Appendix E
Transportation Impact Analysis

Lakeside Equestrian Facility
Transportation Impact Analysis

Final Report

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Table of Contents

Appendices

List of Tables

List of Figures

1.0 Introduction

The purpose of this Transportation Impact Analysis (TIA) report is to identify any vehicular impacts that may be associated with the proposed Lakeside Equestrian Center project, to be developed by the County of San Diego Department of Parks and Recreation (Proposed Project).

1.1 Project Description

The Lakeside Equestrian Facility is being planned for an approximately 14-acre parcel on the northeast corner of the Willow Road and Moreno Avenue intersection, in the unincorporated community of Lakeside. The facility would consist of two arenas (one outside and one covered), bleachers, restrooms, livestock corrals, and accessory structures for meetings, concessions and storage. The facility would also include an open parking area that could accommodate approximately 74 trucks/trailers and 35 single vehicle spaces, and the construction of one host pad. Surrounding the facility will be a trail, perimeter track and a trail staging area with a covered picnic area adjacent to hitching posts. The facility is intended to be used by the community for a variety of equestrian and livestock related uses such as practices, training, and contests, including shows, and non-equestrian events such as wedding receptions, dog shows, etc. The facility will include lighting for nighttime events. A typical equestrian event will likely draw an attendance of between 50 and 125 contestants with large events attracting as many as 300 attendees. The large events are only anticipated to occur a couple times each year. The Proposed Project may also include a small-scale manure composting facility and educational interpretive signage. Use of drought tolerance landscape and incorporation of renewable energy components, such as roof-mounted photovoltaic panels and bird safe wind turbines may be incorporated into the project.

Figure 1-1 displays the Proposed Project's regional location, while **Figure 1-2** and **Figure 1-3** display the Project Study Area and Project Site Plan, respectively.

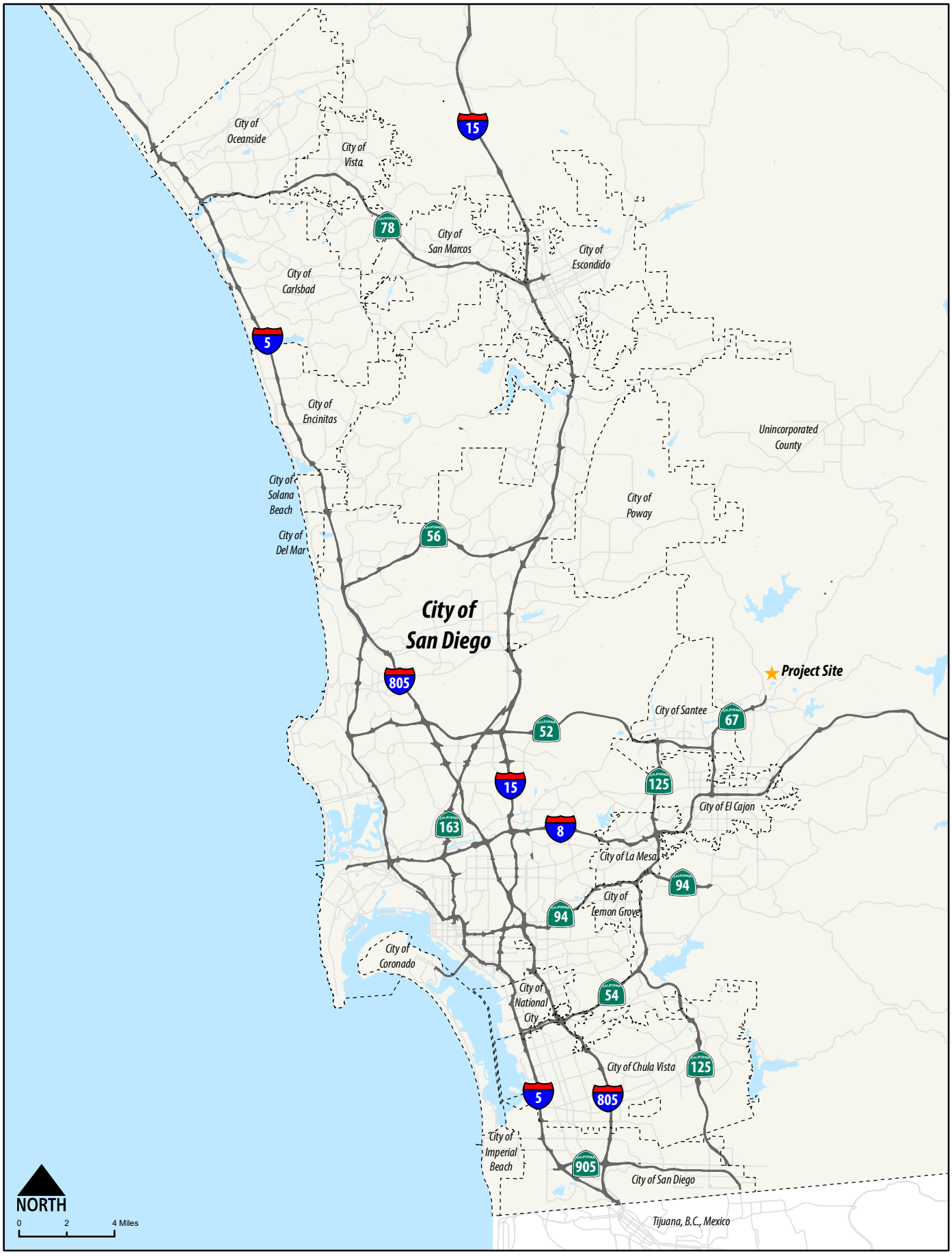

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Figure 1-1
Project Regional Location

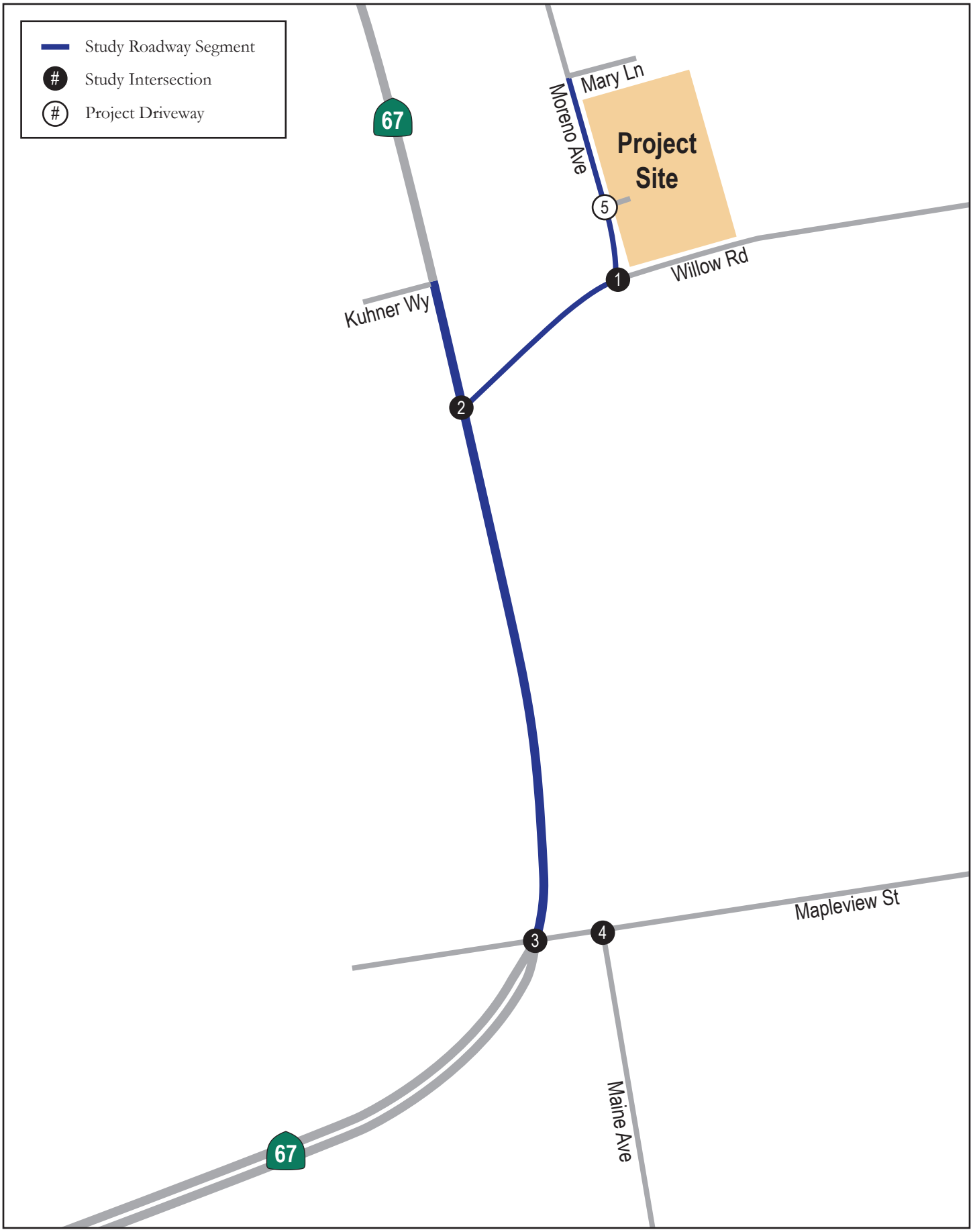

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Figure 1-2
Project Study Area

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Figure 1-3
Project Site Plan

2.0 Analysis Methodology

The traffic analyses prepared for this technical memorandum were performed in accordance with the County of San Diego Traffic Impact Guidelines and the California Environmental Quality Act (CEQA) project review process.

County Guidelines require that the project study area includes all County Mobility Element roadways and intersections where the Proposed Project is projected to add 25 or more peak hour trips in addition to 200 or more ADT.

2.1 Level of Service Definition

Level of Service (LOS) is a quantitative measure describing operational conditions within a traffic stream, and the motorist's and/or passenger's perception of operations. A LOS definition generally describes these conditions in terms of such factors as delay, speed, travel time, freedom to maneuver, interruptions in traffic flow, queuing, comfort, and convenience. **Table 2.1** describes generalized definitions of the various LOS categories (A through F) as applied to roadway operations.

