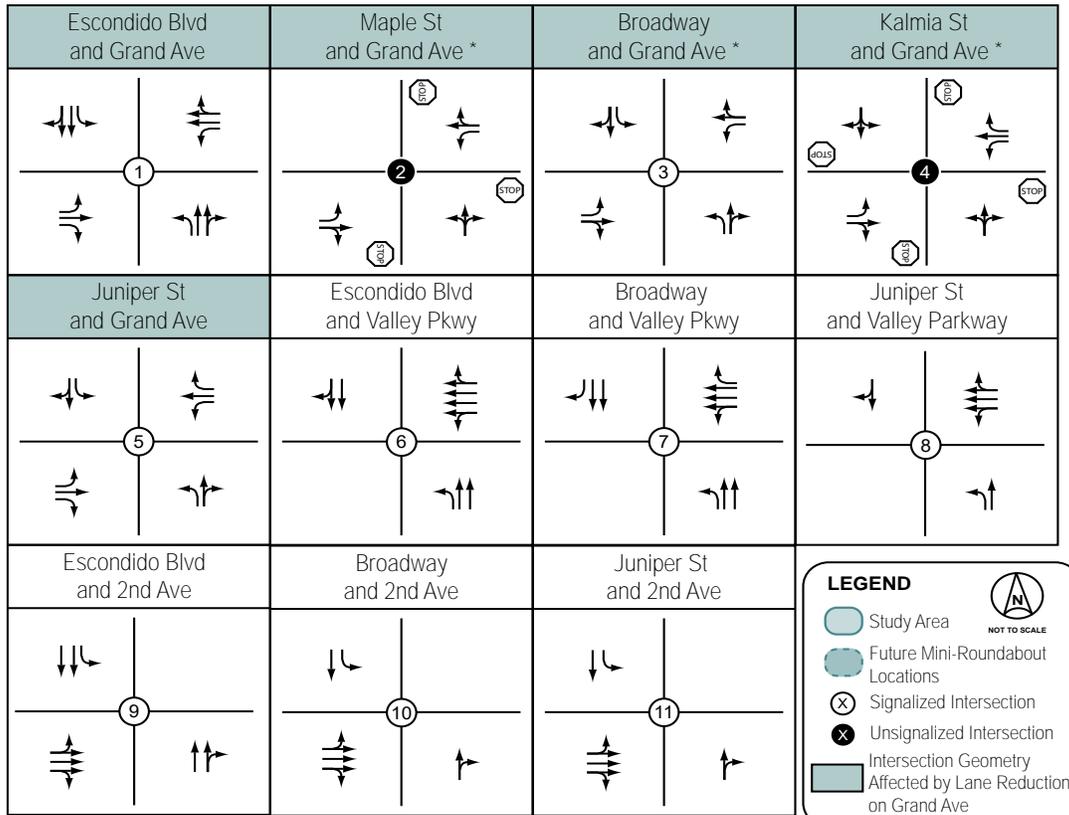
Table 5-1 and **Table 5-2** displays the intersection analysis and roadway analysis results respectively for the study intersections and roadways under Existing with Project Conditions. As shown in the table, all intersections will continue to operate at LOS C or better with the implementation of the proposed project.

Appendix B contains the intersections LOS calculation worksheets.

5.4 FINDINGS AND CONCLUSIONS

The results of the foregoing analysis indicate that the proposed improvements would have no impact under the Existing with Project Conditions scenario at all the facilities within the study area. The roadway segment change in volume-to-capacity ratio is less than 0.2. Grand Avenue operates at an acceptable level of service C or better. Additionally, the intersection analysis shows all intersections operate at an acceptable level of service C or better. This indicates that there is no significant project effect.

FIGURE 5-1 INTERSECTION GEOMETRIES - WITH PROJECT



Note:
 * Intersection control will change from stop-controlled to mini-roundabout configuration during the second phase of the project and is analyzed in Horizon Year

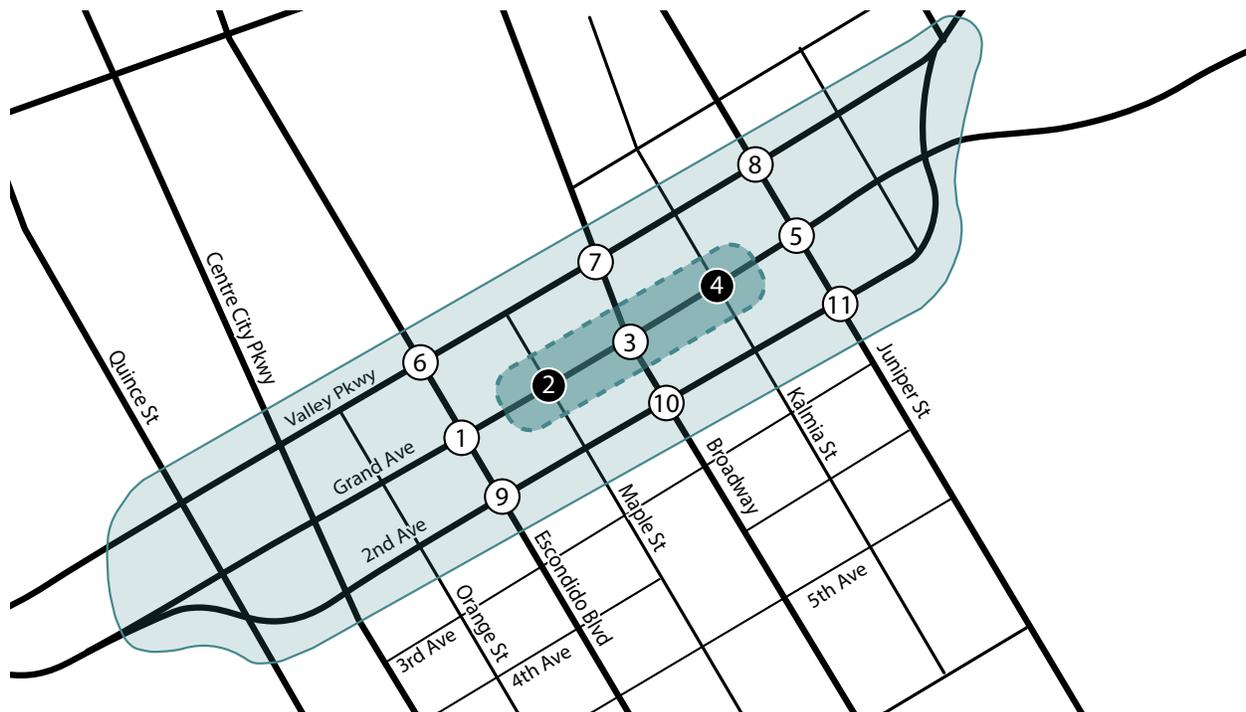


Table 5-1 Existing with Project Conditions Peak-Hour Intersection Analysis

INTERSECTION	PEAK HOUR	EXISTING BASELINE		EXISTING BASELINE PLUS PROJECT				
		DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	D (c)	SIGNIFICANT?	
1	Escondido Blvd & Grand Ave	AM	18.1	B	18.1	B	0.0	NO
		PM	18.0	B	18.1	B	0.1	NO
2	Maple St. & Grand Ave	AM	8.6	A	9.5	A	0.9	NO
		PM	10.4	B	14.5	B	4.1	NO
3	Broadway/S. Broadway & Grand Ave	AM	13.5	B	14.1	B	0.6	NO
		PM	12.7	B	13.4	B	0.7	NO
4	Kalmia St/Kalmia St. & Grand Ave	AM	9.4	A	11.1	B	1.7	NO
		PM	10.6	B	14.2	B	3.6	NO
5	Juniper St & Grand Ave	AM	18.1	B	19.1	B	1.0	NO
		PM	19.7	B	20.8	C	1.1	NO
6	Escondido Blvd & Valley Pkwy	AM	26.9	C	26.9	C	0.0	NO
		PM	29.3	C	29.3	C	0.0	NO
7	S. Broadway & Valley Pkwy	AM	17.7	B	17.7	B	0.0	NO
		PM	16.7	B	16.7	B	0.0	NO
8	Juniper St & Valley Pkwy	AM	22.1	C	22.1	C	0.0	NO
		PM	18.7	B	18.7	B	0.0	NO
9	Escondido Blvd & 2nd Ave	AM	27.7	C	27.7	C	0.0	NO
		PM	32.4	C	32.4	C	0.0	NO
10	Broadway & 2nd Ave	AM	19.0	B	19.0	B	0.0	NO
		PM	20.2	C	20.2	C	0.0	NO
11	Juniper St & 2nd Ave	AM	21.1	C	21.1	C	0.0	NO
		PM	27.2	C	27.2	C	0.0	NO

Notes:

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the 6th Edition of the Highway Capacity Manual and performed using Synchro 10

(c) Change in delay due to addition of project traffic

Table 5-2 Existing with Project Conditions Roadway Segment Level Of Service Summary

ROADWAY SEGMENT	ROADWAY CLASSIFICATION	LOS E CAPACITY	EXISTING BASELINE			ROADWAY CLASSIFICATION WITH PROJECT	LOS E CAPACITY	EXISTING PLUS PROJECT			D in V/C	SIG?
			ADT	V/C RATIO (a)	LOS			ADT	V/C RATIO (a)	LOS		
Grand Avenue												
Between Orange St and Escondido Blvd	4 Lane Collector (with Parking)	20,000	8,168	0.408	B	2 Lane Local Collector	15,000	8,168	0.545	B	0.137	NO
Between Escondido Blvd and Broadway	4 Lane Collector (with Parking)	20,000	9,951	0.498	B	2 Lane Local Collector	15,000	9,951	0.663	C	0.165	NO
Between Broadway and Juniper St	4 Lane Collector (with Parking)	20,000	8,935	0.447	B	2 Lane Local Collector	15,000	8,935	0.596	C	0.149	NO
Between Juniper St to Ivy St	4 Lane Collector (with Parking)	20,000	9,488	0.474	B	2 Lane Local Collector	15,000	9,488	0.633	C	0.159	NO
Valley Parkway												
Between Escondido Blvd and Broadway	3 Lane Collector (one-way)	30,000	17,466	0.582	C	3 Lane Collector (one-way)	30,000	17,466	0.582	C	0.000	NO
Between Broadway and Juniper St	3 Lane Collector (one-way)	30,000	16,553	0.552	B	3 Lane Collector (one-way)	30,000	16,553	0.552	B	0.000	NO
2nd Avenue												
Between Escondido Blvd and Broadway	3 Lane Collector (one-way)	30,000	14,616	0.487	B	3 Lane Collector (one-way)	30,000	14,616	0.487	B	0.000	NO
Between Broadway and Juniper St	3 Lane Collector (one-way)	30,000	14,161	0.472	B	3 Lane Collector (one-way)	30,000	14,161	0.472	B	0.000	NO
Notes:												
(a) The v/c Ratio is calculated by dividing the ADT volume by each respective roadway segment's capacity.												

6 NEAR-TERM (2022) BASELINE CONDITIONS

This section provides a description of the Near-Term Year 2022 Baseline Conditions without the project. This scenario establishes a baseline to compare against plus project scenario to determine project impacts.

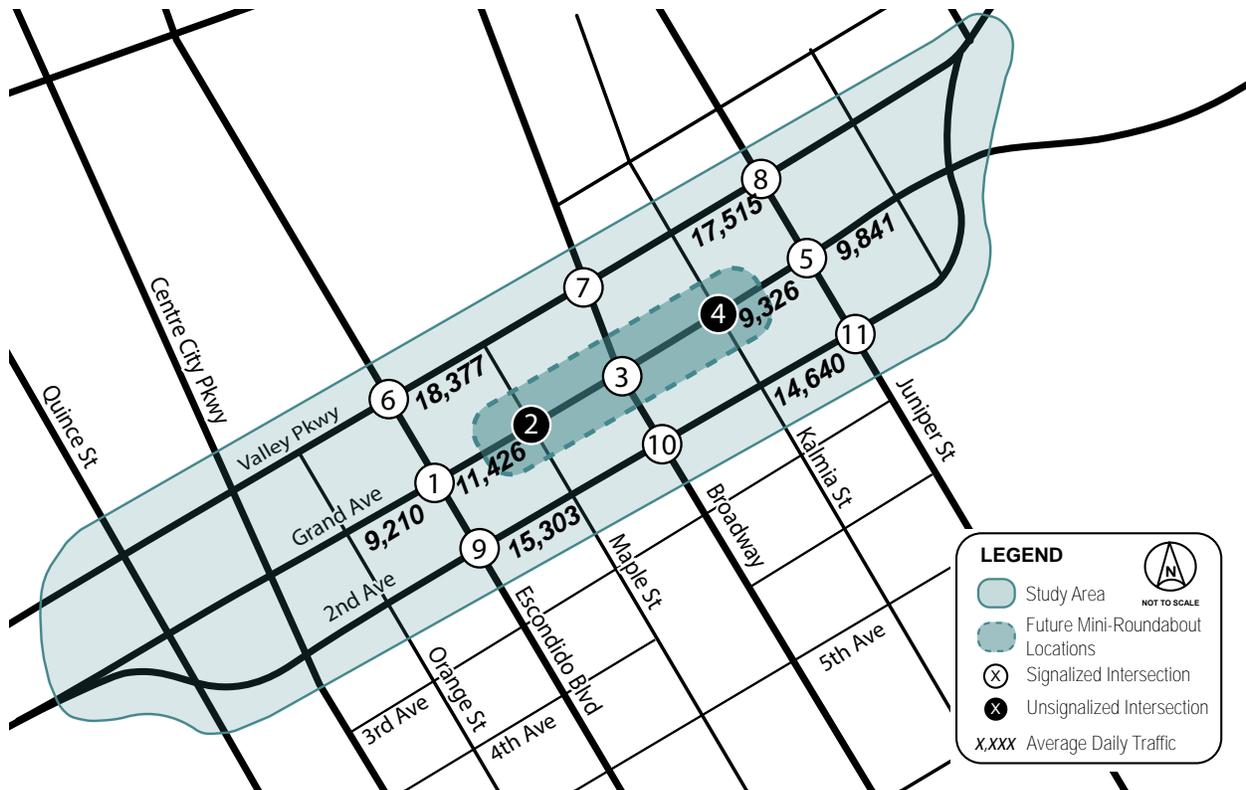
6.1 TRAFFIC VOLUMES

The Near-Term Baseline Conditions traffic volumes were developed by increasing the existing intersection turning movement volumes proportionally based on the expected increase of average daily traffic volumes on each of the intersection legs. The existing average daily traffic volumes were obtained from the City of Escondido and supplemented with data obtained from the SANDAG Traffic Volume Forecast Data Series 14. The 2022 average daily traffic volumes were estimated based on the calculated growth rate from SANDAG Volumes between Years 2012 and 2035.

Appendix C contains the SANDAG Model 14 volumes for Baseline Year 2012 and Horizon Year 2035. The resulting Near-Term Baseline Conditions traffic volumes are shown in **Figure 6-1**.

FIGURE 6-1 NEAR-TERM BASELINE (2022) TRAFFIC VOLUMES

<p>1</p> <p>12 / 23 318 / 460 43 / 87</p> <p>Escondido Blvd.</p> <p>31 / 61 199 / 294 33 / 60</p> <p>Grand Ave.</p> <p>73 / 83 158 / 292 5 / 26</p> <p>16 / 40 313 / 439 17 / 36</p>	<p>2</p> <p>Maple St.</p> <p>7 / 12 221 / 347 49 / 18</p> <p>Grand Ave.</p> <p>17 / 18 185 / 392 19 / 9</p> <p>20 / 45 7 / 3 15 / 24</p>	<p>3</p> <p>51 / 48 159 / 143 102 / 104</p> <p>S. Broadway</p> <p>48 / 53 239 / 306 9 / 15</p> <p>Grand Ave.</p> <p>57 / 97 135 / 295 5 / 17</p> <p>9 / 19 170 / 236 11 / 16</p>	<p>4</p> <p>5 / 15 42 / 27 5 / 17</p> <p>Kalmia St.</p> <p>14 / 23 290 / 335 22 / 28</p> <p>Grand Ave.</p> <p>11 / 40 202 / 352 25 / 22</p> <p>12 / 30 35 / 46 6 / 8</p>
<p>5</p> <p>8 / 16 132 / 105 9 / 20</p> <p>Juniper St.</p> <p>35 / 36 263 / 317 100 / 105</p> <p>Grand Ave.</p> <p>17 / 22 158 / 314 24 / 32</p> <p>38 / 53 203 / 198 32 / 27</p>	<p>6</p> <p>79 / 135 252 / 347</p> <p>Escondido Blvd.</p> <p>47 / 72 1041 / 985 43 / 84</p> <p>Valley Pkwy.</p> <p>29 / 52 152 / 432</p>	<p>7</p> <p>185 / 126 225 / 222</p> <p>Broadway</p> <p>59 / 112 993 / 914 13 / 21</p> <p>Valley Pkwy.</p> <p>44 / 67 64 / 189</p>	<p>8</p> <p>110 / 45 118 / 80</p> <p>Juniper St.</p> <p>1 / 5 1460 / 1024 33 / 28</p> <p>Valley Pkwy.</p> <p>125 / 164 113 / 117</p>
<p>9</p> <p>252 / 365 42 / 91</p> <p>Escondido Blvd.</p> <p>2nd Ave.</p> <p>14 / 40 560 / 1121 33 / 50</p> <p>154 / 378 54 / 130</p>	<p>10</p> <p>64 / 85 41 / 48</p> <p>Broadway</p> <p>2nd Ave.</p> <p>38 / 69 591 / 1246 15 / 18</p> <p>61 / 89 8 / 23</p>	<p>11</p> <p>236 / 195 12 / 10</p> <p>Juniper St.</p> <p>2nd Ave.</p> <p>59 / 62 770 / 1247 72 / 90</p> <p>256 / 214 110 / 120</p>	<p>Legend</p> <p>X / Y = AM / PM PEAK HOUR TURNING VOLUMES</p>



6.2 ROADWAY NETWORK CHANGES

The roadway network for the Near-Term (2022) Baseline Conditions is assumed to be the same as the Existing Conditions.

6.3 INTERSECTION AND ROADWAY ANALYSIS

Table 6-1 and **Table 6-2** displays the intersection and roadway analysis results respectively for the study intersections and roadways under Near-Term Conditions. As shown in the table, all intersections and roadways operate at LOS C or better.

Appendix B contains the intersections LOS calculation worksheets.

Table 6–1 Near-Term (2022) Baseline Conditions Peak-Hour Intersection Analysis

INTERSECTION	TRAFFIC CONTROL	PEAK HOUR	NEAR TERM BASELINE		
			DELAY (a)	LOS (b)	
1	Escondido Blvd & Grand Ave	Signal	AM	18.1	B
			PM	18.1	B
2	Maple St. & Grand Ave	All-Way Stop	AM	8.6	A
			PM	10.7	B
3	Broadway/S. Broadway & Grand Ave	Signal	AM	13.6	B
			PM	12.9	B
4	Kalmia St/Kalmia St. & Grand Ave	All-Way Stop	AM	9.5	A
			PM	10.9	B
5	Juniper St & Grand Ave	Signal	AM	18.2	B
			PM	19.7	B
6	Escondido Blvd & Valley Pkwy	Signal	AM	27.3	C
			PM	29.7	C
7	S. Broadway & Valley Pkwy	Signal	AM	17.9	B
			PM	16.8	B
8	Juniper St & Valley Pkwy	Signal	AM	22.9	C
			PM	19.0	B
9	Escondido Blvd & 2nd Ave	Signal	AM	27.9	C
			PM	32.9	C
10	Broadway & 2nd Ave	Signal	AM	19.0	B
			PM	20.5	C
11	Juniper St & 2nd Ave	Signal	AM	21.3	C
			PM	28.2	C

Notes:

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the 6th Edition of the Highway Capacity Manual and performed using Synchro 10

(c) Change in delay due to addition of project traffic

Table 6–2 Near-Term (2022) Conditions Roadway Segment Level Of Service Summary

ROADWAY SEGMENT	EXISTING ROADWAY CLASSIFICATION	LOS E CAPACITY	NEAR TERM BASELINE		
			ADT	V/C RATIO (a)	LOS
Grand Avenue					
Between Orange St and Escondido Blvd	4 Lane Collector (with Parking)	20,000	9,210	0.461	B
Between Escondido Blvd and Broadway	4 Lane Collector (with Parking)	20,000	11,426	0.571	C
Between Broadway and Juniper St	4 Lane Collector (with Parking)	20,000	9,326	0.466	B
Between Juniper St to Ivy St	4 Lane Collector (with Parking)	20,000	9,841	0.492	B
Valley Parkway					
Between Escondido Blvd and Broadway	3 Lane Collector (one-way)	30,000	18,377	0.613	C
Between Broadway and Juniper St	3 Lane Collector (one-way)	30,000	17,515	0.584	C
2nd Avenue					
Between Escondido Blvd and Broadway	3 Lane Collector (one-way)	30,000	15,303	0.51	B
Between Broadway and Juniper St	3 Lane Collector (one-way)	30,000	14,640	0.488	B
Notes:					
(a) The v/c Ratio is calculated by dividing the ADT volume by each respective roadway segment's capacity.					

7 NEAR-TERM (2022) WITH PROJECT CONDITIONS

This section provides a description of the Near-Term (2022) Conditions with the addition of the proposed project traffic.

7.1 TRAFFIC VOLUMES

The project is not expected to generate additional vehicular volumes nor a shift of existing traffic volumes due to the implementation of the proposed project. This assessment is based on the fact that during existing conditions, with and without project, the intersections and roadway segments were found to operate at acceptable LOS, and therefore, there is not a need for traffic volumes to shift due to the project. Thus, the traffic volumes for this scenario are the same as the Near Term (2022) Baseline Conditions scenario.

7.2 ROADWAY NETWORK CHANGES

The roadway network for the Near-Term (2022) with Project Conditions is assumed to be the same as the Existing with Project Conditions.

7.3 INTERSECTION AND ROADWAY ANALYSIS

Table 7-1 and **Table 7-2** displays the intersection and roadway analysis results respectively for the study intersections and roadways under Near-Term with Project conditions. As shown in the table, all intersections and roadways will continue to operate at LOS D or better.

Appendix B contains the intersections LOS calculation worksheets.

7.4 FINDINGS AND CONCLUSIONS

The results of the foregoing analysis indicate that the proposed improvements would have no impact under the Near-Term with Project Conditions scenario at all the facilities within the study area. The roadway segment change in volume-to-capacity ratio is less than 0.2. Grand Avenue operates at an acceptable level of service C or better. Additionally, the intersection analysis shows all intersections operate at an acceptable level of service C or better. This indicates that there is no significant project effect.

Table 7-1 Near-Term (2022) with Project Conditions Peak-Hour Intersection Analysis

INTERSECTION	PEAK HOUR	NEAR TERM BASELINE		NEAR TERM BASELINE PLUS PROJECT			
		DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	D (c)	SIGNIFICANT?
1 Escondido Blvd & Grand Ave	AM	18.1	B	18.1	B	0.0	NO
	PM	18.1	B	18.3	B	0.2	NO
2 Maple St. & Grand Ave	AM	8.6	A	9.6	A	1.0	NO
	PM	10.7	B	15.5	C	4.8	NO
3 Broadway/S. Broadway & Grand Ave	AM	13.6	B	14.2	B	0.6	NO
	PM	12.9	B	13.7	B	0.8	NO
4 Kalmia St/Kalmia St. & Grand Ave	AM	9.5	A	11.6	B	2.1	NO
	PM	10.9	B	15.2	C	4.3	NO
5 Juniper St & Grand Ave	AM	18.2	B	19.3	B	1.1	NO
	PM	19.7	B	20.9	C	1.2	NO
6 Escondido Blvd & Valley Pkwy	AM	27.3	C	27.3	C	0.0	NO
	PM	29.7	C	29.7	C	0.0	NO
7 S. Broadway & Valley Pkwy	AM	17.9	B	17.9	B	0.0	NO
	PM	16.8	B	16.8	B	0.0	NO
8 Juniper St & Valley Pkwy	AM	22.9	C	22.9	C	0.0	NO
	PM	19.0	B	19.0	B	0.0	NO
9 Escondido Blvd & 2nd Ave	AM	27.9	C	27.9	C	0.0	NO
	PM	32.9	C	32.9	C	0.0	NO
10 Broadway & 2nd Ave	AM	19.0	B	19.0	B	0.0	NO
	PM	20.5	C	20.5	C	0.0	NO
11 Juniper St & 2nd Ave	AM	21.3	C	21.3	C	0.0	NO
	PM	28.2	C	28.2	C	0.0	NO

Notes:

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the 6th Edition of the Highway Capacity Manual and performed using Synchro 10

(c) Change in delay due to addition of project traffic

Table 7-2 Near-Term (2022) with Project Conditions Peak-Hour Intersection Analysis

ROADWAY SEGMENT	EXISTING ROADWAY CLASSIFICATION	LOS E CAPACITY	NEAR TERM BASELINE			NEAR TERM PLUS PROJECT					D in V/C	SIG?
			ADT	V/C RATIO (a)	LOS	ROADWAY CLASSIFICATION WITH PROJECT	LOS E CAPACITY	ADT	V/C RATIO	LOS		
Grand Avenue												
Between Orange St and Escondido Blvd	4 Lane Collector (with Parking)	20,000	9,210	0.461	B	2 Lane Local Collector	15,000	9,210	0.614	C	0.153	NO
Between Escondido Blvd and Broadway	4 Lane Collector (with Parking)	20,000	11,426	0.571	C	2 Lane Local Collector	15,000	11,426	0.762	D	0.191	NO
Between Broadway and Juniper St	4 Lane Collector (with Parking)	20,000	9,326	0.466	B	2 Lane Local Collector	15,000	9,326	0.622	C	0.156	NO
Between Juniper St to Ivy St	4 Lane Collector (with Parking)	20,000	9,841	0.492	B	2 Lane Local Collector	15,000	9,841	0.656	C	0.164	NO
Valley Parkway												
Between Escondido Blvd and Broadway	3 Lane Collector (one-way)	30,000	18,377	0.613	C	3 Lane Collector (one-way)	30,000	18,377	0.613	C	0.000	NO
Between Broadway and Juniper St	3 Lane Collector (one-way)	30,000	17,515	0.584	C	3 Lane Collector (one-way)	30,000	17,515	0.584	C	0.000	NO
2nd Avenue												
Between Escondido Blvd and Broadway	3 Lane Collector (one-way)	30,000	15,303	0.51	B	3 Lane Collector (one-way)	30,000	15,303	0.51	B	0.000	NO
Between Broadway and Juniper St	3 Lane Collector (one-way)	30,000	14,640	0.488	B	3 Lane Collector (one-way)	30,000	14,640	0.488	B	0.000	NO
Notes:												
(a) The v/c Ratio is calculated by dividing the ADT volume by each respective roadway segment's capacity.												

8 HORIZON YEAR (2035) BASELINE CONDITIONS

This section provides a description of the Horizon Year 2035 Baseline Conditions without the project. This scenario establishes a baseline to compare against plus project scenario to determine project impacts.

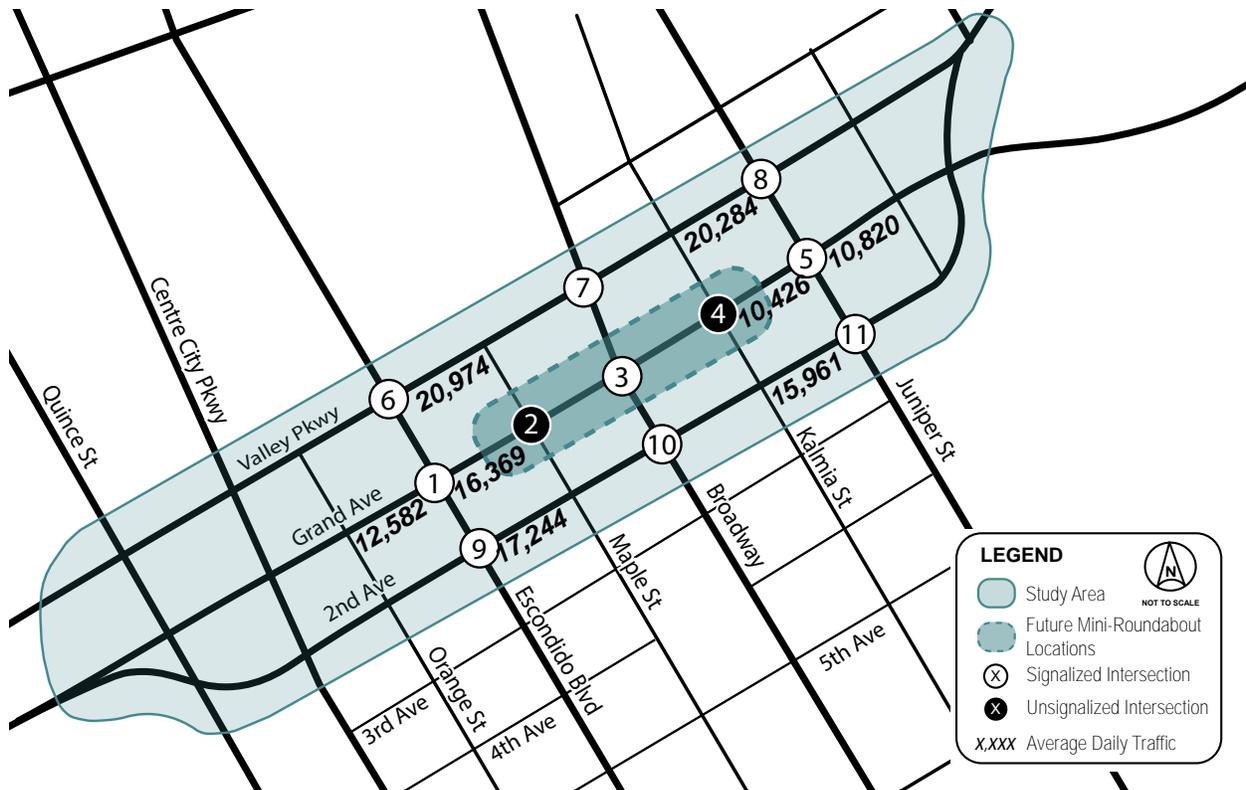
8.1 TRAFFIC VOLUMES

The Horizon Year Baseline Conditions traffic volumes were developed by increasing the existing intersection turning movement volumes proportionally based on the expected increase of average daily traffic volumes on each of the intersection legs. Each respective movement was derived using an iterative approach that balances the inflows and outflows for each approach. The input values include the existing turning movement volumes and future year peak hour approach and departure volumes along each leg of the intersection. The future Peak-Hour approach volumes were estimated by applying the existing peak-hour factor (K-factor) and directional distributional percentage (D-factor) to the future ASDT volumes along each approach. A detailed description of this methodology used to forecast turning movement volumes is contained in the NCHRP 255 Highway Traffic Data for Urbanized Area Project Planning and Design, Chapter 8. As a conservative approach, if a turning movement volume produced by this model was less than the existing count for that movement, manual adjustments were made to assure that all forecast horizon year volumes would be equal or greater than the existing turning movement counts. Roadway segment volumes were obtained by applying the growth factor from SANDAG Traffic Forecast Model Series 14 provided by the City of Escondido to existing traffic. The 2035 average daily traffic volumes were calculated based on the calculated growth rate from the City of Escondido's Forecast Models between Years 2012 and 2035.

Appendix C contains the SANDAG Model 14 volumes for Baseline Year 2012 and Horizon Year 2035. The resulting Horizon Year Baseline Conditions traffic volumes are shown in **Figure 8-1**.

FIGURE 8-1 HORIZON YEAR BASELINE (2035) TRAFFIC VOLUMES

<p>1</p> <p>13 / 25 ↕ 416 / 601 ↕ 54 / 114 ↕ Escondido Blvd. ↕ 43 / 86 290 / 434 76 / 130 Grand Ave.</p> <p>81 / 87 248 / 457 14 / 45 ↕ ↕ ↕</p> <p>29 / 65 417 / 585 39 / 80 ↕ ↕ ↕</p>	<p>2</p> <p>Maple St. ↕ ↕ ↕ 25 / 33 334 / 528 70 / 26 Grand Ave.</p> <p>26 / 26 287 / 599 17 / 9 ↕ ↕ ↕</p> <p>20 / 44 13 / 77 25 / 47 ↕ ↕ ↕</p>	<p>3</p> <p>102 / 116 ↕ 185 / 153 ↕ 101 / 102 ↕ S. Broadway ↕ ↕ ↕ 48 / 52 311 / 386 9 / 14 Grand Ave.</p> <p>87 / 167 202 / 403 24 / 61 ↕ ↕ ↕</p> <p>46 / 91 186 / 235 17 / 18 ↕ ↕ ↕</p>	<p>4</p> <p>37 / 58 ↕ 42 / 27 ↕ 5 / 16 ↕ Kalmia St. ↕ ↕ ↕ 5 / 23 388 / 457 22 / 28 Grand Ave.</p> <p>45 / 105 229 / 417 71 / 71 ↕ ↕ ↕</p> <p>47 / 86 34 / 45 6 / 8 ↕ ↕ ↕</p>
<p>5</p> <p>8 / 14 ↕ 154 / 129 ↕ 8 / 16 ↕ Juniper St. ↕ ↕ ↕ 34 / 35 260 / 311 164 / 165 Grand Ave.</p> <p>17 / 22 156 / 326 55 / 63 ↕ ↕ ↕</p> <p>90 / 111 249 / 244 58 / 53 ↕ ↕ ↕</p>	<p>6</p> <p>97 / 168 ↕ 323 / 452 ↕ Escondido Blvd. ↕ ↕ ↕ 50 / 64 1064 / 1006 51 / 100 Valley Pkwy.</p> <p>47 / 84 192 / 554 ↕ ↕ ↕</p>	<p>7</p> <p>208 / 145 ↕ 241 / 236 ↕ Broadway ↕ ↕ ↕ 68 / 133 1149 / 1058 15 / 26 Valley Pkwy.</p> <p>47 / 72 68 / 201 ↕ ↕ ↕</p>	<p>8</p> <p>132 / 59 ↕ 117 / 78 ↕ Juniper St. ↕ ↕ ↕ 1 / 7 1641 / 1155 31 / 28 Valley Pkwy.</p> <p>135 / 178 116 / 120 ↕ ↕ ↕</p>
<p>9</p> <p>361 / 515 ↕ 57 / 122 ↕ Escondido Blvd. ↕ ↕ ↕ 2nd Ave.</p> <p>21 / 49 592 / 1195 42 / 64 ↕ ↕ ↕</p> <p>215 / 544 82 / 187 ↕ ↕ ↕</p>	<p>10</p> <p>94 / 124 ↕ 41 / 47 ↕ Broadway ↕ ↕ ↕ 2nd Ave.</p> <p>42 / 76 640 / 1360 30 / 37 ↕ ↕ ↕</p> <p>87 / 131 18 / 140 ↕ ↕ ↕</p>	<p>11</p> <p>341 / 284 ↕ 16 / 14 ↕ Juniper St. ↕ ↕ ↕ 2nd Ave.</p> <p>83 / 87 784 / 1284 90 / 118 ↕ ↕ ↕</p> <p>380 / 321 126 / 140 ↕ ↕ ↕</p>	<p>Legend X / Y = AM / PM PEAK HOUR TURNING VOLUMES</p>



8.2 ROADWAY NETWORK CHANGES

The roadway network for the Horizon Year (2035) Baseline Conditions is assumed to be the same as the Existing Conditions.

8.3 INTERSECTION AND ROADWAY ANALYSIS

Table 8-1 and **Table 8-2** displays the intersection and roadway analysis results respectively for the study intersections and roadways under Horizon Year Conditions. As shown in the table, all intersections and roadways operate at LOS D or better.

Appendix B contains the intersections LOS calculation worksheets.

Table 8-1 Horizon Year (2035) Baseline Conditions Peak-Hour Intersection Analysis

INTERSECTION		TRAFFIC CONTROL	PEAK HOUR	HORIZON YEAR BASELINE	
				DELAY (a)	LOS (b)
1	Escondido Blvd & Grand Ave	Signal	AM	17.8	B
			PM	19.5	B
2	Maple St. & Grand Ave	All-Way Stop	AM	9.5	A
			PM	14.6	B
3	Broadway/S. Broadway & Grand Ave	Signal	AM	13.6	B
			PM	13.0	B
4	Kalmia St/Kalmia St. & Grand Ave	All-Way Stop	AM	10.7	B
			PM	14.3	B
5	Juniper St & Grand Ave	Signal	AM	17.6	B
			PM	19.3	B
6	Escondido Blvd & Valley Pkwy	Signal	AM	28.4	C
			PM	31.9	C
7	S. Broadway & Valley Pkwy	Signal	AM	18.1	B
			PM	17.3	B
8	Juniper St & Valley Pkwy	Signal	AM	24.7	C
			PM	19.7	B
9	Escondido Blvd & 2nd Ave	Signal	AM	28.5	C
			PM	35.9	D
10	Broadway & 2nd Ave	Signal	AM	18.3	B
			PM	20.8	C
11	Juniper St & 2nd Ave	Signal	AM	20.4	C
			PM	28.3	C

Notes:

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the 6th Edition of the Highway Capacity Manual and performed using Synchro 10

(c) Change in delay due to addition of project traffic

Table 8-2 Horizon Year (2035) Existing Conditions Roadway Segment Level Of Service Summary

ROADWAY SEGMENT	ROADWAY CLASSIFICATION	LOS E CAPACITY	HORIZON YEAR BASELINE		
			ADT	V/C RATIO (a)	LOS
Grand Avenue					
Between Orange St and Escondido Blvd	4 Lane Collector (with Parking)	20,000	12,582	0.629	C
Between Escondido Blvd and Broadway	4 Lane Collector (with Parking)	20,000	16,369	0.818	D
Between Broadway and Juniper St	4 Lane Collector (with Parking)	20,000	10,426	0.521	B
Between Juniper St to Ivy St	4 Lane Collector (with Parking)	20,000	10,820	0.541	B
Valley Parkway					
Between Escondido Blvd and Broadway	3 Lane Collector (one-way)	30,000	20,974	0.699	C
Between Broadway and Juniper St	3 Lane Collector (one-way)	30,000	20,284	0.676	C
2nd Avenue					
Between Escondido Blvd and Broadway	3 Lane Collector (one-way)	30,000	17,244	0.575	C
Between Broadway and Juniper St	3 Lane Collector (one-way)	30,000	15,961	0.532	B
Notes:					
(a) The v/c Ratio is calculated by dividing the ADT volume by each respective roadway segment's capacity.					

9 HORIZON YEAR (2035) WITH PROJECT CONDITIONS

This section provides a description of the Horizon Year (2035) Conditions with the addition of the proposed project traffic.

9.1 TRAFFIC VOLUMES

The project is not expected to generate additional vehicular volumes due to the construction of the proposed project. However, some traffic is expected to divert from Grand Avenue to the one-way couplet parallel roadways of Valley Parkway and 2nd Avenue. A 35% (4,400 daily trips) traffic shift is assumed to occur with the implementation of the project. This shift was determined by balancing the volume/capacity ratios between Grand Avenue and the two parallel alternative routes (Valley Parkway and Second Avenue). With the shift all three roadways would operate at acceptable LOS

Figure 9-1 shows the anticipated traffic shift in volumes for Horizon Year. **Figure 9-2** shows the Horizon Year with Project anticipated volumes.

9.2 ROADWAY NETWORK CHANGES

The roadway network for the Horizon Year (2035) with Project Conditions is assumed to be the same as the Existing with Project Conditions. In addition, since the second phase of the proposed project will include the implementation of mini-roundabouts or traffic circles at the intersections of Maple Street, Broadway and Kalmia Street), the analysis was done for both possible intersection control types for these three intersections.

9.3 INTERSECTION AND ROADWAY ANALYSIS

Table 9-1 and **Table 9-2** displays the intersection and roadway analysis results respectively for the study intersections and roadways under Horizon Year with Project conditions. As shown in the table, all intersections and roadways operate at LOS D or better.

Appendix B contains the intersections LOS calculation worksheets. As shown in the analysis all intersections and segments of Valley Parkway and 2nd Avenue will operate at LOS D or better under this scenario. It is anticipated that some traffic would shift to these parallel corridors maximizing the capacity of the system.

9.4 FINDINGS AND CONCLUSIONS

The results of the foregoing analysis indicate that the proposed improvements would have no impact under the Year 2035 with Project Conditions scenario. The traffic shift assumed for Horizon Year would cause a change in the volume-to-capacity ratio of less than 0.1 on the segments of Valley Parkway and 2nd Avenue. Additionally, the intersection analysis shows all intersections operate at an acceptable level of service D or better. This indicates that there is no significant project effect.

FIGURE 9-1 HORIZON YEAR (2035) TRAFFIC SHIFT

1	Escondido Blvd. ⇄ -46 / -54 Grand Ave.	2	Maple St. ⇄ -46 / -54 Grand Ave.	3	S. Broadway ⇄ -46 / -54 Grand Ave.	4	Kalmia St. ⇄ -46 / -54 Grand Ave.
	-43 / -80 ⇄		-43 / -80 ⇄		-43 / -80 ⇄		-43 / -80 ⇄
5	Juniper St. ⇄ -46 / -54 Grand Ave.	6	Escondido Blvd. ⇄ 46 / 54 Valley Pkwy.	7	Broadway ⇄ 46 / 54 Valley Pkwy.	8	Juniper St. ⇄ 46 / 54 Valley Pkwy.
	-43 / -80 ⇄						
9	Escondido Blvd. 2nd Ave.	10	Broadway 2nd Ave.	11	Juniper St. 2nd Ave.		
	43 / 80 ⇄		43 / 80 ⇄		43 / 80 ⇄		

Legend

X / Y = AM/PM PEAK HOUR VOLUME
SHIFTED TO 2ND AVE & VALLEY PKWY

-X / -Y = AM/PM PEAK HOUR VOLUME
DIVERTED FROM GRAND AVE

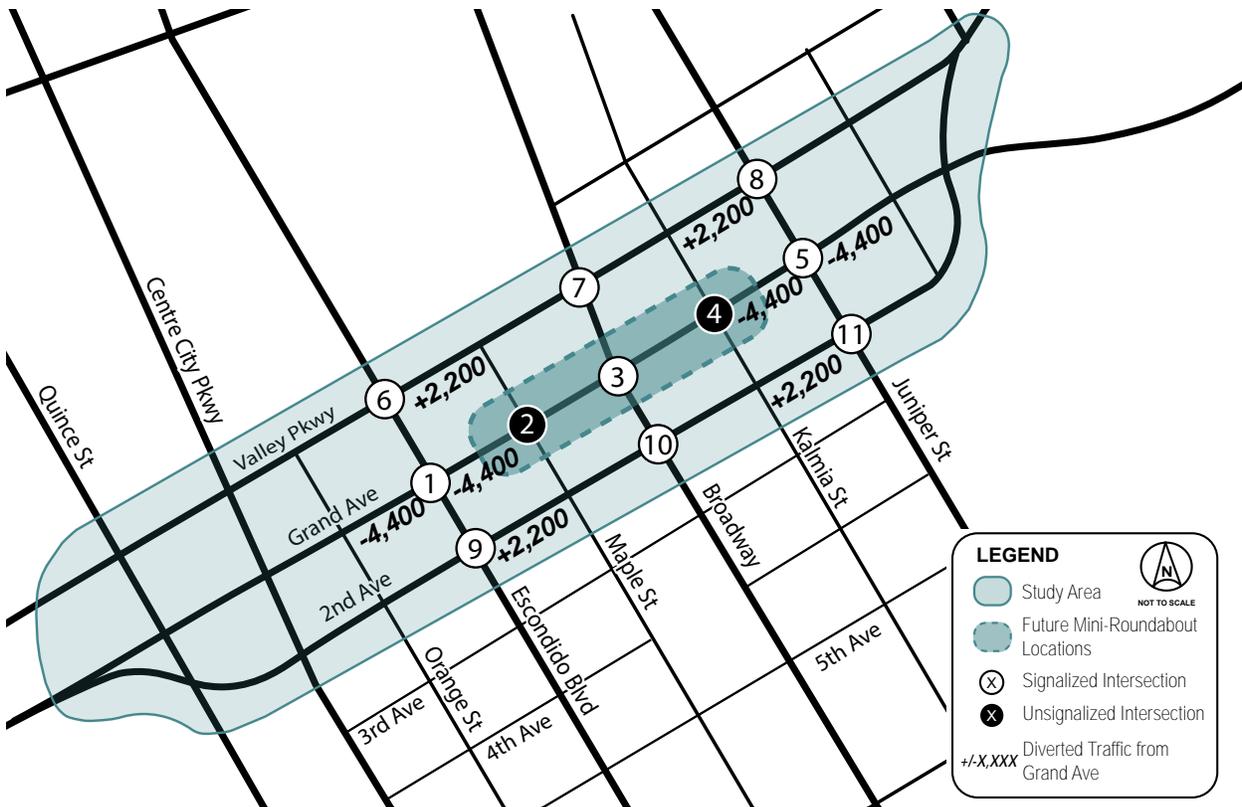


FIGURE 9-2 HORIZON YEAR (2035) + PROJECT TRAFFIC VOLUMES

<p>1</p> <p>13 / 25 416 / 601 54 / 114</p> <p>Escondido Blvd.</p> <p>43 / 86 244 / 380 76 / 130</p> <p>Grand Ave.</p> <p>81 / 87 205 / 377 14 / 45</p> <p>29 / 65 417 / 585 39 / 80</p>	<p>2</p> <p>Maple St.</p> <p>25 / 33 288 / 474 70 / 26</p> <p>Grand Ave.</p> <p>26 / 26 244 / 519 17 / 9</p> <p>20 / 44 13 / 77 25 / 47</p>	<p>3</p> <p>102 / 116 185 / 153 101 / 102</p> <p>S. Broadway</p> <p>48 / 52 265 / 332 9 / 14</p> <p>Grand Ave.</p> <p>87 / 167 159 / 323 24 / 61</p> <p>46 / 91 186 / 235 17 / 18</p>	<p>4</p> <p>37 / 56 42 / 27 5 / 16</p> <p>Kalmia St.</p> <p>5 / 23 342 / 403 22 / 28</p> <p>Grand Ave.</p> <p>45 / 105 186 / 337 71 / 71</p> <p>47 / 86 34 / 45 6 / 8</p>
<p>5</p> <p>8 / 14 154 / 129 8 / 16</p> <p>Juniper St.</p> <p>34 / 35 214 / 257 164 / 165</p> <p>Grand Ave.</p> <p>17 / 22 113 / 246 55 / 63</p> <p>90 / 111 249 / 244 58 / 53</p>	<p>6</p> <p>97 / 168 323 / 452</p> <p>Escondido Blvd.</p> <p>50 / 64 1110 / 1060 51 / 100</p> <p>Valley Pkwy.</p> <p>47 / 84 192 / 554</p>	<p>7</p> <p>208 / 145 241 / 236</p> <p>Broadway</p> <p>68 / 133 1195 / 1112 15 / 26</p> <p>Valley Pkwy.</p> <p>47 / 72 68 / 201</p>	<p>8</p> <p>132 / 59 117 / 78</p> <p>Juniper St.</p> <p>1 / 7 1687 / 1209 31 / 28</p> <p>Valley Pkwy.</p> <p>135 / 178 116 / 120</p>
<p>9</p> <p>361 / 515 57 / 122</p> <p>Escondido Blvd.</p> <p>2nd Ave.</p> <p>21 / 49 635 / 1275 42 / 64</p> <p>215 / 544 82 / 187</p>	<p>10</p> <p>94 / 124 41 / 47</p> <p>Broadway</p> <p>2nd Ave.</p> <p>42 / 76 683 / 1440 30 / 37</p> <p>87 / 131 18 / 40</p>	<p>11</p> <p>341 / 284 16 / 14</p> <p>Juniper St.</p> <p>2nd Ave.</p> <p>83 / 87 827 / 1364 90 / 118</p> <p>380 / 321 126 / 140</p>	<p>Legend</p> <p>X / Y = AM / PM PEAK HOUR TURNING VOLUMES</p>

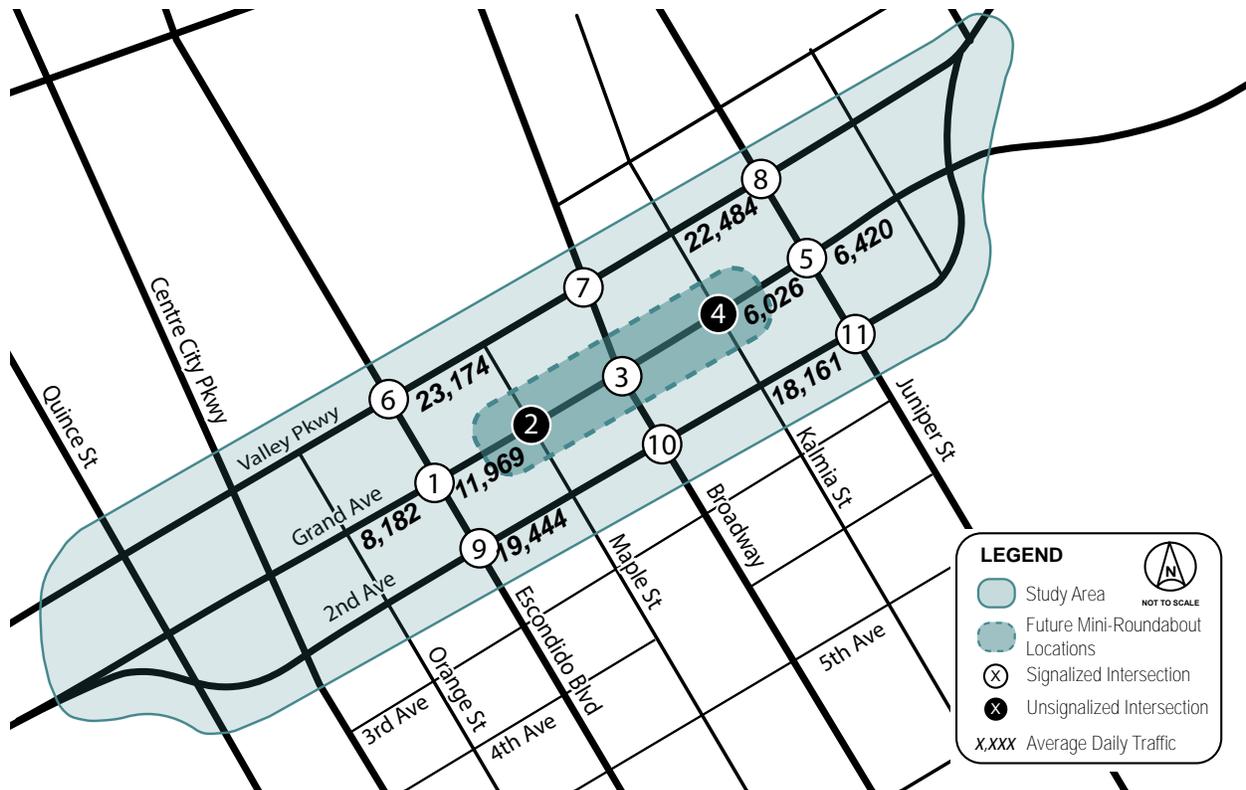


Table 9–1 Horizon Year (2035) with Project Conditions Peak-Hour Intersection Analysis

INTERSECTION	PEAK HOUR	HORIZON YEAR BASELINE		HORIZON YEAR PLUS PROJECT				
		DELAY (a)	LOS (b)	DELAY (a)	LOS (b)	D (c)	SIGNIFICANT?	
1	Escondido Blvd & Grand Ave	AM	17.8	B	18.5	B	0.7	NO
		PM	19.5	B	20.1	C	0.6	NO
2	Maple St. & Grand Ave (Unsignalized)	AM	9.5	A	10.7	B	1.2	NO
		PM	14.6	B	26.4	D	11.8	NO
	Maple St. & Grand Ave (Mini-Roundabout)	AM	N/A	N/A	6.0	A	6.0	NO
		PM	N/A	N/A	7.9	A	7.9	NO
3	Broadway/S. Broadway & Grand Ave (Unsignalized)	AM	13.6	B	15.4	B	1.8	NO
		PM	13.0	B	15.0	B	2.0	NO
	Broadway/S. Broadway & Grand Ave (Mini-Roundabout)	AM	N/A	N/A	9.4	A	9.4	NO
		PM	N/A	N/A	14.3	B	14.3	NO
4	Kalmia St/Kalmia St. & Grand Ave (Unsignalized)	AM	10.7	B	12.4	B	1.7	NO
		PM	14.3	B	20.5	C	6.2	NO
	Kalmia St/Kalmia St. & Grand Ave (Mini-Roundabout)	AM	N/A	N/A	6.5	A	6.5	NO
		PM	N/A	N/A	9.2	A	9.2	NO
5	Juniper St & Grand Ave	AM	17.6	B	17.2	B	-0.4	NO
		PM	19.3	B	19.4	B	0.1	NO
6	Escondido Blvd & Valley Pkwy	AM	28.4	C	28.4	C	0.0	NO
		PM	31.9	C	31.9	C	0.0	NO
7	S. Broadway & Valley Pkwy	AM	18.1	B	18.3	B	0.2	NO
		PM	17.3	B	17.6	B	0.3	NO
8	Juniper St & Valley Pkwy	AM	24.7	C	25.4	C	0.7	NO
		PM	19.7	B	20.1	C	0.4	NO
9	Escondido Blvd & 2nd Ave	AM	28.5	C	28.5	C	0.0	NO
		PM	35.9	D	36.2	D	0.3	NO
10	Broadway & 2nd Ave	AM	18.3	B	18.5	B	0.2	NO
		PM	20.8	C	21.7	C	0.9	NO
11	Juniper St & 2nd Ave	AM	20.4	C	20.9	C	0.5	NO
		PM	28.3	C	30.2	C	1.9	NO

Notes:

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled and mini-roundabout intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the 6th Edition of the Highway Capacity Manual and performed using Synchro 10 for signalized and unsignalized intersections, and based on SIDRA methodology for the mini-roundabouts.

(c) Change in delay due to addition of project traffic

Table 9-2 Horizon Year (2035) with Project Conditions Roadway Segment Analysis

ROADWAY SEGMENT	EXISTING ROADWAY CLASSIFICATION	LOS E CAPACITY	HORIZON YEAR BASELINE			HORIZON YEAR PLUS PROJECT							D in V/C	SIG?
			ADT	V/C RATIO (a)	LOS	ROADWAY CLASSIFICATION WITH PROJECT	LOS E CAPACITY	ADT	SHIFT	ADT AFTER SHIFT	V/C RATIO	LOS		
Grand Avenue														
Between Orange St and Escondido Blvd	4 Lane Collector (with Parking)	20,000	12,582	0.629	C	2 Lane Local Collector	15,000	12,582	-4,400	8,182	0.545	B	-0.084	NO
Between Escondido Blvd and Broadway	4 Lane Collector (with Parking)	20,000	16,369	0.818	D	2 Lane Local Collector	15,000	16,369	-4,400	11,969	0.798	D	-0.020	NO
Between Broadway and Juniper St	4 Lane Collector (with Parking)	20,000	10,426	0.521	C	2 Lane Local Collector	15,000	10,426	-4,400	6,026	0.402	B	-0.119	NO
Between Juniper St to Ivy St	4 Lane Collector (with Parking)	20,000	10,820	0.541	C	2 Lane Local Collector	15,000	10,820	-4,400	6,420	0.428	B	-0.113	NO
Valley Parkway														
Between Escondido Blvd and Broadway	3 Lane Collector (one-way)	30,000	20,974	0.699	C	3 Lane Collector (one-way)	30,000	20,974	+2,200	23,174	0.772	D	0.073	NO
Between Broadway and Juniper St	3 Lane Collector (one-way)	30,000	20,284	0.676	C	3 Lane Collector (one-way)	30,000	20,284	+2,200	22,484	0.749	C	0.073	NO
2nd Avenue														
Between Escondido Blvd and Broadway	3 Lane Collector (one-way)	30,000	17,244	0.575	B	3 Lane Collector (one-way)	30,000	17,244	+2,200	19,444	0.648	C	0.073	NO
Between Broadway and Juniper St	3 Lane Collector (one-way)	30,000	15,961	0.532	B	3 Lane Collector (one-way)	30,000	15,961	+2,200	18,161	0.605	C	0.073	NO
Notes:														
(a) The v/c Ratio is calculated by dividing the ADT volume by each respective roadway segment's capacity.														

APPENDICES

APPENDIX A

EXISTING TRAFFIC VOLUME DATA

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TECHNICAL DATA

DATE: 11/1/17 WEDNESDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	ESCONDIDO BROADWAY GRAND	PROJECT #: LOCATION #: CONTROL:	PTD17-1103-01 3 SIGNAL
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NOTES: INCLUDE: BIKE / PED	AM PM MD OTHER OTHER	◀ W	N S ▼	E ▶
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LANES:	NORTHBOUND BROADWAY			SOUTHBOUND BROADWAY			EASTBOUND GRAND			WESTBOUND GRAND			TOTAL
	NL 1	NT 1	NR 0	SL 1	ST 1	SR 1	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	

U-TURNS				
NB X	SB X	EB X	WB X	TTL

WEEKDAY AM	7:00 AM	1	23	1	8	23	6	14	17	1	2	39	4	139
	7:15 AM	2	28	1	18	14	6	14	21	0	2	54	6	166
	7:30 AM	2	27	0	20	34	9	9	32	1	6	51	10	201
	7:45 AM	1	25	2	28	37	12	8	37	1	4	74	16	245
	8:00 AM	0	51	3	28	43	10	15	26	1	0	50	10	237
	8:15 AM	3	50	3	16	30	12	12	34	0	2	61	13	236
	8:30 AM	5	36	2	25	41	14	19	31	3	3	42	7	228
	8:45 AM	4	30	3	14	32	8	14	35	5	3	44	7	199
	VOLUMES	18	270	15	157	254	77	105	233	12	22	415	73	1,651
	APPROACH %	6%	89%	5%	32%	52%	16%	30%	67%	3%	4%	81%	14%	
APP/DEPART	303	/	448	488	/	288	350	/	405	510	/	510	0	
BEGIN PEAK HR	7:45 AM													
VOLUMES	9	162	10	97	151	48	54	128	5	9	227	46	946	
APPROACH %	5%	90%	6%	33%	51%	16%	29%	68%	3%	3%	80%	16%		
PEAK HR FACTOR	0.808			0.914			0.882			0.750			0.965	
APP/DEPART	181	/	262	296	/	165	187	/	235	282	/	284	0	

				0
			1	1
				0
				0
				0
				0
				0
				0
				0
0	0	0	1	1

WEEKDAY MD	11:00 AM	2	37	3	18	25	14	14	41	9	7	64	13	247
	11:15 AM	6	37	7	24	36	13	13	52	8	5	52	11	264
	11:30 AM	3	52	8	21	34	23	21	62	6	3	57	12	302
	11:45 AM	14	57	3	30	19	17	19	52	7	3	67	16	304
	12:00 PM	5	45	2	24	22	14	20	87	12	6	61	19	317
	12:15 PM	9	38	5	20	28	25	27	64	5	4	65	17	307
	12:30 PM	2	35	5	17	26	15	15	54	3	4	55	6	237
	12:45 PM	1	35	6	23	31	14	14	73	6	6	58	7	274
	VOLUMES	42	336	39	177	221	135	143	485	56	38	479	101	2,252
	APPROACH %	10%	81%	9%	33%	41%	25%	21%	71%	8%	6%	78%	16%	
APP/DEPART	417	/	580	533	/	315	684	/	701	618	/	656	0	
BEGIN PEAK HR	11:30 AM													
VOLUMES	31	192	18	95	103	79	87	265	30	16	250	64	1,230	
APPROACH %	13%	80%	7%	34%	37%	29%	23%	69%	8%	5%	76%	19%		
PEAK HR FACTOR	0.814			0.888			0.803			0.959			0.970	
APP/DEPART	241	/	343	277	/	149	382	/	378	330	/	360	0	

				0
				0
				0
				0
				0
				0
				0
				0
				0
0	0	0	0	0

WEEKDAY PM	4:00 PM	4	48	4	21	29	12	29	70	5	2	76	14	314
	4:15 PM	6	56	3	30	33	13	11	78	3	4	60	14	311
	4:30 PM	8	54	6	19	42	6	29	67	3	4	71	14	323
	4:45 PM	3	47	5	27	31	14	27	71	2	4	74	9	314
	5:00 PM	5	66	2	17	30	13	18	72	6	4	84	18	335
	5:15 PM	2	58	2	36	33	13	19	71	5	2	63	10	314
	5:30 PM	8	41	3	28	39	11	24	57	6	4	61	12	294
	5:45 PM	1	49	4	24	42	8	23	63	7	0	51	14	286
	VOLUMES	37	419	29	202	279	90	180	549	37	24	540	105	2,491
	APPROACH %	8%	86%	6%	35%	49%	16%	23%	72%	5%	4%	81%	16%	
APP/DEPART	485	/	704	571	/	340	766	/	780	669	/	667	0	
BEGIN PEAK HR	4:30 PM													
VOLUMES	18	225	15	99	136	46	93	281	16	14	292	51	1,286	
APPROACH %	7%	87%	6%	35%	48%	16%	24%	72%	4%	4%	82%	14%		
PEAK HR FACTOR	0.884			0.857			0.975			0.842			0.960	
APP/DEPART	258	/	369	281	/	166	390	/	395	357	/	356	0	

				0
				0
				0
				0
				0
				0
				0
				0
		1		1
0	0	1	0	1

7:00 AM	1	23	1	8	23	6	14	17	1	2	39	4	139
7:15 AM	2	28	1	18	14	6	14	21	0	2	54	6	166
7:30 AM	2	27	0	20	34	9	9	32	1	6	51	10	201
7:45 AM	1	25	2	28	37	12	8	37	1	4	74	16	245
8:00 AM	0	51	3	28	43	10	15	26	1	0	50	10	237
8:15 AM	3	50	3	16	30	12	12	34	0	2	61	13	236
8:30 AM	5	36	2	25	41	14	19	31	3	3	42	7	228
8:45 AM	4	30	3	14	32	8	14	35	5	3	44	7	199
11:00 AM	2	37	3	18	25	14	14	41	9	7	64	13	247
11:15 AM	6	37	7	24	36	13	13	52	8	5	52	11	264
11:30 AM	3	52	8	21	34	23	21	62	6	3	57	12	302
11:45 AM	14	57	3	30	19	17	19	52	7	3	67	16	304
12:00 PM	5	45	2	24	22	14	20	87	12	6	61	19	317
12:15 PM	9	38	5	20	28	25	27	64	5	4	65	17	307
12:30 PM	2	35	5	17	26	15	15	54	3	4	55	6	237
12:45 PM	1	35	6	23	31	14	14	73	6	6	58	7	274
4:00 PM	4	48	4	21	29	12	29	70	5	2	76	14	314
4:15 PM	6	56	3	30	33	13	11	78	3	4	60	14	311
4:30 PM	8	54	6	19	42	6	29	67	3	4	71	14	323
4:45 PM	3	47	5	27	31	14	27	71	2	4	74	9	314
5:00 PM	5	66	2	17	30	13	18	72	6	4	84	18	335
5:15 PM	2	58	2	36	33	13	19	71	5	2	63	10	314
5:30 PM	8	41	3	28	39	11	24	57	6	4	61	12	294
5:45 PM	1	49	4	24	42	8	23	63	7	0	51	14	286
TOTAL	102	199	109	93	503								

	PEDESTRIAN + BIKE CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
7:00 AM	1	1	1	2	5
7:15 AM	2	4	0	14	20
7:30 AM	1	3	1	2	7
7:45 AM	0	4	2	5	11
8:00 AM	0	6	5	1	12
8:15 AM	1	6	7	1	15
8:30 AM	4	8	1	0	13
8:45 AM	4	4	5	2	15
11:00 AM	4	3	2	3	12
11:15 AM	2	5	6	5	18
11:30 AM	4	7	0	2	13
11:45 AM	11	21	11	2	45
12:00 PM	14	7	11	4	36
12:15 PM	4	15	3	7	29
12:30 PM	9	11	7	3	30
12:45 PM	6	10	5	8	29
4:00 PM	3	14	5	9	31
4:15 PM	8	3	3	2	16
4:30 PM	1	15	6	2	24
4:45 PM	1	7	7	3	18
5:00 PM	10	17	7	6	40
5:15 PM	1	6	7	5	19
5:30 PM	6	7	5	3	21
5:45 PM	5	15	2	2	24
TOTAL	102	199	109	93	503

	PEDESTRIAN CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
7:00 AM	1	1		2	4
7:15 AM	2	4		14	20
7:30 AM	1	3	1	2	7
7:45 AM		4	2	5	11
8:00 AM		6	5	1	12
8:15 AM	1	6	6	1	14
8:30 AM	4	8	1	0	13
8:45 AM	4	3	4	2	13
11:00 AM	4	3	2	3	12
11:15 AM	2	5	6	5	18
11:30 AM	4	7		2	13
11:45 AM	11	21	11	2	45
12:00 PM	13	7	10	4	34
12:15 PM	4	15	3	7	29
12:30 PM	9	9	7	3	28
12:45 PM	6	10	5	8	29
4:00 PM	3	13	5	9	30
4:15 PM	7	3	2	2	14
4:30 PM		13	6	2	21
4:45 PM	1	6	7	3	17
5:00 PM	10	15	7	4	36
5:15 PM	1	6	7	5	19
5:30 PM	6	6	5	3	20
5:45 PM	4	15	2	1	22
TOTAL	98	189	104	90	481

	BICYCLE CROSSINGS				
	NS	SS	ES	WS	TOTAL
7:00 AM					

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TECHNICAL DATA

DATE: 11/1/17 WEDNESDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	ESCONDIDO JUNIPER GRAND	PROJECT #: LOCATION #: CONTROL:	PTD17-1103-01 5 SIGNAL
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NOTES: <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;">INCLUDE: BIKE / PED</div>	<table border="1" style="margin: auto;"> <tr> <td style="padding: 2px;">AM</td> <td style="padding: 2px;">▲</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;">PM</td> <td style="padding: 2px;">◀</td> <td style="padding: 2px;">W</td> </tr> <tr> <td style="padding: 2px;">MD</td> <td style="padding: 2px;">S</td> <td style="padding: 2px;">▶</td> </tr> <tr> <td style="padding: 2px;">OTHER</td> <td style="padding: 2px;">▼</td> <td style="padding: 2px;">E</td> </tr> </table>	AM	▲	N	PM	◀	W	MD	S	▶	OTHER	▼	E
AM	▲	N											
PM	◀	W											
MD	S	▶											
OTHER	▼	E											