Table 2.1 Level of Service Definitions

LOS Category	Definition of Operation
A	This LOS represents a completely free-flow condition, where the operation of vehicles is virtually unaffected by the presence of other vehicles and only constrained by the geometric features of the highway and by driver preferences.
B	This LOS represents a relatively free-flow condition, although the presence of other vehicles becomes noticeable. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to maneuver.
C	At this LOS, the influence of traffic density on operations becomes marked. The ability to maneuver within the traffic stream is clearly affected by other vehicles.
D	At this LOS, the ability to maneuver is notably restricted due to traffic congestion, and only minor disruptions can be absorbed without extensive queues forming and the service deteriorating.
E	This LOS represents operations at or near capacity. LOS E is an unstable level, with vehicles operating with minimum spacing for maintaining uniform flow. At LOS E, disruptions cannot be dissipated readily thus causing deterioration down to LOS F.
F	At this LOS, forced or breakdown of traffic flow occurs, although operations appear to be at capacity, queues form behind these breakdowns. Operations within queues are highly unstable, with vehicles experiencing brief periods of movement followed by stoppages.

Source: Highway Capacity Manual 2010

2.2 Two-Lane Highway and Roadway Segment Level of Service Thresholds

Two-Lane State Highway Level of Service Standards and Thresholds

The two-lane state highway SR-67 was analyzed utilizing the County of San Diego's methodologies.

Table 2.2 displays the two-lane state highway ADT thresholds for LOS E and LOS F when signalized intersection spacing is over one mile. For facilities where signalized intersections are less than one mile apart, the Level of Service is determined to be that of the intersections along the subject highway.

Table 2.2 Two-Lane Highway LOS Thresholds – With Signalized Intersection Spacing Over One Mile

LOS	LOS Criteria
LOS E	> 16,200 ADT
LOS F	> 22,900 ADT

Source: County of San Diego

Roadway Segments Level of Service Standards and Thresholds

Roadway segment Level of Service standards and thresholds provide the basis for analysis of arterial roadway segment performance. The analysis of roadway segment Level of Service is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast Average Daily Traffic (ADT) volumes**. Table 2.3** presents the roadway segment capacity and Level of Service standards utilized to analyze roadway segments within the County of San Diego.

Table 2.3 County of San Diego Roadway Classification and LOS Standards

No.	Travel Lanes	Design Speed	Road Classification	Level of Service (in ADT)				
				A	B	C	D	E
6.1	6	65 mph	Expressway	36,000	54,000	70,000	**86,000**	108,000
6.2	6	65 mph	Prime Arterial	22,200	37,000	44,600	**50,000**	57,000
4.1A	4	55 mph	Major Road with Raised Median	14,800	24,700	29,600	**33,400**	37,000
4.1B			Major Road with Intermittent Turn Lanes	13,700	22,800	27,400	**30,800**	34,200
4.2A	4	40 mph	Boulevard with Raised Median	18,000	21,000	24,000	**27,000**	30,000
4.2B			Boulevard with Intermittent Turn Lane	16,800	19,600	22,500	**25,000**	28,000
2.1A	2	45 mph	Community Collector with Raised Median	10,000	11,700	13,400	**15,000**	19,000
2.1B			Community Collector w/ Continuous Turn Lane	3,000	6,000	9,500	**13,500**	19,000
2.1C			Community Collector w/ Intermittent Turn Lane	3,000	6,000	9,500	**13,500**	19,000
2.1D			Community Collector with Improvement Options	3,000	6,000	9,500	**13,500**	19,000

Table 2.3 County of San Diego Roadway Classification and LOS Standards

No.	Travel Lanes	Design Speed	Road Classification	Level of Service (in ADT)				
				A	B	C	D	E
2.1E	2	45 mph	Community Collector	1,900	4,100	7,100	**10,900**	16,200
2.2A	2	40 mph	Light Collector with Raised Median	3,000	6,000	9,500	**13,500**	19,000
2.2B			Light Collector with Continuous Turn Lane	3,000	6,000	9,500	**13,500**	19,000
2.2C			Light Collector with Intermittent Turn Lanes	3,000	6,000	9,500	**13,500**	19,000
2.2D			Light Collector with Improvement Options	3,000	6,000	9,500	**13,500**	19,000
2.2E			Light Collector	1,900	4,100	7,100	**10,900**	16,200
2.2F			Light Collector with Reduced Shoulder	5,800	6,800	7,800	**8,700**	9,700
2.3A	2	35 mph	Minor Collector with Raised Median	3,000	6,000	7,000	**8,000**	9,000
2.3B			Minor Collector with Intermittent Turn Lane	3,000	6,000	7,000	**8,000**	9,000
2.3C			Minor Collector	1,900	4,100	6,000	**7,000**	8,000

Source: County of San Diego Public Road Standards; March 2012

Note:
Bold numbers indicate the ADT thresholds for acceptable LOS.

2.3 Signalized Intersection Analysis

The analysis of signalized intersections utilized the operational analysis procedures as outlined in the *2010 Highway Capacity Manual (HCM)*. This method defines LOS in terms of delay, or more specifically, average stopped delay per vehicle. Delay is a measure of driver and/or passenger discomfort, frustration, fuel consumption and lost travel time. This technique uses 1,900 vehicles per hour per lane (VPHPL) as the maximum saturation volume of an intersection. This saturation volume is adjusted to account for lane width, on-street parking, pedestrians, traffic composition (i.e., percentage trucks) and shared lane movements (i.e., through and right-turn movements originating from the same lane). The LOS criteria used for this technique are described in **Table 2.4.** The computerized analysis of intersection operations was performed utilizing *SYNCHRO 9.0* traffic analysis software.

Table 2.4 Signalized Intersection LOS Criteria

Average Stopped Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
<10.0	*LOS A* describes operations with very low delay. This occurs when progression is extremely favorable, and most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
10.1 – 20.0	*LOS B* describes operations with generally good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.

Table 2.4 Signalized Intersection LOS Criteria

Average Stopped Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
20.1 – 35.0	*LOS C* describes operations with higher delays, which may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
35.1 – 55.0	*LOS D* describes operations with high delay, resulting from some combination of unfavorable progression, long cycle lengths, or high volumes. The influence of congestion becomes more noticeable, and individual cycle failures are noticeable.
55.1 – 80.0	*LOS E* is considered the limit of acceptable delay. Individual cycle failures are frequent occurrences.
>80.0	*LOS F* describes a condition of excessively high delay, considered unacceptable to most drivers. This condition often occurs when arrival flow rates exceed the LOS D capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes to such delay.

Source: 2010 Highway Capacity Manual

2.4 Unsignalized Intersection Analysis

Unsignalized intersections, including side street and all-way stop controlled intersections, were analyzed using the 2010 Highway Capacity Manual unsignalized intersection analysis methodology. The *SYNCHRO 9.0* Traffic Analysis software supports this methodology and was utilized to produce LOS results. The LOS for a side street stop controlled (SSSC) intersection is determined by the computed control delay and is defined for each minor movement. **Table 2.5** summarizes the LOS criteria for unsignalized intersections.

Table 2.5 Unsignalized Intersection LOS Criteria

Average Control Delay (sec/veh)	Level of Service (LOS)
≤10	A
>10 and ≤15	B
>15 and ≤25	C
>25 and ≤35	D
>35 and ≤50	E
>50	F

Source: 2010 Highway Capacity Manual

2.5 Determination of Significant Impacts

This section outlines the thresholds for determination of significant project-related impacts to roadways and intersections. **Table 2.6** displays the measures of significant project impacts to congestion at intersections.

Signalized Intersections

Table 2.6 Measures of Significant Project Impacts to Congestion at Intersections – Allowable Increases at Congested Intersections

Level of Service	Signalized	Unsignalized
LOS E	Delay of 2 seconds	20 peak hour trips on a critical movement
LOS F	Delay of 1 second, or 5 peak hour trips on a critical movement	5 peak hour trips on a critical movement

Source: County of San Diego

Notes:

1. A critical movement is an intersection movement (right turn, left turn, and through-movement) that experiences excessive queues, which typically operate at LOS F. Also if a project adds significant volume to a minor roadway approach, a gap study should be provided that details the headways between vehicles on the major roadway.
2. By adding Proposed Project trips to all other trips from a list of projects, these same tables are used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project is responsible for mitigating its share of the cumulative impact.
3. The County may also determine impacts have occurred on roads even when a project's direct or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.
4. For determining significance at signalized intersections with LOS F conditions, the analysis must evaluate both the delay and the number of trips on a critical movement, exceedance of either criteria result in a significant impact.

Unsignalized Intersections

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or Level of Service traffic impact on a road segment:

- The additional or redistributed ADT generated by the Proposed Project will add 20 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate below LOS D, or
- The additional or redistributed ADT generated by the Proposed Project will add 20 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS E, or
- The additional or redistributed ADT generated by the Proposed Project will add 5 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate at LOS F.
- The additional or redistributed ADT generated by the Proposed Project will add 5 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS F.

- Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, the project would significantly impact the operations of the intersection.

Roadway Segments

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or Level of Service traffic impact on a roadway segment, unless specific facts show that there are other circumstances that mitigate or avoid such impacts:

- The additional or redistributed ADT generated by the Proposed Project will significantly increase congestion on a Circulation Element Road or State Highway currently operating at LOS E or LOS F as identified in **2.7**, or will cause a Circulation Element Road or State Highway to operate at LOS E or LOS F as a result of the Proposed Project, or
- The additional or redistributed ADT generated by the Proposed Project will cause a residential street to exceed its design capacity.

Table 2.7 Measures of Significant Project Impacts to Congestion on Road Segments – Allowable Increases on Congested Road Segments

Level of Service	Two-Lane Road	Four-Lane Road	Six-Lane Road
LOS E	200 ADT	400 ADT	600 ADT
LOS F	100 ADT	200 ADT	300 ADT

Source: County of San Diego

Notes:

1. By adding Proposed Project trips to all other trips from a list of projects, this same table must be used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project is responsible for mitigating its share of the cumulative impact.
2. The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable Level of Service, when such traffic uses a significant amount of remaining road capacity.

Two-Lane Highways with Signalized Intersection Spacing Over One Mile

Traffic volume increases from public or private projects that result in the following criteria will have a significant traffic volume or Level of Service traffic impact on a two-lane highway facility with signalized intersection spacing over one mile:

- The additional or redistributed ADT generated by the Proposed Project will significantly increase congestion on a two-lane highway segment currently operating at LOS E or LOS F, as identified in **Table 2.8**, or will cause a two-lane highway segment to operate at LOS E or LOS F as a result of the Proposed Project.

Table 2.8 Measures of Significant Project Impacts to Congestion – Allowable Increases on Two-Lane Highways with Signalized Intersection Spacing Over One Mile

LOS	LOS Criteria	Impact Significance Level
LOS E	> 16,200 ADT	> 325 ADT
LOS F	> 22,900 ADT	> 225 ADT

Source: County of San Diego

Note:

Where detailed data are available, the Director of Public Works may also accept a detailed Level of Service analysis based upon the two-lane highway analysis procedures provided in the Chapter 20 Highway Capacity Manual.

3.0 Existing Conditions

This section describes the key study area roadway segments, two-lane highway segments, and intersections. Information regarding the existing daily roadway and peak hour intersection traffic volumes, and the LOS analysis results under the Existing conditions are also provided.

3.1 Project Study Area

Existing Roadway Network

State Route 67 - is primarily a north-south California State Highway, running between the cities of El Cajon and the unincorporated community of Ramona. Within the project study area, SR-67 is a two-lane undivided roadway. On-street parking is not permitted along either side of the roadway and there no sidewalks present within the project study area. A class I bicycle facility is present on the west side of the roadway, approximately 1,000 feet south of Lakeside Avenue. State Route 67 is classified as a 4.1A – Major Road with a raised median north of Mapleview Street in the County of San Diego General Plan Mobility Element.

Moreno Avenue - is a two-lane undivided roadway with a posted speed limit of 45 MPH. Unpaved shoulders are present on both sides of the roadway where on-street parking is permitted. Sidewalks and bicycle facilities are not present on either side of the roadway.

Willow Road is a two-lane undivided roadway with a posted speed limit of 35 MPH. Unpaved shoulders are present on both sides of the roadway where on-street parking is permitted. Sidewalks and bicycle facilities are not present on either side of the roadway.

Study Intersections

1. Moreno Avenue / Willow Road
2. SR-67 / Willow Road
3. SR-67 / Mapleview Street
4. Maine Avenue / Mapleview Street
5. Moreno Avenue / Proposed Project Driveway (only analyzed under “plus project” scenarios)

3.2 Existing Study Area Traffic Volumes

Roadway segment, two-lane highway segment and study area intersection traffic counts were conducted in February 2017 and are provided in **Appendix A**. **Figure 3-1** displays the existing roadway geometrics while **Figure 3-2** displays existing traffic volumes.

3.3 Existing Traffic Operations Analysis

Level of Service analyses under Existing conditions were conducted using the methodologies described in Chapter 2 of this report. Roadway segment, two-lane highway segments and intersection LOS analysis results are discussed separately below.

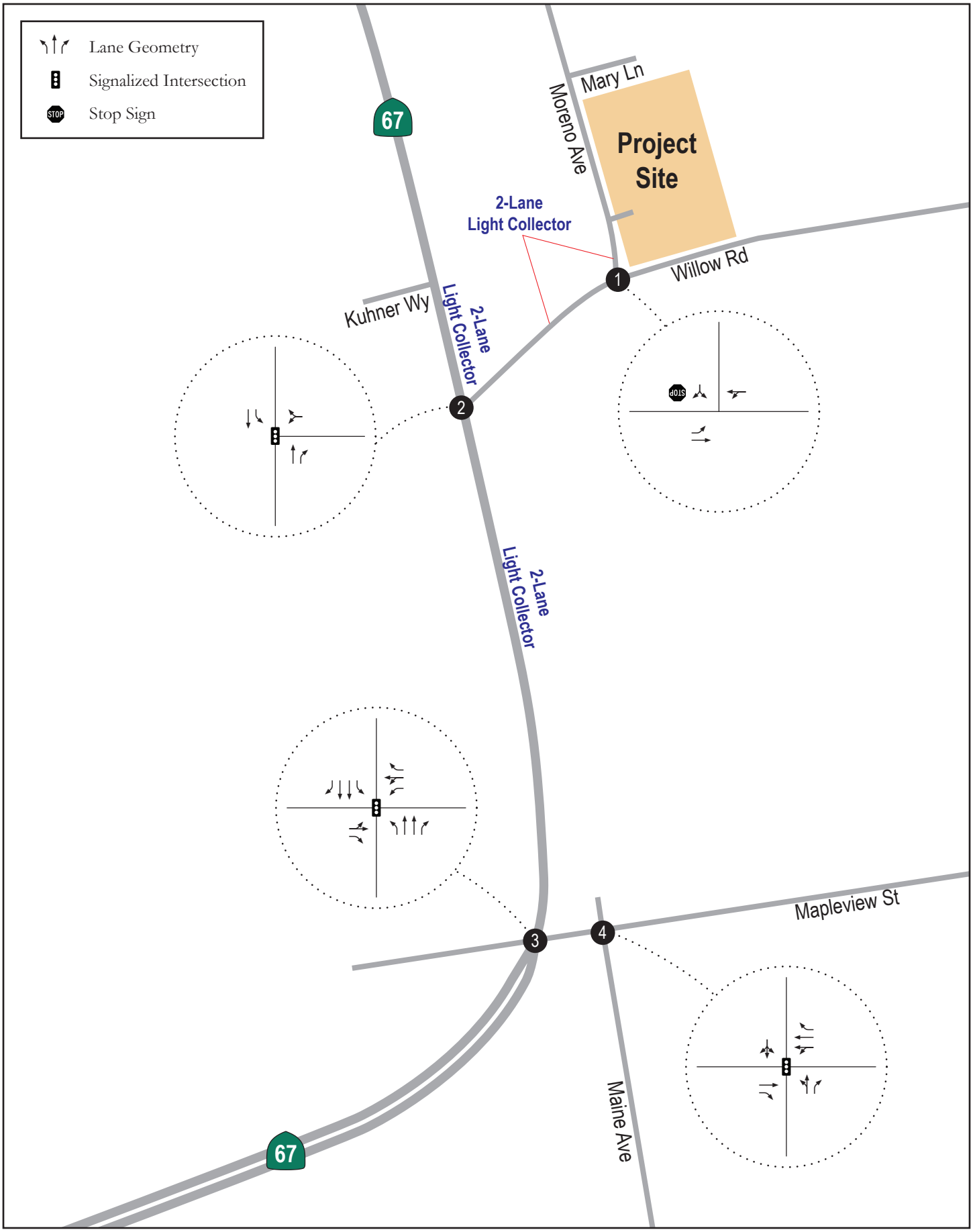

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Figure 3-1
Existing Roadway Geometrics

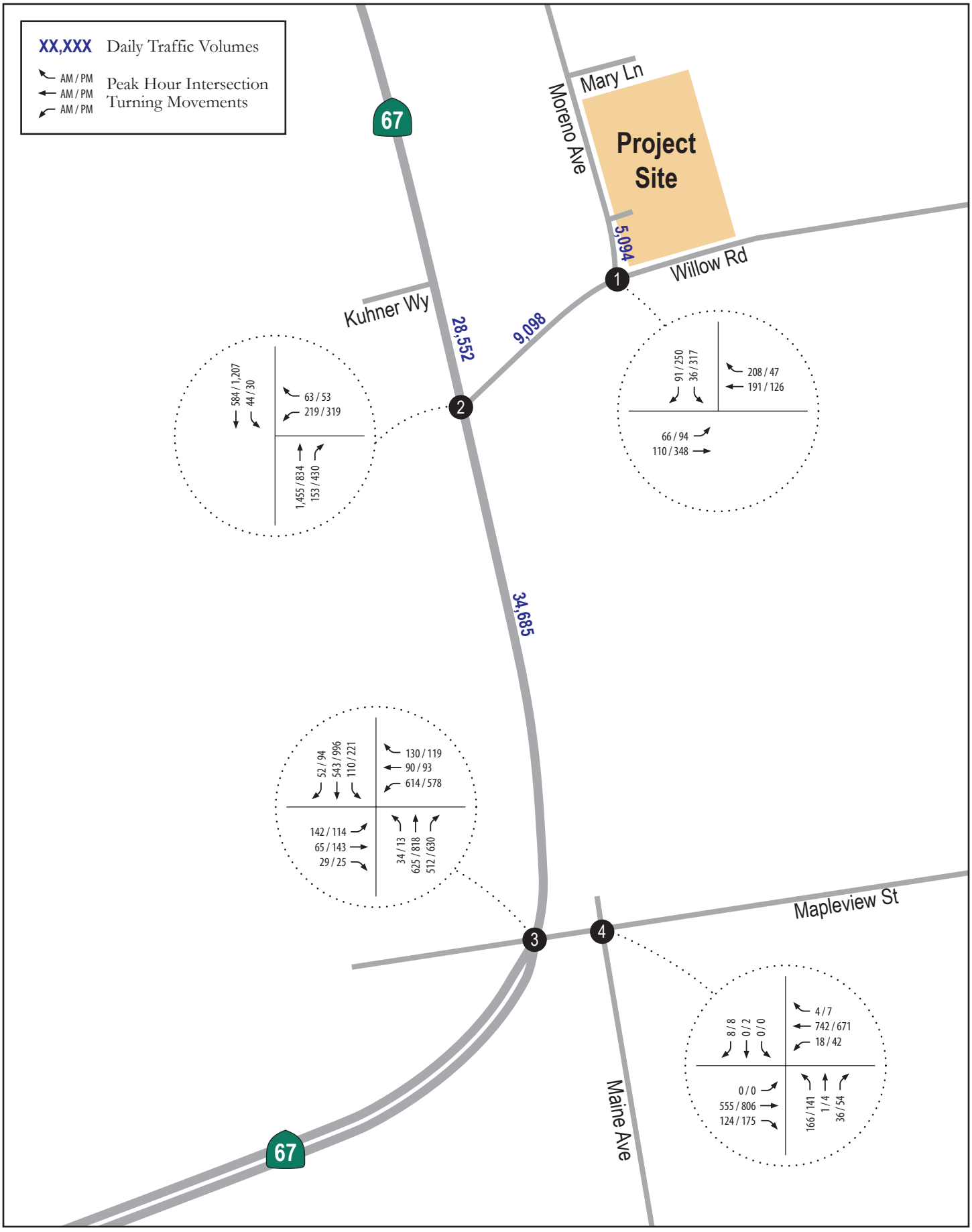

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Figure 3-2
Traffic Volumes - Existing Conditions

Two-Lane Highway Segment Analysis

Table 3.1 displays the LOS analysis results for key study area two-lane highway segments under Existing conditions.