LANES:	NORTHBOUND JUNIPER			SOUTHBOUND JUNIPER			EASTBOUND GRAND			WESTBOUND GRAND			TOTAL
	NL 1	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	

U-TURNS				
NB X	SB X	EB X	WB X	TTL

WEEKDAY AM	7:00 AM	3	32	2	2	24	1	2	22	3	15	49	5	160
	7:15 AM	6	46	4	2	30	3	2	17	0	11	47	7	175
	7:30 AM	6	34	6	0	32	2	0	32	5	19	59	5	200
	7:45 AM	10	55	8	1	38	0	4	38	9	39	81	11	294
	8:00 AM	8	41	9	0	29	3	3	42	6	20	56	12	229
	8:15 AM	8	43	9	5	22	4	6	34	2	17	70	4	224
	8:30 AM	10	54	4	3	36	1	3	36	6	19	43	6	221
	8:45 AM	6	32	9	5	21	1	2	45	4	17	54	6	202
	VOLUMES	57	337	51	18	232	15	22	266	35	157	459	56	1,705
	APPROACH %	13%	76%	11%	7%	88%	6%	7%	82%	11%	23%	68%	8%	
APP/DEPART	445	/	415	265	/	424	323	/	335	672	/	531	0	
BEGIN PEAK HR	7:45 AM			9	125	8	16	150	23	95	250	33	968	
VOLUMES	36	193	30	9	125	8	16	150	23	95	250	33	968	
APPROACH %	14%	75%	12%	6%	88%	6%	8%	79%	12%	25%	66%	9%		
PEAK HR FACTOR	0.887			0.888			0.926			0.721			0.823	
APP/DEPART	259	/	242	142	/	243	189	/	189	378	/	294	0	

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

WEEKDAY MD	11:00 AM	17	29	6	3	15	7	6	47	6	28	66	4	234
	11:15 AM	9	50	5	3	22	1	7	46	9	20	62	5	239
	11:30 AM	13	31	4	0	14	4	4	66	6	19	54	7	222
	11:45 AM	13	44	7	2	14	5	6	67	15	18	77	6	274
	12:00 PM	13	51	7	6	19	2	8	66	10	19	64	8	273
	12:15 PM	17	38	4	3	24	5	5	64	6	20	66	2	254
	12:30 PM	13	33	10	1	25	7	6	72	6	22	35	0	230
	12:45 PM	8	29	4	4	20	6	4	65	12	21	45	5	223
	VOLUMES	103	305	47	22	153	37	46	493	70	167	469	37	1,949
	APPROACH %	23%	67%	10%	10%	72%	17%	8%	81%	11%	25%	70%	5%	
APP/DEPART	455	/	388	212	/	390	609	/	562	673	/	609	0	
BEGIN PEAK HR	11:45 AM			12	82	19	25	269	37	79	242	16	1,031	
VOLUMES	56	166	28	12	82	19	25	269	37	79	242	16	1,031	
APPROACH %	22%	66%	11%	11%	73%	17%	8%	81%	11%	23%	72%	5%		
PEAK HR FACTOR	0.880			0.856			0.940			0.834			0.941	
APP/DEPART	250	/	207	113	/	198	331	/	309	337	/	317	0	

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

WEEKDAY PM	4:00 PM	9	43	8	6	29	4	5	77	6	20	65	7	279
	4:15 PM	8	49	6	5	24	2	2	81	11	20	88	7	303
	4:30 PM	13	39	6	0	18	6	8	74	6	26	70	9	275
	4:45 PM	10	45	7	5	24	1	7	75	7	30	71	10	292
	5:00 PM	20	56	7	9	34	6	4	70	7	24	73	8	318
	5:15 PM	11	37	7	8	19	5	11	75	9	24	65	7	278
	5:30 PM	9	47	5	4	39	2	2	62	5	28	71	7	281
	5:45 PM	14	37	1	1	21	9	13	60	5	32	56	6	255
	VOLUMES	94	353	47	38	208	35	52	574	56	204	559	61	2,281
	APPROACH %	19%	71%	10%	14%	74%	12%	8%	84%	8%	25%	68%	7%	
APP/DEPART	494	/	466	281	/	468	682	/	659	824	/	688	0	
BEGIN PEAK HR	4:15 PM			19	100	15	21	300	31	100	302	34	1,188	
VOLUMES	51	189	26	19	100	15	21	300	31	100	302	34	1,188	
APPROACH %	19%	71%	10%	14%	75%	11%	6%	85%	9%	23%	69%	8%		
PEAK HR FACTOR	0.801			0.684			0.926			0.948			0.934	
APP/DEPART	266	/	244	134	/	231	352	/	345	436	/	368	0	

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

7:00 AM	3	32	2	2	24	1	2	22	3	15	49	5	160
7:15 AM	6	46	4	2	30	3	2	17	0	11	47	7	175
7:30 AM	6	34	6	0	32	2	0	32	5	19	59	5	200
7:45 AM	10	55	8	1	38	0	4	38	9	39	81	11	294
8:00 AM	8	41	9	0	29	3	3	42	6	20	56	12	229
8:15 AM	8	43	9	5	22	4	6	34	2	17	70	4	224
8:30 AM	10	54	4	3	36	1	3	36	6	19	43	6	221
8:45 AM	6	32	9	5	21	1	2	45	4	17	54	6	202
11:00 AM	17	29	6	3	15	7	6	47	6	28	66	4	234
11:15 AM	9	50	5	3	22	1	7	46	9	20	62	5	239
11:30 AM	13	31	4	0	14	4	4	66	6	19	54	7	222
11:45 AM	13	44	7	2	14	5	6	67	15	18	77	6	274
12:00 PM	13	51	7	6	19	2	8	66	10	19	64	8	273
12:15 PM	17	38	4	3	24	5	5	64	6	20	66	2	254
12:30 PM	13	33	10	1	25	7	6	72	6	22	35	0	230
12:45 PM	8	29	4	4	20	6	4	65	12	21	45	5	223
4:00 PM	9	43	8	6	29	4	5	77	6	20	65	7	279
4:15 PM	8	49	6	5	24	2	2	81	11	20	88	7	303
4:30 PM	13	39	6	0	18	6	8	74	6	26	70	9	275
4:45 PM	10	45	7	5	24	1	7	75	7	30	71	10	292
5:00 PM	20	56	7	9	34	6	4	70	7	24	73	8	318
5:15 PM	11	37	7	8	19	5	11	75	9	24	65	7	278
5:30 PM	9	47	5	4	39	2	2	62	5	28	71	7	281
5:45 PM	14	37	1	1	21	9	13	60	5	32	56	6	255
TOTAL	266	968	118	134	208	35	52	574	56	204	559	61	2,281

PEDESTRIAN + BIKE CROSSINGS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
2	10	0	9	21
1	1	1	2	5
1	6	4	6	17
2	5	6	12	25
0	4	0	5	9
0	7	3	10	20
2	4	6	16	28
1	5	2	11	19
3	4	0	10	17
2	6	9	3	20
5	7	9	10	31
2	3	3	5	13
8	6	1	16	31
7	11	11	15	44
4	13	3	8	28
4	5	3	5	17
2	5	2	5	14
2	6	2	13	23
10	4	3	8	25
5	7	2	9	23
2	8	3	6	19
2	9	1	7	19
1	4	1	9	15
4	6	3	17	30
72	146	78	217	513

PEDESTRIAN CROSSINGS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
2	9		9	20
1	1	1	2	5
1	5	2	6	14
1	5	6	12	24
	4		5	9
	7	3	10	20
2	3	5	14	24
1	5	2	11	19
2	4		9	15
1	6	9	3	19
3	6	9	10	28
2	2	2	5	11
6	6	1	15	28
7	11	11	13	42
4	13	2	8	27
4	4	3	5	16
1	5	2	4	12
2	3	1	10	16
7	2	3	7	19
4	5	1	8	18
2	6	2	5	15
2	8	1	7	18
1	4	1	9	15
4	5	2	17	28
60	129	69	204	462

BICYCLE CROSSINGS				
NS	SS	ES	WS	TOTAL
</				

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TECHNICAL DATA

DATE: 11/1/17 WEDNESDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	ESCONDIDO ORANGE GRAND	PROJECT #: LOCATION #: CONTROL:	PTD17-1103-01 6 4-WAY STOP
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NOTES: <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;">INCLUDE: BIKE / PED</div>	<table border="1" style="border-collapse: collapse; width: 100%;"> <tr> <td style="padding: 2px;">AM</td> <td style="padding: 2px;">▲</td> <td style="padding: 2px;">N</td> <td style="padding: 2px;">▶</td> </tr> <tr> <td style="padding: 2px;">PM</td> <td style="padding: 2px;">◀</td> <td style="padding: 2px;">S</td> <td style="padding: 2px;">▶</td> </tr> <tr> <td style="padding: 2px;">MD</td> <td style="padding: 2px;">◀</td> <td style="padding: 2px;">W</td> <td style="padding: 2px;">▶</td> </tr> <tr> <td style="padding: 2px;">OTHER</td> <td style="padding: 2px;">◀</td> <td style="padding: 2px;">E</td> <td style="padding: 2px;">▶</td> </tr> </table>	AM	▲	N	▶	PM	◀	S	▶	MD	◀	W	▶	OTHER	◀	E	▶
AM	▲	N	▶														
PM	◀	S	▶														
MD	◀	W	▶														
OTHER	◀	E	▶														

LANES:	NORTHBOUND ORANGE			SOUTHBOUND ORANGE			EASTBOUND GRAND			WESTBOUND GRAND			TOTAL
	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	

U-TURNS				
NB X	SB X	EB X	WB X	TTL

WEEKDAY AM	7:00 AM	5	4	1	2	5	2	10	36	0	3	38	1	107
	7:15 AM	5	9	1	0	7	1	3	33	0	1	38	0	98
	7:30 AM	7	9	3	4	4	1	2	44	8	4	44	0	130
	7:45 AM	6	6	3	3	7	3	9	45	2	1	58	3	146
	8:00 AM	7	7	1	2	7	0	17	67	1	2	40	3	154
	8:15 AM	6	5	3	4	4	1	20	49	2	5	41	8	148
	8:30 AM	7	4	7	9	9	0	17	46	3	8	34	4	148
	8:45 AM	7	10	6	6	8	1	25	40	4	3	41	1	152
	VOLUMES	50	54	25	30	51	9	103	360	20	27	334	20	1,083
	APPROACH %	39%	42%	19%	33%	57%	10%	21%	75%	4%	7%	88%	5%	
APP/DEPART	129	/	177	90	/	98	483	/	415	381	/	393	0	
BEGIN PEAK HR	8:00 AM													
VOLUMES	27	26	17	21	28	2	79	202	10	18	156	16	602	
APPROACH %	39%	37%	24%	41%	55%	4%	27%	69%	3%	9%	82%	8%		
PEAK HR FACTOR	0.761			0.708			0.856			0.880			0.977	
APP/DEPART	70	/	121	51	/	56	291	/	240	190	/	185	0	

				0
				0
				0
				0
				0
				0
				0
				0
			1	1
0	0	0	1	1

WEEKDAY MD	11:00 AM	13	15	6	6	15	1	21	61	1	5	46	8	198
	11:15 AM	10	16	8	11	12	3	36	64	5	3	53	6	227
	11:30 AM	11	15	2	9	4	2	26	60	7	9	55	9	209
	11:45 AM	14	14	5	12	7	1	28	61	7	1	77	11	238
	12:00 PM	10	13	6	12	8	3	34	85	2	6	78	7	264
	12:15 PM	8	16	8	6	14	2	26	64	7	6	50	5	212
	12:30 PM	7	19	5	14	11	2	39	67	5	8	59	4	240
	12:45 PM	16	14	7	9	12	0	27	64	3	10	61	9	232
	VOLUMES	89	122	47	79	83	14	237	526	37	48	479	59	1,820
	APPROACH %	34%	47%	18%	45%	47%	8%	30%	66%	5%	8%	82%	10%	
APP/DEPART	258	/	418	176	/	168	800	/	652	586	/	582	0	
BEGIN PEAK HR	11:45 AM													
VOLUMES	39	62	24	44	40	8	127	277	21	21	264	27	954	
APPROACH %	31%	50%	19%	48%	43%	9%	30%	65%	5%	7%	85%	9%		
PEAK HR FACTOR	0.947			0.852			0.878			0.857			0.903	
APP/DEPART	125	/	216	92	/	82	425	/	345	312	/	311	0	

				0
				0
			1	1
			1	1
		1		1
				0
				0
				0
				0
0	0	1	2	3

WEEKDAY PM	4:00 PM	12	21	8	12	11	3	34	82	2	7	56	5	253
	4:15 PM	7	27	10	5	11	4	29	82	1	14	74	8	272
	4:30 PM	13	25	7	8	15	1	30	85	2	6	71	5	268
	4:45 PM	5	17	8	8	13	3	41	80	2	9	55	7	248
	5:00 PM	16	28	5	5	11	1	34	85	3	8	87	5	288
	5:15 PM	18	12	4	9	7	2	32	72	8	6	67	5	242
	5:30 PM	6	8	3	9	11	0	21	78	0	1	64	7	208
	5:45 PM	5	11	5	6	14	0	25	74	3	5	38	3	189
	VOLUMES	82	149	50	62	93	14	246	638	21	56	512	45	1,968
	APPROACH %	29%	53%	18%	37%	55%	8%	27%	70%	2%	9%	84%	7%	
APP/DEPART	281	/	440	169	/	170	905	/	750	613	/	608	0	
BEGIN PEAK HR	4:15 PM													
VOLUMES	41	97	30	26	50	9	134	332	8	37	287	25	1,076	
APPROACH %	24%	58%	18%	31%	59%	11%	28%	70%	2%	11%	82%	7%		
PEAK HR FACTOR	0.857			0.885			0.963			0.873			0.934	
APP/DEPART	168	/	256	85	/	95	474	/	388	349	/	337	0	

		1	1	2
			1	1
		1		1
				0
				0
				0
				0
				0
0	0	2	2	4

7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	1	1
7:30 AM	0	0	0	0	0
7:45 AM	0	1	2	0	3
8:00 AM	0	0	0	0	0
8:15 AM	0	1	0	1	2
8:30 AM	1	1	2	2	6
8:45 AM	2	1	3	3	9
11:00 AM	0	1	0	2	3
11:15 AM	0	0	3	1	4
11:30 AM	3	1	2	1	7
11:45 AM	2	1	2	1	6
12:00 PM	0	1	5	1	7
12:15 PM	0	1	1	0	2
12:30 PM	4	6	3	4	17
12:45 PM	2	2	0	3	7
4:00 PM	0	0	5	5	10
4:15 PM	1	4	0	0	5
4:30 PM	1	3	3	3	10
4:45 PM	4	2	1	2	9
5:00 PM	1	2	0	2	5
5:15 PM	1	2	3	4	10
5:30 PM	0	1	3	3	7
5:45 PM	0	0	3	1	4
TOTAL	22	32	41	40	135

PEDESTRIAN + BIKE CROSSINGS					
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	
0	1	0	0	1	
0	0	0	1	1	
0	0	0	0	0	
0	1	2	0	3	
0	0	0	0	0	
0	1	0	1	2	
1	1	2	2	6	
2	1	3	3	9	
0	1	0	2	3	
0	0	3	1	4	
3	1	2	1	7	
2	1	2	1	6	
0	1	5	1	7	
0	1	1	0	2	
4	6	3	4	17	
2	2	0	3	7	
0	0	5	5	10	
1	4	0	0	5	
1	3	3	3	10	
4	2	1	2	9	
1	2	0	2	5	
1	2	3	4	10	
0	1	3	3	7	
0	0	3	1	4	
TOTAL	22	32	41	40	135

PEDESTRIAN CROSSINGS					
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	
			1	1	
				0	
	1	2		3	
				0	
	1		1	2	
1	1	2	2	6	
1		3	2	6	
	1		2	3	
		3	1	4	
2	1	1	1	5	
2	1	2	1	6	
	1	5	1	7	
	1	1		2	
4	5	3	3	15	
2	2		1	5	
		5	5	10	
1	4			5	
1	3	3	3	10	
2	2	1	2	7	
1	1		2	4	
1	2	1	4	8	
	1	3	1	5	
		3	1	4	
TOTAL	18	28	38	34	118

BICYCLE CROSSINGS				
NS	SS	ES	WS	TOTAL
	1			1
				0
				0
				0
				0
				0
				0
				0
1	1		1	3
				0
				0
1		1		2
				0
				0
	1		1	2
			2	2
				0
				0
				0
2	1			3
				0
				0
				0
4	4	3	6	17

National Data & Surveying Services

Intersection Turning Movement Count

Location: N Escondido Blvd / S Escondido Blvd & W Valley Pkwy
 City: Escondido
 Control: Signalized

Project ID: 20-040179-001
 Date: 8/19/2020

Total

NS/EW Streets:	N Escondido Blvd / S Escondido Blvd				N Escondido Blvd / S Escondido Blvd				W Valley Pkwy				W Valley Pkwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	2	30	0	0	0	21	10	0	0	0	0	0	6	204	7	0	280
7:15 AM	2	35	0	0	0	50	14	0	0	0	0	0	11	198	10	0	320
7:30 AM	6	23	0	0	0	76	26	0	0	0	0	0	13	282	7	0	433
7:45 AM	4	27	0	0	0	63	19	0	0	0	0	0	5	269	15	0	402
8:00 AM	7	41	0	0	0	44	12	0	0	0	0	0	10	175	7	0	296
8:15 AM	9	44	0	0	0	41	13	0	0	0	0	0	10	200	13	0	330
8:30 AM	8	43	0	0	0	32	27	0	0	0	0	0	18	191	12	0	331
8:45 AM	13	30	0	0	0	29	18	0	0	0	0	0	14	181	22	0	307
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	51	273	0	0	0	356	139	0	0	0	0	0	87	1700	93	0	2699
	15.74%	84.26%	0.00%	0.00%	0.00%	71.92%	28.08%	0.00%	0.00%	0.00%	0.00%	0.00%	4.63%	90.43%	4.95%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	26	135	0	0	0	224	70	0	0	0	0	0	38	926	42	0	1461
PEAK HR FACTOR :	0.722	0.767	0.000	0.000	0.000	0.737	0.673	0.000	0.000	0.000	0.000	0.000	0.731	0.821	0.700	0.000	0.844
	0.759				0.721								0.833				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	16	79	0	0	0	66	29	0	0	0	0	0	25	201	22	0	438
4:15 PM	17	99	0	0	0	68	29	0	0	0	0	0	14	241	14	0	482
4:30 PM	7	101	0	0	0	65	37	0	0	0	0	0	19	206	18	0	453
4:45 PM	9	85	0	0	0	92	22	0	0	0	0	0	19	195	14	0	436
5:00 PM	14	101	0	0	0	85	33	0	0	0	0	0	23	238	19	0	513
5:15 PM	7	70	0	0	0	51	24	0	0	0	0	0	13	221	15	0	401
5:30 PM	19	76	0	0	0	70	27	0	0	0	0	0	10	217	13	0	432
5:45 PM	7	62	0	0	0	65	26	0	0	0	0	0	18	207	20	0	405
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	96	673	0	0	0	562	227	0	0	0	0	0	141	1726	135	0	3560
	12.48%	87.52%	0.00%	0.00%	0.00%	71.23%	28.77%	0.00%	0.00%	0.00%	0.00%	0.00%	7.04%	86.21%	6.74%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	47	386	0	0	0	310	121	0	0	0	0	0	75	880	65	0	1884
PEAK HR FACTOR :	0.691	0.955	0.000	0.000	0.000	0.842	0.818	0.000	0.000	0.000	0.000	0.000	0.815	0.913	0.855	0.000	0.918
	0.933				0.913								0.911				

National Data & Surveying Services

Intersection Turning Movement Count

Location: N Escondido Blvd / S Escondido Blvd & E 2nd Ave / W 2nd Ave
 City: Escondido
 Control: Signalized

Project ID: 20-040179-002
 Date: 8/19/2020

Total

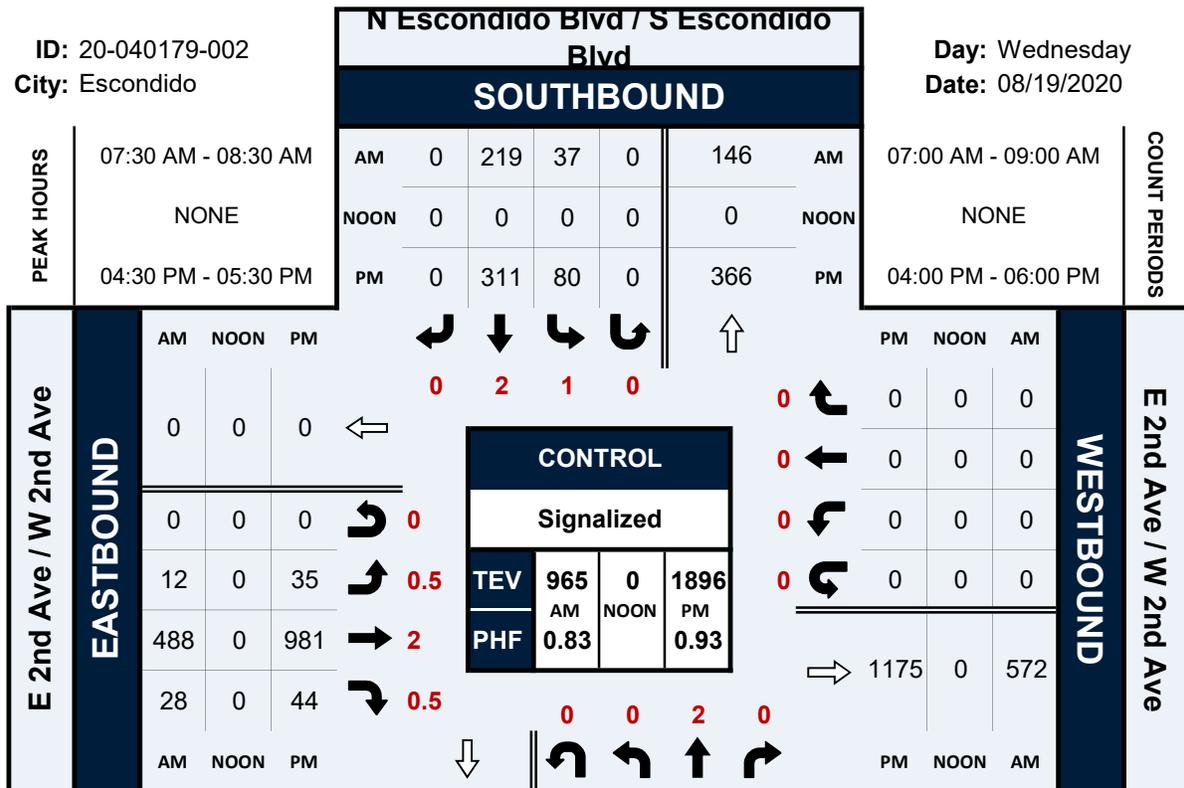
NS/EW Streets:	N Escondido Blvd / S Escondido Blvd				N Escondido Blvd / S Escondido Blvd				E 2nd Ave / W 2nd Ave				E 2nd Ave / W 2nd Ave					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	2	0	0	1	2	0	0	0.5	2	0.5	0	0	0	0	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	7:00 AM	0	20	9	0	4	25	0	0	1	90	14	0	0	0	0	0	163
	7:15 AM	0	29	6	0	4	45	0	0	1	92	21	0	0	0	0	0	198
	7:30 AM	0	20	9	0	10	61	0	0	2	113	4	0	0	0	0	0	219
	7:45 AM	0	28	15	0	10	75	0	0	1	152	9	0	0	0	0	0	290
	8:00 AM	0	43	13	0	9	49	0	0	2	108	7	0	0	0	0	0	231
	8:15 AM	0	43	10	0	8	34	0	0	7	115	8	0	0	0	0	0	225
	8:30 AM	0	36	12	0	8	37	0	0	4	107	6	0	0	0	0	0	210
8:45 AM	0	49	13	0	5	43	0	0	0	154	9	0	0	0	0	0	273	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	0	268	87	0	58	369	0	0	18	931	78	0	0	0	0	0	1809	
	0.00%	75.49%	24.51%	0.00%	13.58%	86.42%	0.00%	0.00%	1.75%	90.65%	7.59%	0.00%						
PEAK HR :	07:30 AM - 08:30 AM																TOTAL	
PEAK HR VOL :	0	134	47	0	37	219	0	0	12	488	28	0	0	0	0	0	965	
PEAK HR FACTOR :	0.000	0.779	0.783	0.000	0.925	0.730	0.000	0.000	0.429	0.803	0.778	0.000	0.000	0.000	0.000	0.000	0.832	
			0.808			0.753				0.815								
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	2	0	0	1	2	0	0	0.5	2	0.5	0	0	0	0	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	4:00 PM	0	79	23	0	16	73	0	0	12	256	18	0	0	0	0	0	477
	4:15 PM	0	73	32	0	9	58	0	0	9	257	16	0	0	0	0	0	454
	4:30 PM	0	92	24	0	27	65	0	0	9	221	10	0	0	0	0	0	448
	4:45 PM	0	86	33	0	24	80	0	0	9	269	8	0	0	0	0	0	509
	5:00 PM	0	93	27	0	18	101	0	0	9	221	12	0	0	0	0	0	481
	5:15 PM	0	60	30	0	11	65	0	0	8	270	14	0	0	0	0	0	458
	5:30 PM	0	71	33	0	9	64	0	0	3	209	11	0	0	0	0	0	400
5:45 PM	0	58	33	0	9	66	0	0	5	187	8	0	0	0	0	0	366	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	0	612	235	0	123	572	0	0	64	1890	97	0	0	0	0	0	3593	
	0.00%	72.26%	27.74%	0.00%	17.70%	82.30%	0.00%	0.00%	3.12%	92.15%	4.73%	0.00%						
PEAK HR :	04:30 PM - 05:30 PM																TOTAL	
PEAK HR VOL :	0	331	114	0	80	311	0	0	35	981	44	0	0	0	0	0	1896	
PEAK HR FACTOR :	0.000	0.890	0.864	0.000	0.741	0.770	0.000	0.000	0.972	0.908	0.786	0.000	0.000	0.000	0.000	0.000	0.931	
			0.927			0.821				0.908								

N Escondido Blvd / S Escondido Blvd & E 2nd Ave / W 2nd Ave

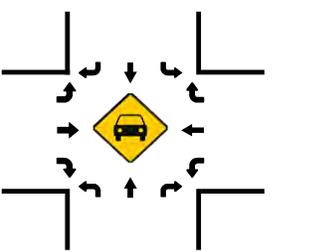
Peak Hour Turning Movement Count

ID: 20-040179-002
City: Escondido

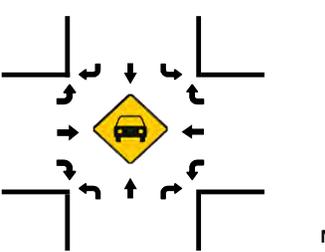
Day: Wednesday
Date: 08/19/2020



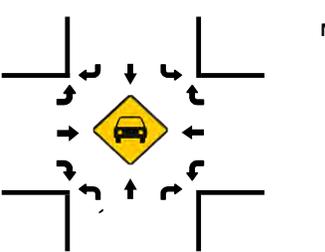
Total Vehicles (AM)



Total Vehicles (NOON)



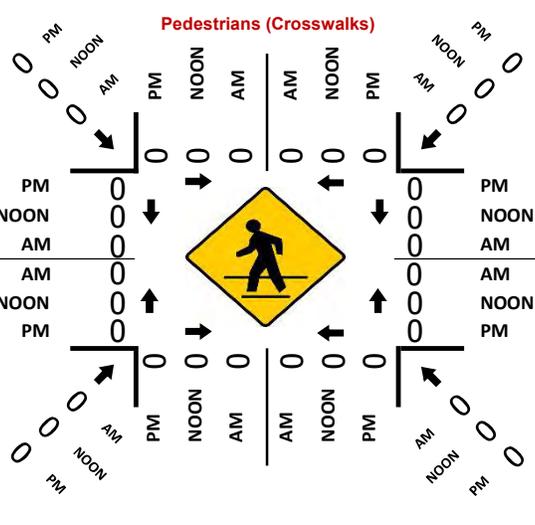
Total Vehicles (PM)



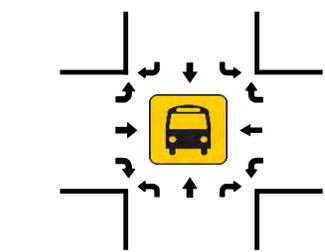
Time	PM	355	0	0	331	114	PM
07:00 AM - 09:00 AM	PM	355	0	0	331	114	PM
NONE	NOON	0	0	0	0	0	NOON
04:00 PM - 06:00 PM	AM	247	0	0	134	47	AM

NORTHBOUND

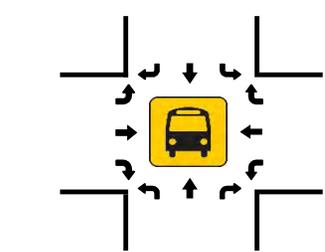
N Escondido Blvd / S Escondido Blvd



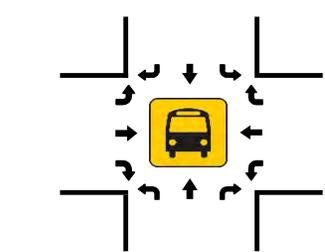
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: N Broadway / S Broadway & W Valley Pkwy
 City: Escondido
 Control: Signalized

Project ID: 20-040179-003
 Date: 8/19/2020

Total

NS/EW Streets:	N Broadway / S Broadway				N Broadway / S Broadway				W Valley Pkwy				W Valley Pkwy					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	1 NL	2 NT	0 NR	0 NU	0 SL	2 ST	1 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0.5 WL	2.5 WT	1 WR	0 WU		
7:00 AM	3	15	0	0	0	20	33	0	0	0	0	0	1	193	6	0	271	
7:15 AM	11	10	0	0	0	65	29	0	0	0	0	0	5	196	14	0	330	
7:30 AM	9	11	0	0	0	60	54	0	0	0	0	0	2	254	18	0	408	
7:45 AM	16	21	0	0	0	55	49	0	0	0	0	0	3	240	14	0	398	
8:00 AM	5	18	0	0	0	34	27	0	0	0	0	0	4	169	11	0	268	
8:15 AM	9	24	0	0	0	37	25	0	0	0	0	0	2	198	15	0	310	
8:30 AM	12	20	0	0	0	36	36	0	0	0	0	0	3	183	17	0	307	
8:45 AM	12	24	0	0	0	28	20	0	0	0	0	0	3	192	14	0	293	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	77	143	0	0	0	335	273	0	0	0	0	0	23	1625	109	0	2585	
	35.00%	65.00%	0.00%	0.00%	0.00%	55.10%	44.90%	0.00%					1.31%	92.49%	6.20%	0.00%		
PEAK HR :	07:00 AM - 08:00 AM																	TOTAL
PEAK HR VOL :	39	57	0	0	0	200	165	0	0	0	0	0	11	883	52	0	1407	
PEAK HR FACTOR :	0.609	0.679	0.000	0.000	0.000	0.769	0.764	0.000	0.000	0.000	0.000	0.000	0.550	0.869	0.722	0.000	0.862	
		0.649				0.800								0.863				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	1 NL	2 NT	0 NR	0 NU	0 SL	2 ST	1 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0.5 WL	2.5 WT	1 WR	0 WU		
4:00 PM	12	44	0	0	0	37	33	0	0	0	0	0	5	201	22	0	354	
4:15 PM	22	44	0	0	0	53	26	0	0	0	0	0	5	221	26	0	397	
4:30 PM	13	42	0	0	0	48	30	0	0	0	0	0	4	191	28	0	356	
4:45 PM	9	45	0	0	0	49	31	0	0	0	0	0	3	177	23	0	337	
5:00 PM	16	37	0	0	0	48	25	0	0	0	0	0	7	227	23	0	383	
5:15 PM	3	46	0	0	0	56	22	0	0	0	0	0	6	221	14	0	368	
5:30 PM	3	33	0	0	0	40	22	0	0	0	0	0	6	193	28	0	325	
5:45 PM	10	41	0	0	0	38	28	0	0	0	0	0	2	194	23	0	336	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	88	332	0	0	0	369	217	0	0	0	0	0	38	1625	187	0	2856	
	20.95%	79.05%	0.00%	0.00%	0.00%	62.97%	37.03%	0.00%					2.05%	87.84%	10.11%	0.00%		
PEAK HR :	04:15 PM - 05:15 PM																	TOTAL
PEAK HR VOL :	60	168	0	0	0	198	112	0	0	0	0	0	19	816	100	0	1473	
PEAK HR FACTOR :	0.682	0.933	0.000	0.000	0.000	0.934	0.903	0.000	0.000	0.000	0.000	0.000	0.679	0.899	0.893	0.000	0.928	
		0.864				0.969								0.910				

National Data & Surveying Services

Intersection Turning Movement Count

Location: N Broadway / S Broadway & E 2nd Ave / W 2nd Ave
 City: Escondido
 Control: Signalized

Project ID: 20-040179-004
 Date: 8/19/2020

Total

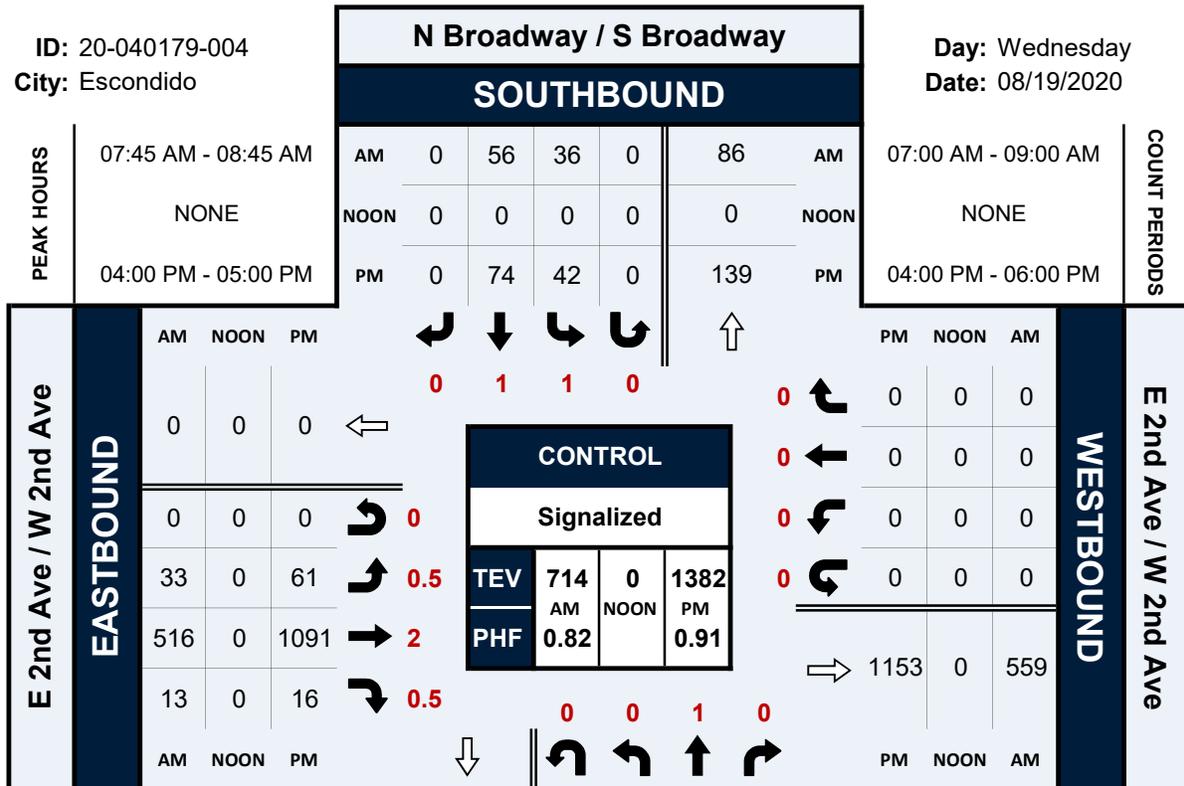
NS/EW Streets:	N Broadway / S Broadway				N Broadway / S Broadway				E 2nd Ave / W 2nd Ave				E 2nd Ave / W 2nd Ave					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
7:00 AM	0	7	3	0	0	5	0	0	0.5	2	0.5	0	0	0	0	0	118	
7:15 AM	0	6	1	0	11	15	0	0	3	87	2	0	0	0	0	0	125	
7:30 AM	0	9	1	0	24	18	0	0	4	115	4	0	0	0	0	0	175	
7:45 AM	0	14	2	0	11	18	0	0	8	161	3	0	0	0	0	0	217	
8:00 AM	0	9	0	0	6	14	0	0	10	125	2	0	0	0	0	0	166	
8:15 AM	0	16	3	0	8	9	0	0	9	102	5	0	0	0	0	0	152	
8:30 AM	0	14	2	0	11	15	0	0	6	128	3	0	0	0	0	0	179	
8:45 AM	0	10	3	0	8	12	0	0	10	134	4	0	0	0	0	0	181	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	0	85	15	0	79	106	0	0	55	947	26	0	0	0	0	0	1313	
	0.00%	85.00%	15.00%	0.00%	42.70%	57.30%	0.00%	0.00%	5.35%	92.12%	2.53%	0.00%						
PEAK HR :	07:45 AM - 08:45 AM																TOTAL	
PEAK HR VOL :	0	53	7	0	36	56	0	0	33	516	13	0	0	0	0	0	714	
PEAK HR FACTOR :	0.000	0.828	0.583	0.000	0.818	0.778	0.000	0.000	0.825	0.801	0.650	0.000	0.000	0.000	0.000	0.000	0.823	
		0.789				0.793				0.817								
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
4:00 PM	0	20	4	0	12	15	0	0	14	266	4	0	0	0	0	0	335	
4:15 PM	0	22	3	0	14	15	0	0	20	269	4	0	0	0	0	0	347	
4:30 PM	0	18	6	0	7	21	0	0	15	251	3	0	0	0	0	0	321	
4:45 PM	0	18	7	0	9	23	0	0	12	305	5	0	0	0	0	0	379	
5:00 PM	0	20	7	0	9	14	0	0	10	246	2	0	0	0	0	0	308	
5:15 PM	0	15	6	0	8	19	0	0	5	280	2	0	0	0	0	0	335	
5:30 PM	0	7	3	0	7	12	0	0	13	237	1	0	0	0	0	0	280	
5:45 PM	0	13	8	0	13	15	0	0	17	228	3	0	0	0	0	0	297	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	0	133	44	0	79	134	0	0	106	2082	24	0	0	0	0	0	2602	
	0.00%	75.14%	24.86%	0.00%	37.09%	62.91%	0.00%	0.00%	4.79%	94.12%	1.08%	0.00%						
PEAK HR :	04:00 PM - 05:00 PM																TOTAL	
PEAK HR VOL :	0	78	20	0	42	74	0	0	61	1091	16	0	0	0	0	0	1382	
PEAK HR FACTOR :	0.000	0.886	0.714	0.000	0.750	0.804	0.000	0.000	0.763	0.894	0.800	0.000	0.000	0.000	0.000	0.000	0.912	
		0.980				0.906				0.907								

N Broadway / S Broadway & E 2nd Ave / W 2nd Ave

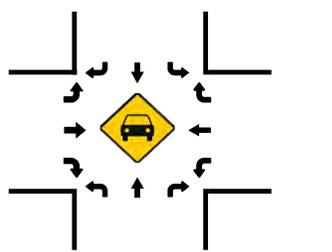
Peak Hour Turning Movement Count

ID: 20-040179-004
City: Escondido

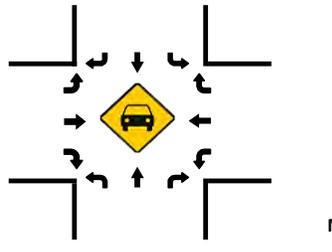
Day: Wednesday
Date: 08/19/2020



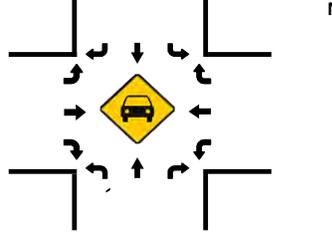
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)

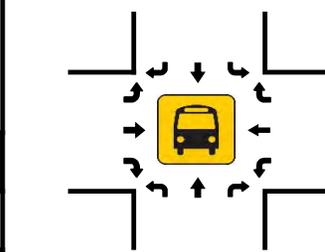


PM	90	0	0	78	20	PM
NOON	0	0	0	0	0	NOON
AM	69	0	0	53	7	AM

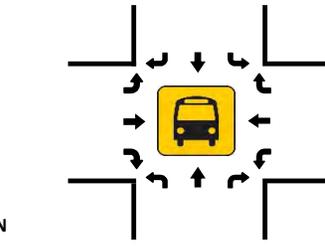
NORTHBOUND

N Broadway / S Broadway

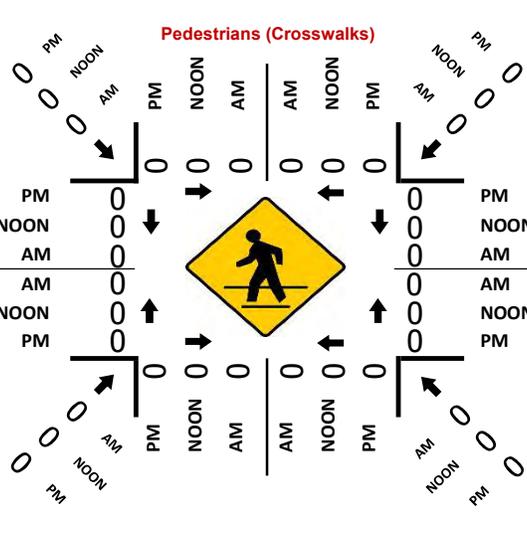
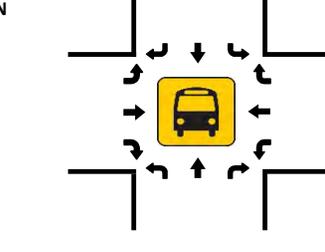
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



VOLUME

W Valley Pkwy Bet. S Escondido Blvd & S Broadway

Day: Wednesday
Date: 8/19/2020

City: Escondido
Project #: CA20_40180_001

DAILY TOTALS					NB	SB	EB	WB	Total		
					0	0	0	14,316	14,316		
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00			0	20	20	12:00			0	262	262
00:15			0	13	13	12:15			0	261	261
00:30			0	9	9	12:30			0	259	259
00:45			0	11 53	11 53	12:45			0	253 1035	253 1035
01:00			0	8	8	13:00			0	253	253
01:15			0	6	6	13:15			0	238	238
01:30			0	10	10	13:30			0	224	224
01:45			0	5 29	5 29	13:45			0	182 897	182 897
02:00			0	5	5	14:00			0	251	251
02:15			0	8	8	14:15			0	232	232
02:30			0	7	7	14:30			0	228	228
02:45			0	9 29	9 29	14:45			0	223 934	223 934
03:00			0	9	9	15:00			0	215	215
03:15			0	6	6	15:15			0	232	232
03:30			0	17	17	15:30			0	247	247
03:45			0	12 44	12 44	15:45			0	267 961	267 961
04:00			0	14	14	16:00			0	240	240
04:15			0	25	25	16:15			0	261	261
04:30			0	26	26	16:30			0	239	239
04:45			0	52 117	52 117	16:45			0	217 957	217 957
05:00			0	65	65	17:00			0	266	266
05:15			0	78	78	17:15			0	246	246
05:30			0	130	130	17:30			0	214	214
05:45			0	148 421	148 421	17:45			0	235 961	235 961
06:00			0	160	160	18:00			0	227	227
06:15			0	227	227	18:15			0	190	190
06:30			0	222	222	18:30			0	188	188
06:45			0	262 871	262 871	18:45			0	147 752	147 752
07:00			0	222	222	19:00			0	169	169
07:15			0	220	220	19:15			0	164	164
07:30			0	301	301	19:30			0	119	119
07:45			0	290 1033	290 1033	19:45			0	134 586	134 586
08:00			0	210	210	20:00			0	119	119
08:15			0	236	236	20:15			0	121	121
08:30			0	219	219	20:30			0	84	84
08:45			0	237 902	237 902	20:45			0	79 403	79 403
09:00			0	178	178	21:00			0	76	76
09:15			0	188	188	21:15			0	73	73
09:30			0	192	192	21:30			0	59	59
09:45			0	242 800	242 800	21:45			0	48 256	48 256
10:00			0	226	226	22:00			0	51	51
10:15			0	239	239	22:15			0	37	37
10:30			0	239	239	22:30			0	42	42
10:45			0	244 948	244 948	22:45			0	33 163	33 163
11:00			0	263	263	23:00			0	22	22
11:15			0	261	261	23:15			0	31	31
11:30			0	256	256	23:30			0	18	18
11:45			0	295 1075	295 1075	23:45			0	18 89	18 89
TOTALS				6322	6322	TOTALS				7994	7994
SPLIT %				100.0%	44.2%	SPLIT %				100.0%	55.8%

DAILY TOTALS					NB	SB	EB	WB	Total
					0	0	0	14,316	14,316

AM Peak Hour				11:45	11:45	PM Peak Hour				12:00	12:00
AM Pk Volume				1077	1077	PM Pk Volume				1035	1035
Pk Hr Factor				0.913	0.913	Pk Hr Factor				0.988	0.988
7 - 9 Volume	0	0	0	1935	1935	4 - 6 Volume	0	0	0	1918	1918
7 - 9 Peak Hour				07:30	07:30	4 - 6 Peak Hour				16:15	16:15
7 - 9 Pk Volume	0	0	0	1037	1037	4 - 6 Pk Volume	0	0	0	983	983
Pk Hr Factor	0.000	0.000	0.000	0.861	0.861	Pk Hr Factor	0.000	0.000	0.000	0.924	0.924

VOLUME

W 2nd Ave Bet. S Escondido Blvd & S Broadway

Day: Wednesday
Date: 8/19/2020

City: Escondido
Project #: CA20_40180_002

DAILY TOTALS					NB	SB	EB	WB	Total		
					0	0	11,294	0	11,294		
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00			16	0	16	12:00			167	0	167
00:15			12	0	12	12:15			219	0	219
00:30			12	0	12	12:30			226	0	226
00:45			12	52	12 52	12:45			205	817	205 817
01:00			12	0	12	13:00			216	0	216
01:15			11	0	11	13:15			214	0	214
01:30			8	0	8	13:30			200	0	200
01:45			5	36	5 36	13:45			210	840	210 840
02:00			6	0	6	14:00			180	0	180
02:15			6	0	6	14:15			221	0	221
02:30			6	0	6	14:30			215	0	215
02:45			5	23	5 23	14:45			250	866	250 866
03:00			6	0	6	15:00			230	0	230
03:15			5	0	5	15:15			255	0	255
03:30			8	0	8	15:30			247	0	247
03:45			9	28	9 28	15:45			246	978	246 978
04:00			5	0	5	16:00			272	0	272
04:15			14	0	14	16:15			286	0	286
04:30			16	0	16	16:30			252	0	252
04:45			17	52	17 52	16:45			304	1114	304 1114
05:00			10	0	10	17:00			243	0	243
05:15			12	0	12	17:15			282	0	282
05:30			31	0	31	17:30			235	0	235
05:45			33	86	33 86	17:45			218	978	218 978
06:00			40	0	40	18:00			221	0	221
06:15			40	0	40	18:15			170	0	170
06:30			52	0	52	18:30			183	0	183
06:45			74	206	74 206	18:45			154	728	154 728
07:00			105	0	105	19:00			152	0	152
07:15			101	0	101	19:15			144	0	144
07:30			121	0	121	19:30			150	0	150
07:45			174	501	174 501	19:45			127	573	127 573
08:00			123	0	123	20:00			109	0	109
08:15			128	0	128	20:15			84	0	84
08:30			124	0	124	20:30			96	0	96
08:45			164	539	164 539	20:45			82	371	82 371
09:00			129	0	129	21:00			90	0	90
09:15			146	0	146	21:15			63	0	63
09:30			135	0	135	21:30			69	0	69
09:45			163	573	163 573	21:45			60	282	60 282
10:00			177	0	177	22:00			59	0	59
10:15			158	0	158	22:15			58	0	58
10:30			151	0	151	22:30			51	0	51
10:45			168	654	168 654	22:45			33	201	33 201
11:00			170	0	170	23:00			29	0	29
11:15			170	0	170	23:15			26	0	26
11:30			175	0	175	23:30			28	0	28
11:45			172	687	172 687	23:45			26	109	26 109
TOTALS			3437		3437	TOTALS			7857		7857
SPLIT %			100.0%		30.4%	SPLIT %			100.0%		69.6%

DAILY TOTALS					NB	SB	EB	WB	Total		
					0	0	11,294	0	11,294		
AM Peak Hour			11:45		11:45	PM Peak Hour			16:00		16:00
AM Pk Volume			784		784	PM Pk Volume			1114		1114
Pk Hr Factor			0.867		0.867	Pk Hr Factor			0.916		0.916
7 - 9 Volume	0	0	1040	0	1040	4 - 6 Volume	0	0	2092	0	2092
7 - 9 Peak Hour			07:45		07:45	4 - 6 Peak Hour			16:00		16:00
7 - 9 Pk Volume	0	0	549	0	549	4 - 6 Pk Volume	0	0	1114	0	1114
Pk Hr Factor	0.000	0.000	0.789	0.000	0.789	Pk Hr Factor	0.000	0.000	0.916	0.000	0.916

GRAND - ORANGE TO ESCONDIDO

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB				
00:00			1	14	12:00			103	85				
00:15			8	5	12:15			86	68				
00:30			3	3	12:30			79	70				
00:45			7	19	5	27	46	12:45	89	357	74	297	654
01:00			4	4	13:00			103	81				
01:15			4	5	13:15			93	75				
01:30			1	4	13:30			90	62				
01:45			1	10	8	21	31	13:45	84	370	69	287	657
02:00			4	1	14:00			79	81				
02:15			3	1	14:15			80	63				
02:30			0	1	14:30			90	79				
02:45			2	9	0	3	12	14:45	89	338	86	309	647
03:00			3	2	15:00			120	80				
03:15			0	2	15:15			77	85				
03:30			3	1	15:30			80	93				
03:45			1	7	3	8	15	15:45	93	370	68	326	696
04:00			0	4	16:00			109	77				
04:15			3	2	16:15			95	90				
04:30			1	4	16:30			96	80				
04:45			2	6	5	15	21	16:45	91	391	80	327	718
05:00			5	7	17:00			108	94				
05:15			6	5	17:15			91	76				
05:30			6	16	17:30			90	68				
05:45			11	28	20	48	76	17:45	95	384	48	286	670
06:00			12	16	18:00			72	50				
06:15			15	28	18:15			75	59				
06:30			21	24	18:30			72	48				
06:45			25	73	22	90	163	18:45	54	273	52	209	482
07:00			40	44	19:00			53	33				
07:15			32	42	19:15			39	30				
07:30			50	50	19:30			32	30				
07:45			61	183	59	195	378	19:45	31	155	22	115	270
08:00			62	44	20:00			24	35				
08:15			60	55	20:15			35	28				
08:30			58	44	20:30			35	29				
08:45			58	238	52	195	433	20:45	41	135	28	120	255
09:00			65	36	21:00			27	30				
09:15			55	59	21:15			28	15				
09:30			52	51	21:30			30	18				
09:45			63	235	46	192	427	21:45	21	106	15	78	184
10:00			80	69	22:00			11	17				
10:15			79	62	22:15			18	11				
10:30			74	53	22:30			16	10				
10:45			77	310	56	240	550	22:45	10	55	11	49	104
11:00			79	63	23:00			9	6				
11:15			83	57	23:15			9	8				
11:30			83	82	23:30			9	11				
11:45			74	319	99	301	620	23:45	3	30	4	29	59

Total Vol. 1437 1335 **2772** 2964 2432 **5396**

Daily Totals				
NB	SB	EB	WB	Combined
		4401	3767	8168

Split %	AM			PM		
	51.8%	48.2%	33.9%	54.9%	45.1%	66.1%
Peak Hour	11:30	11:30	11:30	15:45	14:45	16:15
Volume	346	334	680	393	344	734
P.H.F.	0.84	0.84	0.90	0.90	0.92	0.91

GRAND - ESCONDIDO TO BROADWAY

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB				
00:00			10	11	12:00			111	109				
00:15			6	6	12:15			108	75				
00:30			9	7	12:30			91	85				
00:45			5	30	7	31	61	12:45	88	398	65	334	732
01:00			11	7	13:00			128	87				
01:15			7	6	13:15			119	94				
01:30			5	5	13:30			120	88				
01:45			4	27	8	26	53	13:45	103	470	100	369	839
02:00			6	3	14:00			90	87				
02:15			1	2	14:15			106	93				
02:30			1	3	14:30			130	115				
02:45			2	10	1	9	19	14:45	125	451	126	421	872
03:00			5	2	15:00			114	107				
03:15			1	3	15:15			112	130				
03:30			3	2	15:30			90	111				
03:45			0	9	3	10	19	15:45	136	452	92	440	892
04:00			1	5	16:00			139	85				
04:15			1	4	16:15			100	114				
04:30			2	5	16:30			128	93				
04:45			3	7	7	21	28	16:45	111	478	71	363	841
05:00			3	9	17:00			144	114				
05:15			4	8	17:15			109	74				
05:30			8	22	17:30			103	96				
05:45			14	29	21	60	89	17:45	108	464	64	348	812
06:00			9	15	18:00			86	64				
06:15			17	27	18:15			85	60				
06:30			30	32	18:30			67	54				
06:45			20	76	23	97	173	18:45	74	312	59	237	549
07:00			44	47	19:00			75	44				
07:15			45	44	19:15			46	40				
07:30			62	57	19:30			49	40				
07:45			53	204	81	229	433	19:45	39	209	29	153	362
08:00			65	58	20:00			42	38				
08:15			58	57	20:15			48	37				
08:30			73	52	20:30			55	34				
08:45			70	266	58	225	491	20:45	51	196	33	142	338
09:00			98	49	21:00			53	32				
09:15			56	53	21:15			31	25				
09:30			83	63	21:30			46	19				
09:45			70	307	64	229	536	21:45	35	165	16	92	257
10:00			106	77	22:00			15	21				
10:15			77	66	22:15			21	14				
10:30			101	63	22:30			20	10				
10:45			90	374	67	273	647	22:45	16	72	14	59	131
11:00			88	89	23:00			18	10				
11:15			78	78	23:15			10	9				
11:30			81	70	23:30			13	15				
11:45			105	352	99	336	688	23:45	5	46	9	43	89

Total Vol. 1691 1546 **3237** 3713 3001 **6714**

	Daily Totals					
	NB	SB	EB	WB	Combined	
			5404	4547	9951	
Split %	AM		PM			
	52.2%	47.8%	55.3%	44.7%	67.5%	
Peak Hour	11:45	11:45	11:45	15:45	14:30	14:30
Volume	415	368	783	503	478	959
P.H.F.	0.93	0.84	0.89	0.90	0.92	0.96

WEDNESDAY - NOVEMBER 1, 2017

CITY: ESCONDIDO

PROJECT: PTD17-1103-01

GRAND - BROADWAY TO JUNIPER

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB				
00:00			11	11	12:00			90	80				
00:15			8	3	12:15			88	84				
00:30			13	6	12:30			86	74				
00:45			4	36	5	25	61	12:45	81	345	66	304	649
01:00			8	9	13:00			112	83				
01:15			6	4	13:15			85	87				
01:30			9	6	13:30			113	65				
01:45			6	29	7	26	55	13:45	80	390	96	331	721
02:00			9	5	14:00			90	80				
02:15			2	1	14:15			97	62				
02:30			1	0	14:30			112	82				
02:45			1	13	0	6	19	14:45	88	387	75	299	686
03:00			3	2	15:00			98	92				
03:15			3	2	15:15			107	91				
03:30			4	1	15:30			81	107				
03:45			2	12	3	8	20	15:45	115	401	78	368	769
04:00			3	6	16:00			91	76				
04:15			2	3	16:15			105	97				
04:30			1	8	16:30			84	82				
04:45			3	9	12	29	38	16:45	96	376	80	335	711
05:00			4	7	17:00			98	104				
05:15			3	12	17:15			94	76				
05:30			9	26	17:30			68	79				
05:45			10	26	29	74	100	17:45	84	344	73	332	676
06:00			8	16	18:00			70	50				
06:15			12	31	18:15			65	59				
06:30			28	32	18:30			64	52				
06:45			18	66	29	108	174	18:45	71	270	44	205	475
07:00			28	50	19:00			71	44				
07:15			20	59	19:15			48	45				
07:30			33	65	19:30			47	42				
07:45			58	139	81	255	394	19:45	45	211	25	156	367
08:00			58	67	20:00			53	41				
08:15			58	75	20:15			55	36				
08:30			59	61	20:30			49	29				
08:45			52	227	55	258	485	20:45	58	215	30	136	351
09:00			75	58	21:00			46	32				
09:15			56	52	21:15			40	22				
09:30			59	73	21:30			44	18				
09:45			67	257	55	238	495	21:45	32	162	22	94	256
10:00			87	78	22:00			21	16				
10:15			70	74	22:15			26	18				
10:30			69	59	22:30			16	14				
10:45			63	289	80	291	580	22:45	18	81	13	61	142
11:00			60	88	23:00			11	10				
11:15			77	73	23:15			11	12				
11:30			88	69	23:30			6	15				
11:45			91	316	86	316	632	23:45	9	37	5	42	79

Total Vol. 1419 1634 **3053** 3219 2663 **5882**

Daily Totals				
NB	SB	EB	WB	Combined
		4638	4297	8935

Split %	AM			PM		
	46.5%	53.5%	34.2%	54.7%	45.3%	65.8%
Peak Hour	11:30	11:45	11:45	14:30	15:00	15:00
Volume	357	324	679	405	368	769
P.H.F.	0.98	0.94	0.96	0.90	0.86	0.97

GRAND - JUNIPER TO IVY

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB			
00:00			12	6	12:00			79	101			
00:15			6	3	12:15			75	93			
00:30			6	5	12:30			85	98			
00:45			6	30	5	19	49	75	314	83	375	689
01:00			5	11	13:00			89	113			
01:15			3	5	13:15			70	115			
01:30			5	6	13:30			95	76			
01:45			7	20	7	29	49	77	331	107	411	742
02:00			6	5	14:00			82	106			
02:15			2	1	14:15			70	89			
02:30			1	1	14:30			92	100			
02:45			2	11	1	8	19	87	331	106	401	732
03:00			3	5	15:00			91	98			
03:15			3	4	15:15			90	124			
03:30			4	1	15:30			77	114			
03:45			2	12	3	13	25	92	350	106	442	792
04:00			3	6	16:00			89	100			
04:15			1	5	16:15			92	116			
04:30			1	7	16:30			83	108			
04:45			5	10	18	36	46	88	352	115	439	791
05:00			4	11	17:00			85	103			
05:15			4	10	17:15			88	99			
05:30			4	32	17:30			73	105			
05:45			9	21	38	91	112	63	309	99	406	715
06:00			9	33	18:00			54	79			
06:15			13	46	18:15			52	69			
06:30			25	50	18:30			48	71			
06:45			27	74	54	183	257	52	206	50	269	475
07:00			24	70	19:00			49	57			
07:15			39	80	19:15			42	48			
07:30			43	88	19:30			39	59			
07:45			50	156	140	378	534	38	168	39	203	371
08:00			56	88	20:00			50	44			
08:15			47	93	20:15			40	42			
08:30			46	67	20:30			49	24			
08:45			58	207	80	328	535	51	190	28	138	328
09:00			63	78	21:00			41	42			
09:15			58	58	21:15			32	30			
09:30			56	93	21:30			42	23			
09:45			52	229	74	303	532	30	145	19	114	259
10:00			64	92	22:00			25	11			
10:15			58	79	22:15			22	21			
10:30			59	78	22:30			18	13			
10:45			56	237	100	349	586	13	78	8	53	131
11:00			58	103	23:00			9	12			
11:15			52	87	23:15			12	14			
11:30			65	85	23:30			7	12			
11:45			79	254	107	382	636	8	36	9	47	83

Total Vol. 1261 2119 **3380** 2810 3298 **6108**

Daily Totals				
NB	SB	EB	WB	Combined
		4071	5417	9488

Split %	AM			PM		
	37.3%	62.7%	35.6%	46.0%	54.0%	64.4%
Peak Hour	11:45	07:30	11:45	14:30	15:15	15:00
Volume	318	409	717	360	444	792
P.H.F.	0.94	0.73	0.96	0.98	0.90	0.93

WEDNESDAY - NOVEMBER 1, 2017

CITY: ESCONDIDO

PROJECT: PTD17-1103-01

2 ND - ESCONDIDO TO BROADWAY

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00			33		12:00			233	
00:15			12		12:15			221	
00:30			23		12:30			247	
00:45			14	82	12:45			252	953
01:00			18		13:00			248	
01:15			16		13:15			272	
01:30			7		13:30			288	
01:45			9	50	13:45			275	1083
02:00			6		14:00			276	
02:15			8		14:15			270	
02:30			5		14:30			295	
02:45			12	31	14:45			340	1181
03:00			8		15:00			350	
03:15			4		15:15			304	
03:30			2		15:30			312	
03:45			7	21	15:45			331	1297
04:00			7		16:00			328	
04:15			8		16:15			351	
04:30			12		16:30			339	
04:45			18	45	16:45			347	1365
05:00			19		17:00			362	
05:15			28		17:15			327	
05:30			21		17:30			306	
05:45			48	116	17:45			314	1309
06:00			49		18:00			261	
06:15			79		18:15			235	
06:30			71		18:30			193	
06:45			102	301	18:45			209	898
07:00			116		19:00			180	
07:15			196		19:15			165	
07:30			217		19:30			125	
07:45			266	795	19:45			116	586
08:00			240		20:00			112	
08:15			213		20:15			99	
08:30			212		20:30			132	
08:45			231	896	20:45			127	470
09:00			188		21:00			104	
09:15			178		21:15			113	
09:30			195		21:30			86	
09:45			213	774	21:45			80	383
10:00			183		22:00			68	
10:15			205		22:15			52	
10:30			195		22:30			43	
10:45			197	780	22:45			45	208
11:00			213		23:00			51	
11:15			214		23:15			35	
11:30			186		23:30			35	
11:45			235	848	23:45			23	144

Total Vol. 4739 **4739** 9877 **9877**

Split %	AM		PM	
	NB	SB	EB	WB
	100.0%	32.4%	100.0%	67.6%
Peak Hour		07:30	07:30	16:15
Volume		936	936	1399
P.H.F.		0.88	0.88	0.97

THURSDAY - NOVEMBER 2, 2017

CITY: ESCONDIDO

PROJECT: PTD17-1103-01

2 ND - BROADWAY TO JUNIPER

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00			31		12:00			196	
00:15			21		12:15			227	
00:30			24		12:30			240	
00:45			15	91	12:45			238	901
01:00			17		13:00			215	
01:15			15		13:15			244	
01:30			8		13:30			244	
01:45			6	46	13:45			271	974
02:00			8		14:00			256	
02:15			10		14:15			271	
02:30			6		14:30			306	
02:45			13	37	14:45			294	1127
03:00			9		15:00			337	
03:15			7		15:15			336	
03:30			2		15:30			308	
03:45			8	26	15:45			347	1328
04:00			9		16:00			365	
04:15			8		16:15			317	
04:30			8		16:30			307	
04:45			12	37	16:45			344	1333
05:00			10		17:00			346	
05:15			21		17:15			335	
05:30			33		17:30			285	
05:45			38	102	17:45			249	1215
06:00			41		18:00			267	
06:15			68		18:15			224	
06:30			77		18:30			198	
06:45			89	275	18:45			176	865
07:00			121		19:00			157	
07:15			195		19:15			130	
07:30			235		19:30			92	
07:45			242	793	19:45			128	507
08:00			268		20:00			116	
08:15			223		20:15			120	
08:30			235		20:30			131	
08:45			205	931	20:45			108	475
09:00			177		21:00			123	
09:15			161		21:15			109	
09:30			162		21:30			117	
09:45			206	706	21:45			98	447
10:00			206		22:00			86	
10:15			213		22:15			73	
10:30			208		22:30			65	
10:45			188	815	22:45			44	268
11:00			170		23:00			49	
11:15			165		23:15			43	
11:30			184		23:30			38	
11:45			191	710	23:45			22	152

Total Vol. 4569 **4569** 9592 **9592**

Split %	AM		PM	
	NB	SB	EB	WB
	100.0%	32.3%	100.0%	67.7%
Peak Hour	07:30	07:30	15:15	15:15
Volume	968	968	1356	1356
P.H.F.	0.90	0.90	0.93	0.93

APPENDIX B

INTERSECTION LOS WORKSHEETS

Grand Avenue Vision Project - Phase 1
1: Escondido Blvd & Grand Ave

Existing Conditions
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	150	5	31	189	29	15	297	16	41	302	11
Future Volume (veh/h)	69	150	5	31	189	29	15	297	16	41	302	11
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	161	5	33	203	31	16	319	17	44	325	12
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	873	2449	76	931	2156	324	191	590	31	191	600	22
Arrive On Green	0.70	0.70	0.70	0.70	0.70	0.70	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1146	3519	109	1220	3097	466	1043	3432	182	1044	3495	129
Grp Volume(v), veh/h	74	81	85	33	115	119	16	165	171	44	165	172
Grp Sat Flow(s),veh/h/ln	1146	1777	1851	1220	1777	1786	1043	1777	1838	1044	1777	1847
Q Serve(g_s), s	1.6	1.0	1.1	0.6	1.5	1.6	1.0	6.1	6.1	2.9	6.1	6.1
Cycle Q Clear(g_c), s	3.2	1.0	1.1	1.7	1.5	1.6	7.1	6.1	6.1	9.0	6.1	6.1
Prop In Lane	1.00		0.06	1.00		0.26	1.00		0.10	1.00		0.07
Lane Grp Cap(c), veh/h	873	1237	1288	931	1237	1243	191	305	316	191	305	317
V/C Ratio(X)	0.08	0.07	0.07	0.04	0.09	0.10	0.08	0.54	0.54	0.23	0.54	0.54
Avail Cap(c_a), veh/h	873	1237	1288	931	1237	1243	737	1237	1279	738	1237	1286
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	4.1	3.5	3.5	3.7	3.6	3.6	30.4	27.2	27.2	31.3	27.2	27.2
Incr Delay (d2), s/veh	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.6	0.5	0.2	0.6	0.5
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	0.3	0.3	0.1	0.4	0.4	0.2	2.5	2.6	0.7	2.5	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.3	3.6	3.6	3.8	3.6	3.6	30.5	27.7	27.7	31.5	27.7	27.7
LnGrp LOS	A	A	A	A	A	A	C	C	C	C	C	C
Approach Vol, veh/h		240			267			352			381	
Approach Delay, s/veh		3.8			3.6			27.8			28.2	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		17.3		54.5		17.3				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		50.0		50.0		50.0				
Max Q Clear Time (g_c+I1), s		5.2		11.0		3.7		9.1				
Green Ext Time (p_c), s		0.8		1.3		1.0		1.3				
Intersection Summary												
HCM 6th Ctrl Delay				18.1								
HCM 6th LOS				B								