Table 3.1 Two-Lane Highway LOS – Existing Conditions

Roadway	Segment	Average Daily Traffic (ADT)	LOS Threshold (LOS E)	Level of Service (LOS)
SR-67	Between Kuhner Way and Willow Road	28,552	16,200	**F**
	Between Willow Road and Mapleview Street	34,685	16,200	**F**

Source: NDS, Chen Ryan Associates; January 2018.

As shown, both of the study area two-lane highway segments currently operate at substandard LOS F.

Roadway Segment Analysis

Table 3.2 displays the LOS analysis results for key study area roadway segments under Existing conditions.

Table 3.2 Roadway Segment LOS – Existing Conditions

Roadway	Segment	Functional Classification	Average Daily Traffic (ADT)	LOS Threshold (LOS D)	Level of Service (LOS)
Moreno Avenue	Between Mary Lane and Willow Road	2-Lane Light Collector	5,094	10,900	C
Willow Road	Between SR-67 and Moreno Avenue	2-Lane Light Collector	9,098	10,900	D

Source: NDS, Chen Ryan Associates; January 2018.

As shown, both of the study area roadway segments currently operate at acceptable LOS D or better.

Intersection Analysis

Table 3.3 displays intersection LOS and average vehicle delay results for key study area intersections under Existing Conditions. LOS calculation worksheets for Existing conditions are provided in **Appendix B**.

Table 3.3 Peak Hour Intersection LOS Results – Existing Conditions

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS
1. Moreno Avenue / Willow Road	SSSC	13.4	B	172.7	**F**
2. SR-67 / Willow Road	Signal	93.9	**F**	43.8	D
3. SR-67 / Mapleview Street	Signal	49.7	D	60.7	**E**
4. Maine Avenue / Mapleview Street	Signal	31.5	C	44.9	D

Source: NDS, Chen Ryan Associates; January 2018.

Notes:
SSSC = Side Street Stop Control.
For SSSC intersections, the delay shown is the worst delay experienced by any of the approaches.
Bold represents substandard Level of Service.

As shown, all key study intersections currently operate at acceptable LOS D or better during both the AM and PM peak hours, with the exception of the following intersections:

- Moreno Avenue / Willow Road – LOS F during the PM peak hour;
- SR-67 / Willow Road – LOS F during the AM peak hour; and
- SR-67 / Mapleview Street – LOS E during the PM peak hour.

4.0 Proposed Project

The Lakeside Equestrian Facility is being planned for an approximately 14-acre parcel on the northeast corner of the Willow Road and Moreno Avenue intersection, in the unincorporated community of Lakeside. The facility would consist of two arenas (one outside and one covered), bleachers, restrooms, livestock corrals, and accessory structures for meetings, concessions and storage. The facility would also include an open parking area that could accommodate approximately 74 trucks/trailers and 35 single vehicle spaces, and the construction of one host pad. Surrounding the facility will be a trail, perimeter track and a trail staging area with a covered picnic area adjacent to hitching posts. The facility is intended to be used by the community for a variety of equestrian and livestock related uses such as practices, training, contests, including shows, and non-equestrian events such as wedding receptions, dog shows, etc. The facility will include lighting for nighttime events. A typical equestrian event will likely draw an attendance of between 50 and 125 contestants with large events attracting as many as 300 attendees. The large events are only anticipated to occur a couple times each year. The Proposed Project may also include a small-scale manure composting facility and educational interpretive signage. Use of drought tolerance landscape and incorporation of renewable energy components, such as roof-mounted photovoltaic panels and bird safe wind turbines may be incorporated into the project.

4.1 Project Trip Generation

Neither the SANDAG Not So Brief Guide of Vehicular Traffic Generation Rates nor ITE Trip Generation Manual provide a trip generation rate for a facility that is similar to the Proposed Project. Therefore, the project trip generation was derived conservatively based upon the anticipated facility operations, provided by the client. The following assumptions were made:

- Based on discussions with the project applicant it is assumed that there will be a total of five daily staff members, 32 competitors and 48 daily patrons.
- It should be noted that the project site is currently being used for similar operations; however, to be conservative, no existing trip credit is being assumed.
- 10% of the daily patrons will arrive during the AM peak hour when the facility opens.
- 20% of the daily patrons will arrive and depart during the PM peak hour (assuming that patrons will be evenly distributed over a 10-hour day).
- All of the staff members will arrive during the AM peak hour and depart during the PM peak hour.
- To be conservative, it is assumed that staff will drive a personal vehicle to the Lakeside Equestrian Facility and no carpooling will occur.

Project Trip Generation is provided in **Table 4.1**, which displays the proposed project's average daily traffic projections, as well as weekday AM and PM peak hour projected volumes.

Table 4.1 Project Vehicle Trip Generation

Land Use	Quantity	PCE	Trip Rate	Daily Trips	AM Peak Hour		PM Peak Hour	
					%	Trips	%	Trips
Competitors	32	2.5	2	160	10%	16 (16-in / 0-out)	20%	32 (16-in / 16-out)
Patrons	48	1.0	2	96	-	-	50%	48 (48-in / 0-out)
Staff	5	1.0	2	10	50%	5 (5-in / 0-out)	50%	5 (0-in / 5-out)
Proposed Project Total				**266**	-	**21 (21-in / 0-out)**	-	**85 (64-in / 21-out)**

Source: Chen Ryan Associates; December 2017.

As shown, the proposed project is anticipated to generate a total of 266 average daily trips with 21 trips during the AM peak hour (21-in / 0-out) and 85 trips during the PM peak hour (64-in / 21-out).

4.2 Trip Distribution & Trip Assignment

Trip distribution was based on the population density relative to the project site's position within San Diego County, as well as, surrounding land uses. Trip distribution was utilized to develop trip assignment. **Figure 4-1** and **Figure 4-2** display Project Trip Distribution and Project Trip Assignment, respectively.

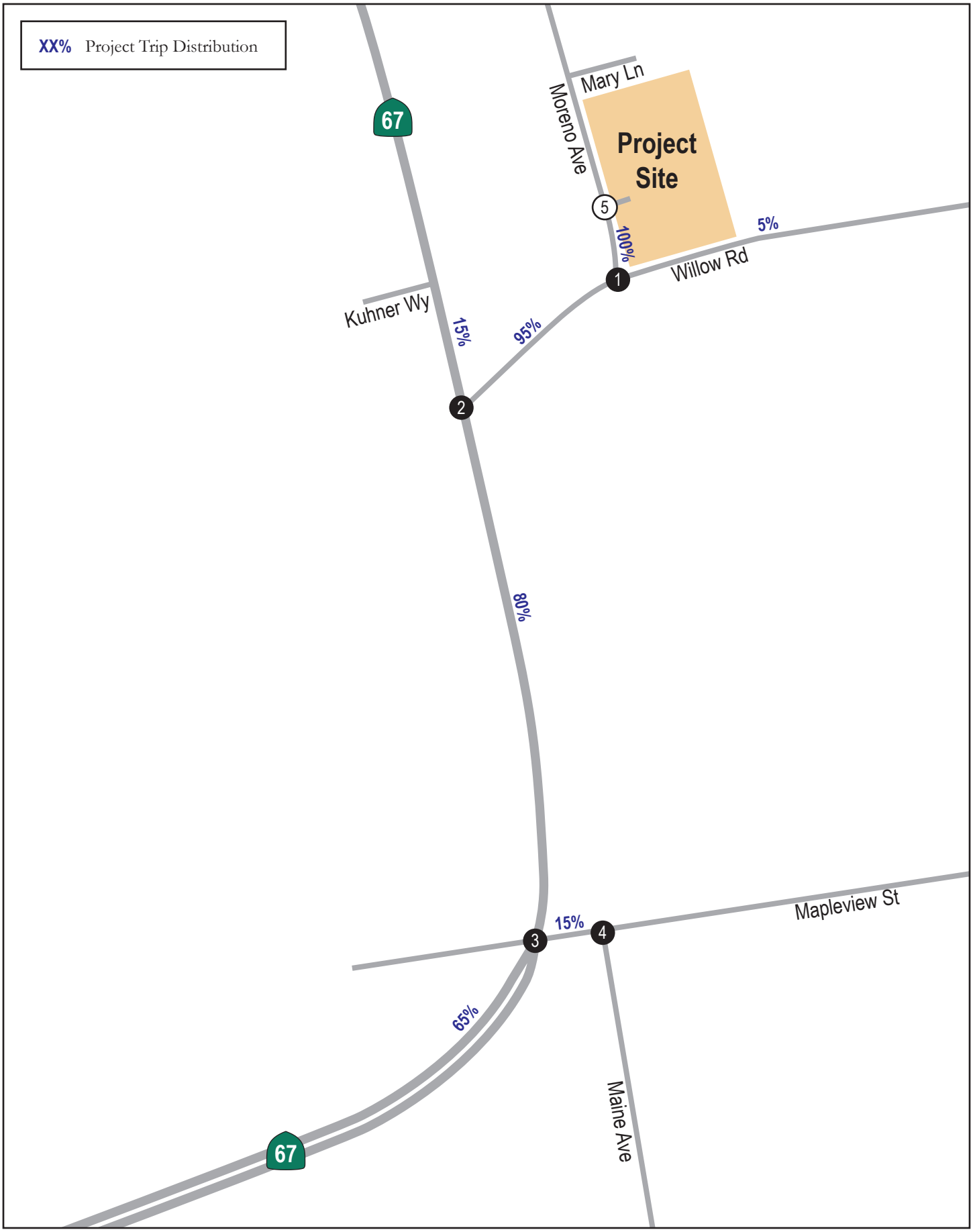

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Figure 4-1
Project Trip Distribution

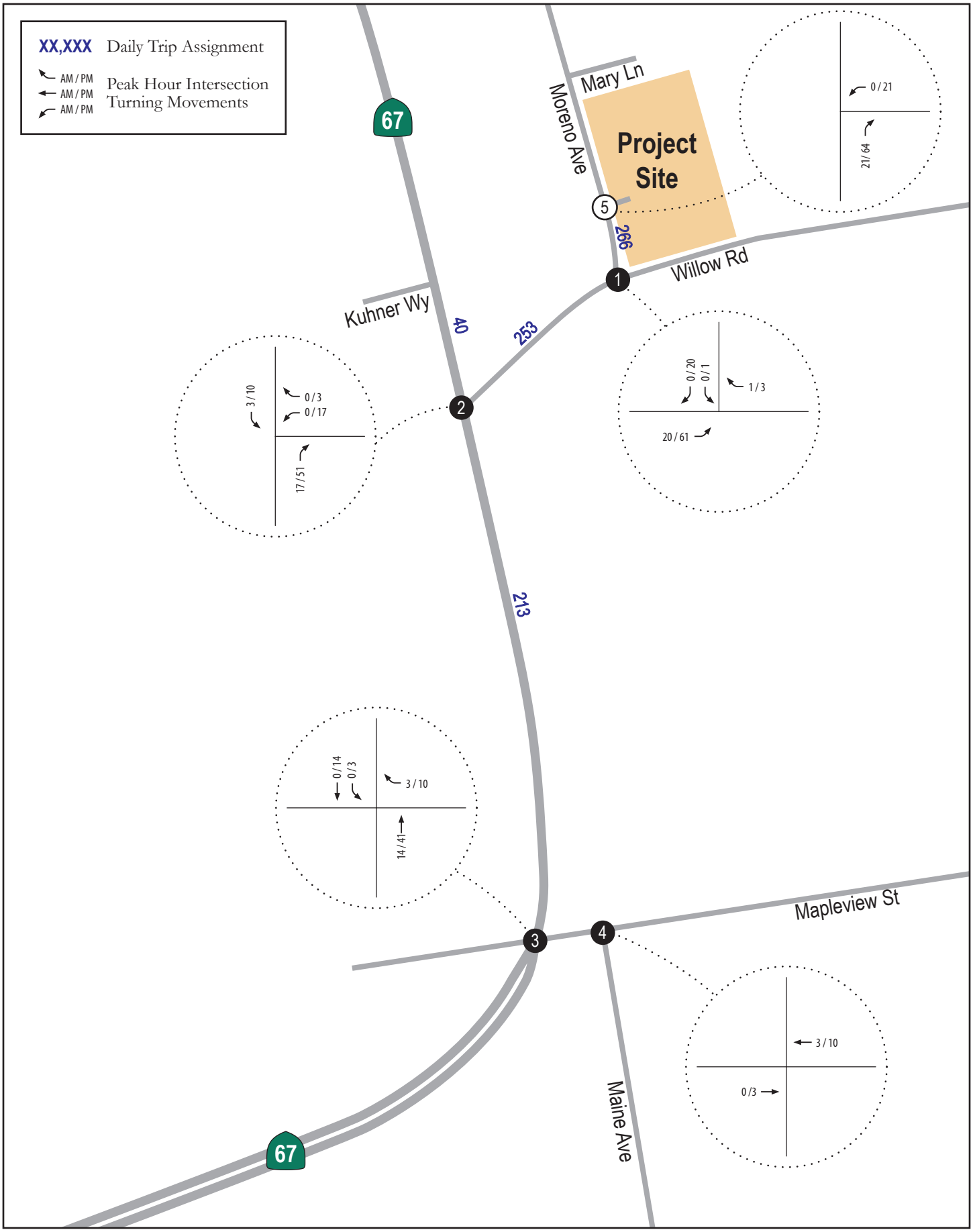

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Figure 4-2
Project Trip Assignment

5.0 Existing Plus Project Conditions

This section provides an analysis of existing traffic conditions with the addition of traffic from the Proposed Project.

5.1 Existing Plus Project Study Area Roadway Network and Traffic Volumes

Roadway and intersection geometrics under Existing Plus Project conditions were assumed to be identical to the Existing conditions, as shown in Figure 3-1 previously.

Existing Plus Project traffic volumes were derived by combining the existing traffic volumes (displayed in Figure 3-2) and the project trip assignment volumes (displayed in Figure 4-2). **Figure 5-1** displays Existing Plus Project traffic volumes.

5.2 Existing Plus Project Traffic Operations Analysis

Two-Lane Highway Segment Analysis

Table 5.1 displays the LOS analysis results for key study area two-lane highway segments under Existing Plus Project conditions.

Table 5.1 Two-Lane Highway LOS – Existing Plus Project Conditions

Roadway	Segment	Functional Classification	Average Daily Traffic (ADT)	LOS Threshold (LOS E)	Level of Service (LOS)	Existing Conditions ADT	Increase in ADT	Significant Impact?
SR-67	Between Kuhner Way and Willow Road	2-Lane Light Collector	28,592	16,200	**F**	28,552	40	No
	Between Willow Road and Mapleview Street	2-Lane Light Collector	34,898	16,200	**F**	34,685	213	No

Source: Chen Ryan Associates; January 2018.

As shown, both of the study area two-lane highway segments are anticipated to operate at substandard LOS F under Existing Plus Project conditions.

However, based on the County of San Diego significance criteria outlined in Section 2.5, the traffic associated with the Proposed Project would not cause any significant changes in two-lane highway operations under Existing Plus Project conditions (the project adds fewer than 225 daily trips). Therefore, no significant project related impacts were identified and no mitigation is required.

Roadway Segment Analysis

Table 5.2 displays the LOS analysis results for key study area roadway segments under Existing plus Project conditions.

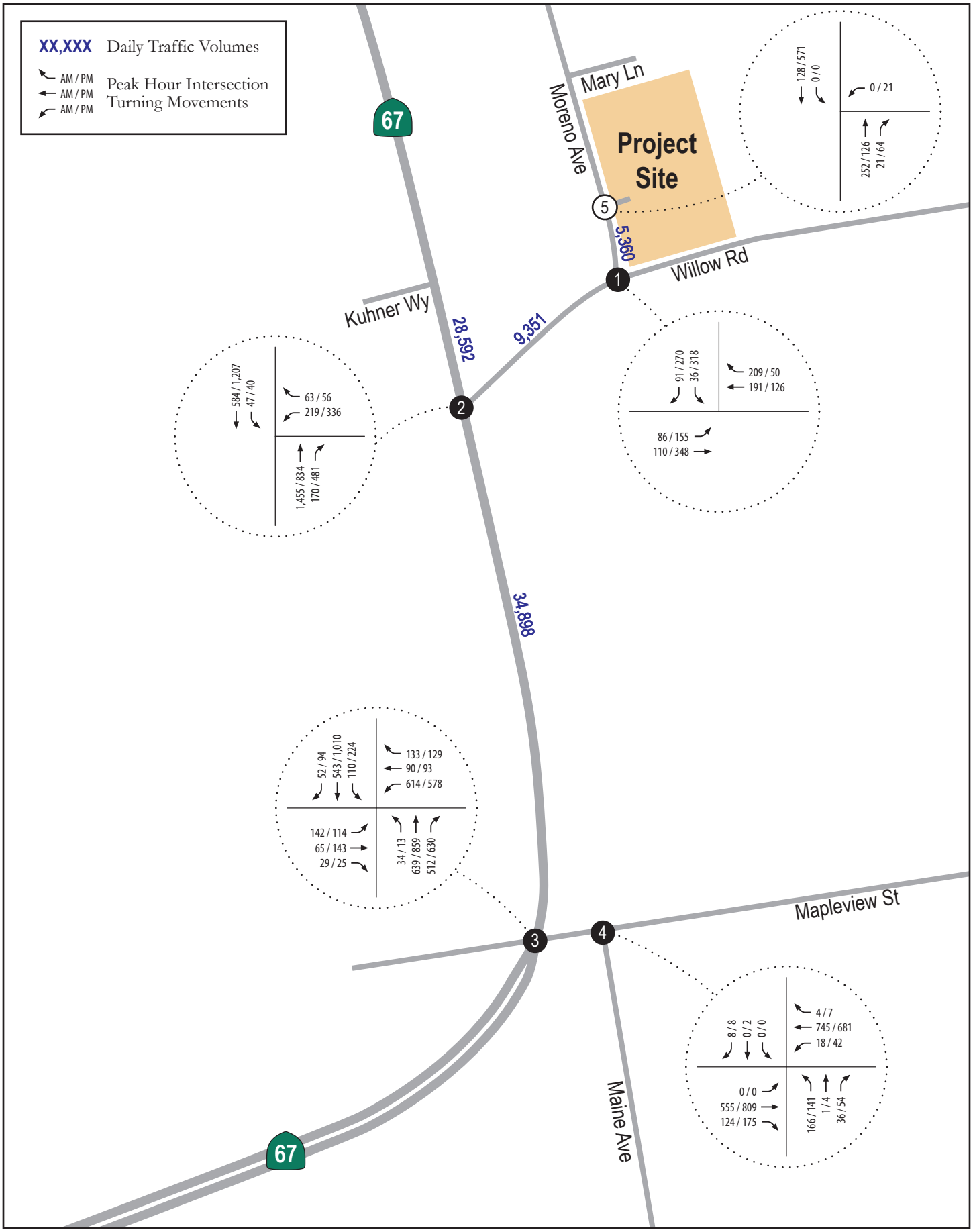

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Figure 5-1
Traffic Volumes - Existing Plus Project Conditions

Table 5.2 Roadway Segment LOS – Existing Plus Project Conditions

Roadway	Segment	Functional Classification	Average Daily Traffic (ADT)	LOS Threshold (LOS D)	Level of Service (LOS)	Existing Conditions ADT	Increase in ADT	Significant Impact?
Moreno Avenue	Between Project Driveway and Willow Road	2-Lane Light Collector	5,360	10,900	C	5,094	266	No
Willow Road	Between SR-67 and Moreno Avenue	2-Lane Light Collector	9,351	10,900	D	9,098	253	No

Source: Chen Ryan Associates; January 2018.

As shown, both of the study area roadway segments are anticipated to operate at LOS D or better under Existing Plus Project conditions. Therefore, based on the significance criterial outlined in Section 2.5, the Proposed Project would not be associated with a significant project related impact.

Intersection Analysis

Table 5.3 displays intersection LOS and average vehicle delay results for key study area intersections under Existing Plus Project conditions. LOS calculation worksheets for Existing Plus Project conditions are provided in **Appendix C.**

Table 5.3 Peak Hour Intersection LOS Results – Existing Plus Project Conditions

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour		Existing Delay	Δ[1]	SI?
		Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS			
1. Moreno Avenue / Willow Road	SSSC	14.0	B	282.7	**F**	13.4 / 172.7	0 trips / 1 trip[2]	No
2. SR-67 / Willow Road	Signal	94.5	**F**	44.8	D	93.9 / 43.8	0.6 / 4.0	No
3. SR-67 / Mapleview Street	Signal	49.7	D	61.1	**E**	49.7 / 60.7	0.0 / 0.4	No
4. Maine Avenue / Mapleview Street	Signal	32.0	C	45.2	D	31.5 / 44.9	0.1 / 0.3	No
5. Moreno Avenue / Proposed Project Driveway	SSSC	0.0	A	15.7	C	N/A	0 trips / 21 trips[3]	No

Source: Chen Ryan Associates; January 2018.