Intersection												
Intersection Delay, s/veh	8.6											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	176	18	47	210	7	19	7	14	0	0	0
Future Vol, veh/h	16	176	18	47	210	7	19	7	14	0	0	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	198	20	53	236	8	21	8	16	0	0	0
Number of Lanes	1	2	0	1	2	0	0	1	0	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	3	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	3
HCM Control Delay	8.5	8.6	8.8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3
Vol Left, %	47%	100%	0%	0%	100%	0%	0%
Vol Thru, %	18%	0%	100%	77%	0%	100%	91%
Vol Right, %	35%	0%	0%	23%	0%	0%	9%
Sign Control	Stop						
Traffic Vol by Lane	40	16	117	77	47	140	77
LT Vol	19	16	0	0	47	0	0
Through Vol	7	0	117	59	0	140	70
RT Vol	14	0	0	18	0	0	7
Lane Flow Rate	45	18	132	86	53	157	87
Geometry Grp	7	7	7	7	7	7	7
Degree of Util (X)	0.071	0.027	0.18	0.113	0.079	0.212	0.115
Departure Headway (Hd)	5.66	5.409	4.908	4.743	5.352	4.851	4.787
Convergence, Y/N	Yes						
Cap	634	664	733	757	671	742	750
Service Time	3.388	3.127	2.626	2.461	3.07	2.569	2.505
HCM Lane V/C Ratio	0.071	0.027	0.18	0.114	0.079	0.212	0.116
HCM Control Delay	8.8	8.3	8.7	8.1	8.5	8.9	8.1
HCM Lane LOS	A	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0.7	0.4	0.3	0.8	0.4

Grand Avenue Vision Project - Phase 1
3: Broadway/S. Brodaway & Grand Ave

Existing Conditions
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	128	5	9	227	46	9	162	10	97	151	48
Future Volume (veh/h)	54	128	5	9	227	46	9	162	10	97	151	48
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	56	132	5	9	234	47	9	167	10	100	156	49
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	788	2247	85	904	1903	376	281	370	22	271	396	336
Arrive On Green	0.64	0.64	0.64	0.64	0.64	0.64	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1098	3492	132	1252	2958	584	1177	1747	105	1207	1870	1585
Grp Volume(v), veh/h	56	67	70	9	139	142	9	0	177	100	156	49
Grp Sat Flow(s),veh/h/ln	1098	1777	1847	1252	1777	1765	1177	0	1852	1207	1870	1585
Q Serve(g_s), s	1.3	0.9	0.9	0.2	1.9	1.9	0.4	0.0	5.2	4.9	4.5	1.6
Cycle Q Clear(g_c), s	3.2	0.9	0.9	1.0	1.9	1.9	4.9	0.0	5.2	10.1	4.5	1.6
Prop In Lane	1.00		0.07	1.00		0.33	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	788	1143	1188	904	1143	1136	281	0	392	271	396	336
V/C Ratio(X)	0.07	0.06	0.06	0.01	0.12	0.13	0.03	0.00	0.45	0.37	0.39	0.15
Avail Cap(c_a), veh/h	788	1143	1188	904	1143	1136	789	0	1191	792	1203	1020
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	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.9	4.1	4.1	4.3	4.3	4.3	23.2	0.0	21.4	25.7	21.1	19.9
Incr Delay (d2), s/veh	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.5	0.1
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	0.3	0.3	0.3	0.0	0.5	0.5	0.1	0.0	2.2	1.4	1.9	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.1	4.2	4.2	4.3	4.3	4.3	23.2	0.0	22.0	26.4	21.5	20.1
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	C	C
Approach Vol, veh/h		193			290			186			305	
Approach Delay, s/veh		4.5			4.3			22.0			22.9	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		44.5		17.7		44.5		17.7				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		40.0		40.0		40.0		40.0				
Max Q Clear Time (g_c+I1), s		5.2		12.1		3.9		7.2				
Green Ext Time (p_c), s		0.8		1.1		1.4		0.9				
Intersection Summary												
HCM 6th Ctrl Delay											13.5	
HCM 6th LOS											B	

Intersection												
Intersection Delay, s/veh	9.4											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	192	24	21	276	13	11	33	6	5	40	5
Future Vol, veh/h	10	192	24	21	276	13	11	33	6	5	40	5
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	226	28	25	325	15	13	39	7	6	47	6
Number of Lanes	1	2	0	1	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	3	3
HCM Control Delay	9.1	9.7	9.4	9.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	22%	100%	0%	0%	100%	0%	0%	10%
Vol Thru, %	66%	0%	100%	73%	0%	100%	88%	80%
Vol Right, %	12%	0%	0%	27%	0%	0%	12%	10%
Sign Control	Stop							
Traffic Vol by Lane	50	10	128	88	21	184	105	50
LT Vol	11	10	0	0	21	0	0	5
Through Vol	33	0	128	64	0	184	92	40
RT Vol	6	0	0	24	0	0	13	5
Lane Flow Rate	59	12	151	104	25	216	124	59
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.098	0.019	0.219	0.145	0.039	0.309	0.173	0.098
Departure Headway (Hd)	6.014	5.733	5.23	5.038	5.637	5.134	5.047	5.967
Convergence, Y/N	Yes							
Cap	592	622	684	708	633	697	708	596
Service Time	3.788	3.487	2.984	2.792	3.387	2.884	2.797	3.742
HCM Lane V/C Ratio	0.1	0.019	0.221	0.147	0.039	0.31	0.175	0.099
HCM Control Delay	9.4	8.6	9.5	8.7	8.6	10.2	8.9	9.4
HCM Lane LOS	A	A	A	A	A	B	A	A
HCM 95th-tile Q	0.3	0.1	0.8	0.5	0.1	1.3	0.6	0.3

Grand Avenue Vision Project - Phase 1
5: Juniper St & Grand Ave

Existing Conditions
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	150	23	95	250	33	36	193	30	9	125	8
Future Volume (veh/h)	16	150	23	95	250	33	36	193	30	9	125	8
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
Work Zone On Approach		No										
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	20	183	28	116	305	40	44	235	37	11	152	10
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	221	638	96	278	652	85	873	1052	166	770	1158	76
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.67	0.67	0.67	0.67	0.67	0.67
Sat Flow, veh/h	1036	3097	466	1171	3162	411	1224	1577	248	1107	1736	114
Grp Volume(v), veh/h	20	104	107	116	170	175	44	0	272	11	0	162
Grp Sat Flow(s),veh/h/ln	1036	1777	1786	1171	1777	1796	1224	0	1826	1107	0	1850
Q Serve(g_s), s	1.3	3.7	3.8	7.0	6.3	6.4	1.0	0.0	4.4	0.3	0.0	2.4
Cycle Q Clear(g_c), s	7.7	3.7	3.8	10.8	6.3	6.4	3.4	0.0	4.4	4.7	0.0	2.4
Prop In Lane	1.00		0.26	1.00		0.23	1.00		0.14	1.00		0.06
Lane Grp Cap(c), veh/h	221	366	368	278	366	370	873	0	1218	770	0	1234
V/C Ratio(X)	0.09	0.28	0.29	0.42	0.46	0.47	0.05	0.00	0.22	0.01	0.00	0.13
Avail Cap(c_a), veh/h	836	1422	1430	974	1422	1438	873	0	1218	770	0	1234
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(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.6	25.1	25.1	29.7	26.1	26.2	5.2	0.0	4.9	5.8	0.0	4.6
Incr Delay (d2), s/veh	0.2	0.4	0.4	1.0	0.9	0.9	0.1	0.0	0.4	0.0	0.0	0.2
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/lr	0.3	1.5	1.6	2.0	2.7	2.7	0.3	0.0	1.5	0.1	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.7	25.5	25.6	30.7	27.0	27.1	5.3	0.0	5.3	5.8	0.0	4.8
LnGrp LOS	C	C	C	C	C	C	A	A	A	A	A	A
Approach Vol, veh/h		231		461		316		173				
Approach Delay, s/veh		25.9		28.0		5.3		4.8				
Approach LOS		C		C		A		A				
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		20.5		54.5		20.5				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		60.0		50.0		60.0				
Max Q Clear Time (g_c+I1), s		6.4		9.7		6.7		12.8				
Green Ext Time (p_c), s		2.1		1.4		1.1		2.7				
Intersection Summary												
HCM 6th Ctrl Delay				18.1								
HCM 6th LOS				B								

Grand Avenue Vision Project - Phase 1
6: Escondido Blvd & Valley Pkwy

Existing Conditions
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				TTTT			T	TT			TT	
Traffic Volume (veh/h)	0	0	0	41	989	45	28	144	0	0	239	75
Future Volume (veh/h)	0	0	0	41	989	45	28	144	0	0	239	75
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				49	1177	54	33	171	0	0	285	89
Peak Hour Factor				0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				125	3224	151	98	1508	0	0	907	278
Arrive On Green				0.51	0.51	0.51	0.06	0.42	0.00	0.00	0.34	0.34
Sat Flow, veh/h				247	6347	298	1781	3647	0	0	2773	820
Grp Volume(v), veh/h				369	581	329	33	171	0	0	187	187
Grp Sat Flow(s),veh/h/ln				1858	1609	1817	1781	1777	0	0	1777	1723
Q Serve(g_s), s				18.0	16.0	16.1	2.6	4.3	0.0	0.0	11.5	11.9
Cycle Q Clear(g_c), s				18.0	16.0	16.1	2.6	4.3	0.0	0.0	11.5	11.9
Prop In Lane				0.13		0.16	1.00		0.00	0.00		0.48
Lane Grp Cap(c), veh/h				944	1634	923	98	1508	0	0	602	583
V/C Ratio(X)				0.39	0.36	0.36	0.34	0.11	0.00	0.00	0.31	0.32
Avail Cap(c_a), veh/h				944	1634	923	302	1805	0	0	602	583
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.3	21.8	21.8	67.1	25.7	0.0	0.0	36.1	36.2
Incr Delay (d2), s/veh				1.2	0.6	1.1	0.7	0.0	0.0	0.0	1.3	1.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.3	6.3	7.2	1.2	1.9	0.0	0.0	5.2	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				23.5	22.4	22.9	67.9	25.7	0.0	0.0	37.4	37.7
LnGrp LOS				C	C	C	E	C	A	A	D	D
Approach Vol, veh/h					1280			204			374	
Approach Delay, s/veh					22.9			32.5			37.6	
Approach LOS					C			C			D	
Timer - Assigned Phs				3	4		6	8				
Phs Duration (G+Y+Rc), s				12.7	55.0		80.0	67.7				
Change Period (Y+Rc), s				4.5	5.0		5.0	5.0				
Max Green Setting (Gmax), s				25.0	50.0		75.0	75.0				
Max Q Clear Time (g_c+I1), s				4.6	13.9		20.0	6.3				
Green Ext Time (p_c), s				0.0	1.4		6.7	0.8				
Intersection Summary												
HCM 6th Ctrl Delay				26.9								
HCM 6th LOS				C								

Grand Avenue Vision Project - Phase 1
7: S. Brodaway & Valley Pkwy

Existing Conditions
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑	↑	↑↑			↑↑	↑
Traffic Volume (veh/h)	0	0	0	12	944	56	42	61	0	0	214	176
Future Volume (veh/h)	0	0	0	12	944	56	42	61	0	0	214	176
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				14	1098	65	49	71	0	0	249	205
Peak Hour Factor				0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				20	1658	505	577	1938	0	0	1938	864
Arrive On Green				0.32	0.32	0.32	0.55	0.55	0.00	0.00	0.55	0.55
Sat Flow, veh/h				63	5209	1585	937	3647	0	0	3647	1585
Grp Volume(v), veh/h				418	694	65	49	71	0	0	249	205
Grp Sat Flow(s),veh/h/ln				1867	1702	1585	937	1777	0	0	1777	1585
Q Serve(g_s), s				14.4	12.8	2.1	2.0	0.7	0.0	0.0	2.5	5.0
Cycle Q Clear(g_c), s				14.4	12.8	2.1	4.5	0.7	0.0	0.0	2.5	5.0
Prop In Lane				0.03		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				594	1083	505	577	1938	0	0	1938	864
V/C Ratio(X)				0.70	0.64	0.13	0.08	0.04	0.00	0.00	0.13	0.24
Avail Cap(c_a), veh/h				1018	1856	864	577	1938	0	0	1938	864
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.0	21.4	17.8	9.2	7.7	0.0	0.0	8.2	8.7
Incr Delay (d2), s/veh				1.1	0.5	0.1	0.3	0.0	0.0	0.0	0.1	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
%ile BackOfQ(50%),veh/ln				6.1	4.9	0.8	0.4	0.2	0.0	0.0	0.9	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				23.1	21.9	17.9	9.5	7.8	0.0	0.0	8.3	9.4
LnGrp LOS				C	C	B	A	A	A	A	A	A
Approach Vol, veh/h					1177			120			454	
Approach Delay, s/veh					22.1			8.5			8.8	
Approach LOS					C			A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		45.0				45.0		28.3				
Change Period (Y+Rc), s		* 5				5.0		5.0				
Max Green Setting (Gmax), s		* 40				40.0		40.0				
Max Q Clear Time (g_c+I1), s		6.5				7.0		16.4				
Green Ext Time (p_c), s		0.8				1.9		6.9				

Intersection Summary

HCM 6th Ctrl Delay	17.7
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Grand Avenue Vision Project - Phase 1
8: Juniper St & Valley Pkwy

Existing Conditions
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↑↑↑			↑	↑			↑	
Traffic Volume (veh/h)	0	0	0	31	1387	1	119	107	0	0	112	105
Future Volume (veh/h)	0	0	0	31	1387	1	119	107	0	0	112	105
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				34	1508	1	129	116	0	0	122	114
Peak Hour Factor				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	0	0	2	2
Cap, veh/h				50	2364	2	488	831	0	0	395	369
Arrive On Green				0.44	0.44	0.44	0.44	0.44	0.00	0.00	0.44	0.44
Sat Flow, veh/h				113	5320	4	1144	1870	0	0	890	831
Grp Volume(v), veh/h				563	467	513	129	116	0	0	0	236
Grp Sat Flow(s),veh/h/ln				1865	1702	1870	1144	1870	0	0	0	1721
Q Serve(g_s), s				21.6	18.9	18.9	7.4	3.3	0.0	0.0	0.0	7.9
Cycle Q Clear(g_c), s				21.6	18.9	18.9	15.3	3.3	0.0	0.0	0.0	7.9
Prop In Lane				0.06		0.00	1.00		0.00	0.00		0.48
Lane Grp Cap(c), veh/h				829	756	831	488	831	0	0	0	765
V/C Ratio(X)				0.68	0.62	0.62	0.26	0.14	0.00	0.00	0.00	0.31
Avail Cap(c_a), veh/h				829	756	831	488	831	0	0	0	765
HCM Platoon Ratio				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	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				19.9	19.1	19.1	21.0	14.8	0.0	0.0	0.0	16.1
Incr Delay (d2), s/veh				4.5	3.8	3.4	1.3	0.4	0.0	0.0	0.0	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
%ile BackOfQ(50%),veh/ln				9.9	7.9	8.6	2.1	1.4	0.0	0.0	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				24.3	22.9	22.6	22.3	15.2	0.0	0.0	0.0	17.1
LnGrp LOS				C	C	C	C	B	A	A	A	B
Approach Vol, veh/h					1543			245			236	
Approach Delay, s/veh					23.3			18.9			17.1	
Approach LOS					C			B			B	
Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				45.0		45.0		45.0				
Change Period (Y+Rc), s				* 5		5.0		5.0				
Max Green Setting (Gmax), s				* 40		40.0		40.0				
Max Q Clear Time (g_c+I1), s				9.9		23.6		17.3				
Green Ext Time (p_c), s				1.6		9.3		1.1				

Intersection Summary

HCM 6th Ctrl Delay	22.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Grand Avenue Vision Project - Phase 1
9: Escondido Blvd & 2nd Ave

Existing Conditions
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↕↔							↕↔		↔↕		
Traffic Volume (veh/h)	13	532	31	0	0	0	0	146	51	40	239	0
Future Volume (veh/h)	13	532	31	0	0	0	0	146	51	40	239	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00					1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No							No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870					0	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	641	37					0	176	61	48	288
Peak Hour Factor	0.83	0.83	0.83					0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2					0	2	2	2	2
Cap, veh/h	55	2317	138					0	1041	349	72	1656
Arrive On Green	0.47	0.47	0.47					0.00	0.40	0.40	0.04	0.47
Sat Flow, veh/h	117	4971	295					0	2707	876	1781	3647
Grp Volume(v), veh/h	255	212	228					0	118	119	48	288
Grp Sat Flow(s),veh/h/ln	1865	1702	1817					0	1777	1713	1781	1777
Q Serve(g_s), s	12.7	11.4	11.5					0.0	6.4	6.8	4.0	7.1
Cycle Q Clear(g_c), s	12.7	11.4	11.5					0.0	6.4	6.8	4.0	7.1
Prop In Lane	0.06		0.16					0.00		0.51	1.00	0.00
Lane Grp Cap(c), veh/h	869	793	847					0	708	682	72	1656
V/C Ratio(X)	0.29	0.27	0.27					0.00	0.17	0.17	0.67	0.17
Avail Cap(c_a), veh/h	869	793	847					0	708	682	296	1656
HCM Platoon Ratio	1.00	1.00	1.00					1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00					0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	24.5	24.5					0.0	29.1	29.2	71.1	23.3
Incr Delay (d2), s/veh	0.9	0.8	0.8					0.0	0.5	0.6	3.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0					0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr	5.9	4.9	5.2					0.0	2.9	2.9	1.9	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.7	25.3	25.3					0.0	29.6	29.8	75.0	23.5
LnGrp LOS	C	C	C					A	C	C	E	C
Approach Vol, veh/h	694							237		336		
Approach Delay, s/veh	25.4							29.7		30.9		
Approach LOS	C							C		C		
Timer - Assigned Phs	2		4		7		8					
Phs Duration (G+Y+Rc), s	75.1		75.1		10.2		64.9					
Change Period (Y+Rc), s	5.1		5.1		4.1		5.1					
Max Green Setting (Gmax), s	70.0		70.0		25.0		50.0					
Max Q Clear Time (g_c+I1), s	14.7		9.1		6.0		8.8					
Green Ext Time (p_c), s	2.9		1.3		0.0		0.9					
Intersection Summary												
HCM 6th Ctrl Delay	27.7											
HCM 6th LOS	C											

Grand Avenue Vision Project - Phase 1
10: Broadway & 2nd Ave

Existing Conditions
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔									↑		
Traffic Volume (veh/h)	36	562	14	0	0	0	0	58	8	39	61	0
Future Volume (veh/h)	36	562	14	0	0	0	0	58	8	39	61	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	44	685	17				0	71	10	48	74	0
Peak Hour Factor	0.82	0.82	0.82				0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	65	1074	27				0	1027	145	937	1197	0
Arrive On Green	0.22	0.22	0.22				0.00	0.64	0.64	0.64	0.64	0.00
Sat Flow, veh/h	300	4978	127				0	1604	226	1317	1870	0
Grp Volume(v), veh/h	272	227	247				0	0	81	48	74	0
Grp Sat Flow(s),veh/h/ln	1855	1702	1847				0	0	1830	1317	1870	0
Q Serve(g_s), s	8.4	7.5	7.6				0.0	0.0	1.0	0.9	0.9	0.0
Cycle Q Clear(g_c), s	8.4	7.5	7.6				0.0	0.0	1.0	1.9	0.9	0.0
Prop In Lane	0.16		0.07				0.00		0.12	1.00		0.00
Lane Grp Cap(c), veh/h	400	367	399				0	0	1171	937	1197	0
V/C Ratio(X)	0.68	0.62	0.62				0.00	0.00	0.07	0.05	0.06	0.00
Avail Cap(c_a), veh/h	1188	1090	1183				0	0	1171	937	1197	0
HCM Platoon Ratio	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				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.5	22.2	22.2				0.0	0.0	4.2	4.6	4.2	0.0
Incr Delay (d2), s/veh	0.8	0.6	0.6				0.0	0.0	0.1	0.1	0.1	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
%ile BackOfQ(50%),veh/ln	3.5	2.9	3.1				0.0	0.0	0.3	0.2	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	22.8	22.8				0.0	0.0	4.3	4.7	4.3	0.0
LnGrp LOS	C	C	C				A	A	A	A	A	A
Approach Vol, veh/h	746						81			122		
Approach Delay, s/veh	23.0						4.3			4.5		
Approach LOS	C						A			A		
Timer - Assigned Phs	2		4		6							
Phs Duration (G+Y+Rc), s	44.5		18.0		44.5							
Change Period (Y+Rc), s	4.5		4.5		4.5							
Max Green Setting (Gmax), s	40.0		40.0		40.0							
Max Q Clear Time (g_c+I1), s	3.0		10.4		3.9							
Green Ext Time (p_c), s	0.3		3.1		0.7							
Intersection Summary												
HCM 6th Ctrl Delay	19.0											
HCM 6th LOS	B											

Grand Avenue Vision Project - Phase 1
 11: Juniper St & 2nd Ave

Existing Conditions
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔↑↑↔							↑↔		↔↑		↑	
Traffic Volume (veh/h)	56	732	68	0	0	0	0	243	105	11	224	0	
Future Volume (veh/h)	56	732	68	0	0	0	0	243	105	11	224	0	
Initial Q (Qb), veh	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	
Parking Bus, Adj	1.00	1.00	1.00					1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No							No				No	
Adj Sat Flow, veh/h/ln	1870	1870	1870					0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	61	796	74					0	264	114	12	243	0
Peak Hour Factor	0.92	0.92	0.92					0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2					0	2	2	2	2	0
Cap, veh/h	86	1198	115					0	786	340	621	1187	0
Arrive On Green	0.26	0.26	0.26					0.00	0.63	0.63	0.63	0.63	0.00
Sat Flow, veh/h	330	4579	438					0	1239	535	1005	1870	0
Grp Volume(v), veh/h	343	286	303					0	0	378	12	243	0
Grp Sat Flow(s),veh/h/ln	1854	1702	1791					0	0	1774	1005	1870	0
Q Serve(g_s), s	14.5	12.9	13.0					0.0	0.0	8.6	0.5	4.7	0.0
Cycle Q Clear(g_c), s	14.5	12.9	13.0					0.0	0.0	8.6	9.1	4.7	0.0
Prop In Lane	0.18		0.24					0.00		0.30	1.00		0.00
Lane Grp Cap(c), veh/h	485	445	469					0	0	1126	621	1187	0
V/C Ratio(X)	0.71	0.64	0.65					0.00	0.00	0.34	0.02	0.20	0.00
Avail Cap(c_a), veh/h	856	786	827					0	0	1126	621	1187	0
HCM Platoon Ratio	1.00	1.00	1.00					1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00					0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.0	28.4	28.4					0.0	0.0	7.4	9.5	6.7	0.0
Incr Delay (d2), s/veh	1.9	1.6	1.5					0.0	0.0	0.8	0.0	0.1	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
%ile BackOfQ(50%),veh/lr	6.5	5.3	5.6					0.0	0.0	3.2	0.1	1.7	0.0
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	30.9	30.0	29.9					0.0	0.0	8.2	9.5	6.7	0.0
LnGrp LOS	C	C	C					A	A	A	A	A	A
Approach Vol, veh/h	931							378		255			
Approach Delay, s/veh	30.3							8.2		6.9			
Approach LOS	C							A		A			
Timer - Assigned Phs	2		4						8				
Phs Duration (G+Y+Rc), s	27.2		59.5						59.5				
Change Period (Y+Rc), s	4.5		4.5						4.5				
Max Green Setting (Gmax), s	40.0		55.0						55.0				
Max Q Clear Time (g_c+I1), s	16.5		11.1						10.6				
Green Ext Time (p_c), s	6.2		1.6						2.9				
Intersection Summary													
HCM 6th Ctrl Delay			21.1										
HCM 6th LOS			C										

Grand Avenue Vision Project - Phase 1
1: Escondido Blvd & Grand Ave

Existing Conditions
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	279	25	57	280	58	38	419	34	83	439	22
Future Volume (veh/h)	79	279	25	57	280	58	38	419	34	83	439	22
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	82	291	26	59	292	60	40	436	35	86	457	23
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	694	2073	184	719	1848	374	217	843	67	219	871	44
Arrive On Green	0.63	0.63	0.63	0.63	0.63	0.63	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1029	3302	293	1063	2944	596	915	3333	267	922	3443	173
Grp Volume(v), veh/h	82	156	161	59	175	177	40	232	239	86	235	245
Grp Sat Flow(s),veh/h/ln	1029	1777	1818	1063	1777	1763	915	1777	1822	922	1777	1839
Q Serve(g_s), s	2.9	2.8	2.9	1.9	3.2	3.3	3.1	8.9	9.0	7.0	9.1	9.1
Cycle Q Clear(g_c), s	6.2	2.8	2.9	4.8	3.2	3.3	12.3	8.9	9.0	16.0	9.1	9.1
Prop In Lane	1.00		0.16	1.00		0.34	1.00		0.15	1.00		0.09
Lane Grp Cap(c), veh/h	694	1116	1141	719	1116	1107	217	449	461	219	449	465
V/C Ratio(X)	0.12	0.14	0.14	0.08	0.16	0.16	0.18	0.52	0.52	0.39	0.52	0.53
Avail Cap(c_a), veh/h	694	1116	1141	719	1116	1107	560	1116	1144	565	1116	1155
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	7.4	6.0	6.1	7.0	6.1	6.1	30.9	25.6	25.6	32.5	25.6	25.6
Incr Delay (d2), s/veh	0.3	0.3	0.3	0.0	0.0	0.0	0.2	0.3	0.3	0.4	0.4	0.3
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	1.0	1.0	0.4	1.0	1.1	0.7	3.6	3.7	1.5	3.7	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.8	6.3	6.3	7.0	6.1	6.2	31.1	25.9	25.9	32.9	26.0	26.0
LnGrp LOS	A	A	A	A	A	A	C	C	C	C	C	C
Approach Vol, veh/h		399			411			511			566	
Approach Delay, s/veh		6.6			6.3			26.3			27.0	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		25.1		54.5		25.1				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		50.0		50.0		50.0				
Max Q Clear Time (g_c+I1), s		8.2		18.0		6.8		14.3				
Green Ext Time (p_c), s		1.5		2.1		1.6		1.9				
Intersection Summary												
HCM 6th Ctrl Delay				18.0								
HCM 6th LOS				B								

Intersection

Intersection Delay, s/veh 10.4

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↗	↕			↕				
Traffic Vol, veh/h	17	374	9	17	331	11	43	3	23	0	0	0
Future Vol, veh/h	17	374	9	17	331	11	43	3	23	0	0	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	430	10	20	380	13	49	3	26	0	0	0
Number of Lanes	1	2	0	1	2	0	0	1	0	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	3	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	3
HCM Control Delay	10.6	10.3	10.3
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3
Vol Left, %	62%	100%	0%	0%	100%	0%	0%
Vol Thru, %	4%	0%	100%	93%	0%	100%	91%
Vol Right, %	33%	0%	0%	7%	0%	0%	9%
Sign Control	Stop						
Traffic Vol by Lane	69	17	249	134	17	221	121
LT Vol	43	17	0	0	17	0	0
Through Vol	3	0	249	125	0	221	110
RT Vol	23	0	0	9	0	0	11
Lane Flow Rate	79	20	287	154	20	254	139
Geometry Grp	7	7	7	7	7	7	7
Degree of Util (X)	0.141	0.031	0.411	0.218	0.031	0.367	0.199
Departure Headway (Hd)	6.407	5.669	5.167	5.119	5.714	5.211	5.147
Convergence, Y/N	Yes						
Cap	556	630	694	699	625	687	695
Service Time	4.19	3.421	2.919	2.871	3.467	2.964	2.901
HCM Lane V/C Ratio	0.142	0.032	0.414	0.22	0.032	0.37	0.2
HCM Control Delay	10.3	8.6	11.5	9.3	8.7	11	9.2
HCM Lane LOS	B	A	B	A	A	B	A
HCM 95th-tile Q	0.5	0.1	2	0.8	0.1	1.7	0.7

Grand Avenue Vision Project - Phase 1
3: Broadway/S. Brodaway & Grand Ave

Existing Conditions
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	281	16	14	292	51	18	225	15	99	136	46
Future Volume (veh/h)	93	281	16	14	292	51	18	225	15	99	136	46
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	97	293	17	15	304	53	19	234	16	103	142	48
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	692	2088	121	725	1854	319	336	434	30	261	469	397
Arrive On Green	0.61	0.61	0.61	0.61	0.61	0.61	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1024	3415	197	1069	3031	522	1193	1731	118	1130	1870	1585
Grp Volume(v), veh/h	97	152	158	15	177	180	19	0	250	103	142	48
Grp Sat Flow(s),veh/h/ln	1024	1777	1835	1069	1777	1776	1193	0	1849	1130	1870	1585
Q Serve(g_s), s	3.0	2.4	2.4	0.4	2.8	2.9	0.9	0.0	7.7	5.7	4.0	1.5
Cycle Q Clear(g_c), s	5.8	2.4	2.4	2.8	2.8	2.9	4.9	0.0	7.7	13.3	4.0	1.5
Prop In Lane	1.00		0.11	1.00		0.29	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	692	1087	1122	725	1087	1087	336	0	464	261	469	397
V/C Ratio(X)	0.14	0.14	0.14	0.02	0.16	0.17	0.06	0.00	0.54	0.39	0.30	0.12
Avail Cap(c_a), veh/h	692	1087	1122	725	1087	1087	766	0	1131	669	1144	969
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	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.7	5.4	5.4	6.0	5.5	5.5	21.8	0.0	21.2	27.0	19.9	18.9
Incr Delay (d2), s/veh	0.4	0.3	0.3	0.0	0.1	0.1	0.1	0.0	0.7	0.7	0.3	0.1
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/lr	0.6	0.8	0.8	0.1	0.8	0.8	0.2	0.0	3.2	1.5	1.7	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.2	5.7	5.7	6.0	5.5	5.5	21.9	0.0	22.0	27.7	20.1	19.0
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	C	B
Approach Vol, veh/h		407			372			269			293	
Approach Delay, s/veh		6.0			5.6			21.9			22.6	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		44.5		20.9		44.5		20.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		40.0		40.0		40.0		40.0				
Max Q Clear Time (g_c+I1), s		7.8		15.3		4.9		9.7				
Green Ext Time (p_c), s		1.9		1.1		1.9		1.3				
Intersection Summary												
HCM 6th Ctrl Delay											12.7	
HCM 6th LOS											B	

Intersection												
Intersection Delay, s/veh	10.6											
Intersection LOS	B											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	336	21	27	320	22	29	44	8	16	26	14
Future Vol, veh/h	38	336	21	27	320	22	29	44	8	16	26	14
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	369	23	30	352	24	32	48	9	18	29	15
Number of Lanes	1	2	0	1	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	3	3
HCM Control Delay	10.7	10.6	10.7	10.2
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	36%	100%	0%	0%	100%	0%	0%	29%
Vol Thru, %	54%	0%	100%	84%	0%	100%	83%	46%
Vol Right, %	10%	0%	0%	16%	0%	0%	17%	25%
Sign Control	Stop							
Traffic Vol by Lane	81	38	224	133	27	213	129	56
LT Vol	29	38	0	0	27	0	0	16
Through Vol	44	0	224	112	0	213	107	26
RT Vol	8	0	0	21	0	0	22	14
Lane Flow Rate	89	42	246	146	30	234	141	62
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.165	0.07	0.379	0.22	0.05	0.363	0.214	0.113
Departure Headway (Hd)	6.667	6.046	5.541	5.429	6.078	5.573	5.452	6.594
Convergence, Y/N	Yes							
Cap	539	595	652	664	592	649	662	544
Service Time	4.402	3.755	3.25	3.139	3.788	3.283	3.162	4.329
HCM Lane V/C Ratio	0.165	0.071	0.377	0.22	0.051	0.361	0.213	0.114
HCM Control Delay	10.7	9.2	11.6	9.7	9.1	11.4	9.6	10.2
HCM Lane LOS	B	A	B	A	A	B	A	B
HCM 95th-tile Q	0.6	0.2	1.8	0.8	0.2	1.7	0.8	0.4

Grand Avenue Vision Project - Phase 1
5: Juniper St & Grand Ave

Existing Conditions
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	300	31	100	302	34	51	189	26	19	100	15
Future Volume (veh/h)	21	300	31	100	302	34	51	189	26	19	100	15
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	23	323	33	108	325	37	55	203	28	20	108	16
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	254	797	81	256	787	89	862	1021	141	760	1011	150
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.63	0.63	0.63	0.63	0.63	0.63
Sat Flow, veh/h	1020	3257	330	1025	3218	364	1267	1609	222	1149	1592	236
Grp Volume(v), veh/h	23	175	181	108	178	184	55	0	231	20	0	124
Grp Sat Flow(s),veh/h/ln	1020	1777	1811	1025	1777	1805	1267	0	1830	1149	0	1828
Q Serve(g_s), s	1.5	6.5	6.6	7.8	6.6	6.7	1.4	0.0	4.2	0.6	0.0	2.1
Cycle Q Clear(g_c), s	8.3	6.5	6.6	14.4	6.6	6.7	3.5	0.0	4.2	4.7	0.0	2.1
Prop In Lane	1.00		0.18	1.00		0.20	1.00		0.12	1.00		0.13
Lane Grp Cap(c), veh/h	254	435	443	256	435	442	862	0	1162	760	0	1160
V/C Ratio(X)	0.09	0.40	0.41	0.42	0.41	0.42	0.06	0.00	0.20	0.03	0.00	0.11
Avail Cap(c_a), veh/h	781	1353	1379	786	1353	1375	862	0	1162	760	0	1160
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.5	24.9	25.0	31.0	25.0	25.0	6.3	0.0	6.0	7.0	0.0	5.6
Incr Delay (d2), s/veh	0.2	0.6	0.6	1.1	0.6	0.6	0.1	0.0	0.4	0.1	0.0	0.2
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	0.4	2.7	2.8	1.9	2.8	2.9	0.4	0.0	1.5	0.1	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.6	25.5	25.6	32.1	25.6	25.6	6.5	0.0	6.4	7.1	0.0	5.8
LnGrp LOS	C	C	C	C	C	C	A	A	A	A	A	A
Approach Vol, veh/h		379			470			286			144	
Approach Delay, s/veh		25.7			27.1			6.4			6.0	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		24.3		54.5		24.3				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		60.0		50.0		60.0				
Max Q Clear Time (g_c+I1), s		6.2		10.3		6.7		16.4				
Green Ext Time (p_c), s		1.8		2.4		0.9		2.9				
Intersection Summary												
HCM 6th Ctrl Delay				19.7								
HCM 6th LOS				B								

Grand Avenue Vision Project - Phase 1
6: Escondido Blvd & Valley Pkwy

Existing Conditions
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				TTTT			T	TT			TT	
Traffic Volume (veh/h)	0	0	0	80	940	69	50	412	0	0	331	129
Future Volume (veh/h)	0	0	0	80	940	69	50	412	0	0	331	129
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				87	1022	75	54	448	0	0	360	140
Peak Hour Factor				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	0	0	2	2
Cap, veh/h				236	2983	223	117	1531	0	0	841	322
Arrive On Green				0.50	0.50	0.50	0.07	0.43	0.00	0.00	0.33	0.33
Sat Flow, veh/h				471	5940	444	1781	3647	0	0	2606	962
Grp Volume(v), veh/h				341	540	303	54	448	0	0	253	247
Grp Sat Flow(s),veh/h/ln				1847	1609	1790	1781	1777	0	0	1777	1697
Q Serve(g_s), s				16.9	15.0	15.1	4.4	12.3	0.0	0.0	16.5	16.9
Cycle Q Clear(g_c), s				16.9	15.0	15.1	4.4	12.3	0.0	0.0	16.5	16.9
Prop In Lane				0.25		0.25	1.00		0.00	0.00		0.57
Lane Grp Cap(c), veh/h				928	1616	899	117	1531	0	0	595	568
V/C Ratio(X)				0.37	0.33	0.34	0.46	0.29	0.00	0.00	0.43	0.43
Avail Cap(c_a), veh/h				928	1616	899	298	1785	0	0	595	568
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.7	22.2	22.3	67.2	27.7	0.0	0.0	38.5	38.7
Incr Delay (d2), s/veh				1.1	0.6	1.0	1.0	0.0	0.0	0.0	2.2	2.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.7	5.9	6.7	2.0	5.3	0.0	0.0	7.6	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				23.8	22.8	23.3	68.2	27.7	0.0	0.0	40.7	41.1
LnGrp LOS				C	C	C	E	C	A	A	D	D
Approach Vol, veh/h					1184			502			500	
Approach Delay, s/veh					23.2			32.1			40.9	
Approach LOS					C			C			D	
Timer - Assigned Phs				3	4	6	8					
Phs Duration (G+Y+Rc), s				14.3	55.0	80.0	69.3					
Change Period (Y+Rc), s				4.5	5.0	5.0	5.0					
Max Green Setting (Gmax), s				25.0	50.0	75.0	75.0					
Max Q Clear Time (g_c+I1), s				6.4	18.9	18.9	14.3					
Green Ext Time (p_c), s				0.0	1.9	6.0	2.2					
Intersection Summary												
HCM 6th Ctrl Delay				29.3								
HCM 6th LOS				C								

Grand Avenue Vision Project - Phase 1
7: S. Brodaway & Valley Pkwy

Existing Conditions
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↑↑↑	↑	↑	↑	↑↑			↑↑	↑
Traffic Volume (veh/h)	0	0	0	20	872	107	64	180	0	0	212	120
Future Volume (veh/h)	0	0	0	20	872	107	64	180	0	0	212	120
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No				No
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				22	938	115	69	194	0	0	228	129
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				33	1478	454	657	2028	0	0	2028	905
Arrive On Green				0.29	0.29	0.29	0.57	0.57	0.00	0.00	0.57	0.57
Sat Flow, veh/h				114	5155	1585	1024	3647	0	0	3647	1585
Grp Volume(v), veh/h				361	599	115	69	194	0	0	228	129
Grp Sat Flow(s),veh/h/ln				1865	1702	1585	1024	1777	0	0	1777	1585
Q Serve(g_s), s				12.0	10.7	3.9	2.3	1.7	0.0	0.0	2.1	2.7
Cycle Q Clear(g_c), s				12.0	10.7	3.9	4.4	1.7	0.0	0.0	2.1	2.7
Prop In Lane				0.06		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				534	976	454	657	2028	0	0	2028	905
V/C Ratio(X)				0.68	0.61	0.25	0.10	0.10	0.00	0.00	0.11	0.14
Avail Cap(c_a), veh/h				1064	1943	905	657	2028	0	0	2028	905
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.1	21.6	19.2	7.9	6.8	0.0	0.0	6.9	7.0
Incr Delay (d2), s/veh				1.1	0.5	0.2	0.3	0.1	0.0	0.0	0.1	0.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.1	4.1	1.4	0.5	0.6	0.0	0.0	0.7	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				23.2	22.1	19.4	8.2	6.9	0.0	0.0	7.0	7.4
LnGrp LOS				C	C	B	A	A	A	A	A	A
Approach Vol, veh/h					1075			263			357	
Approach Delay, s/veh					22.2			7.3			7.1	
Approach LOS					C			A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		45.0				45.0		25.1				
Change Period (Y+Rc), s		* 5				5.0		5.0				
Max Green Setting (Gmax), s		* 40				40.0		40.0				
Max Q Clear Time (g_c+I1), s		6.4				4.7		14.0				
Green Ext Time (p_c), s		2.0				1.6		6.1				

Intersection Summary

HCM 6th Ctrl Delay	16.7
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Grand Avenue Vision Project - Phase 1
8: Juniper St & Valley Pkwy

Existing Conditions
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↑↑↑			↑	↑			↑	
Traffic Volume (veh/h)	0	0	0	27	977	5	156	112	0	0	76	43
Future Volume (veh/h)	0	0	0	27	977	5	156	112	0	0	76	43
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				29	1062	5	170	122	0	0	83	47
Peak Hour Factor				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	0	0	2	2
Cap, veh/h				60	2342	11	584	831	0	0	498	282
Arrive On Green				0.44	0.44	0.44	0.44	0.44	0.00	0.00	0.44	0.44
Sat Flow, veh/h				135	5271	26	1260	1870	0	0	1121	635
Grp Volume(v), veh/h				400	332	364	170	122	0	0	0	130
Grp Sat Flow(s),veh/h/ln				1864	1702	1866	1260	1870	0	0	0	1756
Q Serve(g_s), s				13.7	12.1	12.1	8.4	3.5	0.0	0.0	0.0	4.0
Cycle Q Clear(g_c), s				13.7	12.1	12.1	12.4	3.5	0.0	0.0	0.0	4.0
Prop In Lane				0.07		0.01	1.00		0.00	0.00		0.36
Lane Grp Cap(c), veh/h				828	756	829	584	831	0	0	0	780
V/C Ratio(X)				0.48	0.44	0.44	0.29	0.15	0.00	0.00	0.00	0.17
Avail Cap(c_a), veh/h				828	756	829	584	831	0	0	0	780
HCM Platoon Ratio				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	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				17.7	17.3	17.3	18.7	14.9	0.0	0.0	0.0	15.0
Incr Delay (d2), s/veh				2.0	1.8	1.7	1.3	0.4	0.0	0.0	0.0	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.1	4.9	5.4	2.6	1.5	0.0	0.0	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				19.7	19.1	18.9	20.0	15.2	0.0	0.0	0.0	15.5
LnGrp LOS				B	B	B	B	B	A	A	A	B
Approach Vol, veh/h				1096				292			130	
Approach Delay, s/veh				19.3				18.0			15.5	
Approach LOS				B				B			B	
Timer - Assigned Phs				4			6			8		
Phs Duration (G+Y+Rc), s				45.0			45.0			45.0		
Change Period (Y+Rc), s				* 5			5.0			5.0		
Max Green Setting (Gmax), s				* 40			40.0			40.0		
Max Q Clear Time (g_c+I1), s				6.0			15.7			14.4		
Green Ext Time (p_c), s				0.8			7.5			1.2		
Intersection Summary												
HCM 6th Ctrl Delay				18.7								
HCM 6th LOS				B								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Grand Avenue Vision Project - Phase 1
 9: Escondido Blvd & 2nd Ave

Existing Conditions
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↑↑↑							↑↑		↖	↑↑		
Traffic Volume (veh/h)	38	1069	48	0	0	0	0	361	124	87	339	0	
Future Volume (veh/h)	38	1069	48	0	0	0	0	361	124	87	339	0	
Initial Q (Qb), veh	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	
Parking Bus, Adj	1.00	1.00	1.00					1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No							No		No			
Adj Sat Flow, veh/h/ln	1870	1870	1870					0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	41	1149	52					0	388	133	94	365	0
Peak Hour Factor	0.93	0.93	0.93					0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2					0	2	2	2	2	0
Cap, veh/h	78	2326	109					0	976	330	114	1656	0
Arrive On Green	0.47	0.47	0.47					0.00	0.37	0.37	0.06	0.47	0.00
Sat Flow, veh/h	168	4991	233					0	2700	882	1781	3647	0
Grp Volume(v), veh/h	456	379	407					0	263	258	94	365	0
Grp Sat Flow(s),veh/h/ln	1862	1702	1828					0	1777	1712	1781	1777	0
Q Serve(g_s), s	26.0	23.0	23.0					0.0	16.3	16.7	7.8	9.2	0.0
Cycle Q Clear(g_c), s	26.0	23.0	23.0					0.0	16.3	16.7	7.8	9.2	0.0
Prop In Lane	0.09		0.13					0.00		0.52	1.00		0.00
Lane Grp Cap(c), veh/h	868	793	852					0	665	641	114	1656	0
V/C Ratio(X)	0.53	0.48	0.48					0.00	0.40	0.40	0.82	0.22	0.00
Avail Cap(c_a), veh/h	868	793	852					0	665	641	296	1656	0
HCM Platoon Ratio	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					0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.3	27.5	27.5					0.0	34.5	34.6	69.4	23.9	0.0
Incr Delay (d2), s/veh	2.3	2.1	1.9					0.0	1.8	1.9	5.4	0.3	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
%ile BackOfQ(50%),veh/ft	2.2	9.9	10.6					0.0	7.4	7.3	3.8	4.0	0.0
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	30.6	29.6	29.5					0.0	36.2	36.5	74.8	24.2	0.0
LnGrp LOS	C	C	C					A	D	D	E	C	A
Approach Vol, veh/h	1242							521		459			
Approach Delay, s/veh	29.9							36.4		34.5			
Approach LOS	C							D		C			
Timer - Assigned Phs	2		4		7		8						
Phs Duration (G+Y+Rc), s	75.1		75.1		13.8		61.3						
Change Period (Y+Rc), s	5.1		5.1		4.1		5.1						
Max Green Setting (Gmax), s	70.0		70.0		25.0		50.0						
Max Q Clear Time (g_c+I1), s	28.0		11.2		9.8		18.7						
Green Ext Time (p_c), s	6.0		1.7		0.0		2.0						
Intersection Summary													
HCM 6th Ctrl Delay	32.4												
HCM 6th LOS	C												

Grand Avenue Vision Project - Phase 1
10: Broadway & 2nd Ave

Existing Conditions
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑									↑		
Traffic Volume (veh/h)	66	1189	17	0	0	0	0	85	22	46	81	0
Future Volume (veh/h)	66	1189	17	0	0	0	0	85	22	46	81	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	73	1307	19				0	93	24	51	89	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	94	1789	27				0	758	196	727	988	0
Arrive On Green	0.35	0.35	0.35				0.00	0.53	0.53	0.53	0.53	0.00
Sat Flow, veh/h	266	5074	76				0	1434	370	1275	1870	0
Grp Volume(v), veh/h	510	425	464				0	0	117	51	89	0
Grp Sat Flow(s),veh/h/ln	1857	1702	1857				0	0	1804	1275	1870	0
Q Serve(g_s), s	18.5	16.3	16.3				0.0	0.0	2.5	1.6	1.8	0.0
Cycle Q Clear(g_c), s	18.5	16.3	16.3				0.0	0.0	2.5	4.1	1.8	0.0
Prop In Lane	0.14		0.04				0.00		0.21	1.00		0.00
Lane Grp Cap(c), veh/h	655	600	655				0	0	953	727	988	0
V/C Ratio(X)	0.78	0.71	0.71				0.00	0.00	0.12	0.07	0.09	0.00
Avail Cap(c_a), veh/h	981	899	981				0	0	953	727	988	0
HCM Platoon Ratio	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				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.9	21.1	21.1				0.0	0.0	9.0	10.0	8.8	0.0
Incr Delay (d2), s/veh	1.1	0.6	0.5				0.0	0.0	0.3	0.2	0.2	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
%ile BackOfQ(50%),veh/ln	7.7	6.2	6.7				0.0	0.0	0.9	0.4	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	21.7	21.7				0.0	0.0	9.3	10.2	9.0	0.0
LnGrp LOS	C	C	C				A	A	A	B	A	A
Approach Vol, veh/h	1399						117			140		
Approach Delay, s/veh	22.2						9.3			9.5		
Approach LOS	C						A			A		
Timer - Assigned Phs	2		4		6							
Phs Duration (G+Y+Rc), s	44.5		31.2		44.5							
Change Period (Y+Rc), s	4.5		4.5		4.5							
Max Green Setting (Gmax), s	40.0		40.0		40.0							
Max Q Clear Time (g_c+I1), s	4.5		20.5		6.1							
Green Ext Time (p_c), s	0.4		6.2		0.8							
Intersection Summary												
HCM 6th Ctrl Delay			20.2									
HCM 6th LOS			C									

Grand Avenue Vision Project - Phase 1
 11: Juniper St & 2nd Ave

Existing Conditions
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↑↑↑							↑		↑		↑	
Traffic Volume (veh/h)	59	1190	86	0	0	0	0	204	114	10	186	0	
Future Volume (veh/h)	59	1190	86	0	0	0	0	204	114	10	186	0	
Initial Q (Qb), veh	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	
Parking Bus, Adj	1.00	1.00	1.00					1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No							No				No	
Adj Sat Flow, veh/h/ln	1870	1870	1870					0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	64	1293	93					0	222	124	11	202	0
Peak Hour Factor	0.92	0.92	0.92					0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2					0	2	2	2	2	0
Cap, veh/h	79	1692	126					0	626	350	535	1039	0
Arrive On Green	0.35	0.35	0.35					0.00	0.56	0.56	0.56	0.56	0.00
Sat Flow, veh/h	223	4788	356					0	1127	630	1035	1870	0
Grp Volume(v), veh/h	534	445	472					0	0	346	11	202	0
Grp Sat Flow(s),veh/h/ln	1859	1702	1806					0	0	1757	1035	1870	0
Q Serve(g_s), s	25.8	22.6	22.6					0.0	0.0	10.8	0.6	5.3	0.0
Cycle Q Clear(g_c), s	25.8	22.6	22.6					0.0	0.0	10.8	11.4	5.3	0.0
Prop In Lane	0.12		0.20					0.00		0.36	1.00		0.00
Lane Grp Cap(c), veh/h	657	601	638					0	0	976	535	1039	0
V/C Ratio(X)	0.81	0.74	0.74					0.00	0.00	0.35	0.02	0.19	0.00
Avail Cap(c_a), veh/h	751	688	730					0	0	976	535	1039	0
HCM Platoon Ratio	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					0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.0	28.0	28.0					0.0	0.0	12.2	15.3	11.0	0.0
Incr Delay (d2), s/veh	6.0	3.7	3.5					0.0	0.0	1.0	0.0	0.1	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
%ile BackOfQ(50%),veh/ft	2.2	9.6	10.1					0.0	0.0	4.4	0.1	2.1	0.0
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	35.1	31.7	31.5					0.0	0.0	13.2	15.3	11.0	0.0
LnGrp LOS	D	C	C					A	A	B	B	B	A
Approach Vol, veh/h	1450							346				213	
Approach Delay, s/veh	32.9							13.2				11.3	
Approach LOS	C							B				B	
Timer - Assigned Phs	2		4						8				
Phs Duration (G+Y+Rc), s	39.5		59.5						59.5				
Change Period (Y+Rc), s	4.5		4.5						4.5				
Max Green Setting (Gmax), s	40.0		55.0						55.0				
Max Q Clear Time (g_c+I1), s	27.8		13.4						12.8				
Green Ext Time (p_c), s	7.2		1.3						2.6				
Intersection Summary													
HCM 6th Ctrl Delay			27.2										
HCM 6th LOS			C										

Grand Avenue Vision Project - Phase 1
1: Escondido Blvd & Grand Ave

Existing with Project
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	150	5	31	189	29	15	297	16	41	302	11
Future Volume (veh/h)	69	150	5	31	189	29	15	297	16	41	302	11
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	161	5	33	203	31	16	319	17	44	325	12
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	873	1302	1103	914	2156	324	191	590	31	191	600	22
Arrive On Green	0.70	0.70	0.70	0.70	0.70	0.70	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1146	1870	1585	1220	3097	466	1043	3432	182	1044	3495	129
Grp Volume(v), veh/h	74	161	5	33	115	119	16	165	171	44	165	172
Grp Sat Flow(s),veh/h/ln	1146	1870	1585	1220	1777	1786	1043	1777	1838	1044	1777	1847
Q Serve(g_s), s	1.6	2.1	0.1	0.7	1.5	1.6	1.0	6.1	6.1	2.9	6.1	6.1
Cycle Q Clear(g_c), s	3.2	2.1	0.1	2.7	1.5	1.6	7.1	6.1	6.1	9.0	6.1	6.1
Prop In Lane	1.00		1.00	1.00		0.26	1.00		0.10	1.00		0.07
Lane Grp Cap(c), veh/h	873	1302	1103	914	1237	1243	191	305	316	191	305	317
V/C Ratio(X)	0.08	0.12	0.00	0.04	0.09	0.10	0.08	0.54	0.54	0.23	0.54	0.54
Avail Cap(c_a), veh/h	873	1302	1103	914	1237	1243	737	1237	1279	738	1237	1286
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	4.1	3.6	3.3	4.1	3.6	3.6	30.4	27.2	27.2	31.3	27.2	27.2
Incr Delay (d2), s/veh	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.6	0.5	0.2	0.6	0.5
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	0.6	0.0	0.1	0.4	0.4	0.2	2.5	2.6	0.7	2.5	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.3	3.8	3.3	4.1	3.6	3.6	30.5	27.7	27.7	31.5	27.7	27.7
LnGrp LOS	A	A	A	A	A	A	C	C	C	C	C	C
Approach Vol, veh/h		240			267			352			381	
Approach Delay, s/veh		4.0			3.6			27.8			28.2	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		17.3		54.5		17.3				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		50.0		50.0		50.0				
Max Q Clear Time (g_c+I1), s		5.2		11.0		4.7		9.1				
Green Ext Time (p_c), s		0.8		1.3		1.0		1.3				
Intersection Summary												
HCM 6th Ctrl Delay				18.1								
HCM 6th LOS				B								

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	176	18	47	210	7	19	7	14	0	0	0
Future Vol, veh/h	16	176	18	47	210	7	19	7	14	0	0	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	198	20	53	236	8	21	8	16	0	0	0
Number of Lanes	1	1	0	1	1	0	0	1	0	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	9.4	9.7	8.4
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	47%	100%	0%	100%	0%
Vol Thru, %	18%	0%	91%	0%	97%
Vol Right, %	35%	0%	9%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	40	16	194	47	217
LT Vol	19	16	0	47	0
Through Vol	7	0	176	0	210
RT Vol	14	0	18	0	7
Lane Flow Rate	45	18	218	53	244
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.063	0.027	0.292	0.078	0.327
Departure Headway (Hd)	5.037	5.39	4.823	5.348	4.824
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	712	666	748	674	751
Service Time	3.063	3.107	2.54	3.048	2.524
HCM Lane V/C Ratio	0.063	0.027	0.291	0.079	0.325
HCM Control Delay	8.4	8.3	9.5	8.5	9.9
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.2	0.1	1.2	0.3	1.4

Grand Avenue Vision Project - Phase 1
3: Broadway/S. Brodaway & Grand Ave

Existing with Project
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	128	5	9	227	46	9	162	10	97	151	48
Future Volume (veh/h)	54	128	5	9	227	46	9	162	10	97	151	48
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	56	132	5	9	234	47	9	167	10	100	156	49
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	748	1149	44	883	970	195	248	374	22	273	292	92
Arrive On Green	0.64	0.64	0.64	0.64	0.64	0.64	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1098	1790	68	1252	1512	304	1177	1747	105	1207	1365	429
Grp Volume(v), veh/h	56	0	137	9	0	281	9	0	177	100	0	205
Grp Sat Flow(s),veh/h/ln	1098	0	1858	1252	0	1816	1177	0	1852	1207	0	1793
Q Serve(g_s), s	1.4	0.0	1.8	0.2	0.0	4.1	0.4	0.0	5.2	4.9	0.0	6.3
Cycle Q Clear(g_c), s	5.5	0.0	1.8	2.0	0.0	4.1	6.8	0.0	5.2	10.1	0.0	6.3
Prop In Lane	1.00		0.04	1.00		0.17	1.00		0.06	1.00		0.24
Lane Grp Cap(c), veh/h	748	0	1192	883	0	1165	248	0	396	273	0	384
V/C Ratio(X)	0.07	0.00	0.11	0.01	0.00	0.24	0.04	0.00	0.45	0.37	0.00	0.53
Avail Cap(c_a), veh/h	748	0	1192	883	0	1165	751	0	1188	790	0	1151
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(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.9	0.0	4.3	4.7	0.0	4.7	24.7	0.0	21.3	25.7	0.0	21.7
Incr Delay (d2), s/veh	0.2	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.6	0.6	0.0	0.9
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	0.6	0.0	0.0	1.1	0.1	0.0	2.2	1.4	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.1	0.0	4.5	4.7	0.0	4.8	24.8	0.0	21.9	26.3	0.0	22.6
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	A	C
Approach Vol, veh/h		193			290			186			305	
Approach Delay, s/veh		5.0			4.8			22.0			23.8	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		44.5		17.8		44.5		17.8				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		40.0		40.0		40.0		40.0				
Max Q Clear Time (g_c+I1), s		7.5		12.1		6.1		8.8				
Green Ext Time (p_c), s		0.8		1.3		1.5		0.9				
Intersection Summary												
HCM 6th Ctrl Delay				14.1								
HCM 6th LOS				B								

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	192	24	21	276	13	11	33	6	5	40	5
Future Vol, veh/h	10	192	24	21	276	13	11	33	6	5	40	5
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	226	28	25	325	15	13	39	7	6	47	6
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	10.6	12.1	9.1	9.1
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	22%	100%	0%	100%	0%	10%
Vol Thru, %	66%	0%	89%	0%	96%	80%
Vol Right, %	12%	0%	11%	0%	4%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	50	10	216	21	289	50
LT Vol	11	10	0	21	0	5
Through Vol	33	0	192	0	276	40
RT Vol	6	0	24	0	13	5
Lane Flow Rate	59	12	254	25	340	59
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.09	0.019	0.36	0.038	0.477	0.09
Departure Headway (Hd)	5.506	5.681	5.1	5.59	5.055	5.494
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	646	628	701	638	711	647
Service Time	3.581	3.436	2.854	3.342	2.807	3.569
HCM Lane V/C Ratio	0.091	0.019	0.362	0.039	0.478	0.091
HCM Control Delay	9.1	8.5	10.7	8.6	12.4	9.1
HCM Lane LOS	A	A	B	A	B	A
HCM 95th-tile Q	0.3	0.1	1.6	0.1	2.6	0.3

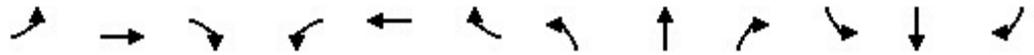
Grand Avenue Vision Project - Phase 1
5: Juniper St & Grand Ave

Existing with Project
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	150	23	95	250	33	36	193	30	9	125	8
Future Volume (veh/h)	16	150	23	95	250	33	36	193	30	9	125	8
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	20	183	28	116	305	40	44	235	37	11	152	10
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	160	669	101	289	404	342	861	1039	164	758	1143	75
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.66	0.66	0.66	0.66	0.66	0.66
Sat Flow, veh/h	1036	3097	466	1171	1870	1585	1224	1577	248	1107	1736	114
Grp Volume(v), veh/h	20	104	107	116	305	40	44	0	272	11	0	162
Grp Sat Flow(s),veh/h/ln	1036	1777	1786	1171	1870	1585	1224	0	1826	1107	0	1850
Q Serve(g_s), s	1.4	3.7	3.8	7.0	11.6	1.5	1.1	0.0	4.5	0.3	0.0	2.5
Cycle Q Clear(g_c), s	13.0	3.7	3.8	10.8	11.6	1.5	3.5	0.0	4.5	4.8	0.0	2.5
Prop In Lane	1.00		0.26	1.00		1.00	1.00		0.14	1.00		0.06
Lane Grp Cap(c), veh/h	160	384	386	289	404	342	861	0	1203	758	0	1219
V/C Ratio(X)	0.12	0.27	0.28	0.40	0.75	0.12	0.05	0.00	0.23	0.01	0.00	0.13
Avail Cap(c_a), veh/h	755	1405	1412	962	1479	1253	861	0	1203	758	0	1219
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.0	24.8	24.8	29.3	27.9	23.9	5.5	0.0	5.2	6.2	0.0	4.8
Incr Delay (d2), s/veh	0.3	0.4	0.4	0.9	2.9	0.2	0.1	0.0	0.4	0.0	0.0	0.2
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	0.4	1.5	1.6	2.0	5.3	0.6	0.3	0.0	1.6	0.1	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.3	25.1	25.2	30.2	30.8	24.1	5.6	0.0	5.6	6.2	0.0	5.1
LnGrp LOS	C	C	C	C	C	C	A	A	A	A	A	A
Approach Vol, veh/h		231			461			316				173
Approach Delay, s/veh		26.0			30.0			5.6				5.1
Approach LOS		C			C			A				A
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		21.4		54.5		21.4				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		60.0		50.0		60.0				
Max Q Clear Time (g_c+I1), s		6.5		15.0		6.8		13.6				
Green Ext Time (p_c), s		2.1		1.4		1.1		2.6				
Intersection Summary												
HCM 6th Ctrl Delay				19.1								
HCM 6th LOS				B								

Grand Avenue Vision Project - Phase 1
6: Escondido Blvd & Valley Pkwy

Existing with Project
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					4111		7	↑↑			↑↑	
Traffic Volume (veh/h)	0	0	0	41	989	45	28	144	0	0	239	75
Future Volume (veh/h)	0	0	0	41	989	45	28	144	0	0	239	75
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				49	1177	54	33	171	0	0	285	89
Peak Hour Factor				0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				125	3224	151	98	1508	0	0	907	278
Arrive On Green				0.51	0.51	0.51	0.06	0.42	0.00	0.00	0.34	0.34
Sat Flow, veh/h				247	6347	298	1781	3647	0	0	2773	820
Grp Volume(v), veh/h				369	581	329	33	171	0	0	187	187
Grp Sat Flow(s),veh/h/ln				1858	1609	1817	1781	1777	0	0	1777	1723
Q Serve(g_s), s				18.0	16.0	16.1	2.6	4.3	0.0	0.0	11.5	11.9
Cycle Q Clear(g_c), s				18.0	16.0	16.1	2.6	4.3	0.0	0.0	11.5	11.9
Prop In Lane				0.13		0.16	1.00		0.00	0.00		0.48
Lane Grp Cap(c), veh/h				944	1634	923	98	1508	0	0	602	583
V/C Ratio(X)				0.39	0.36	0.36	0.34	0.11	0.00	0.00	0.31	0.32
Avail Cap(c_a), veh/h				944	1634	923	302	1805	0	0	602	583
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.3	21.8	21.8	67.1	25.7	0.0	0.0	36.1	36.2
Incr Delay (d2), s/veh				1.2	0.6	1.1	0.7	0.0	0.0	0.0	1.3	1.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.3	6.3	7.2	1.2	1.9	0.0	0.0	5.2	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				23.5	22.4	22.9	67.9	25.7	0.0	0.0	37.4	37.7
LnGrp LOS				C	C	C	E	C	A	A	D	D
Approach Vol, veh/h					1280			204			374	
Approach Delay, s/veh					22.9			32.5			37.6	
Approach LOS					C			C			D	
Timer - Assigned Phs				3	4	6	8					
Phs Duration (G+Y+Rc), s				12.7	55.0	80.0	67.7					
Change Period (Y+Rc), s				4.5	5.0	5.0	5.0					
Max Green Setting (Gmax), s				25.0	50.0	75.0	75.0					
Max Q Clear Time (g_c+I1), s				4.6	13.9	20.0	6.3					
Green Ext Time (p_c), s				0.0	1.4	6.7	0.8					
Intersection Summary												
HCM 6th Ctrl Delay				26.9								
HCM 6th LOS				C								

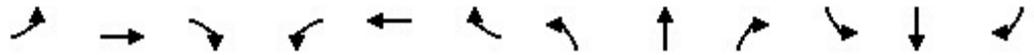
Grand Avenue Vision Project - Phase 1
7: S. Brodaway & Valley Pkwy

Existing with Project
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  			 			 	
Traffic Volume (veh/h)	0	0	0	12	944	56	42	61	0	0	214	176
Future Volume (veh/h)	0	0	0	12	944	56	42	61	0	0	214	176
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				14	1098	65	49	71	0	0	249	205
Peak Hour Factor				0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				20	1658	505	577	1938	0	0	1938	864
Arrive On Green				0.32	0.32	0.32	0.55	0.55	0.00	0.00	0.55	0.55
Sat Flow, veh/h				63	5209	1585	937	3647	0	0	3647	1585
Grp Volume(v), veh/h				418	694	65	49	71	0	0	249	205
Grp Sat Flow(s),veh/h/ln				1867	1702	1585	937	1777	0	0	1777	1585
Q Serve(g_s), s				14.4	12.8	2.1	2.0	0.7	0.0	0.0	2.5	5.0
Cycle Q Clear(g_c), s				14.4	12.8	2.1	4.5	0.7	0.0	0.0	2.5	5.0
Prop In Lane				0.03		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				594	1083	505	577	1938	0	0	1938	864
V/C Ratio(X)				0.70	0.64	0.13	0.08	0.04	0.00	0.00	0.13	0.24
Avail Cap(c_a), veh/h				1018	1856	864	577	1938	0	0	1938	864
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.0	21.4	17.8	9.2	7.7	0.0	0.0	8.2	8.7
Incr Delay (d2), s/veh				1.1	0.5	0.1	0.3	0.0	0.0	0.0	0.1	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
%ile BackOfQ(50%),veh/ln				6.1	4.9	0.8	0.4	0.2	0.0	0.0	0.9	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				23.1	21.9	17.9	9.5	7.8	0.0	0.0	8.3	9.4
LnGrp LOS				C	C	B	A	A	A	A	A	A
Approach Vol, veh/h					1177			120			454	
Approach Delay, s/veh					22.1			8.5			8.8	
Approach LOS					C			A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		45.0				45.0		28.3				
Change Period (Y+Rc), s		* 5				5.0		5.0				
Max Green Setting (Gmax), s		* 40				40.0		40.0				
Max Q Clear Time (g_c+I1), s		6.5				7.0		16.4				
Green Ext Time (p_c), s		0.8				1.9		6.9				
Intersection Summary												
HCM 6th Ctrl Delay					17.7							
HCM 6th LOS					B							
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Grand Avenue Vision Project - Phase 1
8: Juniper St & Valley Pkwy

Existing with Project
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					←↑↑↑		↑	↑			↑	
Traffic Volume (veh/h)	0	0	0	31	1387	1	119	107	0	0	112	105
Future Volume (veh/h)	0	0	0	31	1387	1	119	107	0	0	112	105
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				34	1508	1	129	116	0	0	122	114
Peak Hour Factor				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	0	0	2	2
Cap, veh/h				50	2364	2	488	831	0	0	395	369
Arrive On Green				0.44	0.44	0.44	0.44	0.44	0.00	0.00	0.44	0.44
Sat Flow, veh/h				113	5320	4	1144	1870	0	0	890	831
Grp Volume(v), veh/h				563	467	513	129	116	0	0	0	236
Grp Sat Flow(s),veh/h/ln				1865	1702	1870	1144	1870	0	0	0	1721
Q Serve(g_s), s				21.6	18.9	18.9	7.4	3.3	0.0	0.0	0.0	7.9
Cycle Q Clear(g_c), s				21.6	18.9	18.9	15.3	3.3	0.0	0.0	0.0	7.9
Prop In Lane				0.06		0.00	1.00		0.00	0.00		0.48
Lane Grp Cap(c), veh/h				829	756	831	488	831	0	0	0	765
V/C Ratio(X)				0.68	0.62	0.62	0.26	0.14	0.00	0.00	0.00	0.31
Avail Cap(c_a), veh/h				829	756	831	488	831	0	0	0	765
HCM Platoon Ratio				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	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				19.9	19.1	19.1	21.0	14.8	0.0	0.0	0.0	16.1
Incr Delay (d2), s/veh				4.5	3.8	3.4	1.3	0.4	0.0	0.0	0.0	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
%ile BackOfQ(50%),veh/ln				9.9	7.9	8.6	2.1	1.4	0.0	0.0	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				24.3	22.9	22.6	22.3	15.2	0.0	0.0	0.0	17.1
LnGrp LOS				C	C	C	C	B	A	A	A	B
Approach Vol, veh/h					1543			245			236	
Approach Delay, s/veh					23.3			18.9			17.1	
Approach LOS					C			B			B	
Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				45.0		45.0		45.0				
Change Period (Y+Rc), s				* 5		5.0		5.0				
Max Green Setting (Gmax), s				* 40		40.0		40.0				
Max Q Clear Time (g_c+I1), s				9.9		23.6		17.3				
Green Ext Time (p_c), s				1.6		9.3		1.1				
Intersection Summary												
HCM 6th Ctrl Delay				22.1								
HCM 6th LOS				C								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Grand Avenue Vision Project - Phase 1
 9: Escondido Blvd & 2nd Ave

Existing with Project
 Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  		  	  	
Traffic Volume (veh/h)	13	532	31	0	0	0	0	146	51	40	239	0
Future Volume (veh/h)	13	532	31	0	0	0	0	146	51	40	239	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	16	641	37				0	176	61	48	288	0
Peak Hour Factor	0.83	0.83	0.83				0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	55	2317	138				0	1041	349	72	1656	0
Arrive On Green	0.47	0.47	0.47				0.00	0.40	0.40	0.04	0.47	0.00
Sat Flow, veh/h	117	4971	295				0	2707	876	1781	3647	0
Grp Volume(v), veh/h	255	212	228				0	118	119	48	288	0
Grp Sat Flow(s),veh/h/ln	1865	1702	1817				0	1777	1713	1781	1777	0
Q Serve(g_s), s	12.7	11.4	11.5				0.0	6.4	6.8	4.0	7.1	0.0
Cycle Q Clear(g_c), s	12.7	11.4	11.5				0.0	6.4	6.8	4.0	7.1	0.0
Prop In Lane	0.06		0.16				0.00		0.51	1.00		0.00
Lane Grp Cap(c), veh/h	869	793	847				0	708	682	72	1656	0
V/C Ratio(X)	0.29	0.27	0.27				0.00	0.17	0.17	0.67	0.17	0.00
Avail Cap(c_a), veh/h	869	793	847				0	708	682	296	1656	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.8	24.5	24.5				0.0	29.1	29.2	71.1	23.3	0.0
Incr Delay (d2), s/veh	0.9	0.8	0.8				0.0	0.5	0.6	3.9	0.2	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
%ile BackOfQ(50%),veh/ln	5.9	4.9	5.2				0.0	2.9	2.9	1.9	3.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.7	25.3	25.3				0.0	29.6	29.8	75.0	23.5	0.0
LnGrp LOS	C	C	C				A	C	C	E	C	A
Approach Vol, veh/h		694						237			336	
Approach Delay, s/veh		25.4						29.7			30.9	
Approach LOS		C						C			C	
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		75.1		75.1			10.2	64.9				
Change Period (Y+Rc), s		5.1		5.1			4.1	5.1				
Max Green Setting (Gmax), s		70.0		70.0			25.0	50.0				
Max Q Clear Time (g_c+l1), s		14.7		9.1			6.0	8.8				
Green Ext Time (p_c), s		2.9		1.3			0.0	0.9				
Intersection Summary												
HCM 6th Ctrl Delay				27.7								
HCM 6th LOS				C								

Grand Avenue Vision Project - Phase 1
10: Broadway & 2nd Ave

Existing with Project
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 		 		
Traffic Volume (veh/h)	36	562	14	0	0	0	0	58	8	39	61	0
Future Volume (veh/h)	36	562	14	0	0	0	0	58	8	39	61	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	44	685	17				0	71	10	48	74	0
Peak Hour Factor	0.82	0.82	0.82				0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	65	1074	27				0	1027	145	937	1197	0
Arrive On Green	0.22	0.22	0.22				0.00	0.64	0.64	0.64	0.64	0.00
Sat Flow, veh/h	300	4978	127				0	1604	226	1317	1870	0
Grp Volume(v), veh/h	272	227	247				0	0	81	48	74	0
Grp Sat Flow(s),veh/h/ln	1855	1702	1847				0	0	1830	1317	1870	0
Q Serve(g_s), s	8.4	7.5	7.6				0.0	0.0	1.0	0.9	0.9	0.0
Cycle Q Clear(g_c), s	8.4	7.5	7.6				0.0	0.0	1.0	1.9	0.9	0.0
Prop In Lane	0.16		0.07				0.00		0.12	1.00		0.00
Lane Grp Cap(c), veh/h	400	367	399				0	0	1171	937	1197	0
V/C Ratio(X)	0.68	0.62	0.62				0.00	0.00	0.07	0.05	0.06	0.00
Avail Cap(c_a), veh/h	1188	1090	1183				0	0	1171	937	1197	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.5	22.2	22.2				0.0	0.0	4.2	4.6	4.2	0.0
Incr Delay (d2), s/veh	0.8	0.6	0.6				0.0	0.0	0.1	0.1	0.1	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
%ile BackOfQ(50%),veh/ln	3.5	2.9	3.1				0.0	0.0	0.3	0.2	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	22.8	22.8				0.0	0.0	4.3	4.7	4.3	0.0
LnGrp LOS	C	C	C				A	A	A	A	A	A
Approach Vol, veh/h		746						81			122	
Approach Delay, s/veh		23.0						4.3			4.5	
Approach LOS		C						A			A	
Timer - Assigned Phs		2		4				6				
Phs Duration (G+Y+Rc), s		44.5		18.0				44.5				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		40.0		40.0				40.0				
Max Q Clear Time (g_c+l1), s		3.0		10.4				3.9				
Green Ext Time (p_c), s		0.3		3.1				0.7				
Intersection Summary												
HCM 6th Ctrl Delay				19.0								
HCM 6th LOS				B								

Grand Avenue Vision Project - Phase 1
 11: Juniper St & 2nd Ave

Existing with Project
 Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	732	68	0	0	0	0	243	105	11	224	0
Future Volume (veh/h)	56	732	68	0	0	0	0	243	105	11	224	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	61	796	74				0	264	114	12	243	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	86	1198	115				0	786	340	621	1187	0
Arrive On Green	0.26	0.26	0.26				0.00	0.63	0.63	0.63	0.63	0.00
Sat Flow, veh/h	330	4579	438				0	1239	535	1005	1870	0
Grp Volume(v), veh/h	343	286	303				0	0	378	12	243	0
Grp Sat Flow(s),veh/h/ln	1854	1702	1791				0	0	1774	1005	1870	0
Q Serve(g_s), s	14.5	12.9	13.0				0.0	0.0	8.6	0.5	4.7	0.0
Cycle Q Clear(g_c), s	14.5	12.9	13.0				0.0	0.0	8.6	9.1	4.7	0.0
Prop In Lane	0.18		0.24				0.00		0.30	1.00		0.00
Lane Grp Cap(c), veh/h	485	445	469				0	0	1126	621	1187	0
V/C Ratio(X)	0.71	0.64	0.65				0.00	0.00	0.34	0.02	0.20	0.00
Avail Cap(c_a), veh/h	856	786	827				0	0	1126	621	1187	0
HCM Platoon Ratio	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				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.0	28.4	28.4				0.0	0.0	7.4	9.5	6.7	0.0
Incr Delay (d2), s/veh	1.9	1.6	1.5				0.0	0.0	0.8	0.0	0.1	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
%ile BackOfQ(50%),veh/ln	6.5	5.3	5.6				0.0	0.0	3.2	0.1	1.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.9	30.0	29.9				0.0	0.0	8.2	9.5	6.7	0.0
LnGrp LOS	C	C	C				A	A	A	A	A	A
Approach Vol, veh/h		931						378			255	
Approach Delay, s/veh		30.3						8.2			6.9	
Approach LOS		C						A			A	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		27.2		59.5				59.5				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		40.0		55.0				55.0				
Max Q Clear Time (g_c+I1), s		16.5		11.1				10.6				
Green Ext Time (p_c), s		6.2		1.6				2.9				
Intersection Summary												
HCM 6th Ctrl Delay			21.1									
HCM 6th LOS			C									

Grand Avenue Vision Project - Phase 1
1: Escondido Blvd & Grand Ave

Existing with Project
Timing Plan: PM PEAK

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	279	25	57	280	58	38	419	34	83	439	22
Future Volume (veh/h)	79	279	25	57	280	58	38	419	34	83	439	22
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	82	291	26	59	292	60	40	436	35	86	457	23
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	694	1174	995	685	1848	374	217	843	67	219	871	44
Arrive On Green	0.63	0.63	0.63	0.63	0.63	0.63	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1029	1870	1585	1063	2944	596	915	3333	267	922	3443	173
Grp Volume(v), veh/h	82	291	26	59	175	177	40	232	239	86	235	245
Grp Sat Flow(s),veh/h/ln	1029	1870	1585	1063	1777	1763	915	1777	1822	922	1777	1839
Q Serve(g_s), s	2.9	5.5	0.5	2.1	3.2	3.3	3.1	8.9	9.0	7.0	9.1	9.1
Cycle Q Clear(g_c), s	6.2	5.5	0.5	7.5	3.2	3.3	12.3	8.9	9.0	16.0	9.1	9.1
Prop In Lane	1.00		1.00	1.00		0.34	1.00		0.15	1.00		0.09
Lane Grp Cap(c), veh/h	694	1174	995	685	1116	1107	217	449	461	219	449	465
V/C Ratio(X)	0.12	0.25	0.03	0.09	0.16	0.16	0.18	0.52	0.52	0.39	0.52	0.53
Avail Cap(c_a), veh/h	694	1174	995	685	1116	1107	560	1116	1144	565	1116	1155
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	7.4	6.5	5.6	8.2	6.1	6.1	30.9	25.6	25.6	32.5	25.6	25.6
Incr Delay (d2), s/veh	0.3	0.5	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.4	0.4	0.3
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	2.0	0.2	0.4	1.0	1.1	0.7	3.6	3.7	1.5	3.7	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.8	7.0	5.7	8.2	6.1	6.2	31.1	25.9	25.9	32.9	26.0	26.0
LnGrp LOS	A	A	A	A	A	A	C	C	C	C	C	C
Approach Vol, veh/h		399			411			511			566	
Approach Delay, s/veh		7.1			6.4			26.3			27.0	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		25.1		54.5		25.1				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		50.0		50.0		50.0				
Max Q Clear Time (g_c+I1), s		8.2		18.0		9.5		14.3				
Green Ext Time (p_c), s		1.4		2.1		1.6		1.9				
Intersection Summary												
HCM 6th Ctrl Delay				18.1								
HCM 6th LOS				B								

Intersection	
Intersection Delay, s/veh	14.5
Intersection LOS	B

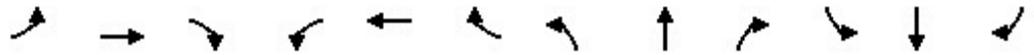
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↷				
Traffic Vol, veh/h	17	374	9	17	331	11	43	3	23	0	0	0
Future Vol, veh/h	17	374	9	17	331	11	43	3	23	0	0	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	430	10	20	380	13	49	3	26	0	0	0
Number of Lanes	1	1	0	1	1	0	0	1	0	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	15.7	14	9.8
HCM LOS	C	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	62%	100%	0%	100%	0%
Vol Thru, %	4%	0%	98%	0%	97%
Vol Right, %	33%	0%	2%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	69	17	383	17	342
LT Vol	43	17	0	17	0
Through Vol	3	0	374	0	331
RT Vol	23	0	9	0	11
Lane Flow Rate	79	20	440	20	393
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.129	0.03	0.623	0.031	0.56
Departure Headway (Hd)	5.86	5.617	5.098	5.656	5.13
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	607	635	704	631	700
Service Time	3.942	3.369	2.849	3.409	2.882
HCM Lane V/C Ratio	0.13	0.031	0.625	0.032	0.561
HCM Control Delay	9.8	8.5	16	8.6	14.3
HCM Lane LOS	A	A	C	A	B
HCM 95th-tile Q	0.4	0.1	4.4	0.1	3.5

Grand Avenue Vision Project - Phase 1
3: Broadway/S. Brodaway & Grand Ave

Existing with Project
Timing Plan: PM PEAK



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	93	281	16	14	292	51	18	225	15	99	136	46
Future Volume (veh/h)	93	281	16	14	292	51	18	225	15	99	136	46
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	97	293	17	15	304	53	19	234	16	103	142	48
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	638	1068	62	679	947	165	305	437	30	263	338	114
Arrive On Green	0.61	0.61	0.61	0.61	0.61	0.61	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1024	1751	102	1069	1551	270	1193	1731	118	1130	1337	452
Grp Volume(v), veh/h	97	0	310	15	0	357	19	0	250	103	0	190
Grp Sat Flow(s),veh/h/ln	1024	0	1852	1069	0	1822	1193	0	1849	1130	0	1789
Q Serve(g_s), s	3.3	0.0	5.1	0.4	0.0	6.2	0.9	0.0	7.7	5.7	0.0	5.8
Cycle Q Clear(g_c), s	9.6	0.0	5.1	5.6	0.0	6.2	6.7	0.0	7.7	13.3	0.0	5.8
Prop In Lane	1.00		0.05	1.00		0.15	1.00		0.06	1.00		0.25
Lane Grp Cap(c), veh/h	638	0	1130	679	0	1112	305	0	467	263	0	452
V/C Ratio(X)	0.15	0.00	0.27	0.02	0.00	0.32	0.06	0.00	0.54	0.39	0.00	0.42
Avail Cap(c_a), veh/h	638	0	1130	679	0	1112	732	0	1128	667	0	1092
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(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.5	0.0	6.0	7.3	0.0	6.2	23.3	0.0	21.2	26.9	0.0	20.5
Incr Delay (d2), s/veh	0.5	0.0	0.6	0.0	0.0	0.1	0.1	0.0	0.7	0.7	0.0	0.5
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	0.7	0.0	1.8	0.1	0.0	1.9	0.2	0.0	3.2	1.5	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	0.0	6.6	7.3	0.0	6.3	23.4	0.0	21.9	27.6	0.0	21.0
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	A	C
Approach Vol, veh/h		407			372			269			293	
Approach Delay, s/veh		7.2			6.4			22.0			23.3	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		44.5		21.1		44.5		21.1				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		40.0		40.0		40.0		40.0				
Max Q Clear Time (g_c+I1), s		11.6		15.3		8.2		9.7				
Green Ext Time (p_c), s		1.9		1.2		2.0		1.3				
Intersection Summary												
HCM 6th Ctrl Delay				13.4								
HCM 6th LOS				B								

Intersection	
Intersection Delay, s/veh	14.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Traffic Vol, veh/h	38	336	21	27	320	22	29	44	8	16	26	14
Future Vol, veh/h	38	336	21	27	320	22	29	44	8	16	26	14
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	369	23	30	352	24	32	48	9	18	29	15
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	15.2	14.7	10.3	9.9
HCM LOS	C	B	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	36%	100%	0%	100%	0%	29%
Vol Thru, %	54%	0%	94%	0%	94%	46%
Vol Right, %	10%	0%	6%	0%	6%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	81	38	357	27	342	56
LT Vol	29	38	0	27	0	16
Through Vol	44	0	336	0	320	26
RT Vol	8	0	21	0	22	14
Lane Flow Rate	89	42	392	30	376	62
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.153	0.069	0.593	0.049	0.571	0.105
Departure Headway (Hd)	6.181	5.985	5.438	6.003	5.466	6.153
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	579	601	667	598	661	582
Service Time	4.224	3.694	3.147	3.727	3.177	4.2
HCM Lane V/C Ratio	0.154	0.07	0.588	0.05	0.569	0.107
HCM Control Delay	10.3	9.1	15.8	9	15.2	9.9
HCM Lane LOS	B	A	C	A	C	A
HCM 95th-tile Q	0.5	0.2	3.9	0.2	3.6	0.4

Grand Avenue Vision Project - Phase 1
5: Juniper St & Grand Ave

Existing with Project
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	300	31	100	302	34	51	189	26	19	100	15
Future Volume (veh/h)	21	300	31	100	302	34	51	189	26	19	100	15
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	23	323	33	108	325	37	55	203	28	20	108	16
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	242	564	478	244	564	478	790	944	130	691	934	138
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.59	0.59	0.59	0.59	0.59	0.59
Sat Flow, veh/h	1020	1870	1585	1025	1870	1585	1267	1609	222	1149	1592	236
Grp Volume(v), veh/h	23	323	33	108	325	37	55	0	231	20	0	124
Grp Sat Flow(s),veh/h/ln	1020	1870	1585	1025	1870	1585	1267	0	1830	1149	0	1828
Q Serve(g_s), s	1.7	12.4	1.3	8.5	12.5	1.4	1.7	0.0	5.1	0.7	0.0	2.6
Cycle Q Clear(g_c), s	14.2	12.4	1.3	20.9	12.5	1.4	4.3	0.0	5.1	5.8	0.0	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		0.13
Lane Grp Cap(c), veh/h	242	564	478	244	564	478	790	0	1074	691	0	1073
V/C Ratio(X)	0.09	0.57	0.07	0.44	0.58	0.08	0.07	0.00	0.22	0.03	0.00	0.12
Avail Cap(c_a), veh/h	653	1317	1116	657	1317	1116	790	0	1074	691	0	1073
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.1	25.1	21.2	33.9	25.1	21.3	8.7	0.0	8.3	9.7	0.0	7.8
Incr Delay (d2), s/veh	0.2	0.9	0.1	1.3	0.9	0.1	0.2	0.0	0.5	0.1	0.0	0.2
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	0.4	5.5	0.5	2.1	5.5	0.5	0.5	0.0	2.0	0.2	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.3	26.0	21.3	35.2	26.1	21.3	8.9	0.0	8.8	9.8	0.0	8.0
LnGrp LOS	C	C	C	D	C	C	A	A	A	A	A	A
Approach Vol, veh/h		379			470			286			144	
Approach Delay, s/veh		25.9			27.8			8.8			8.3	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		30.7		54.5		30.7				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		60.0		50.0		60.0				
Max Q Clear Time (g_c+I1), s		7.1		16.2		7.8		22.9				
Green Ext Time (p_c), s		1.8		2.4		0.9		2.8				
Intersection Summary												
HCM 6th Ctrl Delay				20.8								
HCM 6th LOS				C								

Grand Avenue Vision Project - Phase 1
6: Escondido Blvd & Valley Pkwy

Existing with Project
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	80	940	69	50	412	0	0	331	129
Future Volume (veh/h)	0	0	0	80	940	69	50	412	0	0	331	129
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				87	1022	75	54	448	0	0	360	140
Peak Hour Factor				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	0	0	2	2
Cap, veh/h				236	2983	223	117	1531	0	0	841	322
Arrive On Green				0.50	0.50	0.50	0.07	0.43	0.00	0.00	0.33	0.33
Sat Flow, veh/h				471	5940	444	1781	3647	0	0	2606	962
Grp Volume(v), veh/h				341	540	303	54	448	0	0	253	247
Grp Sat Flow(s),veh/h/ln				1847	1609	1790	1781	1777	0	0	1777	1697
Q Serve(g_s), s				16.9	15.0	15.1	4.4	12.3	0.0	0.0	16.5	16.9
Cycle Q Clear(g_c), s				16.9	15.0	15.1	4.4	12.3	0.0	0.0	16.5	16.9
Prop In Lane				0.25		0.25	1.00		0.00	0.00		0.57
Lane Grp Cap(c), veh/h				928	1616	899	117	1531	0	0	595	568
V/C Ratio(X)				0.37	0.33	0.34	0.46	0.29	0.00	0.00	0.43	0.43
Avail Cap(c_a), veh/h				928	1616	899	298	1785	0	0	595	568
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.7	22.2	22.3	67.2	27.7	0.0	0.0	38.5	38.7
Incr Delay (d2), s/veh				1.1	0.6	1.0	1.0	0.0	0.0	0.0	2.2	2.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.7	5.9	6.7	2.0	5.3	0.0	0.0	7.6	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				23.8	22.8	23.3	68.2	27.7	0.0	0.0	40.7	41.1
LnGrp LOS				C	C	C	E	C	A	A	D	D
Approach Vol, veh/h					1184			502			500	
Approach Delay, s/veh					23.2			32.1			40.9	
Approach LOS					C			C			D	
Timer - Assigned Phs				3	4	6	8					
Phs Duration (G+Y+Rc), s				14.3	55.0	80.0	69.3					
Change Period (Y+Rc), s				4.5	5.0	5.0	5.0					
Max Green Setting (Gmax), s				25.0	50.0	75.0	75.0					
Max Q Clear Time (g_c+I1), s				6.4	18.9	18.9	14.3					
Green Ext Time (p_c), s				0.0	1.9	6.0	2.2					
Intersection Summary												
HCM 6th Ctrl Delay				29.3								
HCM 6th LOS				C								

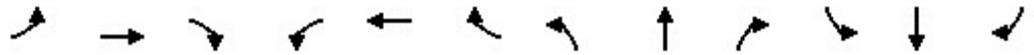
Grand Avenue Vision Project - Phase 1
7: S. Brodaway & Valley Pkwy

Existing with Project
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  			 			 	
Traffic Volume (veh/h)	0	0	0	20	872	107	64	180	0	0	212	120
Future Volume (veh/h)	0	0	0	20	872	107	64	180	0	0	212	120
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No				No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				22	938	115	69	194	0	0	228	129
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				33	1478	454	657	2028	0	0	2028	905
Arrive On Green				0.29	0.29	0.29	0.57	0.57	0.00	0.00	0.57	0.57
Sat Flow, veh/h				114	5155	1585	1024	3647	0	0	3647	1585
Grp Volume(v), veh/h				361	599	115	69	194	0	0	228	129
Grp Sat Flow(s),veh/h/ln				1865	1702	1585	1024	1777	0	0	1777	1585
Q Serve(g_s), s				12.0	10.7	3.9	2.3	1.7	0.0	0.0	2.1	2.7
Cycle Q Clear(g_c), s				12.0	10.7	3.9	4.4	1.7	0.0	0.0	2.1	2.7
Prop In Lane				0.06		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				534	976	454	657	2028	0	0	2028	905
V/C Ratio(X)				0.68	0.61	0.25	0.10	0.10	0.00	0.00	0.11	0.14
Avail Cap(c_a), veh/h				1064	1943	905	657	2028	0	0	2028	905
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.1	21.6	19.2	7.9	6.8	0.0	0.0	6.9	7.0
Incr Delay (d2), s/veh				1.1	0.5	0.2	0.3	0.1	0.0	0.0	0.1	0.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.1	4.1	1.4	0.5	0.6	0.0	0.0	0.7	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				23.2	22.1	19.4	8.2	6.9	0.0	0.0	7.0	7.4
LnGrp LOS				C	C	B	A	A	A	A	A	A
Approach Vol, veh/h					1075			263			357	
Approach Delay, s/veh					22.2			7.3			7.1	
Approach LOS					C			A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		45.0				45.0		25.1				
Change Period (Y+Rc), s		* 5				5.0		5.0				
Max Green Setting (Gmax), s		* 40				40.0		40.0				
Max Q Clear Time (g_c+I1), s		6.4				4.7		14.0				
Green Ext Time (p_c), s		2.0				1.6		6.1				
Intersection Summary												
HCM 6th Ctrl Delay					16.7							
HCM 6th LOS					B							
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Grand Avenue Vision Project - Phase 1
8: Juniper St & Valley Pkwy

Existing with Project
Timing Plan: PM PEAK



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					←↑↑↑		↑	↑			↑	
Traffic Volume (veh/h)	0	0	0	27	977	5	156	112	0	0	76	43
Future Volume (veh/h)	0	0	0	27	977	5	156	112	0	0	76	43
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				29	1062	5	170	122	0	0	83	47
Peak Hour Factor				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	0	0	2	2
Cap, veh/h				60	2342	11	584	831	0	0	498	282
Arrive On Green				0.44	0.44	0.44	0.44	0.44	0.00	0.00	0.44	0.44
Sat Flow, veh/h				135	5271	26	1260	1870	0	0	1121	635
Grp Volume(v), veh/h				400	332	364	170	122	0	0	0	130
Grp Sat Flow(s),veh/h/ln				1864	1702	1866	1260	1870	0	0	0	1756
Q Serve(g_s), s				13.7	12.1	12.1	8.4	3.5	0.0	0.0	0.0	4.0
Cycle Q Clear(g_c), s				13.7	12.1	12.1	12.4	3.5	0.0	0.0	0.0	4.0
Prop In Lane				0.07		0.01	1.00		0.00	0.00		0.36
Lane Grp Cap(c), veh/h				828	756	829	584	831	0	0	0	780
V/C Ratio(X)				0.48	0.44	0.44	0.29	0.15	0.00	0.00	0.00	0.17
Avail Cap(c_a), veh/h				828	756	829	584	831	0	0	0	780
HCM Platoon Ratio				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	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				17.7	17.3	17.3	18.7	14.9	0.0	0.0	0.0	15.0
Incr Delay (d2), s/veh				2.0	1.8	1.7	1.3	0.4	0.0	0.0	0.0	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.1	4.9	5.4	2.6	1.5	0.0	0.0	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				19.7	19.1	18.9	20.0	15.2	0.0	0.0	0.0	15.5
LnGrp LOS				B	B	B	B	B	A	A	A	B
Approach Vol, veh/h					1096			292				130
Approach Delay, s/veh					19.3			18.0				15.5
Approach LOS					B			B				B
Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				45.0		45.0		45.0				
Change Period (Y+Rc), s				* 5		5.0		5.0				
Max Green Setting (Gmax), s				* 40		40.0		40.0				
Max Q Clear Time (g_c+I1), s				6.0		15.7		14.4				
Green Ext Time (p_c), s				0.8		7.5		1.2				
Intersection Summary												
HCM 6th Ctrl Delay				18.7								
HCM 6th LOS				B								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Grand Avenue Vision Project - Phase 1
 9: Escondido Blvd & 2nd Ave

Existing with Project
 Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 			 	
Traffic Volume (veh/h)	38	1069	48	0	0	0	0	361	124	87	339	0
Future Volume (veh/h)	38	1069	48	0	0	0	0	361	124	87	339	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	41	1149	52				0	388	133	94	365	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	78	2326	109				0	976	330	114	1656	0
Arrive On Green	0.47	0.47	0.47				0.00	0.37	0.37	0.06	0.47	0.00
Sat Flow, veh/h	168	4991	233				0	2700	882	1781	3647	0
Grp Volume(v), veh/h	456	379	407				0	263	258	94	365	0
Grp Sat Flow(s),veh/h/ln	1862	1702	1828				0	1777	1712	1781	1777	0
Q Serve(g_s), s	26.0	23.0	23.0				0.0	16.3	16.7	7.8	9.2	0.0
Cycle Q Clear(g_c), s	26.0	23.0	23.0				0.0	16.3	16.7	7.8	9.2	0.0
Prop In Lane	0.09		0.13				0.00		0.52	1.00		0.00
Lane Grp Cap(c), veh/h	868	793	852				0	665	641	114	1656	0
V/C Ratio(X)	0.53	0.48	0.48				0.00	0.40	0.40	0.82	0.22	0.00
Avail Cap(c_a), veh/h	868	793	852				0	665	641	296	1656	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.3	27.5	27.5				0.0	34.5	34.6	69.4	23.9	0.0
Incr Delay (d2), s/veh	2.3	2.1	1.9				0.0	1.8	1.9	5.4	0.3	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
%ile BackOfQ(50%),veh/ln	12.2	9.9	10.6				0.0	7.4	7.3	3.8	4.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.6	29.6	29.5				0.0	36.2	36.5	74.8	24.2	0.0
LnGrp LOS	C	C	C				A	D	D	E	C	A
Approach Vol, veh/h		1242						521			459	
Approach Delay, s/veh		29.9						36.4			34.5	
Approach LOS		C						D			C	
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		75.1		75.1			13.8	61.3				
Change Period (Y+Rc), s		5.1		5.1			4.1	5.1				
Max Green Setting (Gmax), s		70.0		70.0			25.0	50.0				
Max Q Clear Time (g_c+l1), s		28.0		11.2			9.8	18.7				
Green Ext Time (p_c), s		6.0		1.7			0.0	2.0				
Intersection Summary												
HCM 6th Ctrl Delay				32.4								
HCM 6th LOS				C								

Grand Avenue Vision Project - Phase 1
10: Broadway & 2nd Ave

Existing with Project
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 		 		
Traffic Volume (veh/h)	66	1189	17	0	0	0	0	85	22	46	81	0
Future Volume (veh/h)	66	1189	17	0	0	0	0	85	22	46	81	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	73	1307	19				0	93	24	51	89	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	94	1789	27				0	758	196	727	988	0
Arrive On Green	0.35	0.35	0.35				0.00	0.53	0.53	0.53	0.53	0.00
Sat Flow, veh/h	266	5074	76				0	1434	370	1275	1870	0
Grp Volume(v), veh/h	510	425	464				0	0	117	51	89	0
Grp Sat Flow(s),veh/h/ln	1857	1702	1857				0	0	1804	1275	1870	0
Q Serve(g_s), s	18.5	16.3	16.3				0.0	0.0	2.5	1.6	1.8	0.0
Cycle Q Clear(g_c), s	18.5	16.3	16.3				0.0	0.0	2.5	4.1	1.8	0.0
Prop In Lane	0.14		0.04				0.00		0.21	1.00		0.00
Lane Grp Cap(c), veh/h	655	600	655				0	0	953	727	988	0
V/C Ratio(X)	0.78	0.71	0.71				0.00	0.00	0.12	0.07	0.09	0.00
Avail Cap(c_a), veh/h	981	899	981				0	0	953	727	988	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.9	21.1	21.1				0.0	0.0	9.0	10.0	8.8	0.0
Incr Delay (d2), s/veh	1.1	0.6	0.5				0.0	0.0	0.3	0.2	0.2	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
%ile BackOfQ(50%),veh/ln	7.7	6.2	6.7				0.0	0.0	0.9	0.4	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	21.7	21.7				0.0	0.0	9.3	10.2	9.0	0.0
LnGrp LOS	C	C	C				A	A	A	B	A	A
Approach Vol, veh/h		1399						117			140	
Approach Delay, s/veh		22.2						9.3			9.5	
Approach LOS		C						A			A	
Timer - Assigned Phs		2		4				6				
Phs Duration (G+Y+Rc), s		44.5		31.2				44.5				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		40.0		40.0				40.0				
Max Q Clear Time (g_c+l1), s		4.5		20.5				6.1				
Green Ext Time (p_c), s		0.4		6.2				0.8				
Intersection Summary												
HCM 6th Ctrl Delay				20.2								
HCM 6th LOS				C								

Grand Avenue Vision Project - Phase 1
 11: Juniper St & 2nd Ave

Existing with Project
 Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  								 		
Traffic Volume (veh/h)	59	1190	86	0	0	0	0	204	114	10	186	0
Future Volume (veh/h)	59	1190	86	0	0	0	0	204	114	10	186	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	64	1293	93				0	222	124	11	202	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	79	1692	126				0	626	350	535	1039	0
Arrive On Green	0.35	0.35	0.35				0.00	0.56	0.56	0.56	0.56	0.00
Sat Flow, veh/h	223	4788	356				0	1127	630	1035	1870	0
Grp Volume(v), veh/h	534	445	472				0	0	346	11	202	0
Grp Sat Flow(s),veh/h/ln	1859	1702	1806				0	0	1757	1035	1870	0
Q Serve(g_s), s	25.8	22.6	22.6				0.0	0.0	10.8	0.6	5.3	0.0
Cycle Q Clear(g_c), s	25.8	22.6	22.6				0.0	0.0	10.8	11.4	5.3	0.0
Prop In Lane	0.12		0.20				0.00		0.36	1.00		0.00
Lane Grp Cap(c), veh/h	657	601	638				0	0	976	535	1039	0
V/C Ratio(X)	0.81	0.74	0.74				0.00	0.00	0.35	0.02	0.19	0.00
Avail Cap(c_a), veh/h	751	688	730				0	0	976	535	1039	0
HCM Platoon Ratio	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				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.0	28.0	28.0				0.0	0.0	12.2	15.3	11.0	0.0
Incr Delay (d2), s/veh	6.0	3.7	3.5				0.0	0.0	1.0	0.0	0.1	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
%ile BackOfQ(50%),veh/ln	12.2	9.6	10.1				0.0	0.0	4.4	0.1	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.1	31.7	31.5				0.0	0.0	13.2	15.3	11.0	0.0
LnGrp LOS	D	C	C				A	A	B	B	B	A
Approach Vol, veh/h		1450						346			213	
Approach Delay, s/veh		32.9						13.2			11.3	
Approach LOS		C						B			B	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		39.5		59.5				59.5				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		40.0		55.0				55.0				
Max Q Clear Time (g_c+I1), s		27.8		13.4				12.8				
Green Ext Time (p_c), s		7.2		1.3				2.6				
Intersection Summary												
HCM 6th Ctrl Delay			27.2									
HCM 6th LOS			C									

Grand Avenue Vision Project - Phase 1
1: Escondido Blvd & Grand Ave

Near-Term
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Traffic Volume (veh/h)	73	158	5	33	199	31	16	313	17	43	318	12
Future Volume (veh/h)	73	158	5	33	199	31	16	313	17	43	318	12
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	170	5	35	214	33	17	337	18	46	342	13
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	854	2431	71	914	2132	324	192	616	33	191	627	24
Arrive On Green	0.69	0.69	0.69	0.69	0.69	0.69	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1133	3525	103	1210	3093	470	1026	3432	183	1026	3491	132
Grp Volume(v), veh/h	78	85	90	35	122	125	17	174	181	46	174	181
Grp Sat Flow(s),veh/h/ln	1133	1777	1852	1210	1777	1786	1026	1777	1837	1026	1777	1847
Q Serve(g_s), s	1.8	1.1	1.1	0.7	1.7	1.7	1.1	6.5	6.5	3.1	6.4	6.5
Cycle Q Clear(g_c), s	3.5	1.1	1.1	1.9	1.7	1.7	7.6	6.5	6.5	9.6	6.4	6.5
Prop In Lane	1.00		0.06	1.00		0.26	1.00		0.10	1.00		0.07
Lane Grp Cap(c), veh/h	854	1225	1277	914	1225	1231	192	319	330	191	319	331
V/C Ratio(X)	0.09	0.07	0.07	0.04	0.10	0.10	0.09	0.55	0.55	0.24	0.54	0.55
Avail Cap(c_a), veh/h	854	1225	1277	914	1225	1231	715	1225	1267	715	1225	1273
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	4.3	3.7	3.7	4.0	3.8	3.8	30.5	27.1	27.1	31.4	27.1	27.1
Incr Delay (d2), s/veh	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.5	0.5	0.2	0.5	0.5
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	0.4	0.3	0.4	0.1	0.4	0.5	0.3	2.6	2.7	0.7	2.6	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.6	3.8	3.8	4.0	3.8	3.8	30.6	27.6	27.6	31.7	27.6	27.6
LnGrp LOS	A	A	A	A	A	A	C	C	C	C	C	C
Approach Vol, veh/h		253			282			372			401	
Approach Delay, s/veh		4.0			3.8			27.7			28.1	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		18.0		54.5		18.0				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		50.0		50.0		50.0				
Max Q Clear Time (g_c+I1), s		5.5		11.6		3.9		9.6				
Green Ext Time (p_c), s		0.8		1.4		1.0		1.3				
Intersection Summary												
HCM 6th Ctrl Delay				18.1								
HCM 6th LOS				B								

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

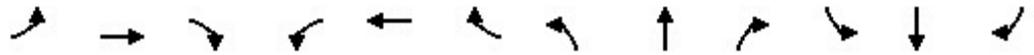
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↕		↘	↕			↕				
Traffic Vol, veh/h	17	185	19	49	221	7	20	7	15	0	0	0
Future Vol, veh/h	17	185	19	49	221	7	20	7	15	0	0	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	208	21	55	248	8	22	8	17	0	0	0
Number of Lanes	1	2	0	1	2	0	0	1	0	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	3	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	3
HCM Control Delay	8.5	8.7	8.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3
Vol Left, %	48%	100%	0%	0%	100%	0%	0%
Vol Thru, %	17%	0%	100%	76%	0%	100%	91%
Vol Right, %	36%	0%	0%	24%	0%	0%	9%
Sign Control	Stop						
Traffic Vol by Lane	42	17	123	81	49	147	81
LT Vol	20	17	0	0	49	0	0
Through Vol	7	0	123	62	0	147	74
RT Vol	15	0	0	19	0	0	7
Lane Flow Rate	47	19	139	91	55	166	91
Geometry Grp	7	7	7	7	7	7	7
Degree of Util (X)	0.075	0.029	0.19	0.12	0.082	0.224	0.121
Departure Headway (Hd)	5.709	5.432	4.93	4.765	5.373	4.872	4.811
Convergence, Y/N	Yes						
Cap	628	661	729	754	668	738	747
Service Time	3.44	3.151	2.649	2.484	3.091	2.59	2.529
HCM Lane V/C Ratio	0.075	0.029	0.191	0.121	0.082	0.225	0.122
HCM Control Delay	8.9	8.3	8.8	8.1	8.6	9	8.2
HCM Lane LOS	A	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0.7	0.4	0.3	0.9	0.4

Grand Avenue Vision Project - Phase 1
3: Broadway/S. Brodaway & Grand Ave

Near-Term
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	135	5	9	239	48	9	170	11	102	159	51
Future Volume (veh/h)	57	135	5	9	239	48	9	170	11	102	159	51
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	59	139	5	9	246	49	9	175	11	105	164	53
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	768	2226	80	887	1885	369	284	384	24	275	413	350
Arrive On Green	0.64	0.64	0.64	0.64	0.64	0.64	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1084	3499	125	1244	2962	580	1164	1741	109	1198	1870	1585
Grp Volume(v), veh/h	59	70	74	9	146	149	9	0	186	105	164	53
Grp Sat Flow(s),veh/h/ln	1084	1777	1848	1244	1777	1766	1164	0	1851	1198	1870	1585
Q Serve(g_s), s	1.4	0.9	1.0	0.2	2.0	2.1	0.4	0.0	5.5	5.2	4.7	1.7
Cycle Q Clear(g_c), s	3.5	0.9	1.0	1.1	2.0	2.1	5.1	0.0	5.5	10.7	4.7	1.7
Prop In Lane	1.00		0.07	1.00		0.33	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	768	1130	1176	887	1130	1123	284	0	408	275	413	350
V/C Ratio(X)	0.08	0.06	0.06	0.01	0.13	0.13	0.03	0.00	0.46	0.38	0.40	0.15
Avail Cap(c_a), veh/h	768	1130	1176	887	1130	1123	768	0	1177	772	1190	1008
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	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.2	4.3	4.3	4.5	4.5	4.5	23.1	0.0	21.2	25.9	20.9	19.8
Incr Delay (d2), s/veh	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.5	0.1
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	0.3	0.3	0.3	0.0	0.6	0.6	0.1	0.0	2.3	1.5	2.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.4	4.4	4.4	4.6	4.6	4.6	23.2	0.0	21.8	26.5	21.4	19.9
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	C	B
Approach Vol, veh/h		203			304			195			322	
Approach Delay, s/veh		4.7			4.6			21.9			22.8	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		44.5		18.4		44.5		18.4				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		40.0		40.0		40.0		40.0				
Max Q Clear Time (g_c+I1), s		5.5		12.7		4.1		7.5				
Green Ext Time (p_c), s		0.9		1.2		1.5		0.9				
Intersection Summary												
HCM 6th Ctrl Delay				13.6								
HCM 6th LOS				B								

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↑↑		↵	↑↑			↕			↕	
Traffic Vol, veh/h	11	202	25	22	290	14	12	35	6	5	42	5
Future Vol, veh/h	11	202	25	22	290	14	12	35	6	5	42	5
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	238	29	26	341	16	14	41	7	6	49	6
Number of Lanes	1	2	0	1	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	3	3
HCM Control Delay	9.2	9.8	9.6	9.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	23%	100%	0%	0%	100%	0%	0%	10%
Vol Thru, %	66%	0%	100%	73%	0%	100%	87%	81%
Vol Right, %	11%	0%	0%	27%	0%	0%	13%	10%
Sign Control	Stop							
Traffic Vol by Lane	53	11	135	92	22	193	111	52
LT Vol	12	11	0	0	22	0	0	5
Through Vol	35	0	135	67	0	193	97	42
RT Vol	6	0	0	25	0	0	14	5
Lane Flow Rate	62	13	158	109	26	227	130	61
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.106	0.021	0.232	0.153	0.041	0.327	0.184	0.103
Departure Headway (Hd)	6.092	5.777	5.274	5.083	5.676	5.172	5.083	6.042
Convergence, Y/N	Yes							
Cap	584	617	677	702	628	691	702	589
Service Time	3.876	3.54	3.036	2.845	3.433	2.929	2.84	3.827
HCM Lane V/C Ratio	0.106	0.021	0.233	0.155	0.041	0.329	0.185	0.104
HCM Control Delay	9.6	8.7	9.6	8.8	8.7	10.4	9	9.5
HCM Lane LOS	A	A	A	A	A	B	A	A
HCM 95th-tile Q	0.4	0.1	0.9	0.5	0.1	1.4	0.7	0.3

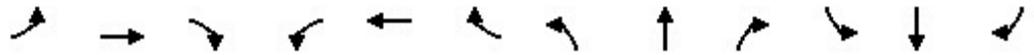
Grand Avenue Vision Project - Phase 1
5: Juniper St & Grand Ave

Near-Term
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	158	24	100	263	35	38	203	32	9	132	8
Future Volume (veh/h)	17	158	24	100	263	35	38	203	32	9	132	8
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	193	29	122	321	43	46	248	39	11	161	10
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	223	669	99	283	679	90	853	1040	164	746	1149	71
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.66	0.66	0.66	0.66	0.66	0.66
Sat Flow, veh/h	1018	3105	460	1159	3153	419	1214	1578	248	1092	1743	108
Grp Volume(v), veh/h	21	109	113	122	180	184	46	0	287	11	0	171
Grp Sat Flow(s),veh/h/ln	1018	1777	1788	1159	1777	1795	1214	0	1826	1092	0	1851
Q Serve(g_s), s	1.4	3.9	4.0	7.5	6.7	6.8	1.1	0.0	4.8	0.3	0.0	2.6
Cycle Q Clear(g_c), s	8.2	3.9	4.0	11.5	6.7	6.8	3.8	0.0	4.8	5.1	0.0	2.6
Prop In Lane	1.00		0.26	1.00		0.23	1.00		0.14	1.00		0.06
Lane Grp Cap(c), veh/h	223	383	385	283	383	387	853	0	1204	746	0	1220
V/C Ratio(X)	0.09	0.29	0.29	0.43	0.47	0.48	0.05	0.00	0.24	0.01	0.00	0.14
Avail Cap(c_a), veh/h	809	1406	1414	951	1406	1420	853	0	1204	746	0	1220
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.6	24.9	24.9	29.7	26.0	26.0	5.6	0.0	5.2	6.3	0.0	4.9
Incr Delay (d2), s/veh	0.2	0.4	0.4	1.0	0.9	0.9	0.1	0.0	0.5	0.0	0.0	0.2
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	1.6	1.7	2.1	2.8	2.9	0.3	0.0	1.7	0.1	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.8	25.3	25.3	30.8	26.9	26.9	5.7	0.0	5.7	6.3	0.0	5.1
LnGrp LOS	C	C	C	C	C	C	A	A	A	A	A	A
Approach Vol, veh/h		243			486			333			182	
Approach Delay, s/veh		25.7			27.9			5.7			5.2	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		21.3		54.5		21.3				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		60.0		50.0		60.0				
Max Q Clear Time (g_c+I1), s		6.8		10.2		7.1		13.5				
Green Ext Time (p_c), s		2.2		1.5		1.2		2.9				
Intersection Summary												
HCM 6th Ctrl Delay				18.2								
HCM 6th LOS				B								

Grand Avenue Vision Project - Phase 1
6: Escondido Blvd & Valley Pkwy

Near-Term
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					4111		1	11			11	
Traffic Volume (veh/h)	0	0	0	43	1041	47	29	152	0	0	252	79
Future Volume (veh/h)	0	0	0	43	1041	47	29	152	0	0	252	79
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				51	1239	56	35	181	0	0	300	94
Peak Hour Factor				0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				124	3223	149	101	1511	0	0	905	278
Arrive On Green				0.51	0.51	0.51	0.06	0.43	0.00	0.00	0.34	0.34
Sat Flow, veh/h				244	6355	294	1781	3647	0	0	2770	823
Grp Volume(v), veh/h				388	611	346	35	181	0	0	197	197
Grp Sat Flow(s),veh/h/ln				1858	1609	1817	1781	1777	0	0	1777	1722
Q Serve(g_s), s				19.3	17.1	17.2	2.8	4.6	0.0	0.0	12.2	12.6
Cycle Q Clear(g_c), s				19.3	17.1	17.2	2.8	4.6	0.0	0.0	12.2	12.6
Prop In Lane				0.13		0.16	1.00		0.00	0.00		0.48
Lane Grp Cap(c), veh/h				942	1631	922	101	1511	0	0	601	582
V/C Ratio(X)				0.41	0.37	0.38	0.35	0.12	0.00	0.00	0.33	0.34
Avail Cap(c_a), veh/h				942	1631	922	301	1802	0	0	601	582
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.7	22.2	22.2	67.1	25.7	0.0	0.0	36.4	36.6
Incr Delay (d2), s/veh				1.3	0.7	1.2	0.8	0.0	0.0	0.0	1.5	1.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.9	6.7	7.7	1.3	2.0	0.0	0.0	5.6	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				24.0	22.8	23.4	67.9	25.8	0.0	0.0	37.9	38.1
LnGrp LOS				C	C	C	E	C	A	A	D	D
Approach Vol, veh/h					1346			216			394	
Approach Delay, s/veh					23.3			32.6			38.0	
Approach LOS					C			C			D	
Timer - Assigned Phs				3	4	6	8					
Phs Duration (G+Y+Rc), s				12.9	55.0	80.0	67.9					
Change Period (Y+Rc), s				4.5	5.0	5.0	5.0					
Max Green Setting (Gmax), s				25.0	50.0	75.0	75.0					
Max Q Clear Time (g_c+I1), s				4.8	14.6	21.3	6.6					
Green Ext Time (p_c), s				0.0	1.5	7.2	0.8					
Intersection Summary												
HCM 6th Ctrl Delay				27.3								
HCM 6th LOS				C								

Grand Avenue Vision Project - Phase 1
7: S. Brodaway & Valley Pkwy

Near-Term
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  			 			 	
Traffic Volume (veh/h)	0	0	0	13	993	59	44	64	0	0	225	185
Future Volume (veh/h)	0	0	0	13	993	59	44	64	0	0	225	185
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No				No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				15	1155	69	51	74	0	0	262	215
Peak Hour Factor				0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				21	1721	524	554	1903	0	0	1903	849
Arrive On Green				0.33	0.33	0.33	0.54	0.54	0.00	0.00	0.54	0.54
Sat Flow, veh/h				64	5208	1585	917	3647	0	0	3647	1585
Grp Volume(v), veh/h				440	730	69	51	74	0	0	262	215
Grp Sat Flow(s),veh/h/ln				1867	1702	1585	917	1777	0	0	1777	1585
Q Serve(g_s), s				15.4	13.6	2.3	2.2	0.7	0.0	0.0	2.8	5.4
Cycle Q Clear(g_c), s				15.4	13.6	2.3	5.0	0.7	0.0	0.0	2.8	5.4
Prop In Lane				0.03		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				617	1125	524	554	1903	0	0	1903	849
V/C Ratio(X)				0.71	0.65	0.13	0.09	0.04	0.00	0.00	0.14	0.25
Avail Cap(c_a), veh/h				1000	1823	849	554	1903	0	0	1903	849
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				21.9	21.3	17.5	9.9	8.2	0.0	0.0	8.7	9.3
Incr Delay (d2), s/veh				1.2	0.5	0.1	0.3	0.0	0.0	0.0	0.2	0.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.5	5.2	0.8	0.5	0.3	0.0	0.0	1.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				23.1	21.8	17.6	10.3	8.3	0.0	0.0	8.8	10.0
LnGrp LOS				C	C	B	B	A	A	A	A	B
Approach Vol, veh/h					1239			125			477	
Approach Delay, s/veh					22.0			9.1			9.4	
Approach LOS					C			A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		45.0				45.0		29.7				
Change Period (Y+Rc), s		* 5				5.0		5.0				
Max Green Setting (Gmax), s		* 40				40.0		40.0				
Max Q Clear Time (g_c+I1), s		7.0				7.4		17.4				
Green Ext Time (p_c), s		0.9				2.0		7.3				
Intersection Summary												
HCM 6th Ctrl Delay					17.9							
HCM 6th LOS					B							
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Grand Avenue Vision Project - Phase 1
8: Juniper St & Valley Pkwy

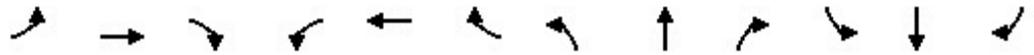
Near-Term
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					←↑↑↑		↑	↑			↑	
Traffic Volume (veh/h)	0	0	0	33	1460	1	125	113	0	0	118	110
Future Volume (veh/h)	0	0	0	33	1460	1	125	113	0	0	118	110
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		No
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				36	1587	1	136	123	0	0	128	120
Peak Hour Factor				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	0	0	2	2
Cap, veh/h				50	2364	2	477	831	0	0	395	370
Arrive On Green				0.44	0.44	0.44	0.44	0.44	0.00	0.00	0.44	0.44
Sat Flow, veh/h				113	5320	3	1132	1870	0	0	888	833
Grp Volume(v), veh/h				592	492	540	136	123	0	0	0	248
Grp Sat Flow(s),veh/h/ln				1865	1702	1870	1132	1870	0	0	0	1721
Q Serve(g_s), s				23.3	20.3	20.3	8.0	3.5	0.0	0.0	0.0	8.4
Cycle Q Clear(g_c), s				23.3	20.3	20.3	16.4	3.5	0.0	0.0	0.0	8.4
Prop In Lane				0.06		0.00	1.00		0.00	0.00		0.48
Lane Grp Cap(c), veh/h				829	756	831	477	831	0	0	0	765
V/C Ratio(X)				0.71	0.65	0.65	0.29	0.15	0.00	0.00	0.00	0.32
Avail Cap(c_a), veh/h				829	756	831	477	831	0	0	0	765
HCM Platoon Ratio				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	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				20.4	19.5	19.5	21.6	14.9	0.0	0.0	0.0	16.2
Incr Delay (d2), s/veh				5.2	4.3	3.9	1.5	0.4	0.0	0.0	0.0	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
%ile BackOfQ(50%),veh/ln				10.7	8.5	9.2	2.3	1.5	0.0	0.0	0.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				25.6	23.8	23.5	23.0	15.2	0.0	0.0	0.0	17.4
LnGrp LOS				C	C	C	C	B	A	A	A	B
Approach Vol, veh/h					1624			259				248
Approach Delay, s/veh					24.3			19.3				17.4
Approach LOS					C			B				B
Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				45.0		45.0		45.0				
Change Period (Y+Rc), s				* 5		5.0		5.0				
Max Green Setting (Gmax), s				* 40		40.0		40.0				
Max Q Clear Time (g_c+I1), s				10.4		25.3		18.4				
Green Ext Time (p_c), s				1.7		9.1		1.2				
Intersection Summary												
HCM 6th Ctrl Delay				22.9								
HCM 6th LOS				C								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Grand Avenue Vision Project - Phase 1
 9: Escondido Blvd & 2nd Ave

Near-Term
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑						↑↑		↘	↑↑	
Traffic Volume (veh/h)	14	560	33	0	0	0	0	154	54	42	252	0
Future Volume (veh/h)	14	560	33	0	0	0	0	154	54	42	252	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	17	675	40				0	186	65	51	304	0
Peak Hour Factor	0.83	0.83	0.83				0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	55	2312	141				0	1037	351	73	1656	0
Arrive On Green	0.47	0.47	0.47				0.00	0.40	0.40	0.04	0.47	0.00
Sat Flow, veh/h	118	4962	303				0	2700	882	1781	3647	0
Grp Volume(v), veh/h	269	223	240				0	125	126	51	304	0
Grp Sat Flow(s),veh/h/ln	1864	1702	1816				0	1777	1712	1781	1777	0
Q Serve(g_s), s	13.5	12.1	12.2				0.0	6.8	7.2	4.2	7.5	0.0
Cycle Q Clear(g_c), s	13.5	12.1	12.2				0.0	6.8	7.2	4.2	7.5	0.0
Prop In Lane	0.06		0.17				0.00		0.52	1.00		0.00
Lane Grp Cap(c), veh/h	869	793	846				0	707	681	73	1656	0
V/C Ratio(X)	0.31	0.28	0.28				0.00	0.18	0.19	0.70	0.18	0.00
Avail Cap(c_a), veh/h	869	793	846				0	707	681	296	1656	0
HCM Platoon Ratio	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				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.0	24.6	24.7				0.0	29.3	29.4	71.1	23.4	0.0
Incr Delay (d2), s/veh	0.9	0.9	0.8				0.0	0.5	0.6	4.4	0.2	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
%ile BackOfQ(50%),veh/ln	6.3	5.2	5.6				0.0	3.1	3.1	2.0	3.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.9	25.5	25.5				0.0	29.8	30.0	75.5	23.7	0.0
LnGrp LOS	C	C	C				A	C	C	E	C	A
Approach Vol, veh/h		732						251			355	
Approach Delay, s/veh		25.7						29.9			31.1	
Approach LOS		C						C			C	
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		75.1		75.1			10.3	64.8				
Change Period (Y+Rc), s		5.1		5.1			4.1	5.1				
Max Green Setting (Gmax), s		70.0		70.0			25.0	50.0				
Max Q Clear Time (g_c+I1), s		15.5		9.5			6.2	9.2				
Green Ext Time (p_c), s		3.1		1.4			0.0	0.9				
Intersection Summary												
HCM 6th Ctrl Delay				27.9								
HCM 6th LOS				C								

Grand Avenue Vision Project - Phase 1
10: Broadway & 2nd Ave

Near-Term
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 		 		
Traffic Volume (veh/h)	38	591	15	0	0	0	0	61	8	41	64	0
Future Volume (veh/h)	38	591	15	0	0	0	0	61	8	41	64	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	46	721	18				0	74	10	50	78	0
Peak Hour Factor	0.82	0.82	0.82				0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	67	1118	29				0	1021	138	923	1184	0
Arrive On Green	0.22	0.22	0.22				0.00	0.63	0.63	0.63	0.63	0.00
Sat Flow, veh/h	298	4979	128				0	1613	218	1314	1870	0
Grp Volume(v), veh/h	286	239	260				0	0	84	50	78	0
Grp Sat Flow(s),veh/h/ln	1855	1702	1847				0	0	1831	1314	1870	0
Q Serve(g_s), s	8.9	8.0	8.0				0.0	0.0	1.1	1.0	1.0	0.0
Cycle Q Clear(g_c), s	8.9	8.0	8.0				0.0	0.0	1.1	2.1	1.0	0.0
Prop In Lane	0.16		0.07				0.00		0.12	1.00		0.00
Lane Grp Cap(c), veh/h	417	382	415				0	0	1159	923	1184	0
V/C Ratio(X)	0.69	0.62	0.63				0.00	0.00	0.07	0.05	0.07	0.00
Avail Cap(c_a), veh/h	1175	1077	1169				0	0	1159	923	1184	0
HCM Platoon Ratio	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				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.5	22.1	22.1				0.0	0.0	4.5	4.9	4.4	0.0
Incr Delay (d2), s/veh	0.8	0.6	0.6				0.0	0.0	0.1	0.1	0.1	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
%ile BackOfQ(50%),veh/ln	3.7	3.0	3.3				0.0	0.0	0.4	0.2	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	22.7	22.7				0.0	0.0	4.6	5.0	4.5	0.0
LnGrp LOS	C	C	C				A	A	A	A	A	A
Approach Vol, veh/h		785						84			128	
Approach Delay, s/veh		22.9						4.6			4.7	
Approach LOS		C						A			A	
Timer - Assigned Phs		2		4				6				
Phs Duration (G+Y+Rc), s		44.5		18.7				44.5				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		40.0		40.0				40.0				
Max Q Clear Time (g_c+I1), s		3.1		10.9				4.1				
Green Ext Time (p_c), s		0.3		3.2				0.7				
Intersection Summary												
HCM 6th Ctrl Delay				19.0								
HCM 6th LOS				B								

Grand Avenue Vision Project - Phase 1
11: Juniper St & 2nd Ave

Near-Term
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 		 		
Traffic Volume (veh/h)	59	770	72	0	0	0	0	256	110	12	236	0
Future Volume (veh/h)	59	770	72	0	0	0	0	256	110	12	236	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	64	837	78				0	278	120	13	257	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	90	1245	119				0	775	335	592	1170	0
Arrive On Green	0.27	0.27	0.27				0.00	0.63	0.63	0.63	0.63	0.00
Sat Flow, veh/h	329	4578	439				0	1239	535	987	1870	0
Grp Volume(v), veh/h	360	301	318				0	0	398	13	257	0
Grp Sat Flow(s),veh/h/ln	1854	1702	1791				0	0	1774	987	1870	0
Q Serve(g_s), s	15.4	13.7	13.8				0.0	0.0	9.5	0.6	5.2	0.0
Cycle Q Clear(g_c), s	15.4	13.7	13.8				0.0	0.0	9.5	10.1	5.2	0.0
Prop In Lane	0.18		0.25				0.00		0.30	1.00		0.00
Lane Grp Cap(c), veh/h	504	463	487				0	0	1110	592	1170	0
V/C Ratio(X)	0.71	0.65	0.65				0.00	0.00	0.36	0.02	0.22	0.00
Avail Cap(c_a), veh/h	844	775	815				0	0	1110	592	1170	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.9	28.3	28.3				0.0	0.0	7.9	10.4	7.1	0.0
Incr Delay (d2), s/veh	1.9	1.5	1.5				0.0	0.0	0.9	0.0	0.1	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
%ile BackOfQ(50%),veh/ln	6.9	5.6	6.0				0.0	0.0	3.6	0.1	1.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.8	29.8	29.8				0.0	0.0	8.8	10.4	7.2	0.0
LnGrp LOS	C	C	C				A	A	A	B	A	A
Approach Vol, veh/h		979						398			270	
Approach Delay, s/veh		30.2						8.8			7.4	
Approach LOS		C						A			A	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		28.4		59.5				59.5				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		40.0		55.0				55.0				
Max Q Clear Time (g_c+I1), s		17.4		12.1				11.5				
Green Ext Time (p_c), s		6.5		1.7				3.0				
Intersection Summary												
HCM 6th Ctrl Delay			21.3									
HCM 6th LOS			C									

Grand Avenue Vision Project - Phase 1
1: Escondido Blvd & Grand Ave

Near-Term
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Traffic Volume (veh/h)	83	292	26	60	294	61	40	439	36	87	460	23
Future Volume (veh/h)	83	292	26	60	294	61	40	439	36	87	460	23
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	86	304	27	62	306	64	42	457	38	91	479	24
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	668	2039	180	695	1811	374	220	882	73	222	914	46
Arrive On Green	0.62	0.62	0.62	0.62	0.62	0.62	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1012	3303	291	1049	2933	605	896	3322	275	902	3444	172
Grp Volume(v), veh/h	86	163	168	62	184	186	42	244	251	91	247	256
Grp Sat Flow(s),veh/h/ln	1012	1777	1818	1049	1777	1761	896	1777	1821	902	1777	1839
Q Serve(g_s), s	3.2	3.1	3.2	2.1	3.6	3.7	3.4	9.5	9.5	7.7	9.6	9.6
Cycle Q Clear(g_c), s	6.9	3.1	3.2	5.3	3.6	3.7	13.0	9.5	9.5	17.3	9.6	9.6
Prop In Lane	1.00		0.16	1.00		0.34	1.00		0.15	1.00		0.09
Lane Grp Cap(c), veh/h	668	1097	1122	695	1097	1087	220	472	483	222	472	488
V/C Ratio(X)	0.13	0.15	0.15	0.09	0.17	0.17	0.19	0.52	0.52	0.41	0.52	0.53
Avail Cap(c_a), veh/h	668	1097	1122	695	1097	1087	535	1097	1124	540	1097	1135
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(l)	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	8.1	6.5	6.5	7.7	6.6	6.6	31.0	25.3	25.4	32.7	25.4	25.4
Incr Delay (d2), s/veh	0.4	0.3	0.3	0.0	0.0	0.0	0.2	0.3	0.3	0.4	0.3	0.3
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	0.7	1.1	1.2	0.4	1.2	1.2	0.7	3.8	4.0	1.7	3.9	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.5	6.8	6.8	7.7	6.6	6.7	31.1	25.7	25.7	33.2	25.7	25.7
LnGrp LOS	A	A	A	A	A	A	C	C	C	C	C	C
Approach Vol, veh/h		417			432			537			594	
Approach Delay, s/veh		7.2			6.8			26.1			26.9	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		26.5		54.5		26.5				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		50.0		50.0		50.0				
Max Q Clear Time (g_c+I1), s		8.9		19.3		7.3		15.0				
Green Ext Time (p_c), s		1.5		2.2		1.7		2.0				
Intersection Summary												
HCM 6th Ctrl Delay				18.1								
HCM 6th LOS				B								

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

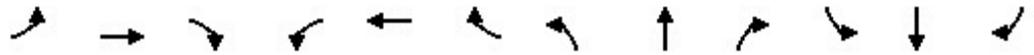
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕			↕				
Traffic Vol, veh/h	18	392	9	18	347	12	45	3	24	0	0	0
Future Vol, veh/h	18	392	9	18	347	12	45	3	24	0	0	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	451	10	21	399	14	52	3	28	0	0	0
Number of Lanes	1	2	0	1	2	0	0	1	0	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	3	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	3
HCM Control Delay	11	10.5	10.4
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3
Vol Left, %	62%	100%	0%	0%	100%	0%	0%
Vol Thru, %	4%	0%	100%	94%	0%	100%	91%
Vol Right, %	33%	0%	0%	6%	0%	0%	9%
Sign Control	Stop						
Traffic Vol by Lane	72	18	261	140	18	231	128
LT Vol	45	18	0	0	18	0	0
Through Vol	3	0	261	131	0	231	116
RT Vol	24	0	0	9	0	0	12
Lane Flow Rate	83	21	300	161	21	266	147
Geometry Grp	7	7	7	7	7	7	7
Degree of Util (X)	0.149	0.033	0.434	0.23	0.033	0.388	0.211
Departure Headway (Hd)	6.485	5.708	5.206	5.16	5.754	5.251	5.185
Convergence, Y/N	Yes						
Cap	549	625	688	692	619	681	688
Service Time	4.277	3.466	2.963	2.918	3.514	3.011	2.945
HCM Lane V/C Ratio	0.151	0.034	0.436	0.233	0.034	0.391	0.214
HCM Control Delay	10.4	8.7	11.9	9.5	8.7	11.3	9.3
HCM Lane LOS	B	A	B	A	A	B	A
HCM 95th-tile Q	0.5	0.1	2.2	0.9	0.1	1.8	0.8

Grand Avenue Vision Project - Phase 1
3: Broadway/S. Brodaway & Grand Ave

Near-Term
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	295	17	15	306	53	19	236	16	104	143	48
Future Volume (veh/h)	97	295	17	15	306	53	19	236	16	104	143	48
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	101	307	18	16	319	55	20	246	17	108	149	50
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	669	2057	120	703	1830	312	342	452	31	264	489	415
Arrive On Green	0.60	0.60	0.60	0.60	0.60	0.60	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1009	3412	199	1055	3036	518	1183	1729	120	1116	1870	1585
Grp Volume(v), veh/h	101	159	166	16	185	189	20	0	263	108	149	50
Grp Sat Flow(s),veh/h/ln	1009	1777	1835	1055	1777	1777	1183	0	1849	1116	1870	1585
Q Serve(g_s), s	3.3	2.6	2.6	0.4	3.1	3.1	0.9	0.0	8.1	6.1	4.2	1.6
Cycle Q Clear(g_c), s	6.4	2.6	2.6	3.1	3.1	3.1	5.2	0.0	8.1	14.2	4.2	1.6
Prop In Lane	1.00		0.11	1.00		0.29	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	669	1071	1106	703	1071	1071	342	0	484	264	489	415
V/C Ratio(X)	0.15	0.15	0.15	0.02	0.17	0.18	0.06	0.00	0.54	0.41	0.30	0.12
Avail Cap(c_a), veh/h	669	1071	1106	703	1071	1071	746	0	1115	645	1128	956
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(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.3	5.7	5.8	6.4	5.8	5.9	21.7	0.0	21.1	27.2	19.7	18.7
Incr Delay (d2), s/veh	0.5	0.3	0.3	0.0	0.1	0.1	0.1	0.0	0.7	0.8	0.3	0.1
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	0.7	0.9	0.9	0.1	0.9	1.0	0.2	0.0	3.4	1.6	1.8	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.8	6.0	6.0	6.4	5.9	5.9	21.8	0.0	21.8	28.0	19.9	18.8
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	B	B
Approach Vol, veh/h		426			390			283			307	
Approach Delay, s/veh		6.4			5.9			21.8			22.6	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		44.5		21.9		44.5		21.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		40.0		40.0		40.0		40.0				
Max Q Clear Time (g_c+I1), s		8.4		16.2		5.1		10.1				
Green Ext Time (p_c), s		2.0		1.1		2.0		1.4				
Intersection Summary												
HCM 6th Ctrl Delay				12.9								
HCM 6th LOS				B								