Notes:
SSSC = Side-Street-Stop Control.
SI? = Significant Impact?
Bold represents substandard Level of Service.
For SSSC intersections, the delay shown is the worst delay experienced by any of the approaches.
[1] "Δ" represents the project-related increase in delay for signalized intersections and project traffic added to the critical movement for unsignalized intersections operating at LOS E or F.
[2] The critical movement for this intersection is the southbound left-turn movement.
[3] The critical movement for this intersection is the westbound left-turn movement.

As shown, the key study intersections are anticipated to operate at acceptable LOS D or better during the AM and PM peak hours under the Existing Plus Project conditions, with the exception of the following intersections:

- Moreno Avenue / Willow Road – LOS E during the AM peak hour and LOS F during the PM peak hour;
- SR-67 / Willow Road – LOS F during the AM peak hour and LOS E during the PM peak hour; and
- SR-67 / Mapleview Street – LOS E during the PM peak hour.

However, based on the County of San Diego significance criteria outlined in Section 2.5, the traffic associated with the Proposed Project would not add more than five peak hour trips to the critical movement of an unsignalized intersection and/or add more than one second of delay to a signalized intersection operating at a substandard level under Existing Plus Project. Therefore, no significant project related impacts were identified and no mitigation is required.

5.3 Impact Significance and Mitigation

Based upon the significance criteria presented Section 2.5 of this report, the addition of project traffic would not be associated with a significant traffic related impact.

6.0 Cumulative Conditions

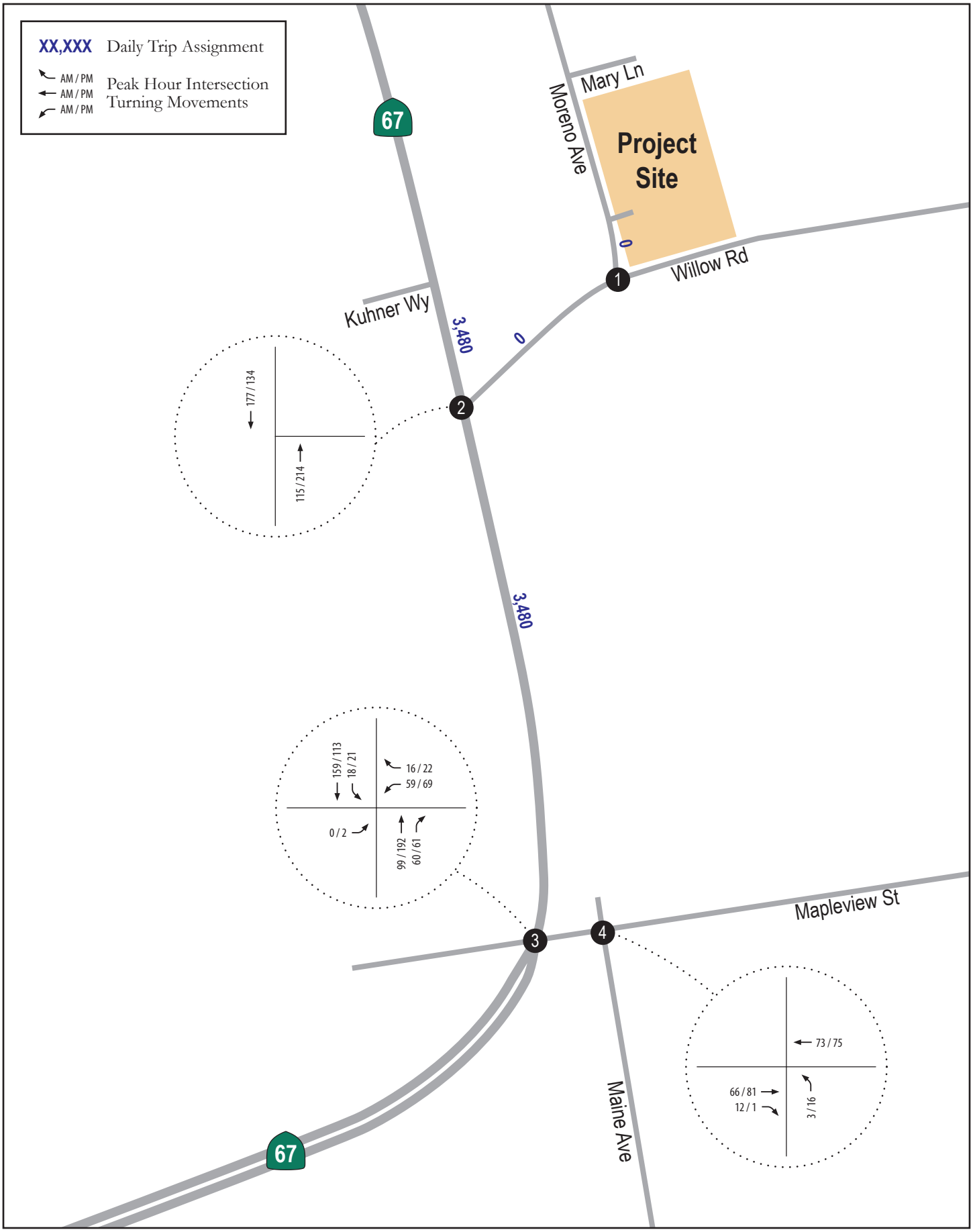
Per County of San Diego staff direction, a list of cumulative projects was obtained from the El Monte Sand Mining Project traffic impact analysis conducted by LLG Engineers in May 2016. A total of thirty-four (34) projects were identified as cumulative projects in the aforementioned traffic impact analysis conducted by LLG Engineers in May 2016. The list of thirty-four (34) projects, along with the El Monte Sand Mining Project, were considered as cumulative projects for the analysis in this report and are anticipated to generate a total of 51,875 average daily trips to the transportation network. Out of the anticipated 51,875 average daily trips generated by the cumulative projects, only 3,480 average daily trips are anticipated to be added to the study area from this report.

The relevant excerpts from the *El Monte Sand Mining Project* traffic impact analysis conducted by LLG Engineers, regarding cumulative projects in the vicinity of the proposed project provided by County of San Diego staff is provided in **Appendix D.**

6.1 Cumulative Conditions Study Area Roadway Network and Traffic Volumes

Roadway and intersection geometrics under Cumulative Plus Project conditions were assumed to be identical to the Existing conditions, as shown in Figure 3-1 previously.

The Cumulative Conditions scenario traffic volumes were derived by adding the additional trips generated by the cumulative projects listed in Section 6.0 to the existing traffic volumes (Figure 3-2). **Figure 6-1** displays cumulative projects trip assignment and **Figure 6-2** displays traffic volumes under cumulative conditions.



Lakeside Equestrian Center
Transportation Impact Analysis
CHEN RYAN

Figure 6-1
Cumulative Projects Trip Assignment

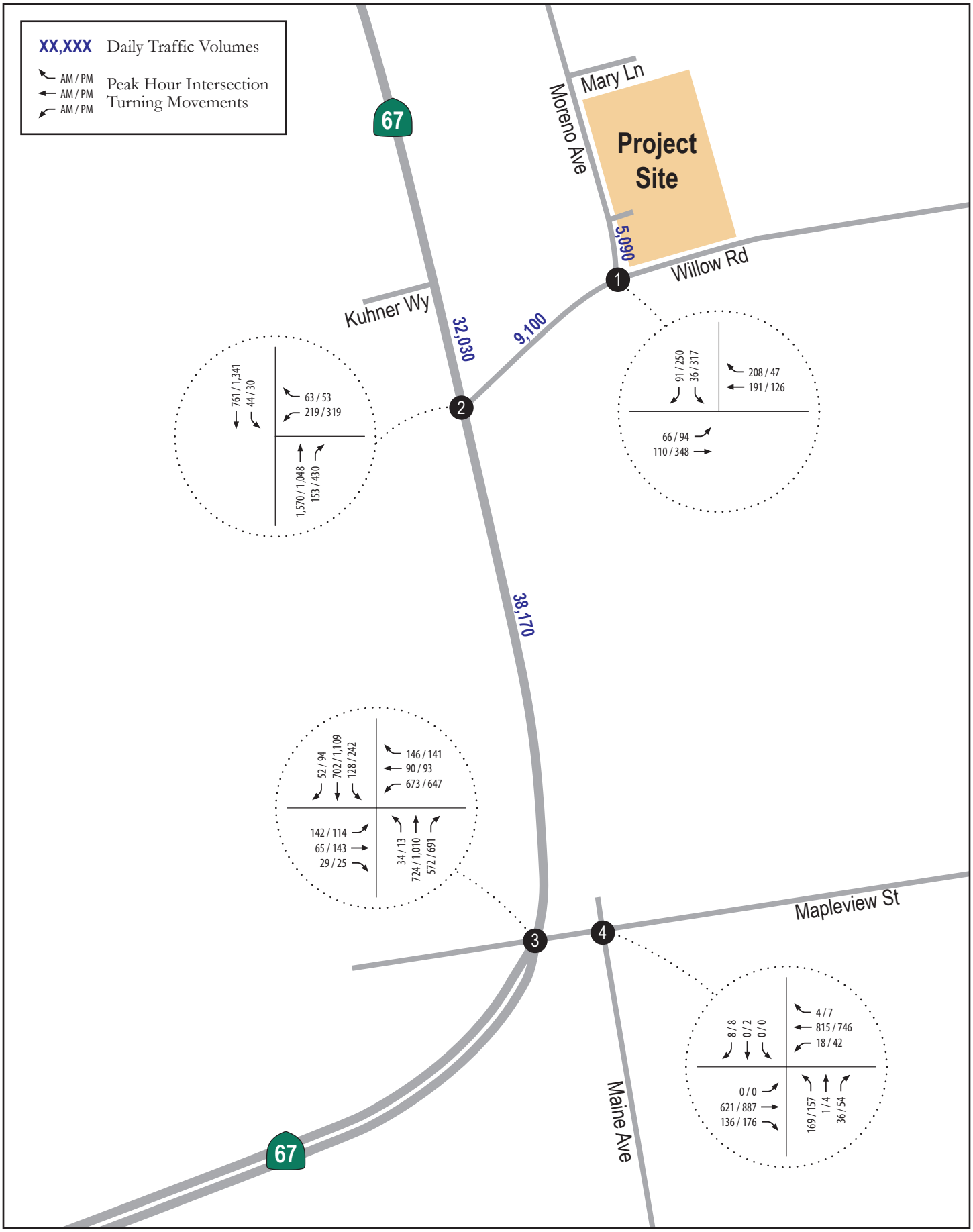


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Figure 6-2
Traffic Volumes - Cumulative Conditions

6.2 Cumulative Conditions Traffic Operations Analysis

Two-Lane Highway Segment Analysis

Table 6.1 displays the LOS analysis results for key study area two-lane highway segments under Cumulative conditions.