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↑↑		↵	↑↑			↕			↕	
Traffic Vol, veh/h	40	352	22	28	335	23	30	46	8	17	27	15
Future Vol, veh/h	40	352	22	28	335	23	30	46	8	17	27	15
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	387	24	31	368	25	33	51	9	19	30	16
Number of Lanes	1	2	0	1	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	3	3
HCM Control Delay	11	10.9	10.9	10.4
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	36%	100%	0%	0%	100%	0%	0%	29%
Vol Thru, %	55%	0%	100%	84%	0%	100%	83%	46%
Vol Right, %	10%	0%	0%	16%	0%	0%	17%	25%
Sign Control	Stop							
Traffic Vol by Lane	84	40	235	139	28	223	135	59
LT Vol	30	40	0	0	28	0	0	17
Through Vol	46	0	235	117	0	223	112	27
RT Vol	8	0	0	22	0	0	23	15
Lane Flow Rate	92	44	258	153	31	245	148	65
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.174	0.074	0.4	0.233	0.052	0.383	0.226	0.121
Departure Headway (Hd)	6.768	6.095	5.59	5.478	6.13	5.625	5.504	6.693
Convergence, Y/N	Yes							
Cap	531	589	645	657	585	641	653	536
Service Time	4.502	3.82	3.315	3.204	3.856	3.351	3.23	4.43
HCM Lane V/C Ratio	0.173	0.075	0.4	0.233	0.053	0.382	0.227	0.121
HCM Control Delay	10.9	9.3	12	9.9	9.2	11.8	9.8	10.4
HCM Lane LOS	B	A	B	A	A	B	A	B
HCM 95th-tile Q	0.6	0.2	1.9	0.9	0.2	1.8	0.9	0.4

Grand Avenue Vision Project - Phase 1
5: Juniper St & Grand Ave

Near-Term
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	314	32	105	317	36	53	198	27	20	105	16
Future Volume (veh/h)	22	314	32	105	317	36	53	198	27	20	105	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	338	34	113	341	39	57	213	29	22	113	17
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	256	832	83	260	820	93	843	1009	137	738	995	150
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.63	0.63	0.63	0.63	0.63	0.63
Sat Flow, veh/h	1003	3262	326	1010	3216	365	1260	1611	219	1138	1588	239
Grp Volume(v), veh/h	24	183	189	113	187	193	57	0	242	22	0	130
Grp Sat Flow(s),veh/h/ln	1003	1777	1812	1010	1777	1805	1260	0	1831	1138	0	1827
Q Serve(g_s), s	1.6	6.8	6.9	8.4	7.0	7.1	1.5	0.0	4.5	0.7	0.0	2.3
Cycle Q Clear(g_c), s	8.7	6.8	6.9	15.3	7.0	7.1	3.8	0.0	4.5	5.2	0.0	2.3
Prop In Lane	1.00		0.18	1.00		0.20	1.00		0.12	1.00		0.13
Lane Grp Cap(c), veh/h	256	453	462	260	453	460	843	0	1146	738	0	1144
V/C Ratio(X)	0.09	0.40	0.41	0.43	0.41	0.42	0.07	0.00	0.21	0.03	0.00	0.11
Avail Cap(c_a), veh/h	754	1335	1361	762	1335	1356	843	0	1146	738	0	1144
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(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.5	24.7	24.7	31.1	24.8	24.8	6.8	0.0	6.4	7.6	0.0	6.0
Incr Delay (d2), s/veh	0.2	0.6	0.6	1.1	0.6	0.6	0.2	0.0	0.4	0.1	0.0	0.2
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	0.4	2.9	3.0	2.1	2.9	3.0	0.4	0.0	1.7	0.2	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.6	25.3	25.3	32.3	25.4	25.4	6.9	0.0	6.9	7.6	0.0	6.2
LnGrp LOS	C	C	C	C	C	C	A	A	A	A	A	A
Approach Vol, veh/h		396			493			299				152
Approach Delay, s/veh		25.5			27.0			6.9				6.4
Approach LOS		C			C			A				A
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		25.4		54.5		25.4				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		60.0		50.0		60.0				
Max Q Clear Time (g_c+I1), s		6.5		10.7		7.2		17.3				
Green Ext Time (p_c), s		1.8		2.5		0.9		3.1				
Intersection Summary												
HCM 6th Ctrl Delay				19.7								
HCM 6th LOS				B								

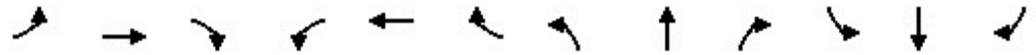
Grand Avenue Vision Project - Phase 1
6: Escondido Blvd & Valley Pkwy

Near-Term
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	84	985	72	52	432	0	0	347	135
Future Volume (veh/h)	0	0	0	84	985	72	52	432	0	0	347	135
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				91	1071	78	57	470	0	0	377	147
Peak Hour Factor				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	0	0	2	2
Cap, veh/h				236	2982	221	119	1533	0	0	839	323
Arrive On Green				0.50	0.50	0.50	0.07	0.43	0.00	0.00	0.33	0.33
Sat Flow, veh/h				470	5944	441	1781	3647	0	0	2602	965
Grp Volume(v), veh/h				358	566	317	57	470	0	0	265	259
Grp Sat Flow(s),veh/h/ln				1847	1609	1791	1781	1777	0	0	1777	1697
Q Serve(g_s), s				17.9	15.9	16.0	4.6	13.0	0.0	0.0	17.5	17.9
Cycle Q Clear(g_c), s				17.9	15.9	16.0	4.6	13.0	0.0	0.0	17.5	17.9
Prop In Lane				0.25		0.25	1.00		0.00	0.00		0.57
Lane Grp Cap(c), veh/h				927	1614	899	119	1533	0	0	594	568
V/C Ratio(X)				0.39	0.35	0.35	0.48	0.31	0.00	0.00	0.45	0.46
Avail Cap(c_a), veh/h				927	1614	899	298	1783	0	0	594	568
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				23.0	22.5	22.5	67.3	27.9	0.0	0.0	38.9	39.0
Incr Delay (d2), s/veh				1.2	0.6	1.1	1.1	0.0	0.0	0.0	2.4	2.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.2	6.2	7.1	2.1	5.6	0.0	0.0	8.1	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				24.2	23.1	23.6	68.4	27.9	0.0	0.0	41.3	41.7
LnGrp LOS				C	C	C	E	C	A	A	D	D
Approach Vol, veh/h					1240			527			524	
Approach Delay, s/veh					23.6			32.3			41.5	
Approach LOS					C			C			D	
Timer - Assigned Phs				3	4	6	8					
Phs Duration (G+Y+Rc), s				14.5	55.0	80.0	69.5					
Change Period (Y+Rc), s				4.5	5.0	5.0	5.0					
Max Green Setting (Gmax), s				25.0	50.0	75.0	75.0					
Max Q Clear Time (g_c+I1), s				6.6	19.9	19.9	15.0					
Green Ext Time (p_c), s				0.0	2.1	6.4	2.3					
Intersection Summary												
HCM 6th Ctrl Delay				29.7								
HCM 6th LOS				C								

Grand Avenue Vision Project - Phase 1
7: S. Brodaway & Valley Pkwy

Near-Term
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑	↑	↑↑			↑↑	↑
Traffic Volume (veh/h)	0	0	0	21	914	112	67	189	0	0	222	126
Future Volume (veh/h)	0	0	0	21	914	112	67	189	0	0	222	126
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				23	983	120	72	203	0	0	239	135
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				34	1532	471	637	1998	0	0	1998	891
Arrive On Green				0.30	0.30	0.30	0.56	0.56	0.00	0.00	0.56	0.56
Sat Flow, veh/h				113	5155	1585	1009	3647	0	0	3647	1585
Grp Volume(v), veh/h				378	628	120	72	203	0	0	239	135
Grp Sat Flow(s),veh/h/ln				1865	1702	1585	1009	1777	0	0	1777	1585
Q Serve(g_s), s				12.7	11.3	4.1	2.6	1.9	0.0	0.0	2.2	2.9
Cycle Q Clear(g_c), s				12.7	11.3	4.1	4.8	1.9	0.0	0.0	2.2	2.9
Prop In Lane				0.06		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				554	1011	471	637	1998	0	0	1998	891
V/C Ratio(X)				0.68	0.62	0.25	0.11	0.10	0.00	0.00	0.12	0.15
Avail Cap(c_a), veh/h				1049	1914	891	637	1998	0	0	1998	891
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.0	21.5	19.0	8.4	7.2	0.0	0.0	7.3	7.4
Incr Delay (d2), s/veh				1.1	0.5	0.2	0.4	0.1	0.0	0.0	0.1	0.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.4	4.3	1.5	0.6	0.6	0.0	0.0	0.8	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				23.2	22.0	19.2	8.8	7.3	0.0	0.0	7.4	7.8
LnGrp LOS				C	C	B	A	A	A	A	A	A
Approach Vol, veh/h					1126			275			374	
Approach Delay, s/veh					22.1			7.7			7.6	
Approach LOS					C			A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		45.0				45.0		26.1				
Change Period (Y+Rc), s		* 5				5.0		5.0				
Max Green Setting (Gmax), s		* 40				40.0		40.0				
Max Q Clear Time (g_c+I1), s		6.8				4.9		14.7				
Green Ext Time (p_c), s		2.1				1.7		6.4				

Intersection Summary

HCM 6th Ctrl Delay	16.8
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Grand Avenue Vision Project - Phase 1
8: Juniper St & Valley Pkwy

Near-Term
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					←←←		←	↑			↑	
Traffic Volume (veh/h)	0	0	0	28	1024	5	164	117	0	0	80	45
Future Volume (veh/h)	0	0	0	28	1024	5	164	117	0	0	80	45
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				30	1113	5	178	127	0	0	87	49
Peak Hour Factor				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	0	0	2	2
Cap, veh/h				59	2344	11	579	831	0	0	499	281
Arrive On Green				0.44	0.44	0.44	0.44	0.44	0.00	0.00	0.44	0.44
Sat Flow, veh/h				134	5274	24	1253	1870	0	0	1124	633
Grp Volume(v), veh/h				419	348	381	178	127	0	0	0	136
Grp Sat Flow(s),veh/h/ln				1864	1702	1866	1253	1870	0	0	0	1756
Q Serve(g_s), s				14.5	12.8	12.8	9.0	3.6	0.0	0.0	0.0	4.2
Cycle Q Clear(g_c), s				14.5	12.8	12.8	13.2	3.6	0.0	0.0	0.0	4.2
Prop In Lane				0.07		0.01	1.00		0.00	0.00		0.36
Lane Grp Cap(c), veh/h				828	756	829	579	831	0	0	0	781
V/C Ratio(X)				0.51	0.46	0.46	0.31	0.15	0.00	0.00	0.00	0.17
Avail Cap(c_a), veh/h				828	756	829	579	831	0	0	0	781
HCM Platoon Ratio				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	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				17.9	17.5	17.5	19.0	14.9	0.0	0.0	0.0	15.1
Incr Delay (d2), s/veh				2.2	2.0	1.8	1.4	0.4	0.0	0.0	0.0	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.4	5.2	5.7	2.7	1.6	0.0	0.0	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				20.1	19.5	19.3	20.4	15.3	0.0	0.0	0.0	15.5
LnGrp LOS				C	B	B	C	B	A	A	A	B
Approach Vol, veh/h					1148			305				136
Approach Delay, s/veh					19.6			18.3				15.5
Approach LOS					B			B				B
Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				45.0		45.0		45.0				
Change Period (Y+Rc), s				* 5		5.0		5.0				
Max Green Setting (Gmax), s				* 40		40.0		40.0				
Max Q Clear Time (g_c+I1), s				6.2		16.5		15.2				
Green Ext Time (p_c), s				0.8		7.9		1.3				

Intersection Summary

HCM 6th Ctrl Delay	19.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Grand Avenue Vision Project - Phase 1
 9: Escondido Blvd & 2nd Ave

Near-Term
 Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  		  	  	
Traffic Volume (veh/h)	40	1121	50	0	0	0	0	378	130	91	355	0
Future Volume (veh/h)	40	1121	50	0	0	0	0	378	130	91	355	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	43	1205	54				0	406	140	98	382	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	78	2327	108				0	968	330	119	1656	0
Arrive On Green	0.47	0.47	0.47				0.00	0.37	0.37	0.07	0.47	0.00
Sat Flow, veh/h	168	4994	231				0	2694	887	1781	3647	0
Grp Volume(v), veh/h	478	397	427				0	276	270	98	382	0
Grp Sat Flow(s),veh/h/ln	1862	1702	1829				0	1777	1711	1781	1777	0
Q Serve(g_s), s	27.7	24.4	24.4				0.0	17.3	17.7	8.2	9.7	0.0
Cycle Q Clear(g_c), s	27.7	24.4	24.4				0.0	17.3	17.7	8.2	9.7	0.0
Prop In Lane	0.09		0.13				0.00		0.52	1.00		0.00
Lane Grp Cap(c), veh/h	868	793	852				0	661	637	119	1656	0
V/C Ratio(X)	0.55	0.50	0.50				0.00	0.42	0.42	0.83	0.23	0.00
Avail Cap(c_a), veh/h	868	793	852				0	661	637	296	1656	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.8	27.9	27.9				0.0	35.1	35.2	69.2	24.0	0.0
Incr Delay (d2), s/veh	2.5	2.3	2.1				0.0	1.9	2.1	5.4	0.3	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
%ile BackOfQ(50%),veh/ln	13.1	10.5	11.3				0.0	7.9	7.8	3.9	4.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.3	30.2	30.0				0.0	37.0	37.2	74.6	24.3	0.0
LnGrp LOS	C	C	C				A	D	D	E	C	A
Approach Vol, veh/h		1302						546			480	
Approach Delay, s/veh		30.5						37.1			34.6	
Approach LOS		C						D			C	
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		75.1		75.1			14.1	61.0				
Change Period (Y+Rc), s		5.1		5.1			4.1	5.1				
Max Green Setting (Gmax), s		70.0		70.0			25.0	50.0				
Max Q Clear Time (g_c+l1), s		29.7		11.7			10.2	19.7				
Green Ext Time (p_c), s		6.4		1.8			0.0	2.1				
Intersection Summary												
HCM 6th Ctrl Delay				32.9								
HCM 6th LOS				C								

Grand Avenue Vision Project - Phase 1
10: Broadway & 2nd Ave

Near-Term
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 		 		
Traffic Volume (veh/h)	69	1246	18	0	0	0	0	89	23	48	85	0
Future Volume (veh/h)	69	1246	18	0	0	0	0	89	23	48	85	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	76	1369	20				0	98	25	53	93	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	96	1851	28				0	745	190	706	970	0
Arrive On Green	0.36	0.36	0.36				0.00	0.52	0.52	0.52	0.52	0.00
Sat Flow, veh/h	264	5075	76				0	1438	367	1268	1870	0
Grp Volume(v), veh/h	534	445	486				0	0	123	53	93	0
Grp Sat Flow(s),veh/h/ln	1857	1702	1857				0	0	1804	1268	1870	0
Q Serve(g_s), s	19.8	17.4	17.4				0.0	0.0	2.7	1.7	1.9	0.0
Cycle Q Clear(g_c), s	19.8	17.4	17.4				0.0	0.0	2.7	4.5	1.9	0.0
Prop In Lane	0.14		0.04				0.00		0.20	1.00		0.00
Lane Grp Cap(c), veh/h	678	621	677				0	0	936	706	970	0
V/C Ratio(X)	0.79	0.72	0.72				0.00	0.00	0.13	0.08	0.10	0.00
Avail Cap(c_a), veh/h	963	883	963				0	0	936	706	970	0
HCM Platoon Ratio	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				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.8	21.1	21.1				0.0	0.0	9.6	10.7	9.4	0.0
Incr Delay (d2), s/veh	1.8	0.6	0.6				0.0	0.0	0.3	0.2	0.2	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
%ile BackOfQ(50%),veh/ln	8.4	6.6	7.2				0.0	0.0	1.1	0.5	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	21.7	21.7				0.0	0.0	9.9	11.0	9.6	0.0
LnGrp LOS	C	C	C				A	A	A	B	A	A
Approach Vol, veh/h		1465						123			146	
Approach Delay, s/veh		22.4						9.9			10.1	
Approach LOS		C						A			B	
Timer - Assigned Phs		2		4				6				
Phs Duration (G+Y+Rc), s		44.5		32.6				44.5				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		40.0		40.0				40.0				
Max Q Clear Time (g_c+l1), s		4.7		21.8				6.5				
Green Ext Time (p_c), s		0.4		6.4				0.8				
Intersection Summary												
HCM 6th Ctrl Delay			20.5									
HCM 6th LOS			C									

Grand Avenue Vision Project - Phase 1
11: Juniper St & 2nd Ave

Near-Term
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 		 		
Traffic Volume (veh/h)	62	1247	90	0	0	0	0	214	120	10	195	0
Future Volume (veh/h)	62	1247	90	0	0	0	0	214	120	10	195	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	67	1355	98				0	233	130	11	212	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	81	1731	129				0	619	345	511	1026	0
Arrive On Green	0.36	0.36	0.36				0.00	0.55	0.55	0.55	0.55	0.00
Sat Flow, veh/h	223	4787	358				0	1128	629	1019	1870	0
Grp Volume(v), veh/h	559	466	495				0	0	363	11	212	0
Grp Sat Flow(s),veh/h/ln	1859	1702	1806				0	0	1757	1019	1870	0
Q Serve(g_s), s	27.5	24.1	24.1				0.0	0.0	11.8	0.6	5.8	0.0
Cycle Q Clear(g_c), s	27.5	24.1	24.1				0.0	0.0	11.8	12.4	5.8	0.0
Prop In Lane	0.12		0.20				0.00		0.36	1.00		0.00
Lane Grp Cap(c), veh/h	672	615	653				0	0	964	511	1026	0
V/C Ratio(X)	0.83	0.76	0.76				0.00	0.00	0.38	0.02	0.21	0.00
Avail Cap(c_a), veh/h	742	679	721				0	0	964	511	1026	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.2	28.1	28.1				0.0	0.0	12.9	16.4	11.5	0.0
Incr Delay (d2), s/veh	7.4	4.5	4.2				0.0	0.0	1.1	0.0	0.1	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
%ile BackOfQ(50%),veh/ln	13.3	10.3	10.9				0.0	0.0	4.8	0.1	2.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.6	32.6	32.3				0.0	0.0	14.0	16.4	11.6	0.0
LnGrp LOS	D	C	C				A	A	B	B	B	A
Approach Vol, veh/h		1520						363			223	
Approach Delay, s/veh		34.0						14.0			11.9	
Approach LOS		C						B			B	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		40.8		59.5				59.5				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		40.0		55.0				55.0				
Max Q Clear Time (g_c+I1), s		29.5		14.4				13.8				
Green Ext Time (p_c), s		6.7		1.4				2.7				
Intersection Summary												
HCM 6th Ctrl Delay			28.2									
HCM 6th LOS			C									

Grand Avenue Vision Project - Phase 1
1: Escondido Blvd & Grand Ave

Near-Term with Project
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	158	5	33	199	31	16	313	17	43	318	12
Future Volume (veh/h)	73	158	5	33	199	31	16	313	17	43	318	12
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	170	5	35	214	33	17	337	18	46	342	13
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	854	1290	1093	896	2132	324	192	616	33	191	627	24
Arrive On Green	0.69	0.69	0.69	0.69	0.69	0.69	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1133	1870	1585	1210	3093	470	1026	3432	183	1026	3491	132
Grp Volume(v), veh/h	78	170	5	35	122	125	17	174	181	46	174	181
Grp Sat Flow(s),veh/h/ln	1133	1870	1585	1210	1777	1786	1026	1777	1837	1026	1777	1847
Q Serve(g_s), s	1.8	2.3	0.1	0.7	1.7	1.7	1.1	6.5	6.5	3.1	6.4	6.5
Cycle Q Clear(g_c), s	3.5	2.3	0.1	3.0	1.7	1.7	7.6	6.5	6.5	9.6	6.4	6.5
Prop In Lane	1.00		1.00	1.00		0.26	1.00		0.10	1.00		0.07
Lane Grp Cap(c), veh/h	854	1290	1093	896	1225	1231	192	319	330	191	319	331
V/C Ratio(X)	0.09	0.13	0.00	0.04	0.10	0.10	0.09	0.55	0.55	0.24	0.54	0.55
Avail Cap(c_a), veh/h	854	1290	1093	896	1225	1231	715	1225	1267	715	1225	1273
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(l)	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	4.3	3.8	3.5	4.4	3.8	3.8	30.5	27.1	27.1	31.4	27.1	27.1
Incr Delay (d2), s/veh	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.5	0.5	0.2	0.5	0.5
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	0.4	0.7	0.0	0.1	0.4	0.5	0.3	2.6	2.7	0.7	2.6	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.6	4.1	3.5	4.4	3.8	3.8	30.6	27.6	27.6	31.7	27.6	27.6
LnGrp LOS	A	A	A	A	A	A	C	C	C	C	C	C
Approach Vol, veh/h		253			282			372			401	
Approach Delay, s/veh		4.2			3.8			27.7			28.1	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		18.0		54.5		18.0				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		50.0		50.0		50.0				
Max Q Clear Time (g_c+l1), s		5.5		11.6		5.0		9.6				
Green Ext Time (p_c), s		0.8		1.4		1.0		1.3				
Intersection Summary												
HCM 6th Ctrl Delay				18.1								
HCM 6th LOS				B								

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

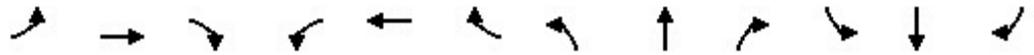
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	185	19	49	221	7	20	7	15	0	0	0
Future Vol, veh/h	17	185	19	49	221	7	20	7	15	0	0	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	208	21	55	248	8	22	8	17	0	0	0
Number of Lanes	1	1	0	1	1	0	0	1	0	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	9.6	9.8	8.5
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	48%	100%	0%	100%	0%
Vol Thru, %	17%	0%	91%	0%	97%
Vol Right, %	36%	0%	9%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	42	17	204	49	228
LT Vol	20	17	0	49	0
Through Vol	7	0	185	0	221
RT Vol	15	0	19	0	7
Lane Flow Rate	47	19	229	55	256
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.067	0.029	0.308	0.082	0.344
Departure Headway (Hd)	5.09	5.412	4.845	5.351	4.828
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	704	663	745	672	748
Service Time	3.119	3.13	2.562	3.068	2.544
HCM Lane V/C Ratio	0.067	0.029	0.307	0.082	0.342
HCM Control Delay	8.5	8.3	9.7	8.5	10.1
HCM Lane LOS	A	A	A	A	B
HCM 95th-tile Q	0.2	0.1	1.3	0.3	1.5

Grand Avenue Vision Project - Phase 1
3: Broadway/S. Brodaway & Grand Ave

Near-Term with Project
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	135	5	9	239	48	9	170	11	102	159	51
Future Volume (veh/h)	57	135	5	9	239	48	9	170	11	102	159	51
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	59	139	5	9	246	49	9	175	11	105	164	53
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	725	1138	41	865	961	191	249	388	24	277	302	98
Arrive On Green	0.63	0.63	0.63	0.63	0.63	0.63	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1084	1794	65	1244	1514	302	1164	1741	109	1198	1354	438
Grp Volume(v), veh/h	59	0	144	9	0	295	9	0	186	105	0	217
Grp Sat Flow(s),veh/h/ln	1084	0	1859	1244	0	1816	1164	0	1851	1198	0	1792
Q Serve(g_s), s	1.6	0.0	1.9	0.2	0.0	4.5	0.4	0.0	5.5	5.2	0.0	6.8
Cycle Q Clear(g_c), s	6.1	0.0	1.9	2.1	0.0	4.5	7.2	0.0	5.5	10.7	0.0	6.8
Prop In Lane	1.00		0.03	1.00		0.17	1.00		0.06	1.00		0.24
Lane Grp Cap(c), veh/h	725	0	1179	865	0	1152	249	0	413	277	0	399
V/C Ratio(X)	0.08	0.00	0.12	0.01	0.00	0.26	0.04	0.00	0.45	0.38	0.00	0.54
Avail Cap(c_a), veh/h	725	0	1179	865	0	1152	728	0	1174	770	0	1136
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.4	0.0	4.6	5.0	0.0	5.0	24.8	0.0	21.2	25.8	0.0	21.7
Incr Delay (d2), s/veh	0.2	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.6	0.6	0.0	0.9
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	0.6	0.0	0.0	1.3	0.1	0.0	2.3	1.5	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.6	0.0	4.8	5.0	0.0	5.1	24.9	0.0	21.7	26.4	0.0	22.5
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	A	C
Approach Vol, veh/h		203			304			195				322
Approach Delay, s/veh		5.3			5.1			21.9				23.8
Approach LOS		A			A			C				C
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		44.5		18.6		44.5		18.6				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		40.0		40.0		40.0		40.0				
Max Q Clear Time (g_c+I1), s		8.1		12.7		6.5		9.2				
Green Ext Time (p_c), s		0.9		1.3		1.6		0.9				
Intersection Summary												
HCM 6th Ctrl Delay				14.2								
HCM 6th LOS				B								

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	202	25	22	290	14	12	35	6	5	42	5
Future Vol, veh/h	11	202	25	22	290	14	12	35	6	5	42	5
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	238	29	26	341	16	14	41	7	6	49	6
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	11	12.7	9.3	9.3
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	23%	100%	0%	100%	0%	10%
Vol Thru, %	66%	0%	89%	0%	95%	81%
Vol Right, %	11%	0%	11%	0%	5%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	53	11	227	22	304	52
LT Vol	12	11	0	22	0	5
Through Vol	35	0	202	0	290	42
RT Vol	6	0	25	0	14	5
Lane Flow Rate	62	13	267	26	358	61
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.097	0.021	0.381	0.04	0.506	0.095
Departure Headway (Hd)	5.596	5.723	5.142	5.626	5.091	5.583
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	635	622	697	634	705	636
Service Time	3.681	3.485	2.904	3.384	2.848	3.668
HCM Lane V/C Ratio	0.098	0.021	0.383	0.041	0.508	0.096
HCM Control Delay	9.3	8.6	11.1	8.6	13	9.3
HCM Lane LOS	A	A	B	A	B	A
HCM 95th-tile Q	0.3	0.1	1.8	0.1	2.9	0.3

Grand Avenue Vision Project - Phase 1
5: Juniper St & Grand Ave

Near-Term with Project
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	158	24	100	263	35	38	203	32	9	132	8
Future Volume (veh/h)	17	158	24	100	263	35	38	203	32	9	132	8
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	193	29	122	321	43	46	248	39	11	161	10
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	460	390	276	460	390	815	999	157	709	1104	69
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.63	0.63	0.63	0.63	0.63	0.63
Sat Flow, veh/h	1018	1870	1585	1159	1870	1585	1214	1578	248	1092	1743	108
Grp Volume(v), veh/h	21	193	29	122	321	43	46	0	287	11	0	171
Grp Sat Flow(s),veh/h/ln	1018	1870	1585	1159	1870	1585	1214	0	1826	1092	0	1851
Q Serve(g_s), s	1.5	6.8	1.1	7.8	12.3	1.7	1.3	0.0	5.4	0.3	0.0	2.9
Cycle Q Clear(g_c), s	13.8	6.8	1.1	14.7	12.3	1.7	4.2	0.0	5.4	5.7	0.0	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.14	1.00		0.06
Lane Grp Cap(c), veh/h	183	460	390	276	460	390	815	0	1157	709	0	1173
V/C Ratio(X)	0.11	0.42	0.07	0.44	0.70	0.11	0.06	0.00	0.25	0.02	0.00	0.15
Avail Cap(c_a), veh/h	706	1422	1205	872	1422	1205	815	0	1157	709	0	1173
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(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.4	25.0	22.8	31.2	27.1	23.1	6.7	0.0	6.3	7.5	0.0	5.8
Incr Delay (d2), s/veh	0.3	0.6	0.1	1.1	1.9	0.1	0.1	0.0	0.5	0.0	0.0	0.3
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	0.4	3.0	0.4	2.2	5.5	0.6	0.3	0.0	2.0	0.1	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.7	25.6	22.9	32.3	29.0	23.2	6.8	0.0	6.8	7.6	0.0	6.1
LnGrp LOS	C	C	C	C	C	C	A	A	A	A	A	A
Approach Vol, veh/h		243			486			333				182
Approach Delay, s/veh		26.0			29.3			6.8				6.2
Approach LOS		C			C			A				A
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		24.4		54.5		24.4				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		60.0		50.0		60.0				
Max Q Clear Time (g_c+I1), s		7.4		15.8		7.7		16.7				
Green Ext Time (p_c), s		2.2		1.4		1.2		2.8				
Intersection Summary												
HCM 6th Ctrl Delay				19.3								
HCM 6th LOS				B								

Grand Avenue Vision Project - Phase 1
6: Escondido Blvd & Valley Pkwy

Near-Term with Project
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	43	1041	47	29	152	0	0	252	79
Future Volume (veh/h)	0	0	0	43	1041	47	29	152	0	0	252	79
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				51	1239	56	35	181	0	0	300	94
Peak Hour Factor				0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				124	3223	149	101	1511	0	0	905	278
Arrive On Green				0.51	0.51	0.51	0.06	0.43	0.00	0.00	0.34	0.34
Sat Flow, veh/h				244	6355	294	1781	3647	0	0	2770	823
Grp Volume(v), veh/h				388	611	346	35	181	0	0	197	197
Grp Sat Flow(s),veh/h/ln				1858	1609	1817	1781	1777	0	0	1777	1722
Q Serve(g_s), s				19.3	17.1	17.2	2.8	4.6	0.0	0.0	12.2	12.6
Cycle Q Clear(g_c), s				19.3	17.1	17.2	2.8	4.6	0.0	0.0	12.2	12.6
Prop In Lane				0.13		0.16	1.00		0.00	0.00		0.48
Lane Grp Cap(c), veh/h				942	1631	922	101	1511	0	0	601	582
V/C Ratio(X)				0.41	0.37	0.38	0.35	0.12	0.00	0.00	0.33	0.34
Avail Cap(c_a), veh/h				942	1631	922	301	1802	0	0	601	582
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.7	22.2	22.2	67.1	25.7	0.0	0.0	36.4	36.6
Incr Delay (d2), s/veh				1.3	0.7	1.2	0.8	0.0	0.0	0.0	1.5	1.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.9	6.7	7.7	1.3	2.0	0.0	0.0	5.6	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				24.0	22.8	23.4	67.9	25.8	0.0	0.0	37.9	38.1
LnGrp LOS				C	C	C	E	C	A	A	D	D
Approach Vol, veh/h					1346			216			394	
Approach Delay, s/veh					23.3			32.6			38.0	
Approach LOS					C			C			D	
Timer - Assigned Phs				3	4	6	8					
Phs Duration (G+Y+Rc), s				12.9	55.0	80.0	67.9					
Change Period (Y+Rc), s				4.5	5.0	5.0	5.0					
Max Green Setting (Gmax), s				25.0	50.0	75.0	75.0					
Max Q Clear Time (g_c+I1), s				4.8	14.6	21.3	6.6					
Green Ext Time (p_c), s				0.0	1.5	7.2	0.8					
Intersection Summary												
HCM 6th Ctrl Delay				27.3								
HCM 6th LOS				C								

Grand Avenue Vision Project - Phase 1
7: S. Brodaway & Valley Pkwy

Near-Term with Project
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  			 			 	
Traffic Volume (veh/h)	0	0	0	13	993	59	44	64	0	0	225	185
Future Volume (veh/h)	0	0	0	13	993	59	44	64	0	0	225	185
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No				No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				15	1155	69	51	74	0	0	262	215
Peak Hour Factor				0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				21	1721	524	554	1903	0	0	1903	849
Arrive On Green				0.33	0.33	0.33	0.54	0.54	0.00	0.00	0.54	0.54
Sat Flow, veh/h				64	5208	1585	917	3647	0	0	3647	1585
Grp Volume(v), veh/h				440	730	69	51	74	0	0	262	215
Grp Sat Flow(s),veh/h/ln				1867	1702	1585	917	1777	0	0	1777	1585
Q Serve(g_s), s				15.4	13.6	2.3	2.2	0.7	0.0	0.0	2.8	5.4
Cycle Q Clear(g_c), s				15.4	13.6	2.3	5.0	0.7	0.0	0.0	2.8	5.4
Prop In Lane				0.03		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				617	1125	524	554	1903	0	0	1903	849
V/C Ratio(X)				0.71	0.65	0.13	0.09	0.04	0.00	0.00	0.14	0.25
Avail Cap(c_a), veh/h				1000	1823	849	554	1903	0	0	1903	849
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				21.9	21.3	17.5	9.9	8.2	0.0	0.0	8.7	9.3
Incr Delay (d2), s/veh				1.2	0.5	0.1	0.3	0.0	0.0	0.0	0.2	0.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.5	5.2	0.8	0.5	0.3	0.0	0.0	1.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				23.1	21.8	17.6	10.3	8.3	0.0	0.0	8.8	10.0
LnGrp LOS				C	C	B	B	A	A	A	A	B
Approach Vol, veh/h					1239			125			477	
Approach Delay, s/veh					22.0			9.1			9.4	
Approach LOS					C			A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		45.0				45.0		29.7				
Change Period (Y+Rc), s		* 5				5.0		5.0				
Max Green Setting (Gmax), s		* 40				40.0		40.0				
Max Q Clear Time (g_c+I1), s		7.0				7.4		17.4				
Green Ext Time (p_c), s		0.9				2.0		7.3				
Intersection Summary												
HCM 6th Ctrl Delay					17.9							
HCM 6th LOS					B							
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Grand Avenue Vision Project - Phase 1
8: Juniper St & Valley Pkwy

Near-Term with Project
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  							
Traffic Volume (veh/h)	0	0	0	33	1460	1	125	113	0	0	118	110
Future Volume (veh/h)	0	0	0	33	1460	1	125	113	0	0	118	110
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		No
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				36	1587	1	136	123	0	0	128	120
Peak Hour Factor				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	0	0	2	2
Cap, veh/h				50	2364	2	477	831	0	0	395	370
Arrive On Green				0.44	0.44	0.44	0.44	0.44	0.00	0.00	0.44	0.44
Sat Flow, veh/h				113	5320	3	1132	1870	0	0	888	833
Grp Volume(v), veh/h				592	492	540	136	123	0	0	0	248
Grp Sat Flow(s),veh/h/ln				1865	1702	1870	1132	1870	0	0	0	1721
Q Serve(g_s), s				23.3	20.3	20.3	8.0	3.5	0.0	0.0	0.0	8.4
Cycle Q Clear(g_c), s				23.3	20.3	20.3	16.4	3.5	0.0	0.0	0.0	8.4
Prop In Lane				0.06		0.00	1.00		0.00	0.00		0.48
Lane Grp Cap(c), veh/h				829	756	831	477	831	0	0	0	765
V/C Ratio(X)				0.71	0.65	0.65	0.29	0.15	0.00	0.00	0.00	0.32
Avail Cap(c_a), veh/h				829	756	831	477	831	0	0	0	765
HCM Platoon Ratio				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	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				20.4	19.5	19.5	21.6	14.9	0.0	0.0	0.0	16.2
Incr Delay (d2), s/veh				5.2	4.3	3.9	1.5	0.4	0.0	0.0	0.0	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
%ile BackOfQ(50%),veh/ln				10.7	8.5	9.2	2.3	1.5	0.0	0.0	0.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				25.6	23.8	23.5	23.0	15.2	0.0	0.0	0.0	17.4
LnGrp LOS				C	C	C	C	B	A	A	A	B
Approach Vol, veh/h					1624			259				248
Approach Delay, s/veh					24.3			19.3				17.4
Approach LOS					C			B				B
Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				45.0		45.0		45.0				
Change Period (Y+Rc), s				* 5		5.0		5.0				
Max Green Setting (Gmax), s				* 40		40.0		40.0				
Max Q Clear Time (g_c+I1), s				10.4		25.3		18.4				
Green Ext Time (p_c), s				1.7		9.1		1.2				
Intersection Summary												
HCM 6th Ctrl Delay				22.9								
HCM 6th LOS				C								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Grand Avenue Vision Project - Phase 1
 9: Escondido Blvd & 2nd Ave

Near-Term with Project
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑						↑↑		↘	↑↑	
Traffic Volume (veh/h)	14	560	33	0	0	0	0	154	54	42	252	0
Future Volume (veh/h)	14	560	33	0	0	0	0	154	54	42	252	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	17	675	40				0	186	65	51	304	0
Peak Hour Factor	0.83	0.83	0.83				0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	55	2312	141				0	1037	351	73	1656	0
Arrive On Green	0.47	0.47	0.47				0.00	0.40	0.40	0.04	0.47	0.00
Sat Flow, veh/h	118	4962	303				0	2700	882	1781	3647	0
Grp Volume(v), veh/h	269	223	240				0	125	126	51	304	0
Grp Sat Flow(s),veh/h/ln	1864	1702	1816				0	1777	1712	1781	1777	0
Q Serve(g_s), s	13.5	12.1	12.2				0.0	6.8	7.2	4.2	7.5	0.0
Cycle Q Clear(g_c), s	13.5	12.1	12.2				0.0	6.8	7.2	4.2	7.5	0.0
Prop In Lane	0.06		0.17				0.00		0.52	1.00		0.00
Lane Grp Cap(c), veh/h	869	793	846				0	707	681	73	1656	0
V/C Ratio(X)	0.31	0.28	0.28				0.00	0.18	0.19	0.70	0.18	0.00
Avail Cap(c_a), veh/h	869	793	846				0	707	681	296	1656	0
HCM Platoon Ratio	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				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.0	24.6	24.7				0.0	29.3	29.4	71.1	23.4	0.0
Incr Delay (d2), s/veh	0.9	0.9	0.8				0.0	0.5	0.6	4.4	0.2	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
%ile BackOfQ(50%),veh/ln	6.3	5.2	5.6				0.0	3.1	3.1	2.0	3.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.9	25.5	25.5				0.0	29.8	30.0	75.5	23.7	0.0
LnGrp LOS	C	C	C				A	C	C	E	C	A
Approach Vol, veh/h		732						251			355	
Approach Delay, s/veh		25.7						29.9			31.1	
Approach LOS		C						C			C	
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		75.1		75.1			10.3	64.8				
Change Period (Y+Rc), s		5.1		5.1			4.1	5.1				
Max Green Setting (Gmax), s		70.0		70.0			25.0	50.0				
Max Q Clear Time (g_c+I1), s		15.5		9.5			6.2	9.2				
Green Ext Time (p_c), s		3.1		1.4			0.0	0.9				
Intersection Summary												
HCM 6th Ctrl Delay				27.9								
HCM 6th LOS				C								

Grand Avenue Vision Project - Phase 1
10: Broadway & 2nd Ave

Near-Term with Project
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 		 		
Traffic Volume (veh/h)	38	591	15	0	0	0	0	61	8	41	64	0
Future Volume (veh/h)	38	591	15	0	0	0	0	61	8	41	64	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	46	721	18				0	74	10	50	78	0
Peak Hour Factor	0.82	0.82	0.82				0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	67	1118	29				0	1021	138	923	1184	0
Arrive On Green	0.22	0.22	0.22				0.00	0.63	0.63	0.63	0.63	0.00
Sat Flow, veh/h	298	4979	128				0	1613	218	1314	1870	0
Grp Volume(v), veh/h	286	239	260				0	0	84	50	78	0
Grp Sat Flow(s),veh/h/ln	1855	1702	1847				0	0	1831	1314	1870	0
Q Serve(g_s), s	8.9	8.0	8.0				0.0	0.0	1.1	1.0	1.0	0.0
Cycle Q Clear(g_c), s	8.9	8.0	8.0				0.0	0.0	1.1	2.1	1.0	0.0
Prop In Lane	0.16		0.07				0.00		0.12	1.00		0.00
Lane Grp Cap(c), veh/h	417	382	415				0	0	1159	923	1184	0
V/C Ratio(X)	0.69	0.62	0.63				0.00	0.00	0.07	0.05	0.07	0.00
Avail Cap(c_a), veh/h	1175	1077	1169				0	0	1159	923	1184	0
HCM Platoon Ratio	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				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.5	22.1	22.1				0.0	0.0	4.5	4.9	4.4	0.0
Incr Delay (d2), s/veh	0.8	0.6	0.6				0.0	0.0	0.1	0.1	0.1	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
%ile BackOfQ(50%),veh/ln	3.7	3.0	3.3				0.0	0.0	0.4	0.2	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	22.7	22.7				0.0	0.0	4.6	5.0	4.5	0.0
LnGrp LOS	C	C	C				A	A	A	A	A	A
Approach Vol, veh/h		785						84			128	
Approach Delay, s/veh		22.9						4.6			4.7	
Approach LOS		C						A			A	
Timer - Assigned Phs		2		4				6				
Phs Duration (G+Y+Rc), s		44.5		18.7				44.5				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		40.0		40.0				40.0				
Max Q Clear Time (g_c+I1), s		3.1		10.9				4.1				
Green Ext Time (p_c), s		0.3		3.2				0.7				
Intersection Summary												
HCM 6th Ctrl Delay				19.0								
HCM 6th LOS				B								

Grand Avenue Vision Project - Phase 1
 11: Juniper St & 2nd Ave

Near-Term with Project
 Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 		 		
Traffic Volume (veh/h)	59	770	72	0	0	0	0	256	110	12	236	0
Future Volume (veh/h)	59	770	72	0	0	0	0	256	110	12	236	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	64	837	78				0	278	120	13	257	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	90	1245	119				0	775	335	592	1170	0
Arrive On Green	0.27	0.27	0.27				0.00	0.63	0.63	0.63	0.63	0.00
Sat Flow, veh/h	329	4578	439				0	1239	535	987	1870	0
Grp Volume(v), veh/h	360	301	318				0	0	398	13	257	0
Grp Sat Flow(s),veh/h/ln	1854	1702	1791				0	0	1774	987	1870	0
Q Serve(g_s), s	15.4	13.7	13.8				0.0	0.0	9.5	0.6	5.2	0.0
Cycle Q Clear(g_c), s	15.4	13.7	13.8				0.0	0.0	9.5	10.1	5.2	0.0
Prop In Lane	0.18		0.25				0.00		0.30	1.00		0.00
Lane Grp Cap(c), veh/h	504	463	487				0	0	1110	592	1170	0
V/C Ratio(X)	0.71	0.65	0.65				0.00	0.00	0.36	0.02	0.22	0.00
Avail Cap(c_a), veh/h	844	775	815				0	0	1110	592	1170	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.9	28.3	28.3				0.0	0.0	7.9	10.4	7.1	0.0
Incr Delay (d2), s/veh	1.9	1.5	1.5				0.0	0.0	0.9	0.0	0.1	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
%ile BackOfQ(50%),veh/ln	6.9	5.6	6.0				0.0	0.0	3.6	0.1	1.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.8	29.8	29.8				0.0	0.0	8.8	10.4	7.2	0.0
LnGrp LOS	C	C	C				A	A	A	B	A	A
Approach Vol, veh/h		979						398			270	
Approach Delay, s/veh		30.2						8.8			7.4	
Approach LOS		C						A			A	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		28.4		59.5				59.5				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		40.0		55.0				55.0				
Max Q Clear Time (g_c+l1), s		17.4		12.1				11.5				
Green Ext Time (p_c), s		6.5		1.7				3.0				
Intersection Summary												
HCM 6th Ctrl Delay			21.3									
HCM 6th LOS			C									

Grand Avenue Vision Project - Phase 1
1: Escondido Blvd & Grand Ave

Near-Term with Project
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	292	26	60	294	61	40	439	36	87	460	23
Future Volume (veh/h)	83	292	26	60	294	61	40	439	36	87	460	23
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	86	304	27	62	306	64	42	457	38	91	479	24
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	668	1155	978	659	1811	374	220	882	73	222	914	46
Arrive On Green	0.62	0.62	0.62	0.62	0.62	0.62	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1012	1870	1585	1049	2933	605	896	3322	275	902	3444	172
Grp Volume(v), veh/h	86	304	27	62	184	186	42	244	251	91	247	256
Grp Sat Flow(s),veh/h/ln	1012	1870	1585	1049	1777	1761	896	1777	1821	902	1777	1839
Q Serve(g_s), s	3.2	6.0	0.5	2.3	3.6	3.7	3.4	9.5	9.5	7.7	9.6	9.6
Cycle Q Clear(g_c), s	6.9	6.0	0.5	8.3	3.6	3.7	13.0	9.5	9.5	17.3	9.6	9.6
Prop In Lane	1.00		1.00	1.00		0.34	1.00		0.15	1.00		0.09
Lane Grp Cap(c), veh/h	668	1155	978	659	1097	1087	220	472	483	222	472	488
V/C Ratio(X)	0.13	0.26	0.03	0.09	0.17	0.17	0.19	0.52	0.52	0.41	0.52	0.53
Avail Cap(c_a), veh/h	668	1155	978	659	1097	1087	535	1097	1124	540	1097	1135
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(l)	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	8.1	7.1	6.0	9.0	6.6	6.6	31.0	25.3	25.4	32.7	25.4	25.4
Incr Delay (d2), s/veh	0.4	0.6	0.1	0.0	0.0	0.0	0.2	0.3	0.3	0.4	0.3	0.3
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	0.7	2.2	0.2	0.5	1.2	1.2	0.7	3.8	4.0	1.7	3.9	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.5	7.6	6.1	9.0	6.6	6.7	31.1	25.7	25.7	33.2	25.7	25.7
LnGrp LOS	A	A	A	A	A	A	C	C	C	C	C	C
Approach Vol, veh/h		417			432			537			594	
Approach Delay, s/veh		7.7			7.0			26.1			26.9	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		26.5		54.5		26.5				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		50.0		50.0		50.0				
Max Q Clear Time (g_c+I1), s		8.9		19.3		10.3		15.0				
Green Ext Time (p_c), s		1.5		2.2		1.6		2.0				
Intersection Summary												
HCM 6th Ctrl Delay				18.3								
HCM 6th LOS				B								

Intersection	
Intersection Delay, s/veh	15.5
Intersection LOS	C

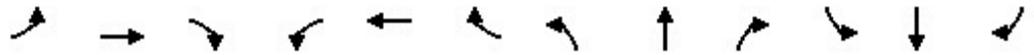
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↷				
Traffic Vol, veh/h	18	392	9	18	347	12	45	3	24	0	0	0
Future Vol, veh/h	18	392	9	18	347	12	45	3	24	0	0	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	451	10	21	399	14	52	3	28	0	0	0
Number of Lanes	1	1	0	1	1	0	0	1	0	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	16.9	14.9	10
HCM LOS	C	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	62%	100%	0%	100%	0%
Vol Thru, %	4%	0%	98%	0%	97%
Vol Right, %	33%	0%	2%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	72	18	401	18	359
LT Vol	45	18	0	18	0
Through Vol	3	0	392	0	347
RT Vol	24	0	9	0	12
Lane Flow Rate	83	21	461	21	413
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.137	0.032	0.657	0.033	0.592
Departure Headway (Hd)	5.952	5.654	5.135	5.694	5.167
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	597	631	701	626	693
Service Time	4.043	3.411	2.892	3.452	2.925
HCM Lane V/C Ratio	0.139	0.033	0.658	0.034	0.596
HCM Control Delay	10	8.6	17.3	8.6	15.2
HCM Lane LOS	A	A	C	A	C
HCM 95th-tile Q	0.5	0.1	4.9	0.1	3.9

Grand Avenue Vision Project - Phase 1
3: Broadway/S. Brodaway & Grand Ave

Near-Term with Project
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	295	17	15	306	53	19	236	16	104	143	48
Future Volume (veh/h)	97	295	17	15	306	53	19	236	16	104	143	48
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	101	307	18	16	319	55	20	246	17	108	149	50
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	611	1052	62	653	935	161	311	455	31	266	353	118
Arrive On Green	0.60	0.60	0.60	0.60	0.60	0.60	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1009	1749	103	1055	1554	268	1183	1729	120	1116	1340	450
Grp Volume(v), veh/h	101	0	325	16	0	374	20	0	263	108	0	199
Grp Sat Flow(s),veh/h/ln	1009	0	1852	1055	0	1822	1183	0	1849	1116	0	1789
Q Serve(g_s), s	3.7	0.0	5.6	0.5	0.0	6.8	0.9	0.0	8.1	6.1	0.0	6.1
Cycle Q Clear(g_c), s	10.6	0.0	5.6	6.1	0.0	6.8	7.1	0.0	8.1	14.2	0.0	6.1
Prop In Lane	1.00		0.06	1.00		0.15	1.00		0.06	1.00		0.25
Lane Grp Cap(c), veh/h	611	0	1114	653	0	1096	311	0	487	266	0	471
V/C Ratio(X)	0.17	0.00	0.29	0.02	0.00	0.34	0.06	0.00	0.54	0.41	0.00	0.42
Avail Cap(c_a), veh/h	611	0	1114	653	0	1096	711	0	1112	643	0	1076
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(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.3	0.0	6.4	7.9	0.0	6.7	23.2	0.0	21.0	27.2	0.0	20.3
Incr Delay (d2), s/veh	0.6	0.0	0.7	0.0	0.0	0.1	0.1	0.0	0.7	0.7	0.0	0.4
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(50%),veh/ln	0.8	0.0	2.0	0.1	0.0	2.2	0.3	0.0	3.4	1.6	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.9	0.0	7.1	7.9	0.0	6.8	23.3	0.0	21.7	27.9	0.0	20.8
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	A	C
Approach Vol, veh/h		426			390			283				307
Approach Delay, s/veh		7.7			6.8			21.8				23.3
Approach LOS		A			A			C				C
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		44.5		22.0		44.5		22.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		40.0		40.0		40.0		40.0				
Max Q Clear Time (g_c+I1), s		12.6		16.2		8.8		10.1				
Green Ext Time (p_c), s		2.1		1.3		2.1		1.4				

Intersection Summary

HCM 6th Ctrl Delay	13.7
HCM 6th LOS	B

Intersection	
Intersection Delay, s/veh	15.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Traffic Vol, veh/h	40	352	22	28	335	23	30	46	8	17	27	15
Future Vol, veh/h	40	352	22	28	335	23	30	46	8	17	27	15
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	44	387	24	31	368	25	33	51	9	19	30	16
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	16.2	15.8	10.6	10.1
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	36%	100%	0%	100%	0%	29%
Vol Thru, %	55%	0%	94%	0%	94%	46%
Vol Right, %	10%	0%	6%	0%	6%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	84	40	374	28	358	59
LT Vol	30	40	0	28	0	17
Through Vol	46	0	352	0	335	27
RT Vol	8	0	22	0	23	15
Lane Flow Rate	92	44	411	31	393	65
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.162	0.074	0.626	0.052	0.603	0.113
Departure Headway (Hd)	6.301	6.031	5.485	6.067	5.516	6.274
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	569	595	658	591	657	571
Service Time	4.346	3.76	3.213	3.796	3.245	4.323
HCM Lane V/C Ratio	0.162	0.074	0.625	0.052	0.598	0.114
HCM Control Delay	10.6	9.2	17	9.1	16.3	10.1
HCM Lane LOS	B	A	C	A	C	B
HCM 95th-tile Q	0.6	0.2	4.4	0.2	4	0.4

Grand Avenue Vision Project - Phase 1
5: Juniper St & Grand Ave

Near-Term with Project
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	314	32	105	317	36	53	198	27	20	105	16
Future Volume (veh/h)	22	314	32	105	317	36	53	198	27	20	105	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	338	34	113	341	39	57	213	29	22	113	17
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	245	587	498	247	587	498	769	929	126	666	916	138
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.58	0.58	0.58	0.58	0.58	0.58
Sat Flow, veh/h	1003	1870	1585	1010	1870	1585	1260	1611	219	1138	1588	239
Grp Volume(v), veh/h	24	338	34	113	341	39	57	0	242	22	0	130
Grp Sat Flow(s),veh/h/ln	1003	1870	1585	1010	1870	1585	1260	0	1831	1138	0	1827
Q Serve(g_s), s	1.8	13.1	1.3	9.1	13.3	1.5	1.9	0.0	5.6	0.8	0.0	2.8
Cycle Q Clear(g_c), s	15.1	13.1	1.3	22.3	13.3	1.5	4.7	0.0	5.6	6.4	0.0	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		0.13
Lane Grp Cap(c), veh/h	245	587	498	247	587	498	769	0	1055	666	0	1053
V/C Ratio(X)	0.10	0.58	0.07	0.46	0.58	0.08	0.07	0.00	0.23	0.03	0.00	0.12
Avail Cap(c_a), veh/h	623	1294	1096	629	1294	1096	769	0	1055	666	0	1053
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.3	24.9	20.9	34.2	25.0	20.9	9.4	0.0	9.0	10.5	0.0	8.4
Incr Delay (d2), s/veh	0.2	0.9	0.1	1.3	0.9	0.1	0.2	0.0	0.5	0.1	0.0	0.2
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	0.4	5.8	0.5	2.3	5.8	0.6	0.5	0.0	2.3	0.2	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.4	25.8	20.9	35.5	25.9	21.0	9.6	0.0	9.5	10.6	0.0	8.6
LnGrp LOS	C	C	C	D	C	C	A	A	A	B	A	A
Approach Vol, veh/h		396			493			299			152	
Approach Delay, s/veh		25.7			27.7			9.5			8.9	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		32.2		54.5		32.2				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		60.0		50.0		60.0				
Max Q Clear Time (g_c+I1), s		7.6		17.1		8.4		24.3				
Green Ext Time (p_c), s		1.8		2.5		0.9		3.0				
Intersection Summary												
HCM 6th Ctrl Delay				20.9								
HCM 6th LOS				C								

Grand Avenue Vision Project - Phase 1
6: Escondido Blvd & Valley Pkwy

Near-Term with Project
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	84	985	72	52	432	0	0	347	135
Future Volume (veh/h)	0	0	0	84	985	72	52	432	0	0	347	135
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				91	1071	78	57	470	0	0	377	147
Peak Hour Factor				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	0	0	2	2
Cap, veh/h				236	2982	221	119	1533	0	0	839	323
Arrive On Green				0.50	0.50	0.50	0.07	0.43	0.00	0.00	0.33	0.33
Sat Flow, veh/h				470	5944	441	1781	3647	0	0	2602	965
Grp Volume(v), veh/h				358	566	317	57	470	0	0	265	259
Grp Sat Flow(s),veh/h/ln				1847	1609	1791	1781	1777	0	0	1777	1697
Q Serve(g_s), s				17.9	15.9	16.0	4.6	13.0	0.0	0.0	17.5	17.9
Cycle Q Clear(g_c), s				17.9	15.9	16.0	4.6	13.0	0.0	0.0	17.5	17.9
Prop In Lane				0.25		0.25	1.00		0.00	0.00		0.57
Lane Grp Cap(c), veh/h				927	1614	899	119	1533	0	0	594	568
V/C Ratio(X)				0.39	0.35	0.35	0.48	0.31	0.00	0.00	0.45	0.46
Avail Cap(c_a), veh/h				927	1614	899	298	1783	0	0	594	568
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				23.0	22.5	22.5	67.3	27.9	0.0	0.0	38.9	39.0
Incr Delay (d2), s/veh				1.2	0.6	1.1	1.1	0.0	0.0	0.0	2.4	2.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.2	6.2	7.1	2.1	5.6	0.0	0.0	8.1	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				24.2	23.1	23.6	68.4	27.9	0.0	0.0	41.3	41.7
LnGrp LOS				C	C	C	E	C	A	A	D	D
Approach Vol, veh/h					1240			527			524	
Approach Delay, s/veh					23.6			32.3			41.5	
Approach LOS					C			C			D	
Timer - Assigned Phs				3	4	6	8					
Phs Duration (G+Y+Rc), s				14.5	55.0	80.0	69.5					
Change Period (Y+Rc), s				4.5	5.0	5.0	5.0					
Max Green Setting (Gmax), s				25.0	50.0	75.0	75.0					
Max Q Clear Time (g_c+I1), s				6.6	19.9	19.9	15.0					
Green Ext Time (p_c), s				0.0	2.1	6.4	2.3					
Intersection Summary												
HCM 6th Ctrl Delay				29.7								
HCM 6th LOS				C								

Grand Avenue Vision Project - Phase 1
7: S. Brodaway & Valley Pkwy

Near-Term with Project
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  			 			 	
Traffic Volume (veh/h)	0	0	0	21	914	112	67	189	0	0	222	126
Future Volume (veh/h)	0	0	0	21	914	112	67	189	0	0	222	126
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				23	983	120	72	203	0	0	239	135
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				34	1532	471	637	1998	0	0	1998	891
Arrive On Green				0.30	0.30	0.30	0.56	0.56	0.00	0.00	0.56	0.56
Sat Flow, veh/h				113	5155	1585	1009	3647	0	0	3647	1585
Grp Volume(v), veh/h				378	628	120	72	203	0	0	239	135
Grp Sat Flow(s),veh/h/ln				1865	1702	1585	1009	1777	0	0	1777	1585
Q Serve(g_s), s				12.7	11.3	4.1	2.6	1.9	0.0	0.0	2.2	2.9
Cycle Q Clear(g_c), s				12.7	11.3	4.1	4.8	1.9	0.0	0.0	2.2	2.9
Prop In Lane				0.06		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				554	1011	471	637	1998	0	0	1998	891
V/C Ratio(X)				0.68	0.62	0.25	0.11	0.10	0.00	0.00	0.12	0.15
Avail Cap(c_a), veh/h				1049	1914	891	637	1998	0	0	1998	891
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.0	21.5	19.0	8.4	7.2	0.0	0.0	7.3	7.4
Incr Delay (d2), s/veh				1.1	0.5	0.2	0.4	0.1	0.0	0.0	0.1	0.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.4	4.3	1.5	0.6	0.6	0.0	0.0	0.8	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				23.2	22.0	19.2	8.8	7.3	0.0	0.0	7.4	7.8
LnGrp LOS				C	C	B	A	A	A	A	A	A
Approach Vol, veh/h					1126			275			374	
Approach Delay, s/veh					22.1			7.7			7.6	
Approach LOS					C			A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		45.0				45.0		26.1				
Change Period (Y+Rc), s		* 5				5.0		5.0				
Max Green Setting (Gmax), s		* 40				40.0		40.0				
Max Q Clear Time (g_c+I1), s		6.8				4.9		14.7				
Green Ext Time (p_c), s		2.1				1.7		6.4				
Intersection Summary												
HCM 6th Ctrl Delay					16.8							
HCM 6th LOS					B							
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Grand Avenue Vision Project - Phase 1
8: Juniper St & Valley Pkwy

Near-Term with Project
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  							
Traffic Volume (veh/h)	0	0	0	28	1024	5	164	117	0	0	80	45
Future Volume (veh/h)	0	0	0	28	1024	5	164	117	0	0	80	45
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				30	1113	5	178	127	0	0	87	49
Peak Hour Factor				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	0	0	2	2
Cap, veh/h				59	2344	11	579	831	0	0	499	281
Arrive On Green				0.44	0.44	0.44	0.44	0.44	0.00	0.00	0.44	0.44
Sat Flow, veh/h				134	5274	24	1253	1870	0	0	1124	633
Grp Volume(v), veh/h				419	348	381	178	127	0	0	0	136
Grp Sat Flow(s),veh/h/ln				1864	1702	1866	1253	1870	0	0	0	1756
Q Serve(g_s), s				14.5	12.8	12.8	9.0	3.6	0.0	0.0	0.0	4.2
Cycle Q Clear(g_c), s				14.5	12.8	12.8	13.2	3.6	0.0	0.0	0.0	4.2
Prop In Lane				0.07		0.01	1.00		0.00	0.00		0.36
Lane Grp Cap(c), veh/h				828	756	829	579	831	0	0	0	781
V/C Ratio(X)				0.51	0.46	0.46	0.31	0.15	0.00	0.00	0.00	0.17
Avail Cap(c_a), veh/h				828	756	829	579	831	0	0	0	781
HCM Platoon Ratio				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	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				17.9	17.5	17.5	19.0	14.9	0.0	0.0	0.0	15.1
Incr Delay (d2), s/veh				2.2	2.0	1.8	1.4	0.4	0.0	0.0	0.0	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.4	5.2	5.7	2.7	1.6	0.0	0.0	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				20.1	19.5	19.3	20.4	15.3	0.0	0.0	0.0	15.5
LnGrp LOS				C	B	B	C	B	A	A	A	B
Approach Vol, veh/h					1148			305				136
Approach Delay, s/veh					19.6			18.3				15.5
Approach LOS					B			B				B
Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				45.0		45.0		45.0				
Change Period (Y+Rc), s				* 5		5.0		5.0				
Max Green Setting (Gmax), s				* 40		40.0		40.0				
Max Q Clear Time (g_c+I1), s				6.2		16.5		15.2				
Green Ext Time (p_c), s				0.8		7.9		1.3				
Intersection Summary												
HCM 6th Ctrl Delay				19.0								
HCM 6th LOS				B								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Grand Avenue Vision Project - Phase 1
 9: Escondido Blvd & 2nd Ave

Near-Term with Project
 Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 			 	
Traffic Volume (veh/h)	40	1121	50	0	0	0	0	378	130	91	355	0
Future Volume (veh/h)	40	1121	50	0	0	0	0	378	130	91	355	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	43	1205	54				0	406	140	98	382	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	78	2327	108				0	968	330	119	1656	0
Arrive On Green	0.47	0.47	0.47				0.00	0.37	0.37	0.07	0.47	0.00
Sat Flow, veh/h	168	4994	231				0	2694	887	1781	3647	0
Grp Volume(v), veh/h	478	397	427				0	276	270	98	382	0
Grp Sat Flow(s),veh/h/ln	1862	1702	1829				0	1777	1711	1781	1777	0
Q Serve(g_s), s	27.7	24.4	24.4				0.0	17.3	17.7	8.2	9.7	0.0
Cycle Q Clear(g_c), s	27.7	24.4	24.4				0.0	17.3	17.7	8.2	9.7	0.0
Prop In Lane	0.09		0.13				0.00		0.52	1.00		0.00
Lane Grp Cap(c), veh/h	868	793	852				0	661	637	119	1656	0
V/C Ratio(X)	0.55	0.50	0.50				0.00	0.42	0.42	0.83	0.23	0.00
Avail Cap(c_a), veh/h	868	793	852				0	661	637	296	1656	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.8	27.9	27.9				0.0	35.1	35.2	69.2	24.0	0.0
Incr Delay (d2), s/veh	2.5	2.3	2.1				0.0	1.9	2.1	5.4	0.3	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
%ile BackOfQ(50%),veh/ln	13.1	10.5	11.3				0.0	7.9	7.8	3.9	4.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.3	30.2	30.0				0.0	37.0	37.2	74.6	24.3	0.0
LnGrp LOS	C	C	C				A	D	D	E	C	A
Approach Vol, veh/h		1302						546			480	
Approach Delay, s/veh		30.5						37.1			34.6	
Approach LOS		C						D			C	
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		75.1		75.1			14.1	61.0				
Change Period (Y+Rc), s		5.1		5.1			4.1	5.1				
Max Green Setting (Gmax), s		70.0		70.0			25.0	50.0				
Max Q Clear Time (g_c+l1), s		29.7		11.7			10.2	19.7				
Green Ext Time (p_c), s		6.4		1.8			0.0	2.1				
Intersection Summary												
HCM 6th Ctrl Delay				32.9								
HCM 6th LOS				C								

Grand Avenue Vision Project - Phase 1
10: Broadway & 2nd Ave

Near-Term with Project
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 		 		
Traffic Volume (veh/h)	69	1246	18	0	0	0	0	89	23	48	85	0
Future Volume (veh/h)	69	1246	18	0	0	0	0	89	23	48	85	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	76	1369	20				0	98	25	53	93	0
Peak Hour Factor	0.91	0.91	0.91				0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	96	1851	28				0	745	190	706	970	0
Arrive On Green	0.36	0.36	0.36				0.00	0.52	0.52	0.52	0.52	0.00
Sat Flow, veh/h	264	5075	76				0	1438	367	1268	1870	0
Grp Volume(v), veh/h	534	445	486				0	0	123	53	93	0
Grp Sat Flow(s),veh/h/ln	1857	1702	1857				0	0	1804	1268	1870	0
Q Serve(g_s), s	19.8	17.4	17.4				0.0	0.0	2.7	1.7	1.9	0.0
Cycle Q Clear(g_c), s	19.8	17.4	17.4				0.0	0.0	2.7	4.5	1.9	0.0
Prop In Lane	0.14		0.04				0.00		0.20	1.00		0.00
Lane Grp Cap(c), veh/h	678	621	677				0	0	936	706	970	0
V/C Ratio(X)	0.79	0.72	0.72				0.00	0.00	0.13	0.08	0.10	0.00
Avail Cap(c_a), veh/h	963	883	963				0	0	936	706	970	0
HCM Platoon Ratio	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				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.8	21.1	21.1				0.0	0.0	9.6	10.7	9.4	0.0
Incr Delay (d2), s/veh	1.8	0.6	0.6				0.0	0.0	0.3	0.2	0.2	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
%ile BackOfQ(50%),veh/ln	8.4	6.6	7.2				0.0	0.0	1.1	0.5	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	21.7	21.7				0.0	0.0	9.9	11.0	9.6	0.0
LnGrp LOS	C	C	C				A	A	A	B	A	A
Approach Vol, veh/h		1465						123			146	
Approach Delay, s/veh		22.4						9.9			10.1	
Approach LOS		C						A			B	
Timer - Assigned Phs		2		4				6				
Phs Duration (G+Y+Rc), s		44.5		32.6				44.5				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		40.0		40.0				40.0				
Max Q Clear Time (g_c+l1), s		4.7		21.8				6.5				
Green Ext Time (p_c), s		0.4		6.4				0.8				
Intersection Summary												
HCM 6th Ctrl Delay			20.5									
HCM 6th LOS			C									

Grand Avenue Vision Project - Phase 1
11: Juniper St & 2nd Ave

Near-Term with Project
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 		 		
Traffic Volume (veh/h)	62	1247	90	0	0	0	0	214	120	10	195	0
Future Volume (veh/h)	62	1247	90	0	0	0	0	214	120	10	195	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	67	1355	98				0	233	130	11	212	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	81	1731	129				0	619	345	511	1026	0
Arrive On Green	0.36	0.36	0.36				0.00	0.55	0.55	0.55	0.55	0.00
Sat Flow, veh/h	223	4787	358				0	1128	629	1019	1870	0
Grp Volume(v), veh/h	559	466	495				0	0	363	11	212	0
Grp Sat Flow(s),veh/h/ln	1859	1702	1806				0	0	1757	1019	1870	0
Q Serve(g_s), s	27.5	24.1	24.1				0.0	0.0	11.8	0.6	5.8	0.0
Cycle Q Clear(g_c), s	27.5	24.1	24.1				0.0	0.0	11.8	12.4	5.8	0.0
Prop In Lane	0.12		0.20				0.00		0.36	1.00		0.00
Lane Grp Cap(c), veh/h	672	615	653				0	0	964	511	1026	0
V/C Ratio(X)	0.83	0.76	0.76				0.00	0.00	0.38	0.02	0.21	0.00
Avail Cap(c_a), veh/h	742	679	721				0	0	964	511	1026	0
HCM Platoon Ratio	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				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.2	28.1	28.1				0.0	0.0	12.9	16.4	11.5	0.0
Incr Delay (d2), s/veh	7.4	4.5	4.2				0.0	0.0	1.1	0.0	0.1	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
%ile BackOfQ(50%),veh/ln	13.3	10.3	10.9				0.0	0.0	4.8	0.1	2.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.6	32.6	32.3				0.0	0.0	14.0	16.4	11.6	0.0
LnGrp LOS	D	C	C				A	A	B	B	B	A
Approach Vol, veh/h		1520						363			223	
Approach Delay, s/veh		34.0						14.0			11.9	
Approach LOS		C						B			B	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		40.8		59.5				59.5				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		40.0		55.0				55.0				
Max Q Clear Time (g_c+I1), s		29.5		14.4				13.8				
Green Ext Time (p_c), s		6.7		1.4				2.7				
Intersection Summary												
HCM 6th Ctrl Delay			28.2									
HCM 6th LOS			C									

Grand Avenue Vision Project - Phase 1
1: Escondido Blvd & Grand Ave

Horizon Year
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	248	14	76	290	43	29	417	39	54	416	13
Future Volume (veh/h)	81	248	14	76	290	43	29	417	39	54	416	13
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	85	261	15	80	305	45	31	439	41	57	438	14
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	721	2214	127	776	2016	294	205	752	70	193	805	26
Arrive On Green	0.65	0.65	0.65	0.65	0.65	0.65	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1031	3417	195	1103	3111	454	939	3286	306	915	3515	112
Grp Volume(v), veh/h	85	135	141	80	173	177	31	237	243	57	221	231
Grp Sat Flow(s),veh/h/ln	1031	1777	1835	1103	1777	1789	939	1777	1815	915	1777	1850
Q Serve(g_s), s	2.7	2.2	2.3	2.3	2.9	3.0	2.3	9.1	9.2	4.6	8.5	8.5
Cycle Q Clear(g_c), s	5.7	2.2	2.3	4.6	2.9	3.0	10.8	9.1	9.2	13.8	8.5	8.5
Prop In Lane	1.00		0.11	1.00		0.25	1.00		0.17	1.00		0.06
Lane Grp Cap(c), veh/h	721	1151	1189	776	1151	1159	205	407	416	193	407	423
V/C Ratio(X)	0.12	0.12	0.12	0.10	0.15	0.15	0.15	0.58	0.59	0.29	0.54	0.55
Avail Cap(c_a), veh/h	721	1151	1189	776	1151	1159	598	1151	1176	577	1151	1199
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	6.4	5.2	5.2	6.0	5.3	5.3	31.0	26.5	26.5	32.6	26.2	26.2
Incr Delay (d2), s/veh	0.3	0.2	0.2	0.0	0.0	0.0	0.1	0.5	0.5	0.3	0.4	0.4
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(50%),veh/ln	0.6	0.7	0.8	0.5	0.9	0.9	0.5	3.7	3.8	1.0	3.4	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.8	5.4	5.4	6.1	5.3	5.3	31.1	27.0	27.0	32.9	26.6	26.6
LnGrp LOS	A	A	A	A	A	A	C	C	C	C	C	C
Approach Vol, veh/h		361			430			511			509	
Approach Delay, s/veh		5.7			5.5			27.2			27.3	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		22.7		54.5		22.7				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		50.0		50.0		50.0				
Max Q Clear Time (g_c+I1), s		7.7		15.8		6.6		12.8				
Green Ext Time (p_c), s		1.3		1.9		1.6		1.9				
Intersection Summary												
HCM 6th Ctrl Delay				17.8								
HCM 6th LOS				B								

Grand Avenue Vision Project - Phase 1
2: Maple St. & Grand Ave

Horizon Year
Timing Plan: AM Peak

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

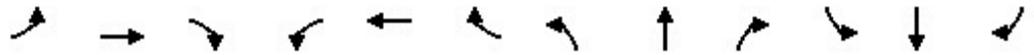
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↶↷		↶	↶↷			↷				
Traffic Vol, veh/h	26	287	17	70	334	25	20	13	25	0	0	0
Future Vol, veh/h	26	287	17	70	334	25	20	13	25	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	302	18	74	352	26	21	14	26	0	0	0
Number of Lanes	1	2	0	1	2	0	0	1	0	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	3	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	3
HCM Control Delay	9.4	9.6	9.5
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3
Vol Left, %	34%	100%	0%	0%	100%	0%	0%
Vol Thru, %	22%	0%	100%	85%	0%	100%	82%
Vol Right, %	43%	0%	0%	15%	0%	0%	18%
Sign Control	Stop						
Traffic Vol by Lane	58	26	191	113	70	223	136
LT Vol	20	26	0	0	70	0	0
Through Vol	13	0	191	96	0	223	111
RT Vol	25	0	0	17	0	0	25
Lane Flow Rate	61	27	201	119	74	234	144
Geometry Grp	7	7	7	7	7	7	7
Degree of Util (X)	0.102	0.043	0.286	0.165	0.113	0.327	0.195
Departure Headway (Hd)	6.042	5.623	5.121	5.015	5.523	5.021	4.892
Convergence, Y/N	Yes						
Cap	591	637	701	714	649	715	733
Service Time	3.802	3.36	2.858	2.752	3.257	2.755	2.627
HCM Lane V/C Ratio	0.103	0.042	0.287	0.167	0.114	0.327	0.196
HCM Control Delay	9.5	8.6	9.9	8.7	9	10.2	8.8
HCM Lane LOS	A	A	A	A	A	B	A
HCM 95th-tile Q	0.3	0.1	1.2	0.6	0.4	1.4	0.7

Grand Avenue Vision Project - Phase 1
3: Broadway/S. Brodaway & Grand Ave

Horizon Year
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	202	24	9	311	48	46	186	17	101	185	102
Future Volume (veh/h)	87	202	24	9	311	48	46	186	17	101	185	102
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	213	25	9	327	51	48	196	18	106	195	107
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	690	1991	231	789	1915	296	275	405	37	275	448	380
Arrive On Green	0.62	0.62	0.62	0.62	0.62	0.62	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1005	3208	372	1142	3085	476	1077	1687	155	1167	1870	1585
Grp Volume(v), veh/h	92	117	121	9	187	191	48	0	214	106	195	107
Grp Sat Flow(s),veh/h/ln	1005	1777	1803	1142	1777	1785	1077	0	1842	1167	1870	1585
Q Serve(g_s), s	2.8	1.7	1.8	0.2	2.9	2.9	2.6	0.0	6.4	5.5	5.7	3.5
Cycle Q Clear(g_c), s	5.7	1.7	1.8	2.0	2.9	2.9	8.3	0.0	6.4	12.0	5.7	3.5
Prop In Lane	1.00		0.21	1.00		0.27	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	690	1103	1119	789	1103	1108	275	0	442	275	448	380
V/C Ratio(X)	0.13	0.11	0.11	0.01	0.17	0.17	0.17	0.00	0.48	0.39	0.43	0.28
Avail Cap(c_a), veh/h	690	1103	1119	789	1103	1108	685	0	1143	720	1161	984
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(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.4	5.0	5.0	5.4	5.2	5.2	24.3	0.0	21.1	26.2	20.8	20.0
Incr Delay (d2), s/veh	0.4	0.2	0.2	0.0	0.1	0.1	0.2	0.0	0.6	0.7	0.5	0.3
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	0.5	0.6	0.0	0.8	0.8	0.6	0.0	2.7	1.5	2.4	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.8	5.2	5.2	5.4	5.2	5.2	24.5	0.0	21.7	26.9	21.3	20.3
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	C	C
Approach Vol, veh/h		330			387			262			408	
Approach Delay, s/veh		5.6			5.2			22.2			22.5	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		44.5		20.0		44.5		20.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		40.0		40.0		40.0		40.0				
Max Q Clear Time (g_c+I1), s		7.7		14.0		4.9		10.3				
Green Ext Time (p_c), s		1.5		1.5		2.0		1.2				
Intersection Summary												
HCM 6th Ctrl Delay				13.6								
HCM 6th LOS				B								

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↑↑		↵	↑↑			↕			↕	
Traffic Vol, veh/h	45	229	71	22	388	5	47	34	6	5	42	37
Future Vol, veh/h	45	229	71	22	388	5	47	34	6	5	42	37
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	47	241	75	23	408	5	49	36	6	5	44	39
Number of Lanes	1	2	0	1	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	3	3
HCM Control Delay	9.9	11.4	10.9	10.2
HCM LOS	A	B	B	B

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	54%	100%	0%	0%	100%	0%	0%	6%
Vol Thru, %	39%	0%	100%	52%	0%	100%	96%	50%
Vol Right, %	7%	0%	0%	48%	0%	0%	4%	44%
Sign Control	Stop							
Traffic Vol by Lane	87	45	153	147	22	259	134	84
LT Vol	47	45	0	0	22	0	0	5
Through Vol	34	0	153	76	0	259	129	42
RT Vol	6	0	0	71	0	0	5	37
Lane Flow Rate	92	47	161	155	23	272	141	88
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.172	0.081	0.253	0.23	0.039	0.423	0.218	0.154
Departure Headway (Hd)	6.768	6.181	5.675	5.334	6.092	5.587	5.561	6.289
Convergence, Y/N	Yes							
Cap	530	581	635	675	589	645	648	570
Service Time	4.504	3.906	3.4	3.059	3.815	3.309	3.283	4.025
HCM Lane V/C Ratio	0.174	0.081	0.254	0.23	0.039	0.422	0.218	0.154
HCM Control Delay	10.9	9.5	10.3	9.7	9.1	12.4	9.8	10.2
HCM Lane LOS	B	A	B	A	A	B	A	B
HCM 95th-tile Q	0.6	0.3	1	0.9	0.1	2.1	0.8	0.5

Grand Avenue Vision Project - Phase 1
5: Juniper St & Grand Ave

Horizon Year
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	156	55	164	260	34	90	249	58	8	154	8
Future Volume (veh/h)	17	156	55	164	260	34	90	249	58	8	154	8
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	164	58	173	274	36	95	262	61	8	162	8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	655	223	322	796	104	809	923	215	670	1111	55
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.63	0.63	0.63	0.63	0.63	0.63
Sat Flow, veh/h	1069	2600	888	1159	3162	411	1215	1467	342	1057	1767	87
Grp Volume(v), veh/h	18	110	112	173	153	157	95	0	323	8	0	170
Grp Sat Flow(s),veh/h/ln	1069	1777	1711	1159	1777	1796	1215	0	1809	1057	0	1855
Q Serve(g_s), s	1.1	3.9	4.2	11.2	5.6	5.7	2.8	0.0	6.4	0.3	0.0	3.0
Cycle Q Clear(g_c), s	6.8	3.9	4.2	15.3	5.6	5.7	5.7	0.0	6.4	6.7	0.0	3.0
Prop In Lane	1.00		0.52	1.00		0.23	1.00		0.19	1.00		0.05
Lane Grp Cap(c), veh/h	283	447	431	322	447	452	809	0	1137	670	0	1166
V/C Ratio(X)	0.06	0.25	0.26	0.54	0.34	0.35	0.12	0.00	0.28	0.01	0.00	0.15
Avail Cap(c_a), veh/h	821	1341	1291	904	1341	1355	809	0	1137	670	0	1166
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.2	23.7	23.8	30.0	24.4	24.4	7.2	0.0	6.7	8.2	0.0	6.0
Incr Delay (d2), s/veh	0.1	0.3	0.3	1.4	0.4	0.5	0.3	0.0	0.6	0.0	0.0	0.3
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	0.3	1.6	1.7	3.1	2.3	2.4	0.7	0.0	2.4	0.1	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.3	24.0	24.1	31.3	24.8	24.9	7.5	0.0	7.3	8.2	0.0	6.3
LnGrp LOS	C	C	C	C	C	C	A	A	A	A	A	A
Approach Vol, veh/h		240			483			418			178	
Approach Delay, s/veh		24.3			27.2			7.3			6.4	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		25.0		54.5		25.0				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		60.0		50.0		60.0				
Max Q Clear Time (g_c+I1), s		8.4		8.8		8.7		17.3				
Green Ext Time (p_c), s		2.7		1.5		1.1		2.7				
Intersection Summary												
HCM 6th Ctrl Delay				17.6								
HCM 6th LOS				B								

Grand Avenue Vision Project - Phase 1
6: Escondido Blvd & Valley Pkwy

Horizon Year
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	51	1064	50	47	192	0	0	323	97
Future Volume (veh/h)	0	0	0	51	1064	50	47	192	0	0	323	97
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				54	1120	53	49	202	0	0	340	102
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				143	3170	153	114	1527	0	0	907	268
Arrive On Green				0.50	0.50	0.50	0.06	0.43	0.00	0.00	0.34	0.34
Sat Flow, veh/h				283	6301	305	1781	3647	0	0	2798	799
Grp Volume(v), veh/h				354	557	316	49	202	0	0	222	220
Grp Sat Flow(s),veh/h/ln				1856	1609	1816	1781	1777	0	0	1777	1727
Q Serve(g_s), s				17.4	15.5	15.6	3.9	5.1	0.0	0.0	14.1	14.5
Cycle Q Clear(g_c), s				17.4	15.5	15.6	3.9	5.1	0.0	0.0	14.1	14.5
Prop In Lane				0.15		0.17	1.00		0.00	0.00		0.46
Lane Grp Cap(c), veh/h				934	1619	914	114	1527	0	0	596	579
V/C Ratio(X)				0.38	0.34	0.35	0.43	0.13	0.00	0.00	0.37	0.38
Avail Cap(c_a), veh/h				934	1619	914	299	1788	0	0	596	579
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.7	22.3	22.3	67.1	25.7	0.0	0.0	37.6	37.7
Incr Delay (d2), s/veh				1.2	0.6	1.0	0.9	0.0	0.0	0.0	1.8	1.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.0	6.1	7.0	1.8	2.2	0.0	0.0	6.5	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				23.9	22.8	23.3	68.1	25.7	0.0	0.0	39.4	39.6
LnGrp LOS				C	C	C	E	C	A	A	D	D
Approach Vol, veh/h					1227			251			442	
Approach Delay, s/veh					23.3			34.0			39.5	
Approach LOS					C			C			D	
Timer - Assigned Phs				3	4	6	8					
Phs Duration (G+Y+Rc), s				14.1	55.0	80.0	69.1					
Change Period (Y+Rc), s				4.5	5.0	5.0	5.0					
Max Green Setting (Gmax), s				25.0	50.0	75.0	75.0					
Max Q Clear Time (g_c+I1), s				5.9	16.5	19.4	7.1					
Green Ext Time (p_c), s				0.0	1.7	6.3	0.9					
Intersection Summary												
HCM 6th Ctrl Delay				28.4								
HCM 6th LOS				C								

Grand Avenue Vision Project - Phase 1
7: S. Brodaway & Valley Pkwy

Horizon Year
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑	↑	↑↑			↑↑	↑
Traffic Volume (veh/h)	0	0	0	15	1149	68	47	68	0	0	241	208
Future Volume (veh/h)	0	0	0	15	1149	68	47	68	0	0	241	208
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				16	1209	72	49	72	0	0	254	219
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				22	1779	542	546	1872	0	0	1872	835
Arrive On Green				0.34	0.34	0.34	0.53	0.53	0.00	0.00	0.53	0.53
Sat Flow, veh/h				65	5206	1585	921	3647	0	0	3647	1585
Grp Volume(v), veh/h				461	764	72	49	72	0	0	254	219
Grp Sat Flow(s),veh/h/ln				1867	1702	1585	921	1777	0	0	1777	1585
Q Serve(g_s), s				16.4	14.5	2.4	2.2	0.7	0.0	0.0	2.8	5.8
Cycle Q Clear(g_c), s				16.4	14.5	2.4	4.9	0.7	0.0	0.0	2.8	5.8
Prop In Lane				0.03		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				638	1163	542	546	1872	0	0	1872	835
V/C Ratio(X)				0.72	0.66	0.13	0.09	0.04	0.00	0.00	0.14	0.26
Avail Cap(c_a), veh/h				983	1793	835	546	1872	0	0	1872	835
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				21.9	21.2	17.2	10.4	8.7	0.0	0.0	9.2	9.9
Incr Delay (d2), s/veh				1.2	0.5	0.1	0.3	0.0	0.0	0.0	0.2	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
%ile BackOfQ(50%),veh/ln				6.9	5.5	0.8	0.5	0.3	0.0	0.0	1.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				23.0	21.7	17.3	10.7	8.7	0.0	0.0	9.3	10.6
LnGrp LOS				C	C	B	B	A	A	A	A	B
Approach Vol, veh/h					1297			121			473	
Approach Delay, s/veh					21.9			9.5			9.9	
Approach LOS					C			A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		45.0				45.0		30.9				
Change Period (Y+Rc), s		* 5				5.0		5.0				
Max Green Setting (Gmax), s		* 40				40.0		40.0				
Max Q Clear Time (g_c+I1), s		6.9				7.8		18.4				
Green Ext Time (p_c), s		0.8				2.0		7.6				
Intersection Summary												
HCM 6th Ctrl Delay						18.1						
HCM 6th LOS						B						
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Grand Avenue Vision Project - Phase 1
8: Juniper St & Valley Pkwy

Horizon Year
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					←↑↑↑		↑	↑			↑	
Traffic Volume (veh/h)	0	0	0	31	1641	1	135	116	0	0	117	132
Future Volume (veh/h)	0	0	0	31	1641	1	135	116	0	0	117	132
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		No
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				33	1727	1	142	122	0	0	123	139
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				43	2373	1	464	831	0	0	356	403
Arrive On Green				0.44	0.44	0.44	0.44	0.44	0.00	0.00	0.44	0.44
Sat Flow, veh/h				96	5338	3	1117	1870	0	0	802	906
Grp Volume(v), veh/h				642	533	586	142	122	0	0	0	262
Grp Sat Flow(s),veh/h/ln				1866	1702	1870	1117	1870	0	0	0	1707
Q Serve(g_s), s				26.2	22.8	22.8	8.6	3.5	0.0	0.0	0.0	9.1
Cycle Q Clear(g_c), s				26.2	22.8	22.8	17.7	3.5	0.0	0.0	0.0	9.1
Prop In Lane				0.05		0.00	1.00		0.00	0.00		0.53
Lane Grp Cap(c), veh/h				829	756	831	464	831	0	0	0	759
V/C Ratio(X)				0.77	0.70	0.70	0.31	0.15	0.00	0.00	0.00	0.35
Avail Cap(c_a), veh/h				829	756	831	464	831	0	0	0	759
HCM Platoon Ratio				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	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				21.2	20.2	20.2	22.2	14.9	0.0	0.0	0.0	16.4
Incr Delay (d2), s/veh				7.0	5.5	5.0	1.7	0.4	0.0	0.0	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
%ile BackOfQ(50%),veh/ln				12.4	9.7	10.5	2.4	1.5	0.0	0.0	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				28.2	25.7	25.2	23.9	15.2	0.0	0.0	0.0	17.7
LnGrp LOS				C	C	C	C	B	A	A	A	B
Approach Vol, veh/h					1761			264			262	
Approach Delay, s/veh					26.4			19.9			17.7	
Approach LOS					C			B			B	
Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				45.0		45.0		45.0				
Change Period (Y+Rc), s				* 5		5.0		5.0				
Max Green Setting (Gmax), s				* 40		40.0		40.0				
Max Q Clear Time (g_c+I1), s				11.1		28.2		19.7				
Green Ext Time (p_c), s				1.8		8.3		1.2				
Intersection Summary												
HCM 6th Ctrl Delay				24.7								
HCM 6th LOS				C								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Grand Avenue Vision Project - Phase 1
 9: Escondido Blvd & 2nd Ave

Horizon Year
 Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑						↑↑		↘	↑↑	
Traffic Volume (veh/h)	21	592	42	0	0	0	0	215	82	57	361	0
Future Volume (veh/h)	21	592	42	0	0	0	0	215	82	57	361	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	22	623	44				0	226	86	60	380	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	75	2263	164				0	1005	371	76	1656	0
Arrive On Green	0.47	0.47	0.47				0.00	0.40	0.40	0.04	0.47	0.00
Sat Flow, veh/h	162	4857	353				0	2633	938	1781	3647	0
Grp Volume(v), veh/h	253	210	225				0	156	156	60	380	0
Grp Sat Flow(s),veh/h/ln	1862	1702	1807				0	1777	1701	1781	1777	0
Q Serve(g_s), s	12.6	11.3	11.4				0.0	8.7	9.2	5.0	9.6	0.0
Cycle Q Clear(g_c), s	12.6	11.3	11.4				0.0	8.7	9.2	5.0	9.6	0.0
Prop In Lane	0.09		0.20				0.00		0.55	1.00		0.00
Lane Grp Cap(c), veh/h	868	793	842				0	703	673	76	1656	0
V/C Ratio(X)	0.29	0.27	0.27				0.00	0.22	0.23	0.78	0.23	0.00
Avail Cap(c_a), veh/h	868	793	842				0	703	673	296	1656	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.8	24.4	24.5				0.0	30.1	30.2	71.2	24.0	0.0
Incr Delay (d2), s/veh	0.9	0.8	0.8				0.0	0.7	0.8	6.4	0.3	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
%ile BackOfQ(50%),veh/ln	5.9	4.8	5.2				0.0	3.9	3.9	2.4	4.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.6	25.2	25.2				0.0	30.8	31.0	77.6	24.3	0.0
LnGrp LOS	C	C	C				A	C	C	E	C	A
Approach Vol, veh/h		689						312			440	
Approach Delay, s/veh		25.4						30.9			31.6	
Approach LOS		C						C			C	
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		75.1		75.1			10.5	64.6				
Change Period (Y+Rc), s		5.1		5.1			4.1	5.1				
Max Green Setting (Gmax), s		70.0		70.0			25.0	50.0				
Max Q Clear Time (g_c+l1), s		14.6		11.6			7.0	11.2				
Green Ext Time (p_c), s		2.9		1.8			0.0	1.2				
Intersection Summary												
HCM 6th Ctrl Delay				28.5								
HCM 6th LOS				C								

Grand Avenue Vision Project - Phase 1
10: Broadway & 2nd Ave

Horizon Year
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 		 		
Traffic Volume (veh/h)	42	640	30	0	0	0	0	87	18	41	94	0
Future Volume (veh/h)	42	640	30	0	0	0	0	87	18	41	94	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	44	674	32				0	92	19	43	99	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	65	1053	51				0	961	198	904	1195	0
Arrive On Green	0.22	0.22	0.22				0.00	0.64	0.64	0.64	0.64	0.00
Sat Flow, veh/h	297	4851	237				0	1504	311	1282	1870	0
Grp Volume(v), veh/h	274	229	247				0	0	111	43	99	0
Grp Sat Flow(s),veh/h/ln	1855	1702	1828				0	0	1814	1282	1870	0
Q Serve(g_s), s	8.5	7.6	7.7				0.0	0.0	1.5	0.8	1.3	0.0
Cycle Q Clear(g_c), s	8.5	7.6	7.7				0.0	0.0	1.5	2.3	1.3	0.0
Prop In Lane	0.16		0.13				0.00		0.17	1.00		0.00
Lane Grp Cap(c), veh/h	403	370	397				0	0	1160	904	1195	0
V/C Ratio(X)	0.68	0.62	0.62				0.00	0.00	0.10	0.05	0.08	0.00
Avail Cap(c_a), veh/h	1186	1088	1168				0	0	1160	904	1195	0
HCM Platoon Ratio	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				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.5	22.2	22.2				0.0	0.0	4.3	4.8	4.3	0.0
Incr Delay (d2), s/veh	0.8	0.6	0.6				0.0	0.0	0.2	0.1	0.1	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
%ile BackOfQ(50%),veh/ln	3.5	2.9	3.1				0.0	0.0	0.5	0.2	0.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	22.8	22.8				0.0	0.0	4.5	4.9	4.4	0.0
LnGrp LOS	C	C	C				A	A	A	A	A	A
Approach Vol, veh/h		750						111			142	
Approach Delay, s/veh		23.0						4.5			4.6	
Approach LOS		C						A			A	
Timer - Assigned Phs		2		4				6				
Phs Duration (G+Y+Rc), s		44.5		18.1				44.5				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		40.0		40.0				40.0				
Max Q Clear Time (g_c+I1), s		3.5		10.5				4.3				
Green Ext Time (p_c), s		0.4		3.1				0.8				
Intersection Summary												
HCM 6th Ctrl Delay			18.3									
HCM 6th LOS			B									

Grand Avenue Vision Project - Phase 1
11: Juniper St & 2nd Ave

Horizon Year
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 		 		
Traffic Volume (veh/h)	83	784	90	0	0	0	0	380	126	16	341	0
Future Volume (veh/h)	83	784	90	0	0	0	0	380	126	16	341	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	87	825	95				0	400	133	17	359	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	121	1219	144				0	833	277	481	1160	0
Arrive On Green	0.28	0.28	0.28				0.00	0.62	0.62	0.62	0.62	0.00
Sat Flow, veh/h	434	4376	518				0	1343	447	871	1870	0
Grp Volume(v), veh/h	371	310	326				0	0	533	17	359	0
Grp Sat Flow(s),veh/h/ln	1849	1702	1777				0	0	1790	871	1870	0
Q Serve(g_s), s	16.1	14.3	14.4				0.0	0.0	14.3	1.0	8.0	0.0
Cycle Q Clear(g_c), s	16.1	14.3	14.4				0.0	0.0	14.3	15.2	8.0	0.0
Prop In Lane	0.23		0.29				0.00		0.25	1.00		0.00
Lane Grp Cap(c), veh/h	515	474	495				0	0	1110	481	1160	0
V/C Ratio(X)	0.72	0.65	0.66				0.00	0.00	0.48	0.04	0.31	0.00
Avail Cap(c_a), veh/h	834	768	801				0	0	1110	481	1160	0
HCM Platoon Ratio	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				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.9	28.2	28.3				0.0	0.0	9.1	13.2	7.9	0.0
Incr Delay (d2), s/veh	1.9	1.5	1.5				0.0	0.0	1.5	0.0	0.2	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
%ile BackOfQ(50%),veh/ln	7.2	5.9	6.1				0.0	0.0	5.6	0.2	2.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.8	29.8	29.8				0.0	0.0	10.6	13.3	8.1	0.0
LnGrp LOS	C	C	C				A	A	B	B	A	A
Approach Vol, veh/h		1007						533			376	
Approach Delay, s/veh		30.2						10.6			8.3	
Approach LOS		C						B			A	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		29.2		59.5				59.5				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		40.0		55.0				55.0				
Max Q Clear Time (g_c+I1), s		18.1		17.2				16.3				
Green Ext Time (p_c), s		6.6		2.5				4.3				
Intersection Summary												
HCM 6th Ctrl Delay			20.4									
HCM 6th LOS			C									

Grand Avenue Vision Project - Phase 1
1: Escondido Blvd & Grand Ave

Horizon Year
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	457	45	130	434	86	65	585	80	114	601	25
Future Volume (veh/h)	87	457	45	130	434	86	65	585	80	114	601	25
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	481	47	137	457	91	68	616	84	120	633	26
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	464	1754	171	476	1585	314	248	1138	155	231	1260	52
Arrive On Green	0.54	0.54	0.54	0.54	0.54	0.54	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	859	3271	319	875	2957	585	775	3142	428	746	3479	143
Grp Volume(v), veh/h	92	260	268	137	273	275	68	348	352	120	323	336
Grp Sat Flow(s),veh/h/ln	859	1777	1813	875	1777	1765	775	1777	1793	746	1777	1845
Q Serve(g_s), s	6.1	7.4	7.5	9.4	7.9	8.0	7.0	14.5	14.5	14.2	13.2	13.2
Cycle Q Clear(g_c), s	14.1	7.4	7.5	16.9	7.9	8.0	20.2	14.5	14.5	28.7	13.2	13.2
Prop In Lane	1.00		0.18	1.00		0.33	1.00		0.24	1.00		0.08
Lane Grp Cap(c), veh/h	464	952	972	476	952	946	248	643	649	231	643	668
V/C Ratio(X)	0.20	0.27	0.28	0.29	0.29	0.29	0.27	0.54	0.54	0.52	0.50	0.50
Avail Cap(c_a), veh/h	464	952	972	476	952	946	383	952	961	361	952	989
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	15.8	11.8	11.8	16.4	11.9	11.9	31.1	23.6	23.6	35.0	23.2	23.2
Incr Delay (d2), s/veh	1.0	0.7	0.7	0.1	0.1	0.1	0.2	0.3	0.3	0.7	0.2	0.2
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	1.3	3.0	3.1	1.8	3.0	3.0	1.3	5.8	5.9	2.5	5.3	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.7	12.5	12.5	16.5	11.9	12.0	31.3	23.9	23.9	35.7	23.4	23.4
LnGrp LOS	B	B	B	B	B	B	C	C	C	D	C	C
Approach Vol, veh/h		620			685			768			779	
Approach Delay, s/veh		13.1			12.9			24.5			25.3	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		38.8		54.5		38.8				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		50.0		50.0		50.0				
Max Q Clear Time (g_c+I1), s		16.1		30.7		18.9		22.2				
Green Ext Time (p_c), s		2.6		3.0		2.9		3.1				
Intersection Summary												
HCM 6th Ctrl Delay				19.5								
HCM 6th LOS				B								

Grand Avenue Vision Project - Phase 1
2: Maple St. & Grand Ave

Horizon Year
Timing Plan: PM Peak

Intersection	
Intersection Delay, s/veh	14.6
Intersection LOS	B

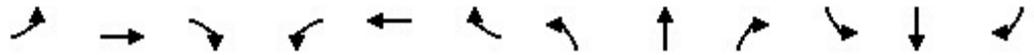
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↕		↘	↕			↕				
Traffic Vol, veh/h	26	599	9	26	528	33	44	7	47	0	0	0
Future Vol, veh/h	26	599	9	26	528	33	44	7	47	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	631	9	27	556	35	46	7	49	0	0	0
Number of Lanes	1	2	0	1	2	0	0	1	0	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	3	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	3
HCM Control Delay	15.7	14	11.6
HCM LOS	C	B	B

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3
Vol Left, %	45%	100%	0%	0%	100%	0%	0%
Vol Thru, %	7%	0%	100%	96%	0%	100%	84%
Vol Right, %	48%	0%	0%	4%	0%	0%	16%
Sign Control	Stop						
Traffic Vol by Lane	98	26	399	209	26	352	209
LT Vol	44	26	0	0	26	0	0
Through Vol	7	0	399	200	0	352	176
RT Vol	47	0	0	9	0	0	33
Lane Flow Rate	103	27	420	220	27	371	220
Geometry Grp	7	7	7	7	7	7	7
Degree of Util (X)	0.203	0.047	0.657	0.341	0.047	0.585	0.34
Departure Headway (Hd)	7.081	6.131	5.627	5.596	6.185	5.681	5.569
Convergence, Y/N	Yes						
Cap	508	585	643	644	580	637	647
Service Time	4.822	3.859	3.354	3.324	3.915	3.411	3.299
HCM Lane V/C Ratio	0.203	0.046	0.653	0.342	0.047	0.582	0.34
HCM Control Delay	11.6	9.2	18.5	11.2	9.2	16.1	11.2
HCM Lane LOS	B	A	C	B	A	C	B
HCM 95th-tile Q	0.8	0.1	4.9	1.5	0.1	3.8	1.5

Grand Avenue Vision Project - Phase 1
3: Broadway/S. Brodaway & Grand Ave

Horizon Year
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	403	61	14	386	52	91	235	18	102	153	116
Future Volume (veh/h)	167	403	61	14	386	52	91	235	18	102	153	116
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	176	424	64	15	406	55	96	247	19	107	161	122
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	611	1859	279	595	1888	254	323	455	35	266	496	420
Arrive On Green	0.60	0.60	0.60	0.60	0.60	0.60	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	931	3099	465	908	3147	424	1096	1715	132	1113	1870	1585
Grp Volume(v), veh/h	176	242	246	15	228	233	96	0	266	107	161	122
Grp Sat Flow(s),veh/h/ln	931	1777	1787	908	1777	1794	1096	0	1847	1113	1870	1585
Q Serve(g_s), s	7.2	4.2	4.3	0.5	3.9	4.0	5.1	0.0	8.2	6.1	4.6	4.1
Cycle Q Clear(g_c), s	11.1	4.2	4.3	4.8	3.9	4.0	9.8	0.0	8.2	14.3	4.6	4.1
Prop In Lane	1.00		0.26	1.00		0.24	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	611	1066	1072	595	1066	1076	323	0	490	266	496	420
V/C Ratio(X)	0.29	0.23	0.23	0.03	0.21	0.22	0.30	0.00	0.54	0.40	0.32	0.29
Avail Cap(c_a), veh/h	611	1066	1072	595	1066	1076	690	0	1108	638	1122	951
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(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.7	6.2	6.2	7.3	6.1	6.1	23.6	0.0	21.0	27.2	19.7	19.5
Incr Delay (d2), s/veh	1.2	0.5	0.5	0.0	0.1	0.1	0.4	0.0	0.7	0.7	0.3	0.3
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	1.4	1.4	1.4	0.1	1.2	1.2	1.3	0.0	3.4	1.6	1.9	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.9	6.7	6.7	7.3	6.2	6.2	24.0	0.0	21.7	27.9	20.0	19.8
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	B	B
Approach Vol, veh/h		664			476			362			390	
Approach Delay, s/veh		7.5			6.2			22.3			22.1	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		44.5		22.2		44.5		22.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		40.0		40.0		40.0		40.0				
Max Q Clear Time (g_c+I1), s		13.1		16.3		6.8		11.8				
Green Ext Time (p_c), s		3.4		1.4		2.5		1.6				
Intersection Summary												
HCM 6th Ctrl Delay				13.0								
HCM 6th LOS				B								

Grand Avenue Vision Project - Phase 1
4: Kalmia St/Kalmia St. & Grand Ave

Horizon Year
Timing Plan: PM Peak

Intersection	
Intersection Delay, s/veh	14.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↑↑		↵	↑↑			↕			↕	
Traffic Vol, veh/h	105	417	71	28	457	23	86	45	8	16	27	58
Future Vol, veh/h	105	417	71	28	457	23	86	45	8	16	27	58
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	111	439	75	29	481	24	91	47	8	17	28	61
Number of Lanes	1	2	0	1	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	3	3
HCM Control Delay	13.8	15.3	14.1	12.1
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1
Vol Left, %	62%	100%	0%	0%	100%	0%	0%	16%
Vol Thru, %	32%	0%	100%	66%	0%	100%	87%	27%
Vol Right, %	6%	0%	0%	34%	0%	0%	13%	57%
Sign Control	Stop							
Traffic Vol by Lane	139	105	278	210	28	305	175	101
LT Vol	86	105	0	0	28	0	0	16
Through Vol	45	0	278	139	0	305	152	27
RT Vol	8	0	0	71	0	0	23	58
Lane Flow Rate	146	111	293	221	29	321	185	106
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.318	0.209	0.513	0.372	0.057	0.571	0.324	0.218
Departure Headway (Hd)	7.835	6.815	6.305	6.064	6.915	6.406	6.312	7.392
Convergence, Y/N	Yes							
Cap	462	523	568	588	514	558	565	488
Service Time	5.535	4.611	4.101	3.86	4.714	4.204	4.11	5.098
HCM Lane V/C Ratio	0.316	0.212	0.516	0.376	0.056	0.575	0.327	0.217
HCM Control Delay	14.1	11.4	15.6	12.5	10.1	17.5	12.2	12.1
HCM Lane LOS	B	B	C	B	B	C	B	B
HCM 95th-tile Q	1.4	0.8	2.9	1.7	0.2	3.6	1.4	0.8

Grand Avenue Vision Project - Phase 1
5: Juniper St & Grand Ave

Horizon Year
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	326	63	165	311	35	111	244	53	16	129	14
Future Volume (veh/h)	22	326	63	165	311	35	111	244	53	16	129	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	23	343	66	174	327	37	117	257	56	17	136	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	327	947	180	305	1024	115	744	853	186	599	948	105
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.57	0.57	0.57	0.57	0.57	0.57
Sat Flow, veh/h	1018	2978	567	977	3220	362	1236	1488	324	1067	1655	183
Grp Volume(v), veh/h	23	203	206	174	179	185	117	0	313	17	0	151
Grp Sat Flow(s),veh/h/ln	1018	1777	1768	977	1777	1805	1236	0	1812	1067	0	1838
Q Serve(g_s), s	1.5	7.7	7.8	14.6	6.7	6.8	4.2	0.0	7.8	0.7	0.0	3.3
Cycle Q Clear(g_c), s	8.3	7.7	7.8	22.4	6.7	6.8	7.6	0.0	7.8	8.5	0.0	3.3
Prop In Lane	1.00		0.32	1.00		0.20	1.00		0.18	1.00		0.10
Lane Grp Cap(c), veh/h	327	565	562	305	565	574	744	0	1038	599	0	1053
V/C Ratio(X)	0.07	0.36	0.37	0.57	0.32	0.32	0.16	0.00	0.30	0.03	0.00	0.14
Avail Cap(c_a), veh/h	703	1222	1216	666	1222	1241	744	0	1038	599	0	1053
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.8	22.9	23.0	31.6	22.6	22.6	10.4	0.0	9.6	11.8	0.0	8.7
Incr Delay (d2), s/veh	0.1	0.4	0.4	1.7	0.3	0.3	0.5	0.0	0.7	0.1	0.0	0.3
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	0.4	3.2	3.2	3.5	2.8	2.9	1.2	0.0	3.1	0.2	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.8	23.3	23.4	33.3	22.9	22.9	10.9	0.0	10.4	11.9	0.0	9.0
LnGrp LOS	C	C	C	C	C	C	B	A	B	B	A	A
Approach Vol, veh/h		432			538			430			168	
Approach Delay, s/veh		23.5			26.3			10.5			9.2	
Approach LOS		C			C			B			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		32.8		54.5		32.8				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		60.0		50.0		60.0				
Max Q Clear Time (g_c+I1), s		9.8		10.3		10.5		24.4				
Green Ext Time (p_c), s		2.7		2.8		1.0		3.3				
Intersection Summary												
HCM 6th Ctrl Delay				19.3								
HCM 6th LOS				B								

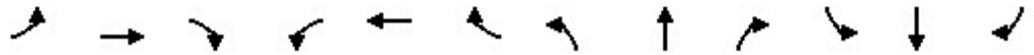
Grand Avenue Vision Project - Phase 1
6: Escondido Blvd & Valley Pkwy

Horizon Year
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	100	1006	64	84	554	0	0	452	158
Future Volume (veh/h)	0	0	0	100	1006	64	84	554	0	0	452	158
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				105	1059	67	88	583	0	0	476	166
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				273	2962	191	127	1543	0	0	862	298
Arrive On Green				0.50	0.50	0.50	0.07	0.43	0.00	0.00	0.33	0.33
Sat Flow, veh/h				547	5933	382	1781	3647	0	0	2683	897
Grp Volume(v), veh/h				354	561	316	88	583	0	0	326	316
Grp Sat Flow(s),veh/h/ln				1843	1609	1802	1781	1777	0	0	1777	1709
Q Serve(g_s), s				17.9	15.9	16.0	7.2	16.7	0.0	0.0	22.5	22.8
Cycle Q Clear(g_c), s				17.9	15.9	16.0	7.2	16.7	0.0	0.0	22.5	22.8
Prop In Lane				0.30		0.21	1.00		0.00	0.00		0.52
Lane Grp Cap(c), veh/h				920	1606	899	127	1543	0	0	591	569
V/C Ratio(X)				0.38	0.35	0.35	0.69	0.38	0.00	0.00	0.55	0.56
Avail Cap(c_a), veh/h				920	1606	899	296	1774	0	0	591	569
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				23.3	22.8	22.8	68.1	28.8	0.0	0.0	40.9	41.0
Incr Delay (d2), s/veh				1.2	0.6	1.1	2.5	0.1	0.0	0.0	3.7	3.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.2	6.3	7.2	3.4	7.2	0.0	0.0	10.5	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				24.5	23.4	23.9	70.6	28.8	0.0	0.0	44.6	44.9
LnGrp LOS				C	C	C	E	C	A	A	D	D
Approach Vol, veh/h					1231			671			642	
Approach Delay, s/veh					23.9			34.3			44.8	
Approach LOS					C			C			D	
Timer - Assigned Phs				3	4	6	8					
Phs Duration (G+Y+Rc), s				15.2	55.0	80.0	70.2					
Change Period (Y+Rc), s				4.5	5.0	5.0	5.0					
Max Green Setting (Gmax), s				25.0	50.0	75.0	75.0					
Max Q Clear Time (g_c+I1), s				9.2	24.8	19.9	18.7					
Green Ext Time (p_c), s				0.0	2.5	6.4	2.9					
Intersection Summary												
HCM 6th Ctrl Delay				31.9								
HCM 6th LOS				C								

Grand Avenue Vision Project - Phase 1
7: S. Brodaway & Valley Pkwy

Horizon Year
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑	↑	↑↑			↑↑	↑
Traffic Volume (veh/h)	0	0	0	26	1058	133	72	201	0	0	236	145
Future Volume (veh/h)	0	0	0	26	1058	133	72	201	0	0	236	145
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No			No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				27	1114	140	76	212	0	0	248	153
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				38	1683	518	593	1914	0	0	1914	854
Arrive On Green				0.33	0.33	0.33	0.54	0.54	0.00	0.00	0.54	0.54
Sat Flow, veh/h				117	5151	1585	984	3647	0	0	3647	1585
Grp Volume(v), veh/h				429	712	140	76	212	0	0	248	153
Grp Sat Flow(s),veh/h/ln				1864	1702	1585	984	1777	0	0	1777	1585
Q Serve(g_s), s				14.9	13.2	4.8	3.1	2.2	0.0	0.0	2.6	3.7
Cycle Q Clear(g_c), s				14.9	13.2	4.8	5.7	2.2	0.0	0.0	2.6	3.7
Prop In Lane				0.06		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				609	1112	518	593	1914	0	0	1914	854
V/C Ratio(X)				0.70	0.64	0.27	0.13	0.11	0.00	0.00	0.13	0.18
Avail Cap(c_a), veh/h				1004	1834	854	593	1914	0	0	1914	854
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				21.9	21.3	18.5	9.9	8.4	0.0	0.0	8.5	8.7
Incr Delay (d2), s/veh				1.1	0.5	0.2	0.4	0.1	0.0	0.0	0.1	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.3	5.0	1.7	0.7	0.8	0.0	0.0	0.9	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				23.0	21.7	18.7	10.3	8.5	0.0	0.0	8.6	9.2
LnGrp LOS				C	C	B	B	A	A	A	A	A
Approach Vol, veh/h					1281			288			401	
Approach Delay, s/veh					21.8			9.0			8.9	
Approach LOS					C			A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		45.0				45.0		29.3				
Change Period (Y+Rc), s		* 5				5.0		5.0				
Max Green Setting (Gmax), s		* 40				40.0		40.0				
Max Q Clear Time (g_c+l1), s		7.7				5.7		16.9				
Green Ext Time (p_c), s		2.2				1.8		7.3				

Intersection Summary

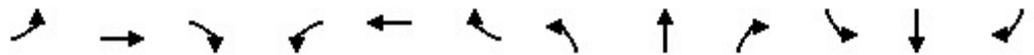
HCM 6th Ctrl Delay	17.3
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Grand Avenue Vision Project - Phase 1
8: Juniper St & Valley Pkwy

Horizon Year
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					←↑↑↑		↑	↑			↑	
Traffic Volume (veh/h)	0	0	0	28	1155	7	178	120	0	0	78	59
Future Volume (veh/h)	0	0	0	28	1155	7	178	120	0	0	78	59
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No			No				No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				29	1216	7	187	126	0	0	82	62
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				53	2347	14	570	831	0	0	439	332
Arrive On Green				0.44	0.44	0.44	0.44	0.44	0.00	0.00	0.44	0.44
Sat Flow, veh/h				118	5281	31	1244	1870	0	0	988	747
Grp Volume(v), veh/h				457	379	416	187	126	0	0	0	144
Grp Sat Flow(s),veh/h/ln				1864	1702	1865	1244	1870	0	0	0	1736
Q Serve(g_s), s				16.2	14.3	14.3	9.6	3.6	0.0	0.0	0.0	4.5
Cycle Q Clear(g_c), s				16.2	14.3	14.3	14.2	3.6	0.0	0.0	0.0	4.5
Prop In Lane				0.06		0.02	1.00		0.00	0.00		0.43
Lane Grp Cap(c), veh/h				829	756	829	570	831	0	0	0	771
V/C Ratio(X)				0.55	0.50	0.50	0.33	0.15	0.00	0.00	0.00	0.19
Avail Cap(c_a), veh/h				829	756	829	570	831	0	0	0	771
HCM Platoon Ratio				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	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				18.4	17.9	17.9	19.4	14.9	0.0	0.0	0.0	15.1
Incr Delay (d2), s/veh				2.6	2.4	2.2	1.5	0.4	0.0	0.0	0.0	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.3	5.9	6.4	2.9	1.6	0.0	0.0	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				21.0	20.2	20.0	21.0	15.3	0.0	0.0	0.0	15.7
LnGrp LOS				C	C	C	C	B	A	A	A	B
Approach Vol, veh/h					1252			313				144
Approach Delay, s/veh					20.5			18.7				15.7
Approach LOS					C			B				B
Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				45.0		45.0		45.0				
Change Period (Y+Rc), s				* 5		5.0		5.0				
Max Green Setting (Gmax), s				* 40		40.0		40.0				
Max Q Clear Time (g_c+I1), s				6.5		18.2		16.2				
Green Ext Time (p_c), s				0.9		8.5		1.3				

Intersection Summary

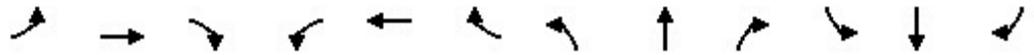
HCM 6th Ctrl Delay	19.7
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Grand Avenue Vision Project - Phase 1
 9: Escondido Blvd & 2nd Ave

Horizon Year
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑						↑↑		↘	↑↑	
Traffic Volume (veh/h)	49	1195	64	0	0	0	0	544	187	122	515	0
Future Volume (veh/h)	49	1195	64	0	0	0	0	544	187	122	515	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	52	1258	67				0	573	197	128	542	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	89	2294	126				0	921	316	150	1656	0
Arrive On Green	0.47	0.47	0.47				0.00	0.35	0.35	0.08	0.47	0.00
Sat Flow, veh/h	191	4922	271				0	2690	890	1781	3647	0
Grp Volume(v), veh/h	506	421	450				0	392	378	128	542	0
Grp Sat Flow(s),veh/h/ln	1861	1702	1822				0	1777	1710	1781	1777	0
Q Serve(g_s), s	29.9	26.3	26.3				0.0	27.4	27.5	10.7	14.4	0.0
Cycle Q Clear(g_c), s	29.9	26.3	26.3				0.0	27.4	27.5	10.7	14.4	0.0
Prop In Lane	0.10		0.15				0.00		0.52	1.00		0.00
Lane Grp Cap(c), veh/h	867	793	849				0	630	607	150	1656	0
V/C Ratio(X)	0.58	0.53	0.53				0.00	0.62	0.62	0.86	0.33	0.00
Avail Cap(c_a), veh/h	867	793	849				0	630	607	296	1656	0
HCM Platoon Ratio	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				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.4	28.4	28.4				0.0	40.1	40.1	67.9	25.3	0.0
Incr Delay (d2), s/veh	2.9	2.5	2.4				0.0	4.6	4.8	5.3	0.5	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
%ile BackOfQ(50%),veh/ln	14.1	11.4	12.2				0.0	12.8	12.4	5.1	6.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.3	31.0	30.8				0.0	44.7	44.9	73.2	25.8	0.0
LnGrp LOS	C	C	C				A	D	D	E	C	A
Approach Vol, veh/h		1377						770			670	
Approach Delay, s/veh		31.4						44.8			34.8	
Approach LOS		C						D			C	
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		75.1		75.1			16.7	58.4				
Change Period (Y+Rc), s		5.1		5.1			4.1	5.1				
Max Green Setting (Gmax), s		70.0		70.0			25.0	50.0				
Max Q Clear Time (g_c+I1), s		31.9		16.4			12.7	29.5				
Green Ext Time (p_c), s		7.0		2.7			0.0	3.0				
Intersection Summary												
HCM 6th Ctrl Delay				35.9								
HCM 6th LOS				D								

Grand Avenue Vision Project - Phase 1
10: Broadway & 2nd Ave

Horizon Year
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 		 		
Traffic Volume (veh/h)	76	1360	37	0	0	0	0	131	40	47	124	0
Future Volume (veh/h)	76	1360	37	0	0	0	0	131	40	47	124	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	80	1432	39				0	138	42	49	131	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	100	1902	53				0	696	212	634	946	0
Arrive On Green	0.38	0.38	0.38				0.00	0.51	0.51	0.51	0.51	0.00
Sat Flow, veh/h	262	5002	141				0	1376	419	1204	1870	0
Grp Volume(v), veh/h	566	472	512				0	0	180	49	131	0
Grp Sat Flow(s),veh/h/ln	1857	1702	1845				0	0	1795	1204	1870	0
Q Serve(g_s), s	21.5	18.8	18.8				0.0	0.0	4.4	1.8	2.9	0.0
Cycle Q Clear(g_c), s	21.5	18.8	18.8				0.0	0.0	4.4	6.2	2.9	0.0
Prop In Lane	0.14		0.08				0.00		0.23	1.00		0.00
Lane Grp Cap(c), veh/h	706	647	702				0	0	908	634	946	0
V/C Ratio(X)	0.80	0.73	0.73				0.00	0.00	0.20	0.08	0.14	0.00
Avail Cap(c_a), veh/h	939	861	933				0	0	908	634	946	0
HCM Platoon Ratio	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				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.8	21.0	21.0				0.0	0.0	10.7	12.4	10.4	0.0
Incr Delay (d2), s/veh	2.7	1.3	1.2				0.0	0.0	0.5	0.2	0.3	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
%ile BackOfQ(50%),veh/ln	9.3	7.2	7.8				0.0	0.0	1.7	0.5	1.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.5	22.3	22.2				0.0	0.0	11.2	12.7	10.7	0.0
LnGrp LOS	C	C	C				A	A	B	B	B	A
Approach Vol, veh/h		1551						180			180	
Approach Delay, s/veh		23.1						11.2			11.2	
Approach LOS		C						B			B	
Timer - Assigned Phs		2		4				6				
Phs Duration (G+Y+Rc), s		44.5		34.6				44.5				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		40.0		40.0				40.0				
Max Q Clear Time (g_c+I1), s		6.4		23.5				8.2				
Green Ext Time (p_c), s		0.7		6.6				1.1				
Intersection Summary												
HCM 6th Ctrl Delay				20.8								
HCM 6th LOS				C								

Grand Avenue Vision Project - Phase 1
11: Juniper St & 2nd Ave

Horizon Year
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						 		 		
Traffic Volume (veh/h)	87	1284	118	0	0	0	0	321	140	14	284	0
Future Volume (veh/h)	87	1284	118	0	0	0	0	321	140	14	284	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	92	1352	124				0	338	147	15	299	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	108	1694	161				0	672	292	410	1017	0
Arrive On Green	0.37	0.37	0.37				0.00	0.54	0.54	0.54	0.54	0.00
Sat Flow, veh/h	295	4616	437				0	1236	538	911	1870	0
Grp Volume(v), veh/h	578	482	508				0	0	485	15	299	0
Grp Sat Flow(s),veh/h/ln	1856	1702	1792				0	0	1774	911	1870	0
Q Serve(g_s), s	28.9	25.3	25.3				0.0	0.0	17.4	1.1	8.8	0.0
Cycle Q Clear(g_c), s	28.9	25.3	25.3				0.0	0.0	17.4	18.4	8.8	0.0
Prop In Lane	0.16		0.24				0.00		0.30	1.00		0.00
Lane Grp Cap(c), veh/h	681	625	658				0	0	965	410	1017	0
V/C Ratio(X)	0.85	0.77	0.77				0.00	0.00	0.50	0.04	0.29	0.00
Avail Cap(c_a), veh/h	734	673	709				0	0	965	410	1017	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.4	28.3	28.3				0.0	0.0	14.5	20.3	12.5	0.0
Incr Delay (d2), s/veh	8.7	5.2	4.9				0.0	0.0	1.9	0.0	0.2	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
%ile BackOfQ(50%),veh/ln	14.1	10.9	11.4				0.0	0.0	7.3	0.2	3.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.2	33.4	33.2				0.0	0.0	16.3	20.3	12.7	0.0
LnGrp LOS	D	C	C				A	A	B	C	B	A
Approach Vol, veh/h		1568						485			314	
Approach Delay, s/veh		35.1						16.3			13.0	
Approach LOS		D						B			B	
Timer - Assigned Phs		2		4				8				
Phs Duration (G+Y+Rc), s		41.6		59.5				59.5				
Change Period (Y+Rc), s		4.5		4.5				4.5				
Max Green Setting (Gmax), s		40.0		55.0				55.0				
Max Q Clear Time (g_c+l1), s		30.9		20.4				19.4				
Green Ext Time (p_c), s		6.2		2.0				3.8				
Intersection Summary												
HCM 6th Ctrl Delay			28.3									
HCM 6th LOS			C									

Grand Avenue Vision Project - Phase 1
1: Escondido Blvd & Grand Ave

Horizon Year with Project
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	205	14	76	244	43	29	417	39	54	416	13
Future Volume (veh/h)	81	205	14	76	244	43	29	417	39	54	416	13
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	85	216	15	80	257	45	31	439	41	57	438	14
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	756	1212	1027	785	1963	339	205	752	70	193	805	26
Arrive On Green	0.65	0.65	0.65	0.65	0.65	0.65	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1077	1870	1585	1149	3030	523	939	3286	306	915	3515	112
Grp Volume(v), veh/h	85	216	15	80	149	153	31	237	243	57	221	231
Grp Sat Flow(s),veh/h/ln	1077	1870	1585	1149	1777	1776	939	1777	1815	915	1777	1850
Q Serve(g_s), s	2.5	3.5	0.3	2.3	2.5	2.6	2.3	9.1	9.2	4.6	8.5	8.5
Cycle Q Clear(g_c), s	5.1	3.5	0.3	5.8	2.5	2.6	10.8	9.1	9.2	13.8	8.5	8.5
Prop In Lane	1.00		1.00	1.00		0.29	1.00		0.17	1.00		0.06
Lane Grp Cap(c), veh/h	756	1212	1027	785	1151	1151	205	407	416	193	407	423
V/C Ratio(X)	0.11	0.18	0.01	0.10	0.13	0.13	0.15	0.58	0.59	0.29	0.54	0.55
Avail Cap(c_a), veh/h	756	1212	1027	785	1151	1151	598	1151	1176	577	1151	1199
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(l)	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	6.2	5.4	4.8	6.6	5.2	5.2	31.0	26.5	26.5	32.6	26.2	26.2
Incr Delay (d2), s/veh	0.3	0.3	0.0	0.0	0.0	0.0	0.1	0.5	0.5	0.3	0.4	0.4
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(50%),veh/ln	0.6	1.2	0.1	0.5	0.8	0.8	0.5	3.7	3.8	1.0	3.4	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.5	5.7	4.9	6.6	5.2	5.2	31.1	27.0	27.0	32.9	26.6	26.6
LnGrp LOS	A	A	A	A	A	A	C	C	C	C	C	C
Approach Vol, veh/h		316			382			511			509	
Approach Delay, s/veh		5.9			5.5			27.2			27.3	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		22.7		54.5		22.7				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		50.0		50.0		50.0				
Max Q Clear Time (g_c+l1), s		7.1		15.8		7.8		12.8				
Green Ext Time (p_c), s		1.1		1.9		1.4		1.9				
Intersection Summary												
HCM 6th Ctrl Delay				18.5								
HCM 6th LOS				B								

Intersection												
Intersection Delay, s/veh	10.7											
Intersection LOS	B											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	244	17	70	288	25	20	13	25	0	0	0
Future Vol, veh/h	26	244	17	70	288	25	20	13	25	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	257	18	74	303	26	21	14	26	0	0	0
Number of Lanes	1	1	0	1	1	0	0	1	0	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	10.6	11	8.9
HCM LOS	B	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	34%	100%	0%	100%	0%
Vol Thru, %	22%	0%	93%	0%	92%
Vol Right, %	43%	0%	7%	0%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	58	26	261	70	313
LT Vol	20	26	0	70	0
Through Vol	13	0	244	0	288
RT Vol	25	0	17	0	25
Lane Flow Rate	61	27	275	74	329
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.09	0.042	0.381	0.111	0.447
Departure Headway (Hd)	5.318	5.542	4.994	5.447	4.888
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	672	646	720	659	738
Service Time	3.363	3.272	2.723	3.174	2.616
HCM Lane V/C Ratio	0.091	0.042	0.382	0.112	0.446
HCM Control Delay	8.9	8.5	10.8	8.9	11.5
HCM Lane LOS	A	A	B	A	B
HCM 95th-tile Q	0.3	0.1	1.8	0.4	2.3

Grand Avenue Vision Project - Phase 1
3: Broadway/S. Brodaway & Grand Ave

Horizon Year with Project
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	159	24	9	265	48	46	186	17	101	185	102
Future Volume (veh/h)	87	159	24	9	265	48	46	186	17	101	185	102
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	167	25	9	279	51	48	196	18	106	195	107
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	666	977	146	789	946	173	209	417	38	284	280	154
Arrive On Green	0.61	0.61	0.61	0.61	0.61	0.61	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1050	1590	238	1191	1539	281	1077	1687	155	1167	1135	623
Grp Volume(v), veh/h	92	0	192	9	0	330	48	0	214	106	0	302
Grp Sat Flow(s),veh/h/ln1050	0	1828	1191	0	1820	1077	0	1842	1167	0	1758	
Q Serve(g_s), s	2.9	0.0	2.9	0.2	0.0	5.6	2.8	0.0	6.4	5.5	0.0	10.2
Cycle Q Clear(g_c), s	8.5	0.0	2.9	3.2	0.0	5.6	12.9	0.0	6.4	12.0	0.0	10.2
Prop In Lane	1.00		0.13	1.00		0.15	1.00		0.08	1.00		0.35
Lane Grp Cap(c), veh/h	666	0	1123	789	0	1119	209	0	455	284	0	434
V/C Ratio(X)	0.14	0.00	0.17	0.01	0.00	0.30	0.23	0.00	0.47	0.37	0.00	0.70
Avail Cap(c_a), veh/h	666	0	1123	789	0	1119	605	0	1133	713	0	1081
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(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.9	0.0	5.4	6.1	0.0	5.9	28.1	0.0	20.9	26.0	0.0	22.3
Incr Delay (d2), s/veh	0.4	0.0	0.3	0.0	0.0	0.1	0.4	0.0	0.6	0.6	0.0	1.5
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/lr0.6	0.0	0.0	1.0	0.0	0.0	1.7	0.7	0.0	2.7	1.5	0.0	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.3	0.0	5.7	6.1	0.0	6.0	28.6	0.0	21.4	26.6	0.0	23.8
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	A	C
Approach Vol, veh/h		284			339			262			408	
Approach Delay, s/veh		6.6			6.0			22.7			24.5	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		44.5		20.6		44.5		20.6				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		40.0		40.0		40.0		40.0				
Max Q Clear Time (g_c+I1), s		10.5		14.0		7.6		14.9				
Green Ext Time (p_c), s		1.3		1.9		1.8		1.2				
Intersection Summary												
HCM 6th Ctrl Delay				15.4								
HCM 6th LOS				B								

Intersection												
Intersection Delay, s/veh	12.4											
Intersection LOS	B											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	186	71	22	342	5	47	34	6	5	42	37
Future Vol, veh/h	45	186	71	22	342	5	47	34	6	5	42	37
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	47	196	75	23	360	5	49	36	6	5	44	39
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	11.3	14.4	10.1	9.6
HCM LOS	B	B	B	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %		54%	100%	0%	100%	0%
Vol Thru, %		39%	0%	72%	0%	99%
Vol Right, %		7%	0%	28%	0%	1%
Sign Control		Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane		87	45	257	22	347
LT Vol		47	45	0	22	0
Through Vol		34	0	186	0	342
RT Vol		6	0	71	0	5
Lane Flow Rate		92	47	271	23	365
Geometry Grp		2	7	7	7	7
Degree of Util (X)		0.152	0.079	0.401	0.038	0.552
Departure Headway (Hd)		5.968	6.025	5.338	5.96	5.445
Convergence, Y/N		Yes	Yes	Yes	Yes	Yes
Cap		601	596	676	604	665
Service Time		4.005	3.747	3.046	3.666	3.151
HCM Lane V/C Ratio		0.153	0.079	0.401	0.038	0.549
HCM Control Delay		10.1	9.3	11.6	8.9	14.7
HCM Lane LOS		B	A	B	A	B
HCM 95th-tile Q		0.5	0.3	1.9	0.1	3.4

Grand Avenue Vision Project - Phase 1
5: Juniper St & Grand Ave

Horizon Year with Project
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	113	55	164	214	34	90	249	58	8	154	8
Future Volume (veh/h)	17	113	55	164	214	34	90	249	58	8	154	8
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	119	58	173	225	36	95	262	61	8	162	8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	245	450	382	320	450	382	823	936	218	683	1128	56
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.64	0.64	0.64	0.64	0.64	0.64
Sat Flow, veh/h	1118	1870	1585	1207	1870	1585	1215	1467	342	1057	1767	87
Grp Volume(v), veh/h	18	119	58	173	225	36	95	0	323	8	0	170
Grp Sat Flow(s),veh/h/ln	1118	1870	1585	1207	1870	1585	1215	0	1809	1057	0	1855
Q Serve(g_s), s	1.1	4.0	2.3	10.6	8.1	1.4	2.6	0.0	6.2	0.3	0.0	2.9
Cycle Q Clear(g_c), s	9.2	4.0	2.3	14.7	8.1	1.4	5.5	0.0	6.2	6.4	0.0	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		0.05
Lane Grp Cap(c), veh/h	245	450	382	320	450	382	823	0	1154	683	0	1183
V/C Ratio(X)	0.07	0.26	0.15	0.54	0.50	0.09	0.12	0.00	0.28	0.01	0.00	0.14
Avail Cap(c_a), veh/h	832	1432	1214	954	1432	1214	823	0	1154	683	0	1183
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.7	24.1	23.4	30.1	25.7	23.1	6.8	0.0	6.3	7.7	0.0	5.7
Incr Delay (d2), s/veh	0.1	0.3	0.2	1.4	0.9	0.1	0.3	0.0	0.6	0.0	0.0	0.3
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/lr	0.3	1.8	0.8	3.1	3.6	0.5	0.7	0.0	2.2	0.1	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.8	24.4	23.6	31.5	26.5	23.2	7.0	0.0	6.9	7.7	0.0	5.9
LnGrp LOS	C	C	C	C	C	C	A	A	A	A	A	A
Approach Vol, veh/h		195			434			418			178	
Approach Delay, s/veh		24.7			28.2			6.9			6.0	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		23.9		54.5		23.9				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		60.0		50.0		60.0				
Max Q Clear Time (g_c+I1), s		8.2		11.2		8.4		16.7				
Green Ext Time (p_c), s		2.7		1.0		1.1		2.2				
Intersection Summary												
HCM 6th Ctrl Delay											17.2	
HCM 6th LOS											B	

Grand Avenue Vision Project - Phase 1
6: Escondido Blvd & Valley Pkwy

Horizon Year with Project
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				TTTT			T	TT			TT	
Traffic Volume (veh/h)	0	0	0	51	1110	50	47	192	0	0	323	97
Future Volume (veh/h)	0	0	0	51	1110	50	47	192	0	0	323	97
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				54	1168	53	49	202	0	0	340	102
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				137	3183	148	114	1527	0	0	907	268
Arrive On Green				0.50	0.50	0.50	0.06	0.43	0.00	0.00	0.34	0.34
Sat Flow, veh/h				273	6325	293	1781	3647	0	0	2798	799
Grp Volume(v), veh/h				368	579	328	49	202	0	0	222	220
Grp Sat Flow(s),veh/h/ln				1857	1609	1818	1781	1777	0	0	1777	1727
Q Serve(g_s), s				18.3	16.3	16.3	3.9	5.1	0.0	0.0	14.1	14.5
Cycle Q Clear(g_c), s				18.3	16.3	16.3	3.9	5.1	0.0	0.0	14.1	14.5
Prop In Lane				0.15		0.16	1.00		0.00	0.00		0.46
Lane Grp Cap(c), veh/h				934	1619	915	114	1527	0	0	596	579
V/C Ratio(X)				0.39	0.36	0.36	0.43	0.13	0.00	0.00	0.37	0.38
Avail Cap(c_a), veh/h				934	1619	915	299	1788	0	0	596	579
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.9	22.4	22.5	67.1	25.7	0.0	0.0	37.6	37.7
Incr Delay (d2), s/veh				1.2	0.6	1.1	0.9	0.0	0.0	0.0	1.8	1.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.4	6.4	7.4	1.8	2.2	0.0	0.0	6.5	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				24.2	23.1	23.5	68.1	25.7	0.0	0.0	39.4	39.6
LnGrp LOS				C	C	C	E	C	A	A	D	D
Approach Vol, veh/h					1275			251			442	
Approach Delay, s/veh					23.5			34.0			39.5	
Approach LOS					C			C			D	
Timer - Assigned Phs				3	4	6	8					
Phs Duration (G+Y+Rc), s				14.1	55.0	80.0	69.1					
Change Period (Y+Rc), s				4.5	5.0	5.0	5.0					
Max Green Setting (Gmax), s				25.0	50.0	75.0	75.0					
Max Q Clear Time (g_c+I1), s				5.9	16.5	20.3	7.1					
Green Ext Time (p_c), s				0.0	1.7	6.7	0.9					
Intersection Summary												
HCM 6th Ctrl Delay				28.4								
HCM 6th LOS				C								