Table 6.1 Two-Lane Highway LOS – Cumulative Conditions

Roadway	Segment	Average Daily Traffic (ADT)	LOS Threshold (LOS E)	Level of Service (LOS)
SR-67	Between Kuhner Way and Willow Road	32,030	16,200	**F**
	South of Willow Road	38,170	16,200	**F**

Source: Chen Ryan Associates; January 2018.

As shown, both of the study area two-lane highway segments are anticipated to operate at substandard LOS F under Cumulative conditions.

Roadway Segment Analysis

Table 6.2 displays the LOS analysis results for key study area roadway segments under Cumulative conditions.

Table 6.2 Roadway Segment LOS – Cumulative Conditions

Roadway	Segment	Functional Classification	Average Daily Traffic (ADT)	LOS Threshold (LOS D)	Level of Service (LOS)
Moreno Avenue	Between Mary Lane and Willow Road	2-Lane Light Collector	5,090	10,900	C
Willow Road	Between SR-67 and Moreno Avenue	2-Lane Light Collector	9,100	10,900	D

Source: Chen Ryan Associates; January 2018.

As shown, both of the study area roadway segments are anticipated to operate at LOS D or better under Cumulative conditions.

Intersection Analysis

Table 6.3 displays intersection LOS and average vehicle delay results for the key study area intersections under Cumulative conditions. LOS calculation worksheets for Cumulative conditions are provided in **Appendix E**.

Table 6.3 Peak Hour Level of Service Results – Cumulative Conditions

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS
1. Moreno Avenue / Willow Road	SSSC	13.4	B	172.7	**F**
2. SR-67 / Willow Road	Signal	112.2	**F**	62.2	**E**
3. SR-67 / Mapleview Street	Signal	61.6	**E**	124.9	**F**
4. Maine Avenue / Mapleview Street	Signal	35.3	D	66.8	**E**

Source: Chen Ryan Associates; January 2018.

Notes:
SSSC = Side Street Stop Control.
For SSSC intersections, the delay shown is the worst delay experienced by any of the approaches.

As shown, all study area intersections are anticipated to operate at acceptable LOS D or better under Cumulative conditions, with the exception of the following intersections:

- Moreno Avenue / Willow Road – LOS F during the PM peak hour;
- SR-67 / Willow Road – LOS F during the PM peak hour and LOS E during the AM peak hour; and
- SR-67 / Mapleview Street – LOS E during the AM peak hour and LOS F during the PM peak hour;
- Maine Avenue / Mapleview Street – LOS E during the PM peak hour.

7.0 Cumulative Plus Project Conditions

This section provides an analysis of Cumulative (Near-Term) Plus Project conditions.

7.1 Cumulative Plus Project Conditions Study Area Roadway Network and Traffic Volumes

Roadway and intersection geometrics under Cumulative Plus Project conditions were assumed to be identical to the Existing conditions, as shown in Figure 3-1 previously.

Cumulative Plus Project Conditions traffic volumes were derived by combining the Cumulative Conditions traffic volumes (displayed in Figure 6-2) and the project trip assignment volumes (displayed in Figure 4-2). **Figure 7-1** displays traffic volumes under Cumulative Plus Project Conditions.

7.2 Cumulative Plus Project Conditions Traffic Operations Analysis

Two-Lane Highway Segments Analysis

Table 7.1 displays the LOS analysis results for key study area two-lane highway segments under Cumulative Plus Project conditions.

Table 7.1 Two-Lane Highway LOS – Cumulative Plus Project Conditions

Roadway	Segment	Average Daily Traffic (ADT)	LOS Threshold (LOS E)	Level of Service (LOS)	Cumulative Conditions ADT	Increase in ADT	Significant Impact?
SR-67	Between Kuhner Way and Willow Road	32,070	16,200	**F**	32,030	40	No
	Between Willow Road and Mapleview Street	38,380	16,200	**F**	38,170	220	No

Source: Chen Ryan Associates; January 2018.

Note:
V/C = Volume / Capacity.

As shown, both of the study area two-lane highway segments are anticipated to operate at substandard LOS F under Cumulative Plus Project conditions.

However, based on the County of San Diego significance criteria outlined in Section 2.5, the traffic associated with the Proposed Project would not cause any significant changes in two-lane highway operations under Cumulative Plus Project conditions (the project adds fewer than 225 daily trips). Therefore, no significant project related impacts were identified and no mitigation is required.

Roadway Segment Analysis

Table 7.2 displays the LOS analysis results for key study area roadway segments under Cumulative Plus Project conditions.

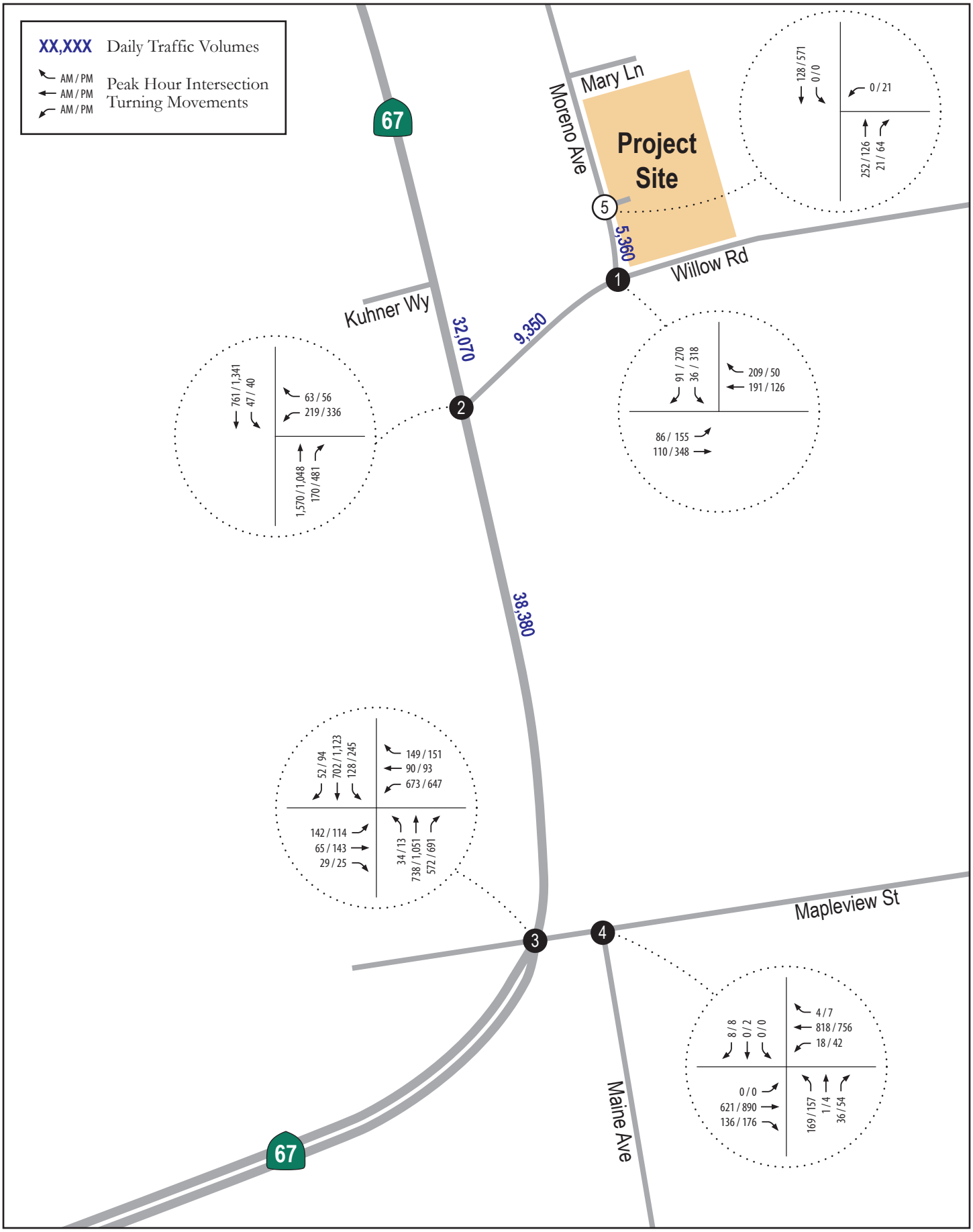

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Figure 7-1
Traffic Volumes - Cumulative Plus Project Conditions

Table 7.2 Roadway Segments LOS – Cumulative Plus Project Conditions

Roadway	Segment	Functional Classification	Average Daily Traffic (ADT)	LOS Threshold (LOS D)	Level of Service (LOS)	Cumulative Conditions ADT	Increase in ADT	Significant Impact?
Moreno Avenue	Between Project Driveway and Willow Road	2-Lane Light Collector	5,360	10,900	C	5,090	270	No
Willow Road	Between SR-67 and Moreno Avenue	2-Lane Light Collector	9,350	10,900	D	9,100	250	No

Source: Chen Ryan Associates; January 2018.

As shown, both of the study area roadway segments are anticipated to operate at LOS D or better under Cumulative Plus Project conditions. Therefore, based on the significance criterial outlined in Section 2.5, the Proposed Project would not be associated with a significant project related impact.

Intersection Analysis

Table 7.3 displays intersection LOS and average vehicle delay results for the key study area intersections under Cumulative Plus Project conditions. LOS calculation worksheets for Cumulative Plus Project conditions are provided in **Appendix F**.