Grand Avenue Vision Project - Phase 1
7: S. Brodaway & Valley Pkwy

Horizon Year with Project
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑	↑	↑↑			↑↑	↑
Traffic Volume (veh/h)	0	0	0	15	1195	68	47	68	0	0	241	208
Future Volume (veh/h)	0	0	0	15	1195	68	47	68	0	0	241	208
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				16	1258	72	49	72	0	0	254	219
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				22	1829	557	537	1845	0	0	1845	823
Arrive On Green				0.35	0.35	0.35	0.52	0.52	0.00	0.00	0.52	0.52
Sat Flow, veh/h				62	5209	1585	921	3647	0	0	3647	1585
Grp Volume(v), veh/h				479	795	72	49	72	0	0	254	219
Grp Sat Flow(s),veh/h/ln				1867	1702	1585	921	1777	0	0	1777	1585
Q Serve(g_s), s				17.3	15.2	2.4	2.2	0.8	0.0	0.0	2.9	5.9
Cycle Q Clear(g_c), s				17.3	15.2	2.4	5.1	0.8	0.0	0.0	2.9	5.9
Prop In Lane				0.03		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				656	1195	557	537	1845	0	0	1845	823
V/C Ratio(X)				0.73	0.66	0.13	0.09	0.04	0.00	0.00	0.14	0.27
Avail Cap(c_a), veh/h				969	1767	823	537	1845	0	0	1845	823
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				21.8	21.2	17.0	10.9	9.1	0.0	0.0	9.6	10.3
Incr Delay (d2), s/veh				1.2	0.5	0.1	0.3	0.0	0.0	0.0	0.2	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
%ile BackOfQ(50%),veh/ln				7.3	5.8	0.8	0.5	0.3	0.0	0.0	1.1	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				23.0	21.6	17.1	11.3	9.1	0.0	0.0	9.8	11.1
LnGrp LOS				C	C	B	B	A	A	A	A	B
Approach Vol, veh/h					1346			121			473	
Approach Delay, s/veh					21.9			10.0			10.4	
Approach LOS					C			A			B	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		45.0				45.0		32.1				
Change Period (Y+Rc), s		* 5				5.0		5.0				
Max Green Setting (Gmax), s		* 40				40.0		40.0				
Max Q Clear Time (g_c+I1), s		7.1				7.9		19.3				
Green Ext Time (p_c), s		0.8				2.0		7.8				

Intersection Summary

HCM 6th Ctrl Delay	18.3
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Grand Avenue Vision Project - Phase 1
8: Juniper St & Valley Pkwy

Horizon Year with Project
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↑↑↑			↑	↑			↑	
Traffic Volume (veh/h)	0	0	0	31	1687	1	135	116	0	0	117	132
Future Volume (veh/h)	0	0	0	31	1687	1	135	116	0	0	117	132
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				33	1776	1	142	122	0	0	123	139
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				41	2374	1	464	831	0	0	356	403
Arrive On Green				0.44	0.44	0.44	0.44	0.44	0.00	0.00	0.44	0.44
Sat Flow, veh/h				93	5341	3	1117	1870	0	0	802	906
Grp Volume(v), veh/h				660	548	602	142	122	0	0	0	262
Grp Sat Flow(s),veh/h/ln				1866	1702	1870	1117	1870	0	0	0	1707
Q Serve(g_s), s				27.4	23.7	23.7	8.6	3.5	0.0	0.0	0.0	9.1
Cycle Q Clear(g_c), s				27.4	23.7	23.7	17.7	3.5	0.0	0.0	0.0	9.1
Prop In Lane				0.05		0.00	1.00		0.00	0.00		0.53
Lane Grp Cap(c), veh/h				829	756	831	464	831	0	0	0	759
V/C Ratio(X)				0.80	0.72	0.72	0.31	0.15	0.00	0.00	0.00	0.35
Avail Cap(c_a), veh/h				829	756	831	464	831	0	0	0	759
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				21.5	20.5	20.5	22.2	14.9	0.0	0.0	0.0	16.4
Incr Delay (d2), s/veh				7.8	6.0	5.5	1.7	0.4	0.0	0.0	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
%ile BackOfQ(50%),veh/ln				13.0	10.1	11.0	2.4	1.5	0.0	0.0	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				29.3	26.4	25.9	23.9	15.2	0.0	0.0	0.0	17.7
LnGrp LOS				C	C	C	C	B	A	A	A	B
Approach Vol, veh/h					1810			264			262	
Approach Delay, s/veh					27.3			19.9			17.7	
Approach LOS					C			B			B	
Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				45.0		45.0		45.0				
Change Period (Y+Rc), s				* 5		5.0		5.0				
Max Green Setting (Gmax), s				* 40		40.0		40.0				
Max Q Clear Time (g_c+I1), s				11.1		29.4		19.7				
Green Ext Time (p_c), s				1.8		7.8		1.2				

Intersection Summary

HCM 6th Ctrl Delay	25.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Grand Avenue Vision Project - Phase 1
9: Escondido Blvd & 2nd Ave

Horizon Year with Project
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔↔↔							↕↕		↙ ↘		↕↕	
Traffic Volume (veh/h)	21	635	42	0	0	0	0	215	82	57	361	0	
Future Volume (veh/h)	21	635	42	0	0	0	0	215	82	57	361	0	
Initial Q (Qb), veh	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	
Parking Bus, Adj	1.00	1.00	1.00					1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No							No				No	
Adj Sat Flow, veh/h/ln	1870	1870	1870					0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	22	668	44					0	226	86	60	380	0
Peak Hour Factor	0.95	0.95	0.95					0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2					0	2	2	2	2	0
Cap, veh/h	71	2280	155					0	1005	371	76	1656	0
Arrive On Green	0.47	0.47	0.47					0.00	0.40	0.40	0.04	0.47	0.00
Sat Flow, veh/h	152	4892	332					0	2633	938	1781	3647	0
Grp Volume(v), veh/h	270	224	240					0	156	156	60	380	0
Grp Sat Flow(s),veh/h/ln	1863	1702	1811					0	1777	1701	1781	1777	0
Q Serve(g_s), s	13.6	12.2	12.3					0.0	8.7	9.2	5.0	9.6	0.0
Cycle Q Clear(g_c), s	13.6	12.2	12.3					0.0	8.7	9.2	5.0	9.6	0.0
Prop In Lane	0.08		0.18					0.00		0.55	1.00		0.00
Lane Grp Cap(c), veh/h	868	793	844					0	703	673	76	1656	0
V/C Ratio(X)	0.31	0.28	0.28					0.00	0.22	0.23	0.78	0.23	0.00
Avail Cap(c_a), veh/h	868	793	844					0	703	673	296	1656	0
HCM Platoon Ratio	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					0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.0	24.7	24.7					0.0	30.1	30.2	71.2	24.0	0.0
Incr Delay (d2), s/veh	0.9	0.9	0.8					0.0	0.7	0.8	6.4	0.3	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
%ile BackOfQ(50%),veh/ln	6.3	5.2	5.6					0.0	3.9	3.9	2.4	4.2	0.0
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	26.0	25.5	25.5					0.0	30.8	31.0	77.6	24.3	0.0
LnGrp LOS	C	C	C					A	C	C	E	C	A
Approach Vol, veh/h	734							312				440	
Approach Delay, s/veh	25.7							30.9				31.6	
Approach LOS	C							C				C	
Timer - Assigned Phs	2		4				7		8				
Phs Duration (G+Y+Rc), s	75.1		75.1				10.5		64.6				
Change Period (Y+Rc), s	5.1		5.1				4.1		5.1				
Max Green Setting (Gmax), s	70.0		70.0				25.0		50.0				
Max Q Clear Time (g_c+I1), s	15.6		11.6				7.0		11.2				
Green Ext Time (p_c), s	3.1		1.8				0.0		1.2				
Intersection Summary													
HCM 6th Ctrl Delay	28.5												
HCM 6th LOS	C												

Grand Avenue Vision Project - Phase 1
10: Broadway & 2nd Ave

Horizon Year with Project
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑									↑		
Traffic Volume (veh/h)	42	683	30	0	0	0	0	87	18	41	94	0
Future Volume (veh/h)	42	683	30	0	0	0	0	87	18	41	94	0
Initial Q (Qb), veh	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	
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	44	719	32				0	92	19	43	99	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	64	1109	51				0	949	196	892	1180	0
Arrive On Green	0.23	0.23	0.23				0.00	0.63	0.63	0.63	0.63	0.00
Sat Flow, veh/h	281	4884	224				0	1504	311	1282	1870	0
Grp Volume(v), veh/h	291	242	262				0	0	111	43	99	0
Grp Sat Flow(s),veh/h/ln	1856	1702	1830				0	0	1814	1282	1870	0
Q Serve(g_s), s	9.1	8.1	8.2				0.0	0.0	1.5	0.9	1.3	0.0
Cycle Q Clear(g_c), s	9.1	8.1	8.2				0.0	0.0	1.5	2.4	1.3	0.0
Prop In Lane	0.15	0.12					0.00	0.17		1.00	0.00	
Lane Grp Cap(c), veh/h	422	387	416				0	0	1145	892	1180	0
V/C Ratio(X)	0.69	0.63	0.63				0.00	0.00	0.10	0.05	0.08	0.00
Avail Cap(c_a), veh/h	1171	1074	1155				0	0	1145	892	1180	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.5	22.1	22.1				0.0	0.0	4.6	5.1	4.6	0.0
Incr Delay (d2), s/veh	0.8	0.6	0.6				0.0	0.0	0.2	0.1	0.1	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
%ile BackOfQ(50%),veh/lr	3.8	3.1	3.3				0.0	0.0	0.5	0.2	0.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	22.7	22.7				0.0	0.0	4.8	5.2	4.7	0.0
LnGrp LOS	C	C	C				A	A	A	A	A	A
Approach Vol, veh/h	795					111			142			
Approach Delay, s/veh	22.9					4.8			4.8			
Approach LOS	C					A			A			
Timer - Assigned Phs	2		4		6							
Phs Duration (G+Y+Rc), s	44.5		18.9		44.5							
Change Period (Y+Rc), s	4.5		4.5		4.5							
Max Green Setting (Gmax), s	40.0		40.0		40.0							
Max Q Clear Time (g_c+l1), s	3.5		11.1		4.4							
Green Ext Time (p_c), s	0.4		3.3		0.8							
Intersection Summary												
HCM 6th Ctrl Delay			18.5									
HCM 6th LOS			B									

Grand Avenue Vision Project - Phase 1
11: Juniper St & 2nd Ave

Horizon Year with Project
Timing Plan: AM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔						↔			↔		
Traffic Volume (veh/h)	83	827	90	0	0	0	0	380	126	16	341	0
Future Volume (veh/h)	83	827	90	0	0	0	0	380	126	16	341	0
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	87	871	95				0	400	133	17	359	0
Peak Hour Factor	0.95	0.95	0.95				0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	119	1273	143				0	822	273	470	1145	0
Arrive On Green	0.29	0.29	0.29				0.00	0.61	0.61	0.61	0.61	0.00
Sat Flow, veh/h	415	4421	497				0	1343	447	871	1870	0
Grp Volume(v), veh/h	388	324	341				0	0	533	17	359	0
Grp Sat Flow(s),veh/h/ln	1850	1702	1781				0	0	1790	871	1870	0
Q Serve(g_s), s	17.0	15.1	15.1				0.0	0.0	14.8	1.0	8.3	0.0
Cycle Q Clear(g_c), s	17.0	15.1	15.1				0.0	0.0	14.8	15.8	8.3	0.0
Prop In Lane	0.22		0.28				0.00		0.25	1.00		0.00
Lane Grp Cap(c), veh/h	532	490	513				0	0	1096	470	1145	0
V/C Ratio(X)	0.73	0.66	0.66				0.00	0.00	0.49	0.04	0.31	0.00
Avail Cap(c_a), veh/h	823	758	793				0	0	1096	470	1145	0
HCM Platoon Ratio	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				0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.8	28.2	28.2				0.0	0.0	9.6	14.0	8.4	0.0
Incr Delay (d2), s/veh	1.9	1.5	1.5				0.0	0.0	1.5	0.0	0.2	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
%ile BackOfQ(50%),veh/ln	7.6	6.2	6.5				0.0	0.0	5.8	0.2	3.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.8	29.7	29.7				0.0	0.0	11.2	14.0	8.5	0.0
LnGrp LOS	C	C	C				A	A	B	B	A	A
Approach Vol, veh/h	1053						533			376		
Approach Delay, s/veh	30.1						11.2			8.8		
Approach LOS	C						B			A		
Timer - Assigned Phs	2		4				8					
Phs Duration (G+Y+Rc), s	30.4		59.5				59.5					
Change Period (Y+Rc), s	4.5		4.5				4.5					
Max Green Setting (Gmax), s	40.0		55.0				55.0					
Max Q Clear Time (g_c+I1), s	19.0		17.8				16.8					
Green Ext Time (p_c), s	6.9		2.5				4.3					
Intersection Summary												
HCM 6th Ctrl Delay			20.9									
HCM 6th LOS			C									

Grand Avenue Vision Project - Phase 1
1: Escondido Blvd & Grand Ave

Horizon Year with Project
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	377	45	130	380	86	65	585	80	114	601	25
Future Volume (veh/h)	87	377	45	130	380	86	65	585	80	114	601	25
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	397	47	137	400	91	68	616	84	120	633	26
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	494	1003	850	466	1544	348	248	1138	155	231	1260	52
Arrive On Green	0.54	0.54	0.54	0.54	0.54	0.54	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	906	1870	1585	946	2881	649	775	3142	428	746	3479	143
Grp Volume(v), veh/h	92	397	47	137	245	246	68	348	352	120	323	336
Grp Sat Flow(s),veh/h/ln	906	1870	1585	946	1777	1753	775	1777	1793	746	1777	1845
Q Serve(g_s), s	5.7	11.7	1.3	9.3	6.9	7.1	7.0	14.5	14.5	14.2	13.2	13.2
Cycle Q Clear(g_c), s	12.7	11.7	1.3	21.0	6.9	7.1	20.2	14.5	14.5	28.7	13.2	13.2
Prop In Lane	1.00		1.00	1.00		0.37	1.00		0.24	1.00		0.08
Lane Grp Cap(c), veh/h	494	1003	850	466	952	940	248	643	649	231	643	668
V/C Ratio(X)	0.19	0.40	0.06	0.29	0.26	0.26	0.27	0.54	0.54	0.52	0.50	0.50
Avail Cap(c_a), veh/h	494	1003	850	466	952	940	383	952	961	361	952	989
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	15.1	12.7	10.3	18.9	11.6	11.7	31.1	23.6	23.6	35.0	23.2	23.2
Incr Delay (d2), s/veh	0.8	1.2	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.7	0.2	0.2
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	1.3	4.9	0.5	2.0	2.6	2.6	1.3	5.8	5.9	2.5	5.3	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.9	13.9	10.5	19.0	11.7	11.7	31.3	23.9	23.9	35.7	23.4	23.4
LnGrp LOS	B	B	B	B	B	B	C	C	C	D	C	C
Approach Vol, veh/h		536			628			768			779	
Approach Delay, s/veh		14.0			13.3			24.5			25.3	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		38.8		54.5		38.8				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		50.0		50.0		50.0				
Max Q Clear Time (g_c+I1), s		14.7		30.7		23.0		22.2				
Green Ext Time (p_c), s		2.1		3.0		2.5		3.1				
Intersection Summary												
HCM 6th Ctrl Delay				20.1								
HCM 6th LOS				C								

Intersection												
Intersection Delay, s/veh	26.4											
Intersection LOS	D											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	519	9	26	474	33	44	7	47	0	0	0
Future Vol, veh/h	26	519	9	26	474	33	44	7	47	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	546	9	27	499	35	46	7	49	0	0	0
Number of Lanes	1	1	0	1	1	0	0	1	0	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	2	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	2
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	2
HCM Control Delay	29.6	25.9	11
HCM LOS	D	D	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2
Vol Left, %	45%	100%	0%	100%	0%
Vol Thru, %	7%	0%	98%	0%	93%
Vol Right, %	48%	0%	2%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	98	26	528	26	507
LT Vol	44	26	0	26	0
Through Vol	7	0	519	0	474
RT Vol	47	0	9	0	33
Lane Flow Rate	103	27	556	27	534
Geometry Grp	2	7	7	7	7
Degree of Util (X)	0.185	0.046	0.844	0.046	0.806
Departure Headway (Hd)	6.449	5.986	5.469	5.988	5.437
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	556	602	667	599	667
Service Time	4.494	3.686	3.169	3.712	3.161
HCM Lane V/C Ratio	0.185	0.045	0.834	0.045	0.801
HCM Control Delay	11	9	30.6	9	26.8
HCM Lane LOS	B	A	D	A	D
HCM 95th-tile Q	0.7	0.1	9.4	0.1	8.2

Grand Avenue Vision Project - Phase 1
3: Broadway/S. Brodaway & Grand Ave

Horizon Year with Project
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	323	61	14	332	52	91	235	18	102	153	116
Future Volume (veh/h)	167	323	61	14	332	52	91	235	18	102	153	116
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	176	340	64	15	349	55	96	247	19	107	161	122
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	571	904	170	571	931	147	255	474	36	279	273	207
Arrive On Green	0.59	0.59	0.59	0.59	0.59	0.59	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	981	1530	288	981	1577	249	1096	1715	132	1113	987	748
Grp Volume(v), veh/h	176	0	404	15	0	404	96	0	266	107	0	283
Grp Sat Flow(s),veh/h/ln	981	0	1819	981	0	1826	1096	0	1847	1113	0	1736
Q Serve(g_s), s	7.8	0.0	7.9	0.6	0.0	7.9	5.6	0.0	8.2	6.1	0.0	9.5
Cycle Q Clear(g_c), s	15.7	0.0	7.9	8.5	0.0	7.9	15.2	0.0	8.2	14.3	0.0	9.5
Prop In Lane	1.00		0.16	1.00		0.14	1.00		0.07	1.00		0.43
Lane Grp Cap(c), veh/h	571	0	1074	571	0	1078	255	0	511	279	0	480
V/C Ratio(X)	0.31	0.00	0.38	0.03	0.00	0.37	0.38	0.00	0.52	0.38	0.00	0.59
Avail Cap(c_a), veh/h	571	0	1074	571	0	1078	599	0	1090	628	0	1025
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.4	0.0	7.3	9.5	0.0	7.3	27.7	0.0	20.7	26.8	0.0	21.2
Incr Delay (d2), s/veh	1.4	0.0	1.0	0.0	0.0	0.2	0.7	0.0	0.6	0.6	0.0	0.9
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	1.7	0.0	2.8	0.1	0.0	2.6	1.5	0.0	3.4	1.6	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.8	0.0	8.3	9.5	0.0	7.5	28.4	0.0	21.3	27.4	0.0	22.0
LnGrp LOS	B	A	A	A	A	A	C	A	C	C	A	C
Approach Vol, veh/h		580			419			362			390	
Approach Delay, s/veh		9.7			7.5			23.2			23.5	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		44.5		23.2		44.5		23.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		40.0		40.0		40.0		40.0				
Max Q Clear Time (g_c+I1), s		17.7		16.3		10.5		17.2				
Green Ext Time (p_c), s		2.8		1.8		2.2		1.6				
Intersection Summary												
HCM 6th Ctrl Delay											15.0	
HCM 6th LOS											B	

Intersection												
Intersection Delay, s/veh20.5												
Intersection LOS C												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	105	337	71	28	403	23	86	45	8	16	27	58
Future Vol, veh/h	105	337	71	28	403	23	86	45	8	16	27	58
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	111	355	75	29	424	24	91	47	8	17	28	61
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	20	25.3	12.8	11.5
HCM LOS	C	D	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	62%	100%	0%	100%	0%	16%
Vol Thru, %	32%	0%	83%	0%	95%	27%
Vol Right, %	6%	0%	17%	0%	5%	57%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	139	105	408	28	426	101
LT Vol	86	105	0	28	0	16
Through Vol	45	0	337	0	403	27
RT Vol	8	0	71	0	23	58
Lane Flow Rate	146	111	429	29	448	106
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.286	0.203	0.712	0.055	0.764	0.201
Departure Headway (Hd)	7.034	6.604	5.972	6.677	6.13	6.799
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	514	538	601	532	583	531
Service Time	5.043	4.402	3.769	4.474	3.927	4.81
HCM Lane V/C Ratio	0.284	0.206	0.714	0.055	0.768	0.2
HCM Control Delay	12.8	11.1	22.3	9.9	26.3	11.5
HCM Lane LOS	B	B	C	A	D	B
HCM 95th-tile Q	1.2	0.8	5.8	0.2	6.9	0.7

Grand Avenue Vision Project - Phase 1
5: Juniper St & Grand Ave

Horizon Year with Project
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	246	63	165	257	35	111	244	53	16	129	14
Future Volume (veh/h)	22	246	63	165	257	35	111	244	53	16	129	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	23	259	66	174	271	37	117	257	56	17	136	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	597	506	304	597	506	742	851	185	597	947	104
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.57	0.57	0.57	0.57	0.57	0.57
Sat Flow, veh/h	1071	1870	1585	1055	1870	1585	1236	1488	324	1067	1655	183
Grp Volume(v), veh/h	23	259	66	174	271	37	117	0	313	17	0	151
Grp Sat Flow(s),veh/h/ln	1071	1870	1585	1055	1870	1585	1236	0	1812	1067	0	1838
Q Serve(g_s), s	1.5	9.6	2.6	13.6	10.1	1.4	4.3	0.0	7.8	0.7	0.0	3.3
Cycle Q Clear(g_c), s	11.6	9.6	2.6	23.2	10.1	1.4	7.6	0.0	7.8	8.5	0.0	3.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.10
Lane Grp Cap(c), veh/h	301	597	506	304	597	506	742	0	1037	597	0	1051
V/C Ratio(X)	0.08	0.43	0.13	0.57	0.45	0.07	0.16	0.00	0.30	0.03	0.00	0.14
Avail Cap(c_a), veh/h	694	1284	1088	691	1284	1088	742	0	1037	597	0	1051
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(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.3	23.5	21.1	32.7	23.7	20.7	10.5	0.0	9.7	11.9	0.0	8.7
Incr Delay (d2), s/veh	0.1	0.5	0.1	1.7	0.5	0.1	0.5	0.0	0.7	0.1	0.0	0.3
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/lr	0.4	4.2	1.0	3.5	4.4	0.5	1.2	0.0	3.1	0.2	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.4	24.0	21.2	34.4	24.2	20.8	10.9	0.0	10.4	12.0	0.0	9.0
LnGrp LOS	C	C	C	C	C	C	B	A	B	B	A	A
Approach Vol, veh/h		348			482			430			168	
Approach Delay, s/veh		23.8			27.6			10.6			9.3	
Approach LOS		C			C			B			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.5		32.9		54.5		32.9				
Change Period (Y+Rc), s		4.5		5.0		4.5		5.0				
Max Green Setting (Gmax), s		50.0		60.0		50.0		60.0				
Max Q Clear Time (g_c+I1), s		9.8		13.6		10.5		25.2				
Green Ext Time (p_c), s		2.7		2.0		1.0		2.7				
Intersection Summary												
HCM 6th Ctrl Delay				19.4								
HCM 6th LOS				B								

Grand Avenue Vision Project - Phase 1
6: Escondido Blvd & Valley Pkwy

Horizon Year with Project
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				←←←←			←	↑↑			↑↑	
Traffic Volume (veh/h)	0	0	0	100	1060	64	84	554	0	0	452	158
Future Volume (veh/h)	0	0	0	100	1060	64	84	554	0	0	452	158
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				105	1116	67	88	583	0	0	476	166
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				261	2984	183	127	1543	0	0	862	298
Arrive On Green				0.50	0.50	0.50	0.07	0.43	0.00	0.00	0.33	0.33
Sat Flow, veh/h				523	5977	366	1781	3647	0	0	2683	897
Grp Volume(v), veh/h				370	587	331	88	583	0	0	326	316
Grp Sat Flow(s),veh/h/ln				1844	1609	1805	1781	1777	0	0	1777	1709
Q Serve(g_s), s				18.9	16.8	16.9	7.2	16.7	0.0	0.0	22.5	22.8
Cycle Q Clear(g_c), s				18.9	16.8	16.9	7.2	16.7	0.0	0.0	22.5	22.8
Prop In Lane				0.28		0.20	1.00		0.00	0.00		0.52
Lane Grp Cap(c), veh/h				921	1606	901	127	1543	0	0	591	569
V/C Ratio(X)				0.40	0.37	0.37	0.69	0.38	0.00	0.00	0.55	0.56
Avail Cap(c_a), veh/h				921	1606	901	296	1774	0	0	591	569
HCM Platoon Ratio				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	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				23.6	23.0	23.1	68.1	28.8	0.0	0.0	40.9	41.0
Incr Delay (d2), s/veh				1.3	0.6	1.2	2.5	0.1	0.0	0.0	3.7	3.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				8.7	6.6	7.6	3.4	7.2	0.0	0.0	10.5	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				24.9	23.7	24.2	70.6	28.8	0.0	0.0	44.6	44.9
LnGrp LOS				C	C	C	E	C	A	A	D	D
Approach Vol, veh/h					1288			671			642	
Approach Delay, s/veh					24.2			34.3			44.8	
Approach LOS					C			C			D	
Timer - Assigned Phs				3	4	6	8					
Phs Duration (G+Y+Rc), s				15.2	55.0	80.0	70.2					
Change Period (Y+Rc), s				4.5	5.0	5.0	5.0					
Max Green Setting (Gmax), s				25.0	50.0	75.0	75.0					
Max Q Clear Time (g_c+I1), s				9.2	24.8	20.9	18.7					
Green Ext Time (p_c), s				0.0	2.5	6.8	2.9					
Intersection Summary												
HCM 6th Ctrl Delay				31.9								
HCM 6th LOS				C								

Grand Avenue Vision Project - Phase 1
7: S. Brodaway & Valley Pkwy

Horizon Year with Project
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑	↑	↑	↑↑			↑↑	↑
Traffic Volume (veh/h)	0	0	0	26	1112	133	72	201	0	0	236	145
Future Volume (veh/h)	0	0	0	26	1112	133	72	201	0	0	236	145
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No			No	
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				27	1171	140	76	212	0	0	248	153
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				38	1744	536	581	1881	0	0	1881	839
Arrive On Green				0.34	0.34	0.34	0.53	0.53	0.00	0.00	0.53	0.53
Sat Flow, veh/h				112	5157	1585	984	3647	0	0	3647	1585
Grp Volume(v), veh/h				450	748	140	76	212	0	0	248	153
Grp Sat Flow(s),veh/h/ln				1865	1702	1585	984	1777	0	0	1777	1585
Q Serve(g_s), s				15.9	14.1	4.8	3.2	2.3	0.0	0.0	2.7	3.8
Cycle Q Clear(g_c), s				15.9	14.1	4.8	5.9	2.3	0.0	0.0	2.7	3.8
Prop In Lane				0.06		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				631	1151	536	581	1881	0	0	1881	839
V/C Ratio(X)				0.71	0.65	0.26	0.13	0.11	0.00	0.00	0.13	0.18
Avail Cap(c_a), veh/h				987	1802	839	581	1881	0	0	1881	839
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				21.8	21.2	18.1	10.5	8.9	0.0	0.0	9.0	9.3
Incr Delay (d2), s/veh				1.1	0.5	0.2	0.5	0.1	0.0	0.0	0.1	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				6.7	5.3	1.7	0.7	0.8	0.0	0.0	1.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				22.9	21.7	18.3	10.9	9.0	0.0	0.0	9.1	9.7
LnGrp LOS				C	C	B	B	A	A	A	A	A
Approach Vol, veh/h						1338		288			401	
Approach Delay, s/veh						21.7		9.5			9.4	
Approach LOS						C		A			A	
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		45.0				45.0		30.6				
Change Period (Y+Rc), s		* 5				5.0		5.0				
Max Green Setting (Gmax), s		* 40				40.0		40.0				
Max Q Clear Time (g_c+I1), s		7.9				5.8		17.9				
Green Ext Time (p_c), s		2.2				1.8		7.6				

Intersection Summary

HCM 6th Ctrl Delay	17.6
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Grand Avenue Vision Project - Phase 1
8: Juniper St & Valley Pkwy

Horizon Year with Project
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↑↑↑			↑	↑			↑	
Traffic Volume (veh/h)	0	0	0	28	1209	7	178	120	0	0	78	59
Future Volume (veh/h)	0	0	0	28	1209	7	178	120	0	0	78	59
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No		No		No		No		
Adj Sat Flow, veh/h/ln				1870	1870	1870	1870	1870	0	0	1870	1870
Adj Flow Rate, veh/h				29	1273	7	187	126	0	0	82	62
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				50	2350	13	570	831	0	0	439	332
Arrive On Green				0.44	0.44	0.44	0.44	0.44	0.00	0.00	0.44	0.44
Sat Flow, veh/h				113	5288	30	1244	1870	0	0	988	747
Grp Volume(v), veh/h				478	397	435	187	126	0	0	0	144
Grp Sat Flow(s),veh/h/ln				1865	1702	1865	1244	1870	0	0	0	1736
Q Serve(g_s), s				17.2	15.2	15.2	9.6	3.6	0.0	0.0	0.0	4.5
Cycle Q Clear(g_c), s				17.2	15.2	15.2	14.2	3.6	0.0	0.0	0.0	4.5
Prop In Lane				0.06		0.02	1.00		0.00	0.00		0.43
Lane Grp Cap(c), veh/h				829	756	829	570	831	0	0	0	771
V/C Ratio(X)				0.58	0.52	0.52	0.33	0.15	0.00	0.00	0.00	0.19
Avail Cap(c_a), veh/h				829	756	829	570	831	0	0	0	771
HCM Platoon Ratio				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	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				18.7	18.1	18.1	19.4	14.9	0.0	0.0	0.0	15.1
Incr Delay (d2), s/veh				2.9	2.6	2.4	1.5	0.4	0.0	0.0	0.0	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.7	6.2	6.8	2.9	1.6	0.0	0.0	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				21.6	20.7	20.5	21.0	15.3	0.0	0.0	0.0	15.7
LnGrp LOS				C	C	C	C	B	A	A	A	B
Approach Vol, veh/h					1309			313			144	
Approach Delay, s/veh					20.9			18.7			15.7	
Approach LOS					C			B			B	
Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				45.0		45.0		45.0				
Change Period (Y+Rc), s				* 5		5.0		5.0				
Max Green Setting (Gmax), s				* 40		40.0		40.0				
Max Q Clear Time (g_c+I1), s				6.5		19.2		16.2				
Green Ext Time (p_c), s				0.9		8.8		1.3				

Intersection Summary

HCM 6th Ctrl Delay	20.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Grand Avenue Vision Project - Phase 1
 9: Escondido Blvd & 2nd Ave

Horizon Year with Project
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↑↑↑							↑↑			↑↑		
Traffic Volume (veh/h)	49	1275	64	0	0	0	0	544	187	122	515	0	
Future Volume (veh/h)	49	1275	64	0	0	0	0	544	187	122	515	0	
Initial Q (Qb), veh	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	
Parking Bus, Adj	1.00	1.00	1.00					1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No							No		No			
Adj Sat Flow, veh/h/ln	1870	1870	1870					0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	52	1342	67					0	573	197	128	542	0
Peak Hour Factor	0.95	0.95	0.95					0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2					0	2	2	2	2	0
Cap, veh/h	84	2308	119					0	921	316	150	1656	0
Arrive On Green	0.47	0.47	0.47					0.00	0.35	0.35	0.08	0.47	0.00
Sat Flow, veh/h	180	4952	256					0	2690	890	1781	3647	0
Grp Volume(v), veh/h	536	446	478					0	392	378	128	542	0
Grp Sat Flow(s),veh/h/ln	1861	1702	1824					0	1777	1710	1781	1777	0
Q Serve(g_s), s	32.5	28.5	28.5					0.0	27.4	27.5	10.7	14.4	0.0
Cycle Q Clear(g_c), s	32.5	28.5	28.5					0.0	27.4	27.5	10.7	14.4	0.0
Prop In Lane	0.10		0.14					0.00		0.52	1.00		0.00
Lane Grp Cap(c), veh/h	867	793	850					0	630	607	150	1656	0
V/C Ratio(X)	0.62	0.56	0.56					0.00	0.62	0.62	0.86	0.33	0.00
Avail Cap(c_a), veh/h	867	793	850					0	630	607	296	1656	0
HCM Platoon Ratio	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					0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.1	29.0	29.0					0.0	40.1	40.1	67.9	25.3	0.0
Incr Delay (d2), s/veh	3.3	2.9	2.7					0.0	4.6	4.8	5.3	0.5	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
%ile BackOfQ(50%),veh/ft	5.4	12.4	13.2					0.0	12.8	12.4	5.1	6.3	0.0
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	33.4	31.9	31.7					0.0	44.7	44.9	73.2	25.8	0.0
LnGrp LOS	C	C	C					A	D	D	E	C	A
Approach Vol, veh/h	1461							770		670			
Approach Delay, s/veh	32.4							44.8		34.8			
Approach LOS	C							D		C			
Timer - Assigned Phs	2		4		7		8						
Phs Duration (G+Y+Rc), s	75.1		75.1		16.7		58.4						
Change Period (Y+Rc), s	5.1		5.1		4.1		5.1						
Max Green Setting (Gmax), s	70.0		70.0		25.0		50.0						
Max Q Clear Time (g_c+I1), s	34.5		16.4		12.7		29.5						
Green Ext Time (p_c), s	7.6		2.7		0.0		3.0						
Intersection Summary													
HCM 6th Ctrl Delay	36.2												
HCM 6th LOS	D												

Grand Avenue Vision Project - Phase 1
10: Broadway & 2nd Ave

Horizon Year with Project
Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↑↑↑							↑		↑		↑	
Traffic Volume (veh/h)	76	1440	37	0	0	0	0	131	40	47	124	0	
Future Volume (veh/h)	76	1440	37	0	0	0	0	131	40	47	124	0	
Initial Q (Qb), veh	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	
Parking Bus, Adj	1.00	1.00	1.00					1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No							No		No			
Adj Sat Flow, veh/h/ln	1870	1870	1870					0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	80	1516	39					0	138	42	49	131	0
Peak Hour Factor	0.95	0.95	0.95					0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2					0	2	2	2	2	0
Cap, veh/h	98	1979	53					0	681	207	617	925	0
Arrive On Green	0.39	0.39	0.39					0.00	0.49	0.49	0.49	0.49	0.00
Sat Flow, veh/h	249	5024	133					0	1376	419	1204	1870	0
Grp Volume(v), veh/h	597	498	540					0	0	180	49	131	0
Grp Sat Flow(s),veh/h/ln	1858	1702	1846					0	0	1795	1204	1870	0
Q Serve(g_s), s	23.2	20.3	20.3					0.0	0.0	4.6	1.9	3.1	0.0
Cycle Q Clear(g_c), s	23.2	20.3	20.3					0.0	0.0	4.6	6.5	3.1	0.0
Prop In Lane	0.13		0.07					0.00		0.23	1.00		0.00
Lane Grp Cap(c), veh/h	732	671	727					0	0	888	617	925	0
V/C Ratio(X)	0.82	0.74	0.74					0.00	0.00	0.20	0.08	0.14	0.00
Avail Cap(c_a), veh/h	919	842	913					0	0	888	617	925	0
HCM Platoon Ratio	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					0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.9	21.0	21.0					0.0	0.0	11.5	13.3	11.1	0.0
Incr Delay (d2), s/veh	3.7	1.9	1.7					0.0	0.0	0.5	0.3	0.3	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
%ile BackOfQ(50%),veh/ft	0.2	7.9	8.5					0.0	0.0	1.8	0.5	1.3	0.0
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	25.6	22.9	22.7					0.0	0.0	12.0	13.5	11.4	0.0
LnGrp LOS	C	C	C					A	A	B	B	B	A
Approach Vol, veh/h	1635							180		180			
Approach Delay, s/veh	23.8							12.0		12.0			
Approach LOS	C							B		B			
Timer - Assigned Phs	2		4		6								
Phs Duration (G+Y+Rc), s	44.5		36.4		44.5								
Change Period (Y+Rc), s	4.5		4.5		4.5								
Max Green Setting (Gmax), s	40.0		40.0		40.0								
Max Q Clear Time (g_c+I1), s	6.6		25.2		8.5								
Green Ext Time (p_c), s	0.7		6.6		1.1								
Intersection Summary													
HCM 6th Ctrl Delay			21.7										
HCM 6th LOS			C										

Grand Avenue Vision Project - Phase 1
 11: Juniper St & 2nd Ave

Horizon Year with Project
 Timing Plan: PM Peak



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↑↑↑							↑		↑		↑	
Traffic Volume (veh/h)	87	1364	118	0	0	0	0	321	140	14	284	0	
Future Volume (veh/h)	87	1364	118	0	0	0	0	321	140	14	284	0	
Initial Q (Qb), veh	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	
Parking Bus, Adj	1.00	1.00	1.00					1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No							No		No			
Adj Sat Flow, veh/h/ln	1870	1870	1870					0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	92	1436	124					0	338	147	15	299	0
Peak Hour Factor	0.95	0.95	0.95					0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2					0	2	2	2	2	0
Cap, veh/h	105	1743	155					0	665	289	402	1006	0
Arrive On Green	0.37	0.37	0.37					0.00	0.54	0.54	0.54	0.54	0.00
Sat Flow, veh/h	281	4658	415					0	1236	538	911	1870	0
Grp Volume(v), veh/h	608	508	536					0	0	485	15	299	0
Grp Sat Flow(s),veh/h/ln	1856	1702	1796					0	0	1774	911	1870	0
Q Serve(g_s), s	31.2	27.2	27.2					0.0	0.0	17.8	1.1	9.0	0.0
Cycle Q Clear(g_c), s	31.2	27.2	27.2					0.0	0.0	17.8	18.9	9.0	0.0
Prop In Lane	0.15		0.23					0.00		0.30	1.00		0.00
Lane Grp Cap(c), veh/h	695	637	672					0	0	954	402	1006	0
V/C Ratio(X)	0.88	0.80	0.80					0.00	0.00	0.51	0.04	0.30	0.00
Avail Cap(c_a), veh/h	726	666	702					0	0	954	402	1006	0
HCM Platoon Ratio	1.00	1.00	1.00					1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00					0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.8	28.5	28.5					0.0	0.0	15.0	21.0	13.0	0.0
Incr Delay (d2), s/veh	11.4	6.5	6.2					0.0	0.0	1.9	0.0	0.2	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
%ile BackOfQ(50%),veh/lt	5.7	11.9	12.5					0.0	0.0	7.5	0.2	3.7	0.0
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	41.1	35.0	34.8					0.0	0.0	17.0	21.1	13.2	0.0
LnGrp LOS	D	D	C					A	A	B	C	B	A
Approach Vol, veh/h	1652							485		314			
Approach Delay, s/veh	37.2							17.0		13.5			
Approach LOS	D							B		B			
Timer - Assigned Phs	2		4						8				
Phs Duration (G+Y+Rc), s	42.8		59.5						59.5				
Change Period (Y+Rc), s	4.5		4.5						4.5				
Max Green Setting (Gmax), s	40.0		55.0						55.0				
Max Q Clear Time (g_c+I1), s	33.2		20.9						19.8				
Green Ext Time (p_c), s	5.1		2.0						3.8				
Intersection Summary													
HCM 6th Ctrl Delay			30.2										
HCM 6th LOS			C										

MOVEMENT SUMMARY

 Site: 101 [Maple-AM (Site Folder: Grand-AM)]

New Site
 Site Category: (None)
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] ft				
South: Maple Street														
3	L2	20	3.0	22	3.0	0.064	4.2	LOS A	0.3	6.7	0.41	0.28	0.41	20.2
8	T1	13	3.0	14	3.0	0.064	4.2	LOS A	0.3	6.7	0.41	0.28	0.41	18.1
18	R2	25	3.0	27	3.0	0.064	4.2	LOS A	0.3	6.7	0.41	0.28	0.41	18.9
Approach		58	3.0	63	3.0	0.064	4.2	LOS A	0.3	6.7	0.41	0.28	0.41	19.2
East: Grand Avenue														
1	L2	70	3.0	76	3.0	0.333	6.0	LOS A	1.9	49.2	0.25	0.11	0.25	19.4
6	T1	288	3.0	313	3.0	0.333	6.0	LOS A	1.9	49.2	0.25	0.11	0.25	19.7
16	R2	25	3.0	27	3.0	0.333	6.0	LOS A	1.9	49.2	0.25	0.11	0.25	17.1
Approach		383	3.0	416	3.0	0.333	6.0	LOS A	1.9	49.2	0.25	0.11	0.25	19.5
West: Grand Ave														
5	L2	26	3.0	28	3.0	0.253	5.2	LOS A	1.3	33.6	0.25	0.12	0.25	14.0
2	T1	244	3.0	265	3.0	0.253	5.2	LOS A	1.3	33.6	0.25	0.12	0.25	20.5
12	R2	17	3.0	18	3.0	0.253	5.2	LOS A	1.3	33.6	0.25	0.12	0.25	19.0
Approach		287	3.0	312	3.0	0.253	5.2	LOS A	1.3	33.6	0.25	0.12	0.25	19.8
All Vehicles		728	3.0	791	3.0	0.333	5.5	LOS A	1.9	49.2	0.26	0.13	0.26	19.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 Site: 101 [Maple-PM (Site Folder: Grand-PM)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] ft				
South: Maple Street														
3	L2	44	3.0	48	3.0	0.149	6.6	LOS A	0.6	15.2	0.59	0.56	0.59	18.3
8	T1	7	3.0	8	3.0	0.149	6.6	LOS A	0.6	15.2	0.59	0.56	0.59	16.0
18	R2	47	3.0	51	3.0	0.149	6.6	LOS A	0.6	15.2	0.59	0.56	0.59	17.2
Approach		98	3.0	107	3.0	0.149	6.6	LOS A	0.6	15.2	0.59	0.56	0.59	17.6
East: Grand Avenue														
1	L2	26	3.0	28	3.0	0.474	7.9	LOS A	3.3	83.8	0.35	0.18	0.35	18.5
6	T1	474	3.0	515	3.0	0.474	7.9	LOS A	3.3	83.8	0.35	0.18	0.35	18.8
16	R2	33	3.0	36	3.0	0.474	7.9	LOS A	3.3	83.8	0.35	0.18	0.35	16.2
Approach		533	3.0	579	3.0	0.474	7.9	LOS A	3.3	83.8	0.35	0.18	0.35	18.7
West: Grand Ave														
5	L2	26	3.0	28	3.0	0.464	7.5	LOS A	3.3	85.3	0.19	0.06	0.19	13.1
2	T1	519	3.0	564	3.0	0.464	7.5	LOS A	3.3	85.3	0.19	0.06	0.19	19.1
12	R2	9	3.0	10	3.0	0.464	7.5	LOS A	3.3	85.3	0.19	0.06	0.19	17.7
Approach		554	3.0	602	3.0	0.464	7.5	LOS A	3.3	85.3	0.19	0.06	0.19	18.8
All Vehicles		1185	3.0	1288	3.0	0.474	7.6	LOS A	3.3	85.3	0.29	0.16	0.29	18.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 Site: 102 [Broadway-AM (Site Folder: Grand-AM)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] ft				
South: Broadway Street														
91	L2	46	3.0	50	3.0	0.301	7.2	LOS A	1.4	36.7	0.56	0.48	0.56	19.9
235	T1	186	3.0	202	3.0	0.301	7.2	LOS A	1.4	36.7	0.56	0.48	0.56	18.6
18	R2	17	3.0	18	3.0	0.301	7.2	LOS A	1.4	36.7	0.56	0.48	0.56	18.2
Approach		249	3.0	271	3.0	0.301	7.2	LOS A	1.4	36.7	0.56	0.48	0.56	18.8
East: Grand Avenue														
14	L2	9	3.0	10	3.0	0.377	8.1	LOS A	1.9	49.8	0.58	0.50	0.58	19.6
332	T1	265	3.0	288	3.0	0.377	8.1	LOS A	1.9	49.8	0.58	0.50	0.58	19.6
52	R2	48	3.0	52	3.0	0.377	8.1	LOS A	1.9	49.8	0.58	0.50	0.58	17.8
Approach		322	3.0	350	3.0	0.377	8.1	LOS A	1.9	49.8	0.58	0.50	0.58	19.3
North: Broadway Street														
102	L2	101	3.0	110	3.0	0.457	9.4	LOS A	2.7	69.5	0.62	0.57	0.67	17.7
153	T1	185	3.0	201	3.0	0.457	9.4	LOS A	2.7	69.5	0.62	0.57	0.67	17.2
116	R2	102	3.0	111	3.0	0.457	9.4	LOS A	2.7	69.5	0.62	0.57	0.67	18.4
Approach		388	3.0	422	3.0	0.457	9.4	LOS A	2.7	69.5	0.62	0.57	0.67	17.6
West: Grand Ave														
167	L2	87	3.0	95	3.0	0.308	7.0	LOS A	1.5	38.6	0.53	0.43	0.53	19.5
323	T1	159	3.0	173	3.0	0.308	7.0	LOS A	1.5	38.6	0.53	0.43	0.53	19.6
61	R2	24	3.0	26	3.0	0.308	7.0	LOS A	1.5	38.6	0.53	0.43	0.53	18.0
Approach		270	3.0	293	3.0	0.308	7.0	LOS A	1.5	38.6	0.53	0.43	0.53	19.4
All Vehicles		1229	3.0	1336	3.0	0.457	8.1	LOS A	2.7	69.5	0.57	0.50	0.59	18.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 Site: 102 [Broadway-PM (Site Folder: Grand-PM)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] ft				
South: Broadway Street														
91	L2	91	3.0	99	3.0	0.550	14.3	LOS B	3.9	99.9	0.77	0.99	1.21	15.9
235	T1	235	3.0	255	3.0	0.550	14.3	LOS B	3.9	99.9	0.77	0.99	1.21	14.5
18	R2	18	3.0	20	3.0	0.550	14.3	LOS B	3.9	99.9	0.77	0.99	1.21	14.7
Approach		344	3.0	374	3.0	0.550	14.3	LOS B	3.9	99.9	0.77	0.99	1.21	14.9
East: Grand Avenue														
14	L2	14	3.0	15	3.0	0.569	13.6	LOS B	4.6	116.6	0.76	0.99	1.19	16.4
332	T1	332	3.0	361	3.0	0.569	13.6	LOS B	4.6	116.6	0.76	0.99	1.19	16.7
52	R2	52	3.0	57	3.0	0.569	13.6	LOS B	4.6	116.6	0.76	0.99	1.19	15.1
Approach		398	3.0	433	3.0	0.569	13.6	LOS B	4.6	116.6	0.76	0.99	1.19	16.5
North: Broadway Street														
102	L2	102	3.0	111	3.0	0.499	11.3	LOS B	3.5	89.2	0.70	0.79	0.96	16.6
153	T1	153	3.0	166	3.0	0.499	11.3	LOS B	3.5	89.2	0.70	0.79	0.96	16.0
116	R2	116	3.0	126	3.0	0.499	11.3	LOS B	3.5	89.2	0.70	0.79	0.96	17.3
Approach		371	3.0	403	3.0	0.499	11.3	LOS B	3.5	89.2	0.70	0.79	0.96	16.6
West: Grand Ave														
167	L2	167	3.0	182	3.0	0.610	12.3	LOS B	6.5	165.9	0.70	0.79	0.99	16.4
323	T1	323	3.0	351	3.0	0.610	12.3	LOS B	6.5	165.9	0.70	0.79	0.99	16.9
61	R2	61	3.0	66	3.0	0.610	12.3	LOS B	6.5	165.9	0.70	0.79	0.99	15.5
Approach		551	3.0	599	3.0	0.610	12.3	LOS B	6.5	165.9	0.70	0.79	0.99	16.6
All Vehicles		1664	3.0	1809	3.0	0.610	12.8	LOS B	6.5	165.9	0.73	0.88	1.07	16.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 Site: 103 [Kalmia-AM (Site Folder: Grand-AM)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
		[Total veh/h]	[HV %]	[Total veh/h]	[HV %]				[Veh. veh]	[Dist ft]				
South: Kalmia Street														
86	L2	47	3.0	51	3.0	0.093	4.4	LOS A	0.4	9.9	0.40	0.27	0.40	20.0
45	T1	34	3.0	37	3.0	0.093	4.4	LOS A	0.4	9.9	0.40	0.27	0.40	19.1
8	R2	6	3.0	7	3.0	0.093	4.4	LOS A	0.4	9.9	0.40	0.27	0.40	18.6
Approach		87	3.0	95	3.0	0.093	4.4	LOS A	0.4	9.9	0.40	0.27	0.40	19.6
East: Grand Avenue														
28	L2	22	3.0	24	3.0	0.347	6.5	LOS A	1.9	49.8	0.37	0.23	0.37	19.6
403	T1	342	3.0	372	3.0	0.347	6.5	LOS A	1.9	49.8	0.37	0.23	0.37	19.9
23	R2	5	3.0	5	3.0	0.347	6.5	LOS A	1.9	49.8	0.37	0.23	0.37	18.3
Approach		369	3.0	401	3.0	0.347	6.5	LOS A	1.9	49.8	0.37	0.23	0.37	19.8
North: Kalmia Street														
16	L2	5	3.0	5	3.0	0.110	5.4	LOS A	0.4	11.3	0.52	0.43	0.52	20.4
27	T1	42	3.0	46	3.0	0.110	5.4	LOS A	0.4	11.3	0.52	0.43	0.52	20.0
58	R2	37	3.0	40	3.0	0.110	5.4	LOS A	0.4	11.3	0.52	0.43	0.52	21.3
Approach		84	3.0	91	3.0	0.110	5.4	LOS A	0.4	11.3	0.52	0.43	0.52	20.6
West: Grand Ave														
105	L2	45	3.0	49	3.0	0.266	5.3	LOS A	1.4	35.9	0.25	0.12	0.25	20.1
337	T1	186	3.0	202	3.0	0.266	5.3	LOS A	1.4	35.9	0.25	0.12	0.25	20.3
71	R2	71	3.0	77	3.0	0.266	5.3	LOS A	1.4	35.9	0.25	0.12	0.25	18.8
Approach		302	3.0	328	3.0	0.266	5.3	LOS A	1.4	35.9	0.25	0.12	0.25	19.9
All Vehicles		842	3.0	915	3.0	0.347	5.7	LOS A	1.9	49.8	0.35	0.21	0.35	19.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

 Site: 103 [Kalmia-PM (Site Folder: Grand-PM)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] ft				
South: Kalmia Street														
86	L2	86	3.0	93	3.0	0.191	6.6	LOS A	0.8	20.6	0.57	0.52	0.57	18.4
45	T1	45	3.0	49	3.0	0.191	6.6	LOS A	0.8	20.6	0.57	0.52	0.57	17.5
8	R2	8	3.0	9	3.0	0.191	6.6	LOS A	0.8	20.6	0.57	0.52	0.57	17.2
Approach		139	3.0	151	3.0	0.191	6.6	LOS A	0.8	20.6	0.57	0.52	0.57	18.0
East: Grand Avenue														
28	L2	28	3.0	30	3.0	0.484	9.2	LOS A	2.9	75.2	0.58	0.46	0.58	17.9
403	T1	403	3.0	438	3.0	0.484	9.2	LOS A	2.9	75.2	0.58	0.46	0.58	18.3
23	R2	23	3.0	25	3.0	0.484	9.2	LOS A	2.9	75.2	0.58	0.46	0.58	16.8
Approach		454	3.0	493	3.0	0.484	9.2	LOS A	2.9	75.2	0.58	0.46	0.58	18.2
North: Kalmia Street														
16	L2	16	3.0	17	3.0	0.149	6.5	LOS A	0.6	15.3	0.58	0.54	0.58	19.3
27	T1	27	3.0	29	3.0	0.149	6.5	LOS A	0.6	15.3	0.58	0.54	0.58	18.8
58	R2	58	3.0	63	3.0	0.149	6.5	LOS A	0.6	15.3	0.58	0.54	0.58	20.1
Approach		101	3.0	110	3.0	0.149	6.5	LOS A	0.6	15.3	0.58	0.54	0.58	19.6
West: Grand Ave														
105	L2	105	3.0	114	3.0	0.453	7.6	LOS A	3.1	78.1	0.32	0.16	0.32	18.5
337	T1	337	3.0	366	3.0	0.453	7.6	LOS A	3.1	78.1	0.32	0.16	0.32	18.9
71	R2	71	3.0	77	3.0	0.453	7.6	LOS A	3.1	78.1	0.32	0.16	0.32	17.4
Approach		513	3.0	558	3.0	0.453	7.6	LOS A	3.1	78.1	0.32	0.16	0.32	18.6
All Vehicles		1207	3.0	1312	3.0	0.484	8.0	LOS A	3.1	78.1	0.47	0.35	0.47	18.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

Roundabout Capacity Model: US HCM 6.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: Traditional M1.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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APPENDIX C

2035 TRAFFIC VOLUMES

Int 4 AM Peak Volumes

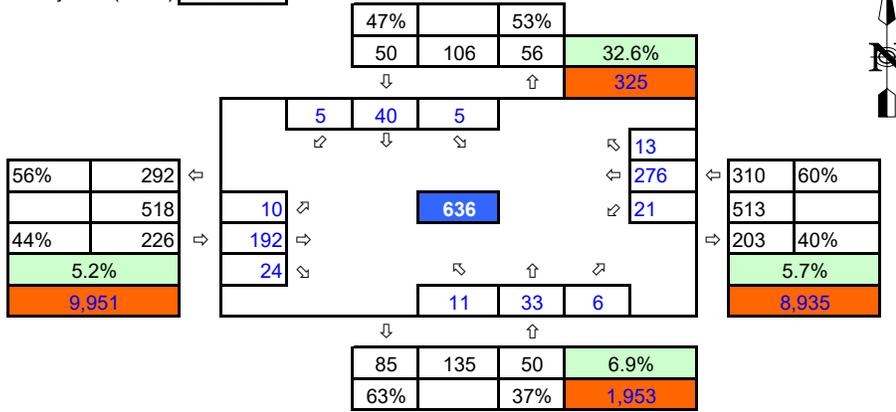
Scenario: **Existing Conditions**

N/S Street: **Kalmia St.**

E/W Street: **Grand Ave.**

Intersection #: **4**

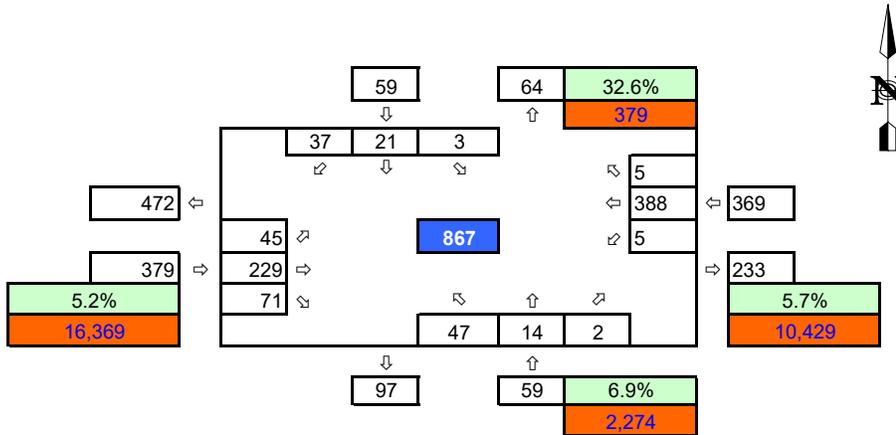
Project # (last 6): **293015**



Scenario: **Horizon Year Conditions**

N/S Street: **Kalmia St.**

E/W Street: **Grand Ave.**



LEGEND	
Existing K-Factor	xx%
ADT Volume	xx

Int 6 AM Peak Volumes

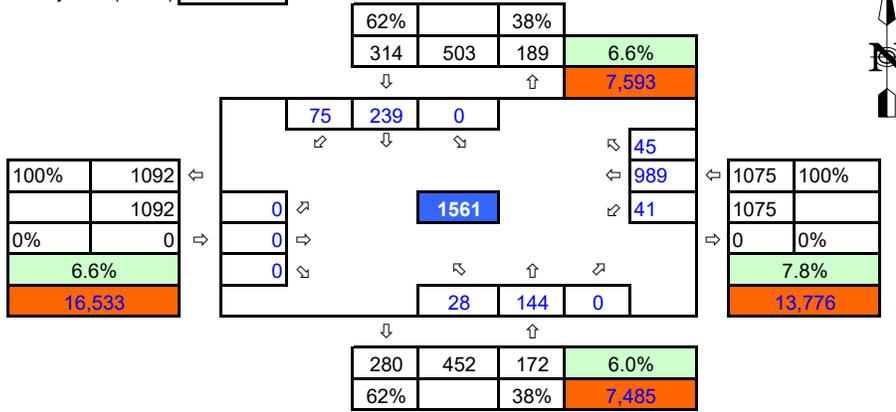
Scenario: **Existing Conditions**

N/S Street: **Escondido Blvd.**

E/W Street: **Valley Pkwy.**

Intersection #: **6**

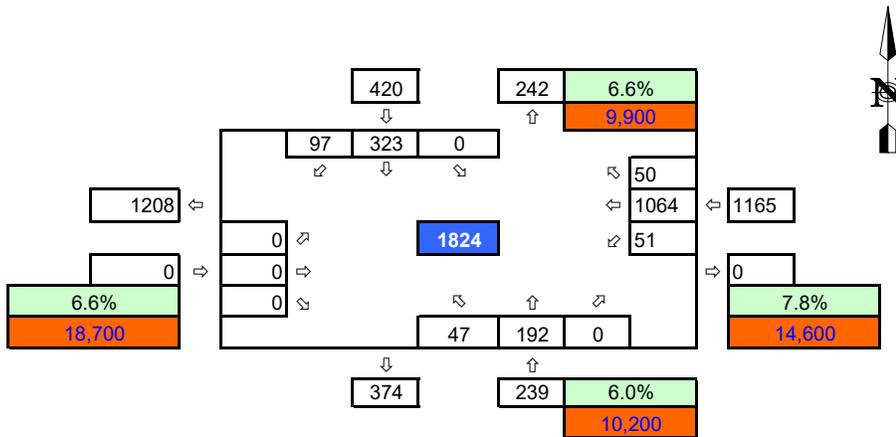
Project # (last 6): **293015**



Scenario: **Horizon Year Conditions**

N/S Street: **Escondido Blvd.**

E/W Street: **Valley Pkwy.**



LEGEND	
Existing K-Factor	xx%
ADT Volume	xx

Int 7 AM Peak Volumes

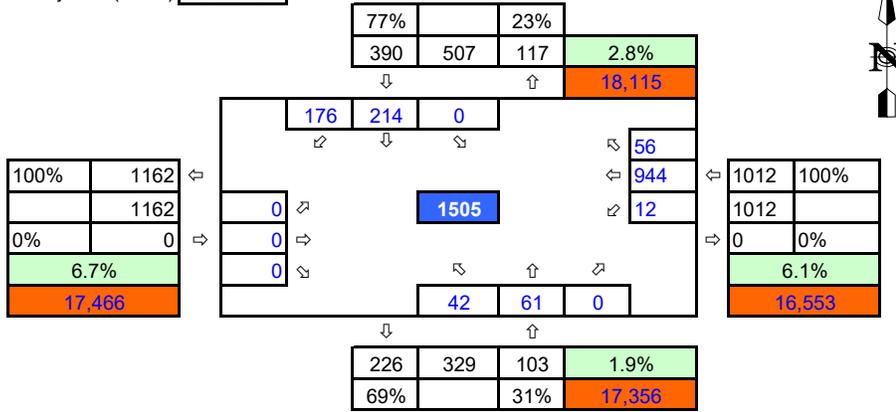
Scenario: **Existing Conditions**

N/S Street: **Broadway**

E/W Street: **Valley Pkwy.**

Intersection #: **7**

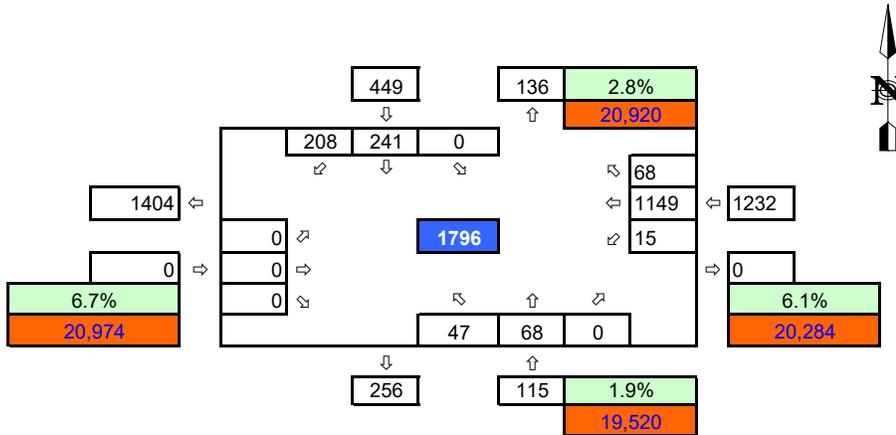
Project # (last 6): **293015**



Scenario: **Horizon Year Conditions**

N/S Street: **Broadway**

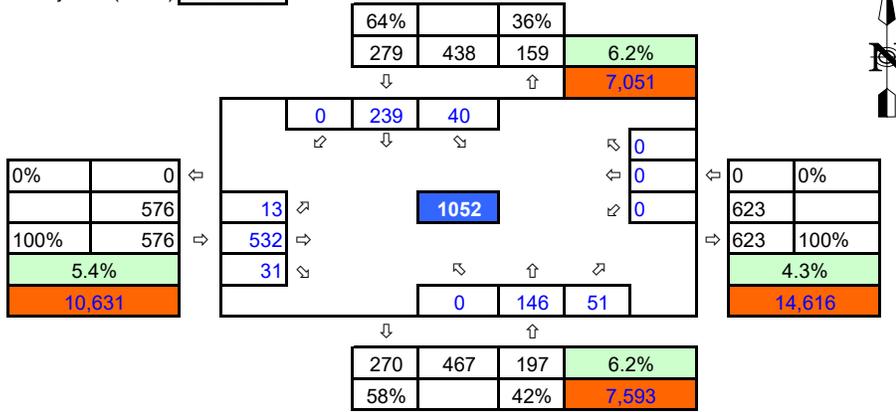
E/W Street: **Valley Pkwy.**



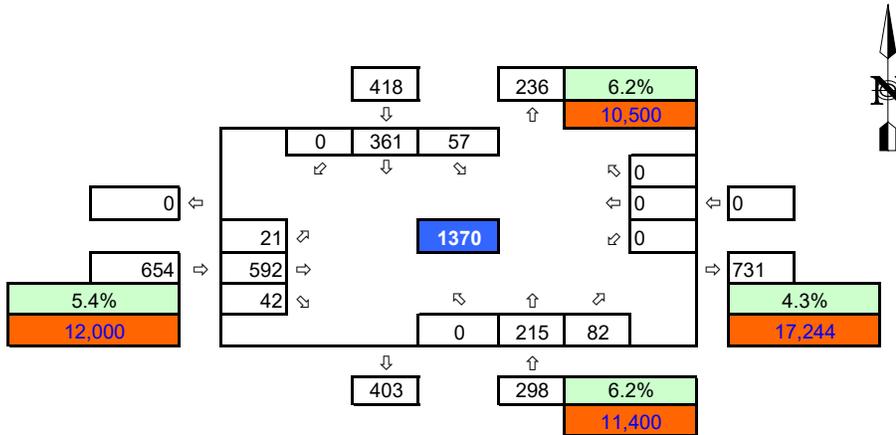
LEGEND	
Existing K-Factor	xx%
ADT Volume	xx

Int 9 AM Peak Volumes

Scenario: **Existing Conditions**
 N/S Street: **Escondido Blvd.**
 E/W Street: **2nd Ave.**
 Intersection #: **9**
 Project # (last 6): **293015**



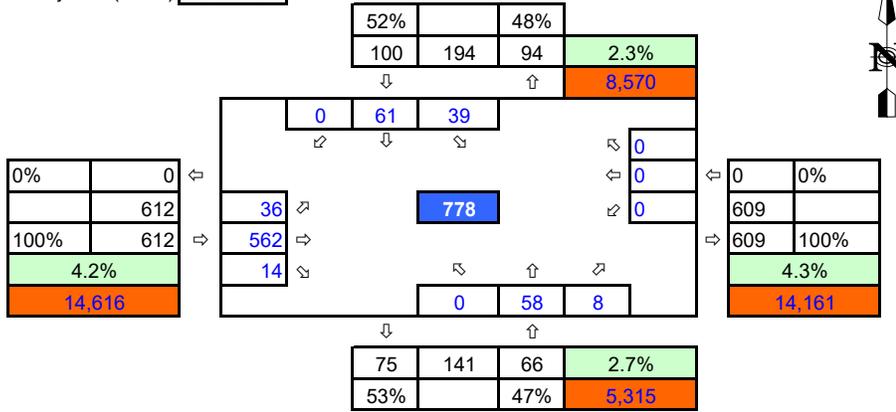
Scenario: **Horizon Year Conditions**
 N/S Street: **Escondido Blvd.**
 E/W Street: **2nd Ave.**



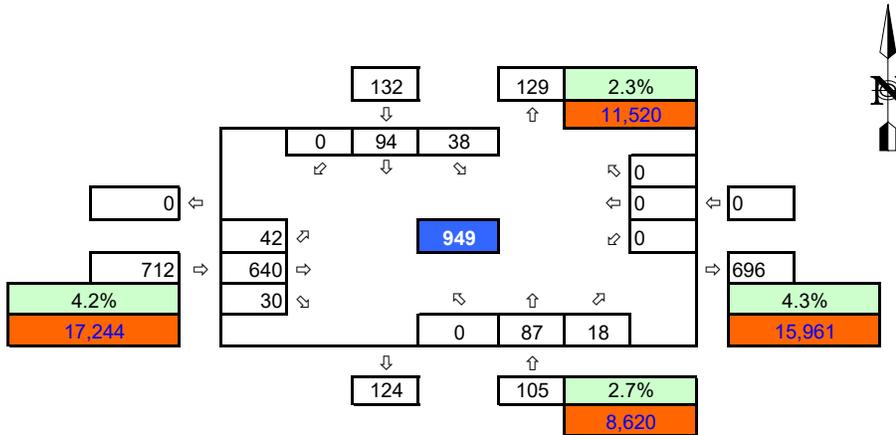
LEGEND	
Existing K-Factor	xx%
ADT Volume	xx

Int 10 AM Peak Volumes

Scenario:	Existing Conditions
N/S Street:	Broadway
E/W Street:	2nd Ave.
Intersection #:	10
Project # (last 6)	293015



Scenario:	Horizon Year Conditions
N/S Street:	Broadway
E/W Street:	2nd Ave.



LEGEND	
Existing K-Factor	xx%
ADT Volume	xx

Int 11 AM Peak Volumes

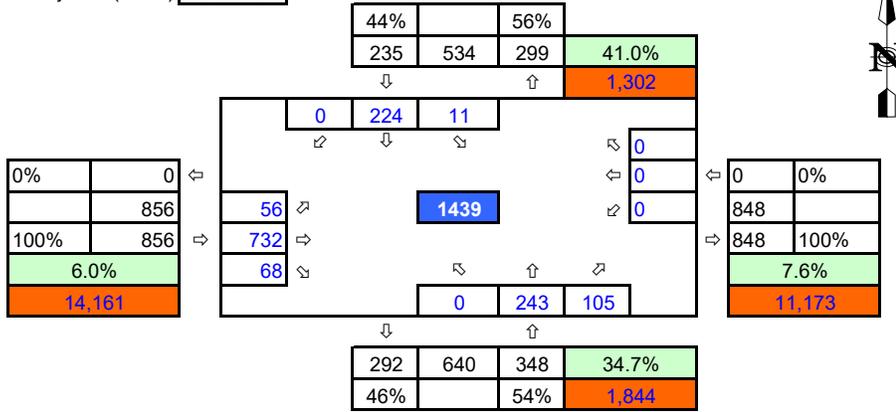
Scenario: **Existing Conditions**

N/S Street: **Juniper St.**

E/W Street: **2nd Ave.**

Intersection #: **11**

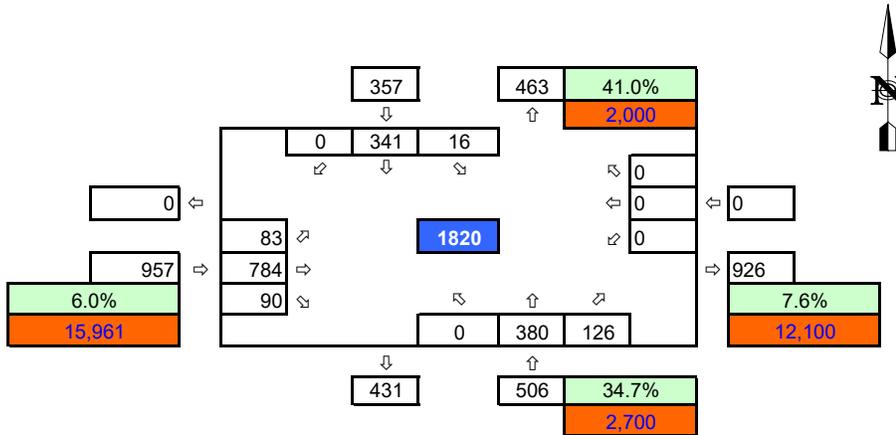
Project # (last 6): **293015**



Scenario: **Horizon Year Conditions**

N/S Street: **Juniper St.**

E/W Street: **2nd Ave.**



LEGEND	
Existing K-Factor	xx%
ADT Volume	xx

Int 2 PM Peak Volumes

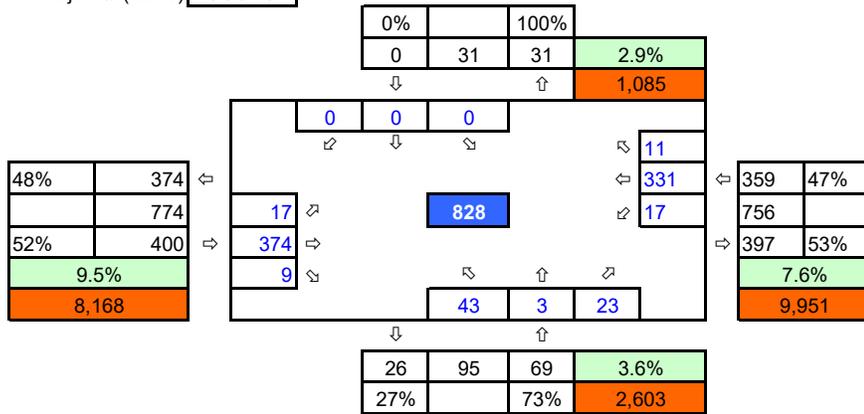
Scenario: **Existing Conditions**

N/S Street: **Maple St.**

E/W Street: **Grand Ave.**

Intersection #: **2**

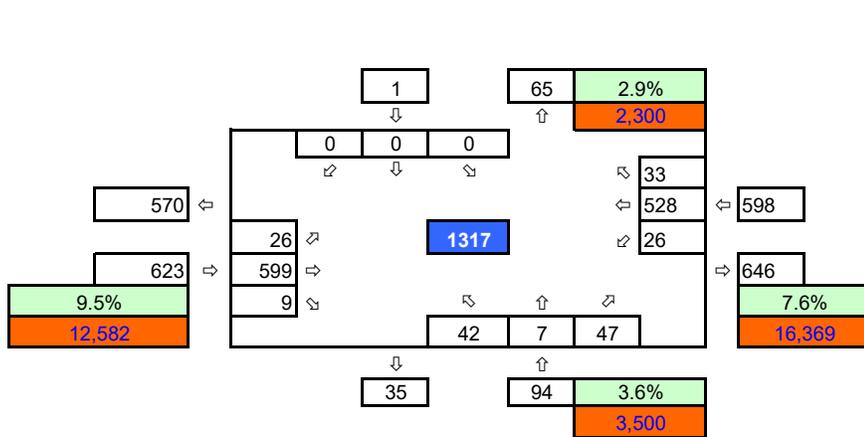
Project # (last 6): **293015**



Scenario: **Horizon Year Conditions**

N/S Street: **Maple St.**

E/W Street: **Grand Ave.**



LEGEND	
Existing K-Factor	xx%
ADT Volume	xx

Int 3 PM Peak Volumes

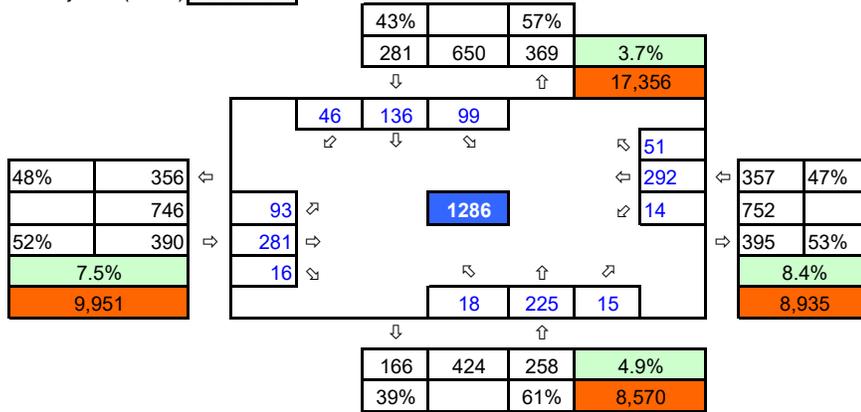
Scenario: **Existing Conditions**

N/S Street: **S. Broadway**

E/W Street: **Grand Ave.**

Intersection #: **3**

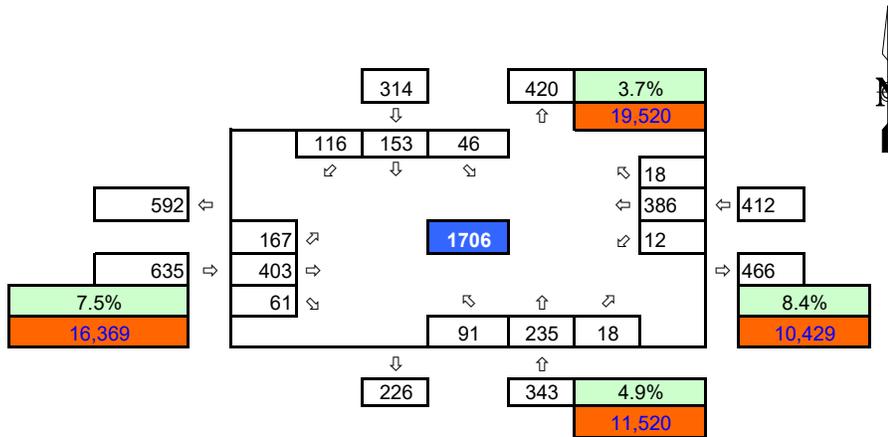
Project # (last 6): **293015**



Scenario: **Horizon Year Conditions**

N/S Street: **S. Broadway**

E/W Street: **Grand Ave.**



LEGEND	
Existing K-Factor	xx%
ADT Volume	xx

Int 4 PM Peak Volumes

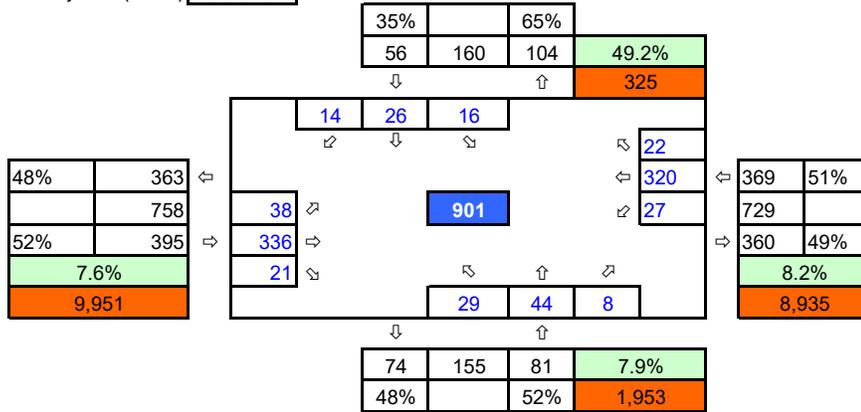
Scenario: **Existing Conditions**

N/S Street: **Kalmia St.**

E/W Street: **Grand Ave.**

Intersection #: **4**

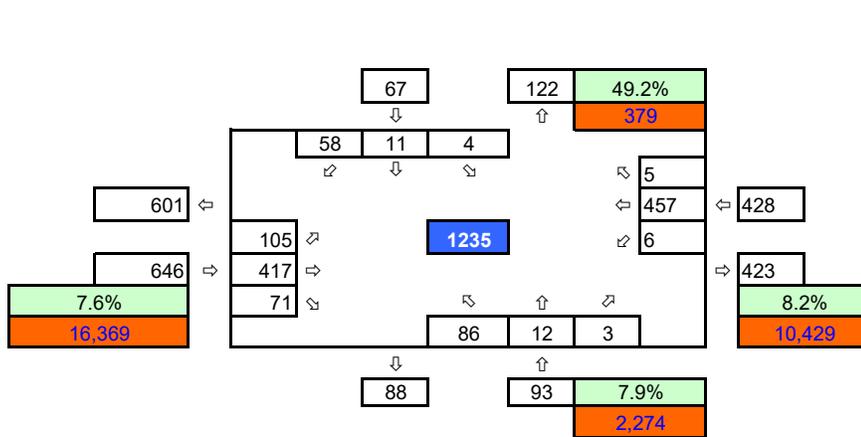
Project # (last 6): **293015**



Scenario: **Horizon Year Conditions**

N/S Street: **Kalmia St.**

E/W Street: **Grand Ave.**



LEGEND	
Existing K-Factor	xx%
ADT Volume	xx

Int 6 PM Peak Volumes

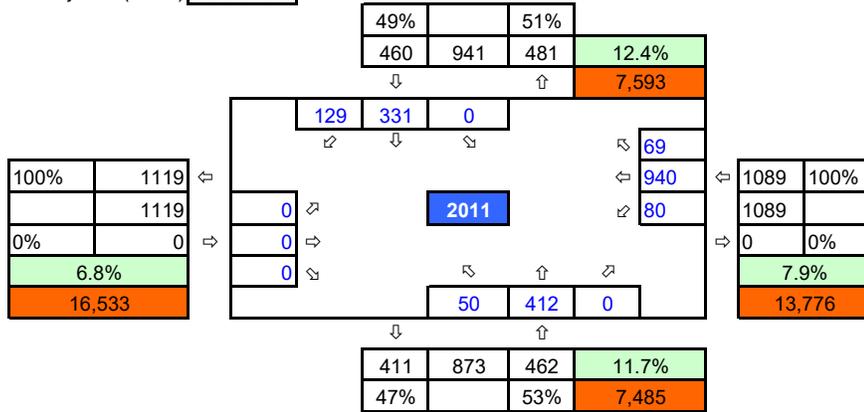
Scenario: **Existing Conditions**

N/S Street: **Escondido Blvd.**

E/W Street: **Valley Pkwy.**

Intersection #: **6**

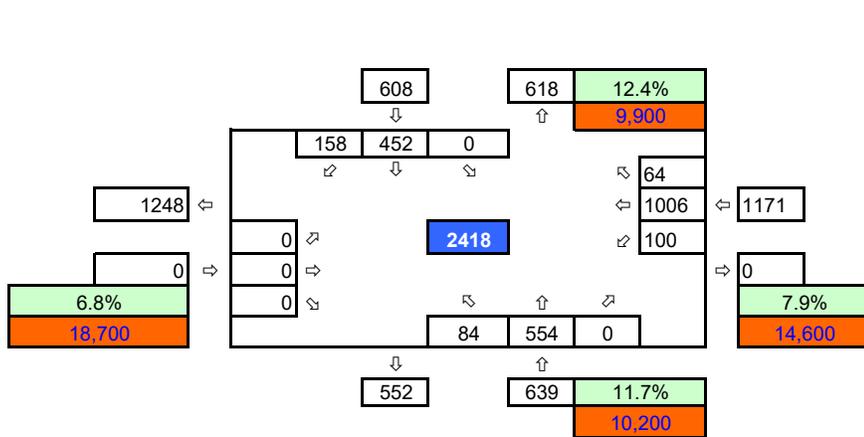
Project # (last 6): **293015**



Scenario: **Horizon Year Conditions**

N/S Street: **Escondido Blvd.**

E/W Street: **Valley Pkwy.**



LEGEND	
Existing K-Factor	xx%
ADT Volume	xx

Int 7 PM Peak Volumes

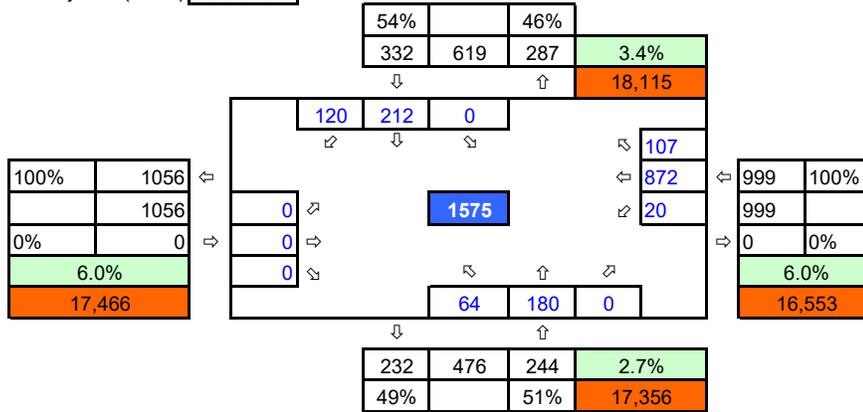
Scenario: **Existing Conditions**

N/S Street: **Broadway**

E/W Street: **Valley Pkwy.**

Intersection #: **7**

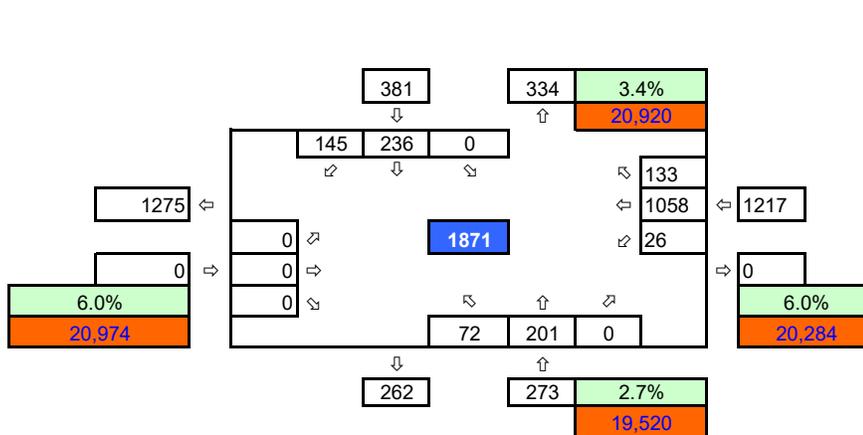
Project # (last 6): **293015**



Scenario: **Horizon Year Conditions**

N/S Street: **Broadway**

E/W Street: **Valley Pkwy.**



LEGEND	
Existing K-Factor	xx%
ADT Volume	xx

Int 8 PM Peak Volumes

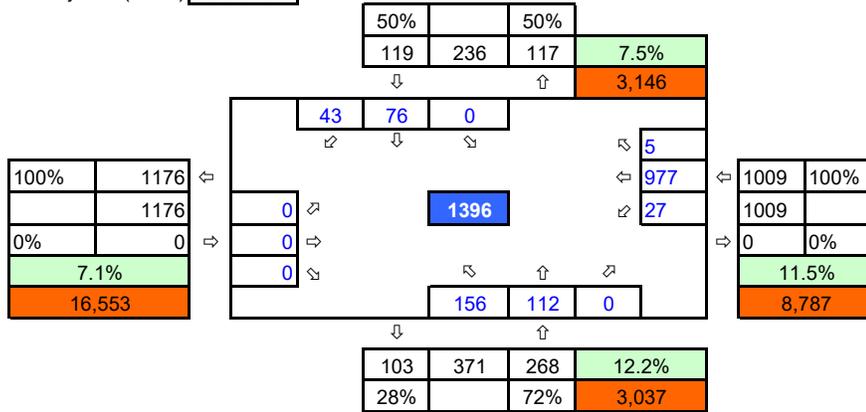
Scenario: **Existing Conditions**

N/S Street: **Juniper St.**

E/W Street: **Valley Pkwy.**

Intersection #: **8**

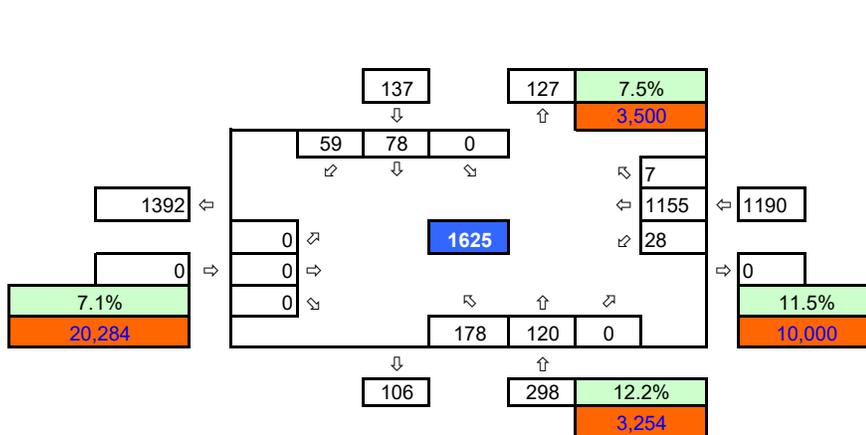
Project # (last 6): **293015**



Scenario: **Horizon Year Conditions**

N/S Street: **Juniper St.**

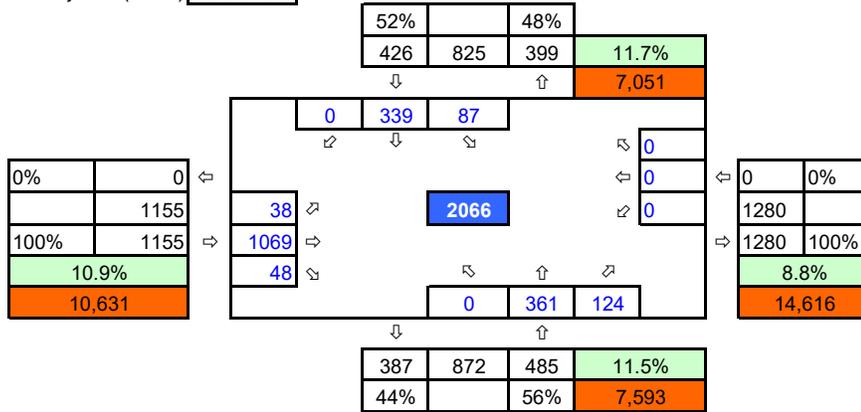
E/W Street: **Valley Pkwy.**



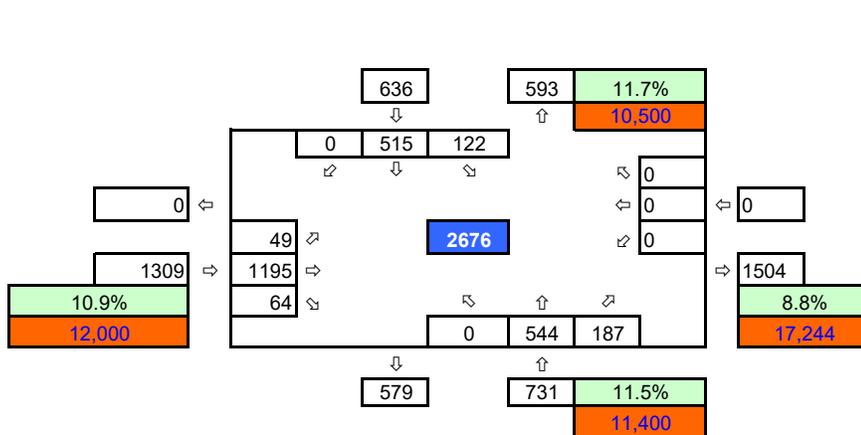
LEGEND	
Existing K-Factor	xx%
ADT Volume	xx

Int 9 PM Peak Volumes

Scenario:	Existing Conditions
N/S Street:	Escondido Blvd.
E/W Street:	2nd Ave.
Intersection #:	9
Project # (last 6)	293015



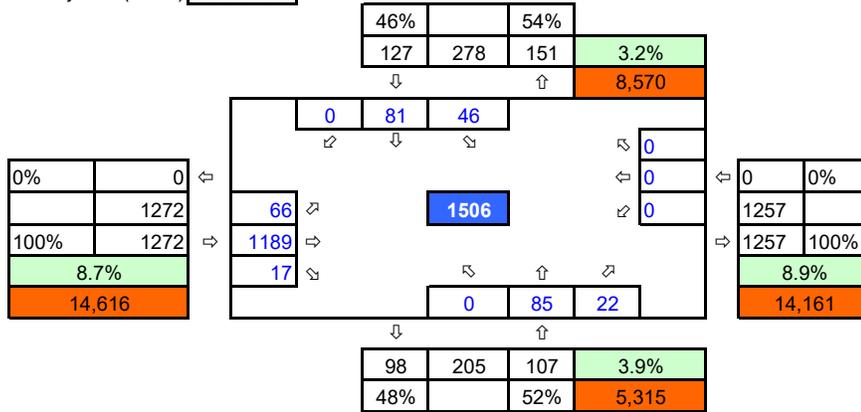
Scenario:	Horizon Year Conditions
N/S Street:	Escondido Blvd.
E/W Street:	2nd Ave.



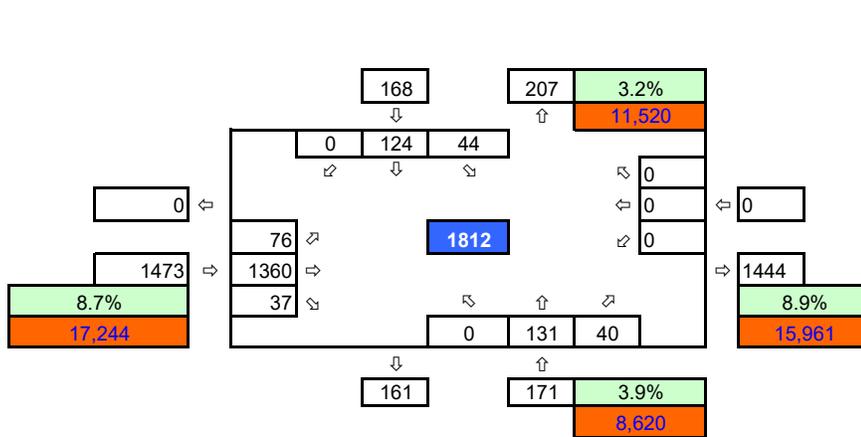
LEGEND	
Existing K-Factor	xx%
ADT Volume	xx

Int 10 PM Peak Volumes

Scenario:	Existing Conditions
N/S Street:	Broadway
E/W Street:	2nd Ave.
Intersection #:	10
Project # (last 6)	293015



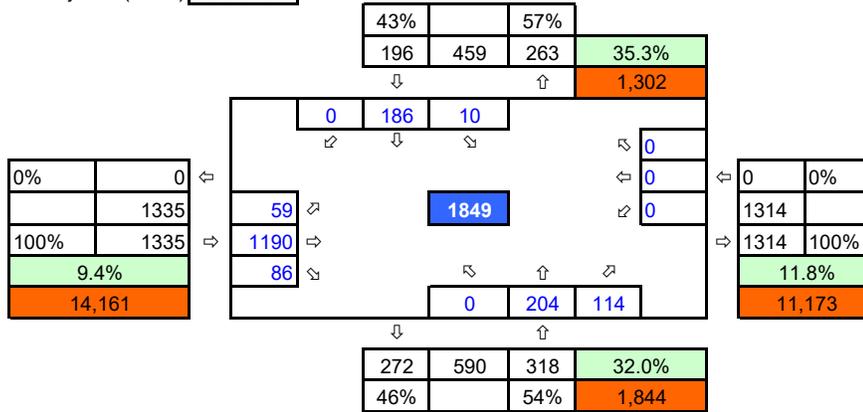
Scenario:	Horizon Year Conditions
N/S Street:	Broadway
E/W Street:	2nd Ave.



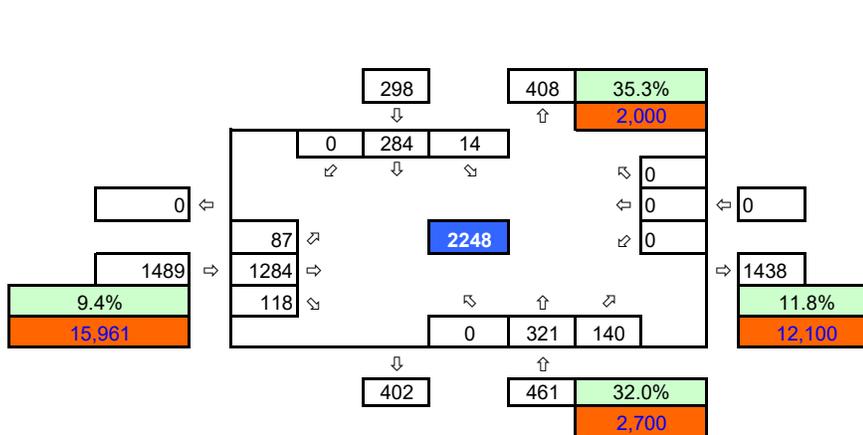
LEGEND	
Existing K-Factor	xx%
ADT Volume	xx

Int 11 PM Peak Volumes

Scenario:	Existing Conditions
N/S Street:	Juniper St.
E/W Street:	2nd Ave.
Intersection #:	11
Project # (last 6)	293015



Scenario:	Horizon Year Conditions
N/S Street:	Juniper St.
E/W Street:	2nd Ave.



LEGEND	
Existing K-Factor	xx%
ADT Volume	xx

APPENDIX D

TRANSIT ROUTE INFORMATION

351/352

Escondido Circulator

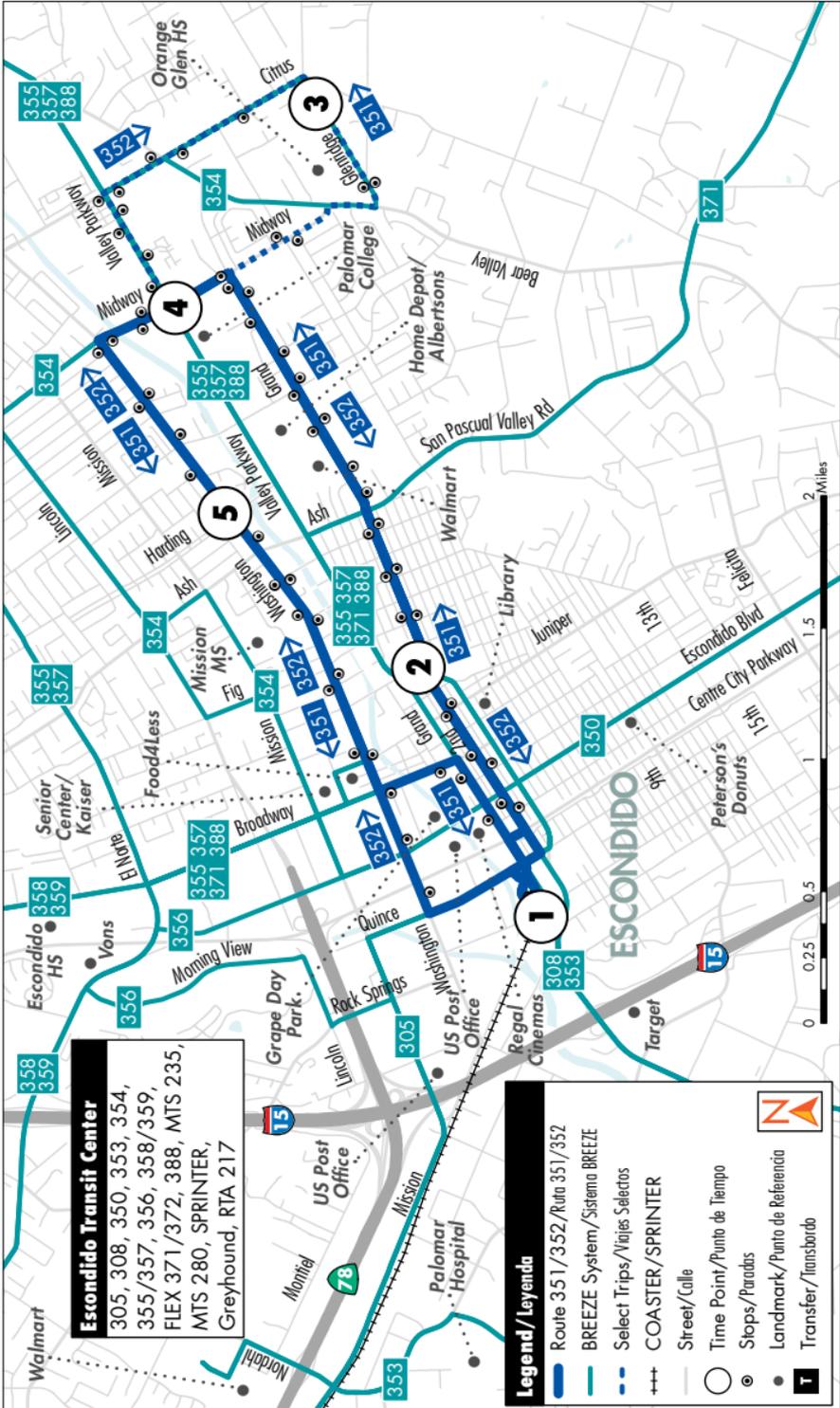
Escondido Circulator

M-F • SA • SU
L-V • SÁ • DO

Destinations/Destinos

- Palomar College Escondido Branch
- Hidden Valley Middle School
- Orange Glen High School
- Palomar Health Downtown Campus

- Escondido Civic Center
- North County Inland Career Center



See pg. 6 for Holiday schedules/Ver pág. 244 para obtener los horarios de días festivos

 351 Monday - Friday Grand Ave. then Washington Ave. <i>351 Lunes a Viernes • Grand Ave. luego Washington Ave.</i>					
Escondido Transit Center	Palomar Health Downtown Campus	Orange Glen High School	Midway Dr. & Valley Pkwy.	Washington Ave. & Harding St.	Escondido Transit Center
1	2	3	4	5	1
4:50	4:54	–	5:01	5:06	5:17a
5:20	5:24	–	5:31	5:36	5:47
5:50	5:54	–	6:01	6:06	6:17
6:20	6:24	–	6:31	6:36	6:47
6:35	6:40	–	6:48	6:53	7:06
6:50	6:55	7:10	7:17	7:25	7:38
7:23	7:29	–	7:38	7:43	7:56
7:35	7:41	–	7:50	7:55	8:08
7:53	7:59	–	8:08	8:13	8:26
8:23	8:29	–	8:38	8:43	8:56
8:35	8:41	–	8:50	8:55	9:08
8:53	8:59	–	9:08	9:13	9:26
9:23	9:29	–	9:38	9:43	9:56
9:35	9:41	–	9:50	9:55	10:08
9:53	9:59	–	10:08	10:13	10:26
10:23	10:29	–	10:38	10:43	10:56
10:35	10:41	–	10:50	10:55	11:08
10:53	10:59	–	11:08	11:13	11:26
11:23	11:29	–	11:38	11:43	11:56
11:35	11:41	–	11:50	11:55	12:08p
11:53	11:59	–	12:08	12:13	12:26
12:23	12:29	–	12:38	12:43	12:56
12:35	12:41	–	12:50	12:55	1:08
12:53	12:59	–	1:08	1:13	1:26
1:23	1:29	–	1:38	1:43	1:56
1:35	1:41	–	1:50	1:55	2:08
1:53	1:59	–	2:08	2:13	2:26
2:23	2:29	–	2:38	2:43	2:56
2:37	2:43	2:58	3:05	3:13	3:26
2:53	2:59	–	3:08	3:13	3:26
3:22	3:28	–	3:38	3:43	3:56
3:35	3:41	–	3:51	3:56	4:09
3:52	3:58	–	4:08	4:13	4:26
4:22	4:28	–	4:38	4:43	4:56
4:35	4:41	–	4:51	4:56	5:09
4:52	4:58	–	5:08	5:13	5:26
5:23	5:29	–	5:39	5:44	5:56

See pg. 6 for Holiday schedules/Ver pág. 244 para obtener los horarios de días festivos

 351 Monday - Friday Grand Ave. then Washington Ave. <i>351 Lunes a Viernes • Grand Ave. luego Washington Ave.</i>					
Escondido Transit Center	Palomar Health Downtown Campus	Orange Glen High School	Midway Dr. & Valley Pkwy.	Washington Ave. & Harding St.	Escondido Transit Center
1	2	3	4	5	1
5:35	5:41	–	5:51	5:56	6:08
5:53	5:59	–	6:09	6:14	6:26
6:20	6:26	–	6:35	6:40	6:51
6:50	6:56	–	7:05	7:10	7:20
7:20	7:25	–	7:33	7:38	7:48
7:50	7:55	–	8:03	8:07	8:17
8:20	8:24	–	8:32	8:36	8:46
8:50	8:54	–	9:02	9:06	9:16
9:20	9:24	–	9:31	9:34	9:43
10:20	10:24	–	10:30	10:33	10:42

See pg. 6 for Holiday schedules/Ver pág. 244 para obtener los horarios de días festivos

**352 Monday - Friday**
Washington Ave. then Grand Ave.
352 Lunes a Viernes • Washington Ave. luego Grand Ave.

Escondido Transit Center	Washington Ave. & Harding St.	Midway Dr. & Valley Pkwy.	Orange Glen High School	Palomar Health Downtown Campus	Escondido Transit Center
1	5	4	3	2	1
4:05	4:11	4:16	–	4:23	4:28 _a
5:33	5:40	5:45	–	5:54	6:00
6:03	6:10	6:15	–	6:25	6:31
6:20	6:27	6:32	–	6:42	6:48
6:33	6:40	6:45	–	6:55	7:01
7:03	7:11	7:18	7:25	7:42	7:50
7:20	7:28	7:35	7:42	7:59	8:07
7:33	7:41	7:46	–	7:56	8:04
8:03	8:11	8:16	–	8:26	8:34
8:20	8:28	8:33	–	8:43	8:51
8:33	8:41	8:46	–	8:56	9:04
9:03	9:12	9:17	–	9:27	9:36
9:20	9:30	9:35	–	9:45	9:54
9:33	9:43	9:48	–	9:58	10:07
10:03	10:13	10:18	–	10:28	10:37
10:20	10:30	10:35	–	10:45	10:54
10:33	10:43	10:48	–	10:58	11:07
11:03	11:13	11:18	–	11:28	11:37
11:20	11:30	11:35	–	11:45	11:54
11:33	11:43	11:48	–	11:58	12:07p
12:03	12:13	12:18	–	12:28	12:37
12:20	12:30	12:35	–	12:45	12:54
12:33	12:43	12:48	–	12:58	1:07
1:03	1:14	1:19	–	1:29	1:38
1:20	1:31	1:36	–	1:46	1:55
1:33	1:44	1:49	–	1:59	2:08
2:03	2:14	2:19	–	2:29	2:38
2:20	2:31	2:36	–	2:46	2:55
2:33	2:44	2:51	2:58	3:15	3:24
3:03	3:14	3:20	–	3:30	3:39
3:20	3:31	3:37	–	3:47	3:56
3:33	3:44	3:50	–	4:00	4:09
4:03	4:14	4:20	–	4:30	4:39
4:20	4:31	4:37	–	4:46	4:55
4:33	4:44	4:50	–	4:58	5:07
5:03	5:14	5:20	–	5:28	5:37
5:20	5:31	5:37	–	5:45	5:54

See pg. 6 for Holiday schedules/Ver pág. 244 para obtener los horarios de días festivos



352 Monday - Friday
Washington Ave. then Grand Ave.
352 Lunes a Viernes • Washington Ave. luego Grand Ave.

Escondido Transit Center	Washington Ave. & Harding St.	Midway Dr. & Valley Pkwy.	Orange Glen High School	Palomar Health Downtown Campus	Escondido Transit Center
1	5	4	3	2	1
5:33	5:44	5:50	–	5:58	6:07
6:03	6:12	6:17	–	6:25	6:33
6:33	6:42	6:47	–	6:55	7:02
7:03	7:12	7:16	–	7:23	7:30
7:33	7:41	7:45	–	7:52	7:59
8:03	8:11	8:15	–	8:21	8:28
8:33	8:40	8:44	–	8:50	8:57
9:03	9:10	9:14	–	9:20	9:26
9:33	9:40	9:44	–	9:50	9:56

See pg. 6 for Holiday schedules/Ver pág. 244 para obtener los horarios de días festivos

 351 Saturday & Sunday Grand Ave. then Washington Ave. <i>351 Sábado y Domingo • Grand Ave. luego Washington Ave.</i>				
Escondido Transit Center	Palomar Health Downtown Campus	Midway Dr. & Valley Pkwy.	Washington Ave. & Harding St.	Escondido Transit Center
1	2	4	5	1
6:59	7:03	7:10	7:16	7:27 ^a
7:32	7:36	7:43	7:49	8:00
8:02	8:07	8:14	8:20	8:31
8:32	8:37	8:45	8:51	9:02
9:02	9:07	9:16	9:22	9:33
9:32	9:37	9:46	9:52	10:04
10:02	10:08	10:17	10:23	10:35
10:32	10:38	10:47	10:53	11:05
11:02	11:08	11:17	11:23	11:35
11:32	11:38	11:47	11:53	12:05^p
12:02	12:08	12:17	12:23	12:35
12:32	12:38	12:47	12:53	1:05
1:02	1:08	1:17	1:23	1:35
1:32	1:38	1:47	1:53	2:05
2:02	2:08	2:17	2:23	2:35
2:32	2:38	2:47	2:53	3:05
3:02	3:08	3:17	3:23	3:35
3:32	3:38	3:47	3:53	4:05
4:02	4:08	4:17	4:23	4:35
4:32	4:38	4:47	4:53	5:04
5:02	5:07	5:16	5:22	5:33
5:32	5:37	5:46	5:52	6:03
6:02	6:07	6:16	6:21	6:32
6:32	6:37	6:46	6:51	7:02
7:32	7:37	7:46	7:51	8:02
8:32	8:37	8:45	8:50	9:01
9:32	9:36	9:44	-	-

See pg. 6 for Holiday schedules/Ver pág. 244 para obtener los horarios de días festivos

 352 Saturday & Sunday Washington Ave. then Grand Ave. <i>352 Sábado y Domingo • Washington Ave. luego Grand Ave.</i>				
Escondido Transit Center	Washington Ave. & Harding St.	Midway Dr. & Valley Pkwy.	Palomar Health Downtown Campus	Escondido Transit Center
1	5	4	2	1
–	–	5:14	5:21	5:26a
–	–	6:13	6:21	6:26
6:59	7:06	7:11	7:20	7:26
7:31	7:38	7:43	7:52	7:58
7:59	8:06	8:11	8:20	8:26
8:31	8:38	8:43	8:52	8:58
8:59	9:06	9:11	9:20	9:26
9:28	9:36	9:41	9:50	9:56
9:57	10:05	10:10	10:19	10:26
10:26	10:35	10:40	10:49	10:56
10:56	11:05	11:10	11:19	11:26
11:25	11:34	11:39	11:48	11:56
11:55	12:04	12:09	12:18	12:26p
12:25	12:34	12:39	12:48	12:56
12:55	1:04	1:09	1:18	1:26
1:25	1:34	1:39	1:48	1:56
1:55	2:04	2:09	2:18	2:26
2:26	2:35	2:40	2:49	2:56
2:56	3:05	3:10	3:19	3:26
3:26	3:35	3:40	3:49	3:56
3:57	4:06	4:11	4:19	4:26
4:27	4:36	4:41	4:49	4:56
4:57	5:06	5:11	5:19	5:26
5:28	5:37	5:42	5:49	5:56
5:58	6:07	6:12	6:19	6:26
6:28	6:37	6:42	6:49	6:56
6:58	7:07	7:12	7:19	7:26
7:58	8:07	8:12	8:19	8:26
8:59	9:07	9:12	9:19	9:26

FLEX 371

Ramona Commuter

Ramona Commuter

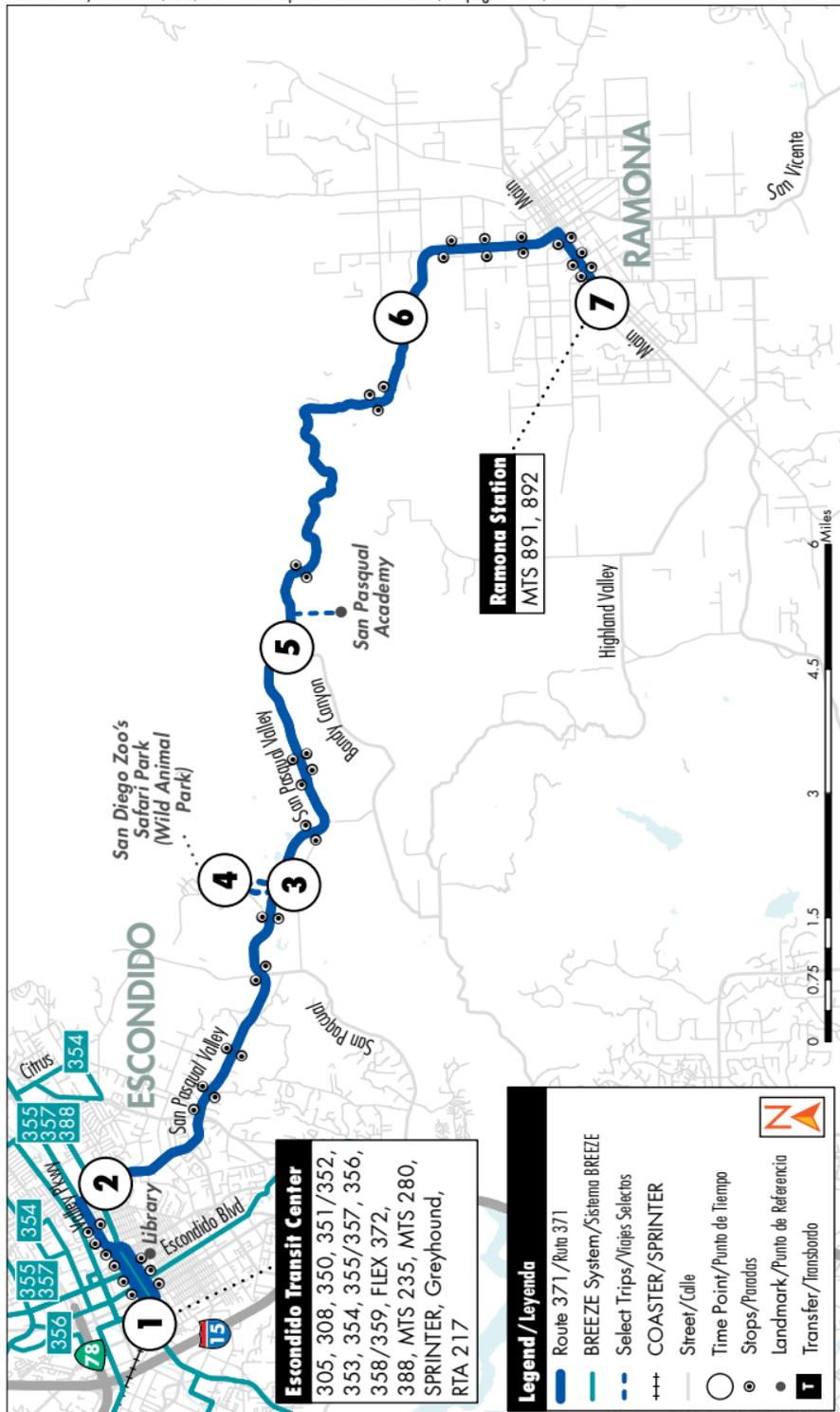
M-F
L-V

Destinations/Destinos

- Palomar Medical Center
- San Pasqual Academy
- San Diego Zoo Safari Park

For deviations call: (855) 844-1454 FLEX fares apply (see page 210)

Para desvíos, llame al: (855) 844-1454 Aplican las tarifas FLEX (ver página 210)



See pg. 6 for Holiday schedules/Ver pág. 244 para obtener los horarios de días festivos

Monday - Friday Escondido to Ramona <i>Lunes a Viernes • Escondido a Ramona</i>						
Escondido Transit Center	Ash St. & Grand Ave.	Hwy. 78 & Safari Park	San Diego Zoo Safari Park	Hwy. 78 & San Pasqual Academy	Hwy. 78 & Weekend Villa Rd.	Ramona Station
1	2	3	4	5	6	7
5:40	5:48	5:57	–	6:01	6:09	6:19 _a
7:35	7:43	7:52	*–	8:05	8:14	8:22
2:15	2:23	2:32	–	2:40	2:49	2:57_p
4:05	4:13	4:22	–	4:30	4:39	4:47
5:40	5:48	5:57	–	6:05	6:14	6:22

Monday - Friday Ramona to Escondido <i>Lunes a Viernes • Ramona a Escondido</i>						
Ramona Station	Hwy. 78 & Weekend Villa Rd.	Hwy. 78 & San Pasqual Academy	San Diego Zoo Safari Park	Hwy. 78 & Safari Park	Ash St. & Grand Ave.	Escondido Transit Center
7	6	5	4	3	2	1
4:46	4:53	5:01	–	5:06	5:15	5:27 _a
6:30	6:38	6:46	–	6:53	7:04	7:13
8:30	8:38	8:46	–	8:53	9:04	9:13
3:05	3:13	3:21	3:32	–	3:43	3:52_p
4:50	4:58	5:06	5:17	–	5:28	5:37
6:35	6:43	6:51	7:02	–	7:13	7:22

Ramona FLEX does not operate on Saturdays, Sundays, or holidays.

Ramona FLEX no opera los sábados, domingos o en días festivos.

* **Trip will drop off at Safari Park only if passengers request to stop there.**

El viaje hará una parada en Safari Park solamente si los pasajeros lo solicitan.

See FLEX 372 for midday weekday service between Ramona and Escondido.

Ver FLEX 372 para el servicio entre semana de mediodía entre Ramona y Escondido.

Travel between Ramona and Escondido weekdays at scheduled times shown on page 209 boarding at any bus stop. Reservations are accepted on a first come, first served basis. Reservations are not required for FLEX 371 except for trips originating or terminating at San Pasqual Academy. Reservations may be scheduled 7 days in advance 8:00 a.m. to 5:00 p.m., 7 days/week, but must be made no later than 5:00 p.m. the day before the trip.

Fares

One-way fares are: \$5.00 Adult, \$2.50 Senior/Disabled/Medicare, RegionPlus Day Pass or any COASTER Monthly or 30-Day Pass (Adult, Youth, or Senior/Disabled/Medicare). These fares/passes are not accepted on FLEX 372. Purchase book of 10 FLEX tickets at any Customer Service location.

Puede viajar entre Ramona y Escondido en días hábiles y en las horas programadas mostradas en la página 209 subiéndose en cualquier parada de autobús. Las reservaciones se aceptan por orden de llegada. No se requiere hacer reservaciones para FLEX 371, excepto para los viajes que empiecen o terminen en la San Pasqual Academy. Las reservaciones pueden ser realizadas con 7 días de anticipación de 4:30 a.m. a 9:00 p.m., 7 días a la semana.

Tarifas

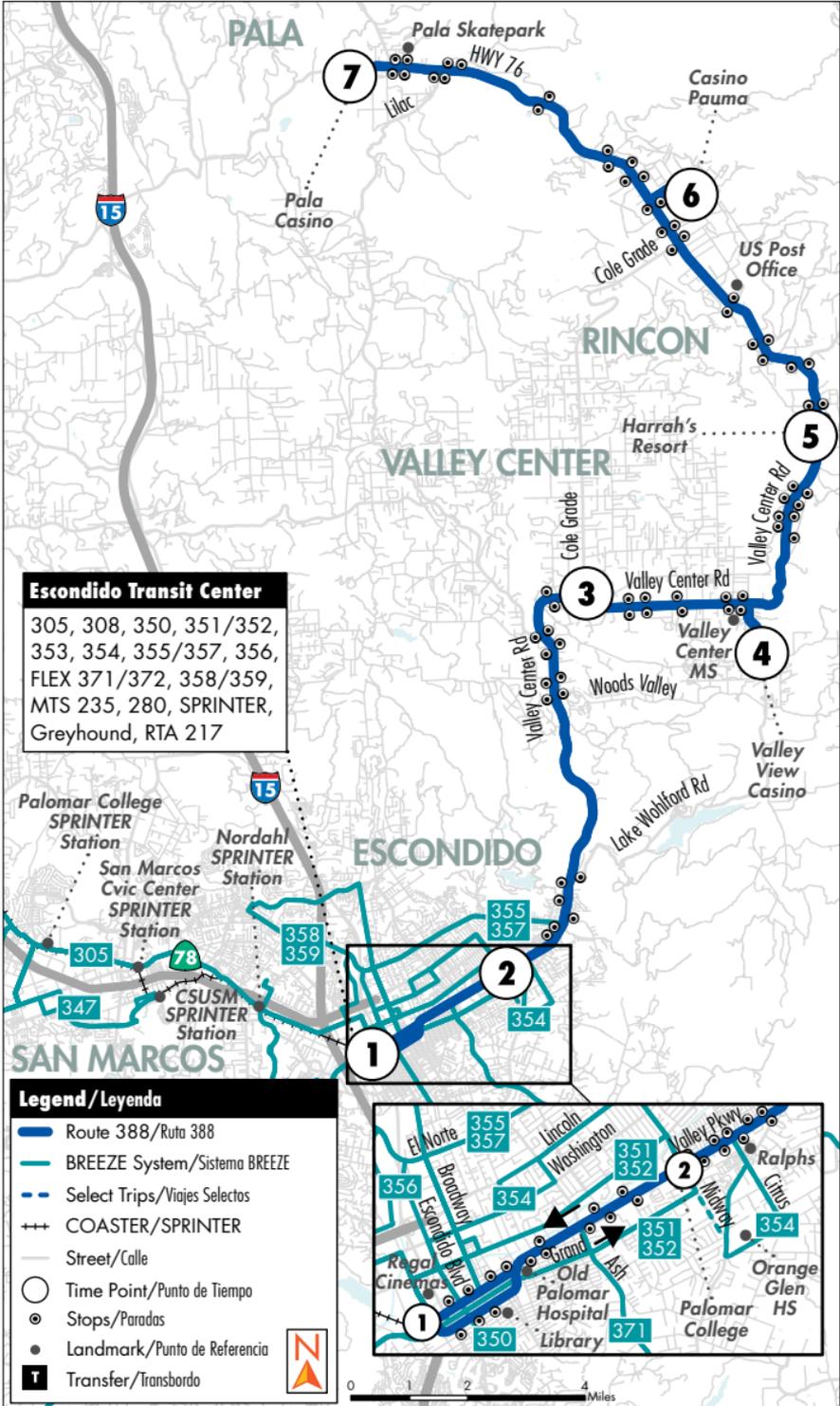
Tarifas de un solo trayecto: \$5.00 Adulto, \$2.50 Persona Mayor/ Discapacitada/Medicare, Pase Diario RegionPlus o cualquier Pase Mensual COASTER o Pase de 30 días (Adulto, Joven o Persona Mayor/Discapacitada/Medicare). Estas tarifas/pases no son aceptados en FLEX 372. Compre una libreta de 10 boletos FLEX en cualquier ventanilla de Servicio al Cliente.

M-F • SA • SU
L-V • SÁ • DO

Destinations/Destinos

- Palomar College Escondido Branch
- Regal Cinemas
- Palomar Medical Center
- Harrah's Rincon Casino

- Pala Casino
- Casino Pauma
- Valley View Casino
- East Valley Community Center



See pg. 6 for Holiday schedules/Ver pág. 244 para obtener los horarios de días festivos

Monday - Friday Northbound to Pala via Valley Center <i>Lunes a Viernes • Dirección hacia el norte a Pala vía Valley Center</i>						
Escondido Transit Center	Valley Pkwy. & Midway Dr.	Valley Center Rd. & Cole Grade Rd.	Valley View Casino	Harrah's Rincon Casino	Casino Pauma	Pala Casino
1	2	3	4	5	6	7
4:33	4:42	4:56	5:06	5:17	5:31	5:45 _a
5:03	5:13	5:27	5:37	5:48	6:02	6:16
7:03	7:15	7:33	7:43	7:54	8:10	8:24
9:03	9:15	9:33	9:43	9:54	10:10	10:25
11:03	11:17	11:35	11:45	11:56	12:12	12:27_p
1:03	1:17	1:36	1:46	1:57	2:13	2:29
3:03	3:17	3:37	3:47	3:58	4:14	4:30
4:03	4:17	4:37	4:47	4:58	5:14	5:30
5:03	5:17	5:38	5:48	5:59	6:15	6:32
7:03	7:15	7:32	7:42	7:53	8:09	8:25

Monday - Friday Southbound to Escondido via Valley Center <i>Lunes a Viernes • Dirección hacia el sur a Escondido vía Valley Center</i>						
Pala Casino	Casino Pauma	Harrah's Rincon Casino	Valley View Casino	Valley Center Rd. & Cole Grade Rd.	Valley Pkwy. & Midway Dr.	Escondido Transit Center
7	6	5	4	3	2	1
6:12	6:25	6:38	6:48	6:58	7:13	7:27 _a
7:12	7:25	7:38	7:48	7:58	8:13	8:27
9:09	9:23	9:37	9:47	9:57	10:13	10:27
11:09	11:23	11:37	11:47	11:57	12:13	12:27_p
1:09	1:23	1:38	1:48	1:58	2:13	2:27
3:07	3:21	3:36	3:47	3:57	4:12	4:27
5:07	5:21	5:36	5:47	5:57	6:12	6:27
6:14	6:27	6:40	6:51	6:59	7:13	7:27
7:14	7:27	7:40	7:51	7:59	8:13	8:27
9:15	9:28	9:41	9:52	10:00	10:14	10:27

See pg. 6 for Holiday schedules/Ver pág. 244 para obtener los horarios de días festivos

Saturday & Sunday Northbound to Pala via Valley Center <i>Sábado y Domingo • Dirección hacia el norte a Pala vía Valley Center</i>						
Escondido Transit Center	Valley Pkwy. & Midway Dr.	Valley Center Rd. & Cole Grade Rd.	Valley View Casino	Harrah's Rincon Casino	Casino Pauma	Pala Casino
1	2	3	4	5	6	7
5:33	5:43	5:58	6:08	6:19	6:34	6:48 _a
6:33	6:44	7:01	7:11	7:22	7:38	7:52
9:03	9:15	9:33	9:43	9:54	10:10	10:25
11:03	11:17	11:35	11:45	11:56	12:12	12:27_p
1:03	1:17	1:36	1:46	1:57	2:13	2:29
3:03	3:17	3:37	3:47	3:58	4:14	4:30
4:03	4:17	4:37	4:47	4:58	5:14	5:30
5:03	5:17	5:38	5:48	5:59	6:15	6:32
7:03	7:15	7:32	7:42	7:53	8:09	8:25

Saturday & Sunday Southbound to Escondido via Valley Center <i>Sábado y Domingo • Dirección hacia el sur a Escondido vía Valley Center</i>						
Pala Casino	Casino Pauma	Harrah's Rincon Casino	Valley View Casino	Valley Center Rd. & Cole Grade Rd.	Valley Pkwy. & Midway Dr.	Escondido Transit Center
7	6	5	4	3	2	1
6:11	6:24	6:37	6:47	6:57	7:12	7:26 _a
7:11	7:24	7:37	7:47	7:57	8:12	8:26
8:38	8:52	9:06	9:16	9:26	9:42	9:56
10:38	10:52	11:06	11:16	11:26	11:42	11:56
12:38	12:52	1:07	1:17	1:27	1:42	1:56_p
3:06	3:20	3:35	3:46	3:56	4:11	4:26
5:06	5:20	5:35	5:46	5:56	6:11	6:26
6:13	6:26	6:39	6:50	6:58	7:12	7:26
7:13	7:26	7:39	7:50	7:58	8:12	8:26
9:14	9:27	9:40	9:51	9:59	10:13	10:26

355/357

El Norte Pkwy. & Valley Pkwy.

M-F • SA • SU • H

Destinations/Destinos

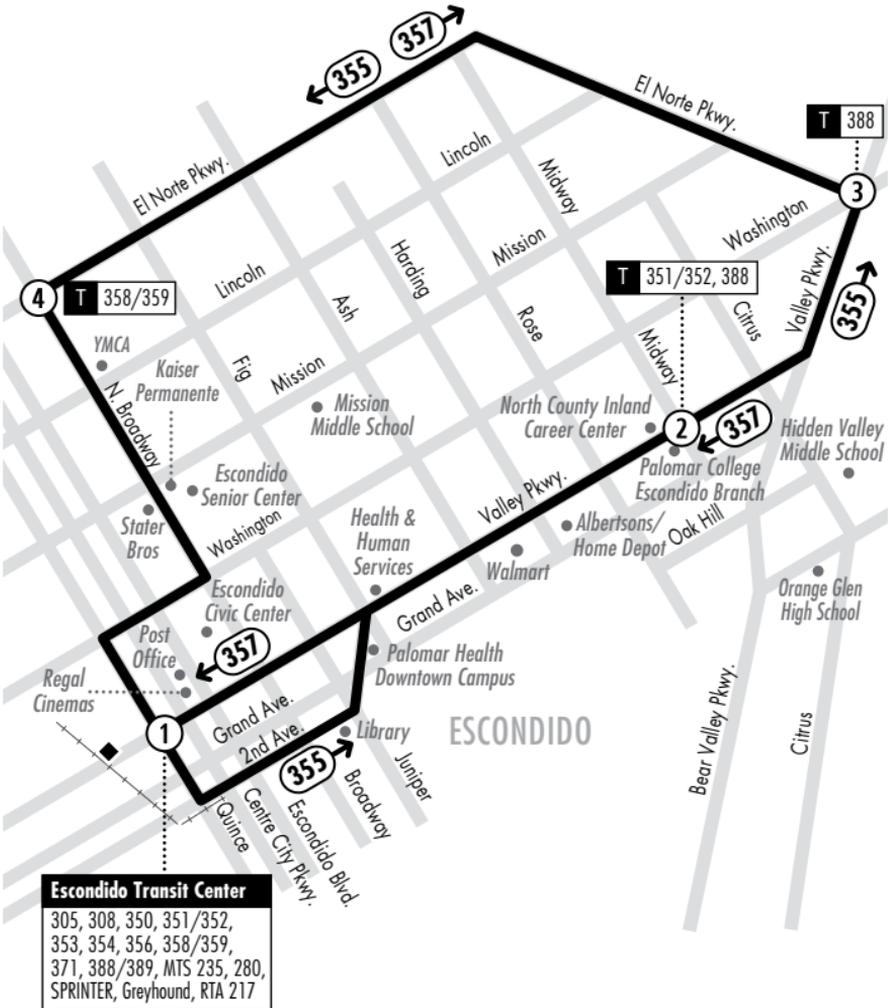
- Valley High School
- Escondido Charter High School
- Palomar Health Downtown Campus
- Palomar College Escondido Branch

- Kaiser Permanente
- YMCA
- North County Inland Career Center
- Escondido Senior Center

LEGEND/Leyenda

Map not to scale/Mapa no está a escala

- Route/Ruta
- Street/Calle
- Time Point/Punto de Tiempo
- Landmark/Señal
- Transfer/Transbordo
- SPRINTER Station/Estaciones del SPRINTER



Escondido Transit Center
 305, 308, 350, 351/352,
 353, 354, 356, 358/359,
 371, 388/389, MTS 235, 280,
 SPRINTER, Greyhound, RTA 217

355/357

El Norte Pkwy. & Valley Pkwy.

Bold denotes P.M. times/Horarios en negritas son en la tarde

 355 Monday - Friday Valley Pkwy. then El Norte Pkwy.				
Escondido Transit Center	Valley Pkwy. & Midway Dr.	El Norte Pkwy. & Valley Pkwy.	El Norte Pkwy. & N. Broadway	Escondido Transit Center
1	2	3	4	1
6:04	6:15	6:23	6:39	6:50 ^a
7:04	7:17	7:25	7:41	7:52
7:44	8:00	8:07	8:23	8:34
8:44	8:59	9:06	9:19	9:29
10:04	10:19	10:26	10:38	10:48
11:04	11:19	11:26	11:38	11:48
12:04	12:20	12:27	12:39	12:49^p
12:59	1:15	1:22	1:34	1:44
1:51	2:07	2:14	2:26	2:37
3:04	3:21	3:28	3:40	3:53
4:04	4:22	4:29	4:41	4:51
5:04	5:23	5:31	5:45	5:55
6:04	6:21	6:29	6:44	6:55
7:04	7:19	7:26	7:43	7:54
8:04	8:18	8:25	8:42	8:53

 357 Monday - Friday El Norte Pkwy. then Valley Pkwy.				
Escondido Transit Center	El Norte Pkwy. & N. Broadway	El Norte Pkwy. & Valley Pkwy.	Valley Pkwy. & Midway Dr.	Escondido Transit Center
1	4	3	2	1
6:34	6:45	6:58	7:06	7:15 ^a
7:34	7:45	7:58	8:06	8:15
8:34	8:45	8:58	9:05	9:15
9:34	9:45	9:58	10:05	10:15
10:34	10:45	10:58	11:05	11:15
11:34	11:45	11:57	12:04	12:16^p
12:34	12:45	12:57	1:04	1:16
1:34	1:45	1:57	2:04	2:18
2:34	2:47	3:00	3:07	3:21
3:34	3:46	3:58	4:05	4:18
4:34	4:46	4:58	5:05	5:18
5:34	5:46	5:58	6:05	6:18

355/357

El Norte Pkwy. & Valley Pkwy.

Bold denotes P.M. times/Horarios en negritas son en la tarde



355 Saturday, Sunday & Holidays

Valley Pkwy. then El Norte Pkwy.

Escondido Transit Center	Valley Pkwy. & Midway Dr.	El Norte Pkwy. & Valley Pkwy.	El Norte Pkwy. & N. Broadway	Escondido Transit Center
1	2	3	4	1
6:35	6:45	6:52	7:08	7:20 _a
8:35	8:45	8:52	9:08	9:20
10:35	10:45	10:52	11:08	11:20
12:35	12:45	12:52	1:08	1:20_p
2:35	2:45	2:52	3:08	3:20
4:35	4:45	4:52	5:08	5:20
6:35	6:45	6:52	7:08	7:20



357 Saturday, Sunday & Holidays

El Norte Pkwy. then Valley Pkwy.

Escondido Transit Center	El Norte Pkwy. & N. Broadway	El Norte Pkwy. & Valley Pkwy.	Valley Pkwy. & Midway Dr.	Escondido Transit Center
1	4	3	2	1
7:35	7:44	7:57	8:06	8:18 _a
9:35	9:44	9:57	10:06	10:18
11:35	11:44	11:57	12:06	12:18_p
1:35	1:44	1:57	2:06	2:18
3:35	3:44	3:57	4:06	4:18
5:35	5:44	5:57	6:06	6:18
7:35	7:44	7:57	8:06	8:18