Table 7.3 Peak Hour Intersection LOS Results – Cumulative Plus Project Conditions

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour		Cumulative Delay	Δ[1]	SI?
		Avg. Delay (sec)	LOS	Avg. Delay (sec)	LOS			
1. Moreno Avenue / Willow Road	SSSC	14.0	B	299.9	**F**	13.4 / 172.7	0 trips / 1 trip	No
2. SR-67 / Willow Road	Signal	112.6	**F**	62.7	**E**	112.2/ 62.2	0.4 / 0.5	No
3. SR-67 / Mapleview Street	Signal	61.6	**E**	125.5	**F**	61.6 / 124.9	0.0 / 0.6	No
4. Maine Avenue / Mapleview Street	Signal	35.6	D	67.5	**E**	35.3 / 66.8	0.1 / 0.7	No
5. Moreno Avenue / Project Driveway	SSSC	0.0	A	15.7	C	N/A	0 trips / 21 trips[3]	No

Source: Chen Ryan Associates; January 2018.

Notes:
SSSC = Side-Street Stop Control.
For SSSC intersections, the delay shown is the worst delay experienced by any of the approaches.
[1] "Δ" represents the project-related increase in delay for signalized intersections and project traffic added to the critical movement for unsignalized intersections operating at LOS E or F.
[2] The critical movement for this intersection is the southbound left-turn movement.
[3] The critical movement for this intersection is the westbound left-turn movement.

As shown, the key study area intersections are anticipated to operate at acceptable LOS D or better under Cumulative Plus Project conditions, with the exception of the following intersections:

- Moreno Avenue / Willow Road – LOS E during the AM peak hour and LOS F during the PM peak hour;
- SR-67 / Willow Road – LOS F during the AM peak hour and LOS E during the PM peak hour;
- SR-67 / Mapleview Street – LOS E during the AM peak hour and LOS F during the PM peak hour; and
- Maine Avenue / Mapleview Street – LOS E during the PM peak hour.

However, based on the County of San Diego significance criteria outlined in Section 2.5, the traffic associated with the Proposed Project would not add more than five peak hour trips to the critical movement of an unsignalized intersection and/or add more than one second of delay to a signalized intersection operating at a substandard level under Cumulative Plus Project. Therefore, no significant project related impacts were identified and no mitigation is required.

7.3 Impact Significance and Mitigation

Based upon the significance criteria presented Section 2.5 of this report, the addition of project traffic would not be associated with a significant traffic related impact.

8.0 Special Event Conditions

As noted in the project description, outside of the normal day-to-day operations the Proposed Project Site will host a few equestrian events each year. A typical equestrian event will likely draw an attendance of between 50 and 125 contestants with large events attracting as many as 300 attendees. The large events would only be anticipated to occur a couple times each year and mostly during weekends. It is possible that during these events temporary changes to the normal traffic operations of the roadways and intersections adjacent to the Proposed Project could potentially occur, particularly an hour before the event starts and an hour after the event ends. Therefore, it is recommended that for these larger events, the project applicant applies for a County of San Diego DPW Special Event Permit. The Special Event Permit should include a traffic management plan that can be deployed during event conditions to help aid the flow of traffic on the roadways adjacent to the project site, as well as maintain a safe environment for all users of the roadway.

9.0 Summary of Findings

This chapter provides a summary of the key findings and study recommendations, including the LOS results and traffic mitigation requirements, if needed, associated with the various analysis scenarios.

9.1 Summary of Two-Lane Highway Segment Analyses

Table 9.1 displays two-lane highway segments LOS results for each of the analyzed scenarios.

Table 9.1 Summary of Two-Lane Highway LOS Results

Roadway	Segment	Existing	Existing + Project	Cumulative	Cumulative + Project
SR-67	Between Kuhner Way and Willow Road	F	F	F	F
	Between Willow Road and Mapleview Street	F	F	F	F

Source: Chen Ryan Associates; January 2018.

The following key points summarize the two-lane highway segments analyses:

1. *Existing Conditions* – Both key study area two-lane highway segments area operate at LOS F under Existing Conditions and are projected to continue operating at LOS F under Existing Plus Project conditions.

    - SR-67, between Kuhner Way and Willow Road
    - SR-67, between Willow Road and Mapleview Street

2. *Cumulative Conditions* – Both key study area two-lane highway segments are projected to operate at LOS F under Cumulative Conditions and are projected to continue operating at LOS F under Cumulative Plus Project conditions.

    - SR-67, between Kuhner Way and Willow Road
    - SR-67, between Willow Road and Mapleview Street

9.2 Summary of Roadway Segment Analyses

Table 9.2 displays roadway segments LOS results for each of the analyzed scenarios.

Table 9.2 Summary of Two-Lane Highway LOS Results

Roadway	Segment	Existing	Existing + Project	Cumulative	Cumulative + Project
Moreno Avenue	Between Mary Lane and Willow Road	C	C	C	C
Willow Road	Between SR-67 and Moreno Avenue	D	D	D	D

Source: Chen Ryan Associates; January 2018.

The following key points summarize the roadway segments analyses:

1. *Existing Conditions* – Both key study area roadway segments operate at LOS D or better under the Existing Conditions and are projected to continue operating at LOS D or better under the Existing Plus Project conditions.

2. *Cumulative Conditions* – Both study area roadway segments are projected to operate at acceptable LOS D or better under both the Cumulative Conditions and Cumulative Conditions Plus Project conditions.

9.3 Summary of Intersection Analyses

Table 9.3 displays intersection LOS results for each of the analyzed scenarios.

Table 9.3 Summary of Intersection LOS Results

Intersection	Existing		Existing + Project		Cumulative		Cumulative + Project	
	AM	PM	AM	PM	AM	PM	AM	PM
1. Moreno Avenue / Willow Road	B	**F**	B	**F**	B	**F**	B	**F**
2. SR-67 / Willow Road	**F**	**E**	**F**	**E**	**F**	**E**	**F**	**E**
3. SR-67 / Mapleview Street	D	**E**	D	**E**	**E**	**F**	**E**	**F**
4. Maine Avenue / Mapleview Street	C	D	C	D	C	**E**	C	**E**
5. Moreno Avenue / Project Driveway	N/A	N/A	A	C	N/A	N/A	A	C

Source: Chen Ryan Associates; January 2018.

The following key points summarize the intersection analyses:

1. *Existing Conditions* - The key study intersections are projected to operate at LOS D or better under the Existing and the Existing Plus Project conditions, with the exception of the following intersections:

    - Moreno Avenue / Willow Road
    - SR-67 / Willow Road
    - SR-67 / Mapleview Street

2. *Cumulative Conditions* – The key study intersections are projected to operate at LOS D or better under both the Cumulative Conditions and Cumulative Conditions Plus Project, with the exception of the following intersections:

    - Moreno Avenue / Willow Road
    - SR-67 / Willow Road
    - SR-67 / Mapleview Street
    - Maine Avenue / Mapleview Street

9.4 Summary of Significant Project Impacts

Based on the County of San Diego significance criteria outlined in Section 2.5, the traffic associated with the Proposed Project would not add more than five peak hour trips to the critical movement of an unsignalized intersection and/or add more than one second of delay to a signalized intersection operating at a substandard level under any of the analyzed scenarios in this report. Therefore, no significant project related impacts were identified and no mitigation is required.

APPENDIX A – Traffic Counts

Prepared by NDS/ATD

VOLUME

Moreno Ave Bet. Mary Ln & Willow Rd

Day: Thursday
Date: 2/16/2017

City: Lakeside
Project #: CA17_4047_001

DAILY TOTALS	NB	SB	EB	WB	Total
	2,187	2,907	0	0	5,094

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	9		2				11		12:00	20		35				55	
00:15	10		4				14		12:15	34		22				56	
00:30	2		1				3		12:30	28		34				62	
00:45	3	24	1	8			4	32	12:45	30	112	32	123			62	235
01:00	2		2				4		13:00	30		25				55	
01:15	4		2				6		13:15	37		32				69	
01:30	2		2				4		13:30	36		41				77	
01:45	3	11	3	9			6	20	13:45	28	131	37	135			65	266
02:00	8		1				9		14:00	31		38				69	
02:15	2		2				4		14:15	30		35				65	
02:30	4		2				6		14:30	27		71				98	
02:45	2	16	3	8			5	24	14:45	41	129	50	194			91	323
03:00	1		1				2		15:00	29		61				90	
03:15	2		1				3		15:15	38		47				85	
03:30	4		2				6		15:30	35		90				125	
03:45	3	10	3	7			6	17	15:45	39	141	80	278			119	419
04:00	2		2				4		16:00	37		105				142	
04:15	1		6				7		16:15	33		131				164	
04:30	3		4				7		16:30	30		154				184	
04:45	10	16	6	18			16	34	16:45	31	131	128	518			159	649
05:00	15		10				25		17:00	33		158				191	
05:15	17		21				38		17:15	32		131				163	
05:30	35		19				54		17:30	28		138				166	
05:45	48	115	12	62			60	177	17:45	33	126	117	544			150	670
06:00	42		31				73		18:00	33		54				87	
06:15	50		25				75		18:15	31		43				74	
06:30	70		30				100		18:30	23		33				56	
06:45	47	209	29	115			76	324	18:45	22	109	22	152			44	261
07:00	43		32				75		19:00	10		24				34	
07:15	83		38				121		19:15	15		18				33	
07:30	72		32				104		19:30	17		15				32	
07:45	54	252	26	128			80	380	19:45	15	57	11	68			26	125
08:00	58		38				96		20:00	14		12				26	
08:15	52		25				77		20:15	14		7				21	
08:30	31		36				67		20:30	12		4				16	
08:45	35	176	23	122			58	298	20:45	11	51	9	32			20	83
09:00	31		38				69		21:00	5		4				9	
09:15	24		22				46		21:15	13		11				24	
09:30	24		36				60		21:30	15		3				18	
09:45	23	102	27	123			50	225	21:45	12	45	4	22			16	67
10:00	20		27				47		22:00	5		2				7	
10:15	20		34				54		22:15	3		4				7	
10:30	21		24				45		22:30	5		5				10	
10:45	20	81	21	106			41	187	22:45	5	18	4	15			9	33
11:00	30		20				50		23:00	1		4				5	
11:15	21		22				43		23:15	6		3				9	
11:30	33		28				61		23:30	4		5				9	
11:45	29	113	36	106			65	219	23:45	1	12	2	14			3	26
TOTALS		1125		812				1937	TOTALS		1062		2095				3157
SPLIT %		58.1%		41.9%				38.0%	SPLIT %		33.6%		66.4%				62.0%

DAILY TOTALS	NB	SB	EB	WB	Total
	2,187	2,907	0	0	5,094

AM Peak Hour	07:15	07:15				07:15	PM Peak Hour	15:15	16:15				16:15
AM Pk Volume	267	134				401	PM Pk Volume	149	571				698
Pk Hr Factor	0.804	0.882				0.829	Pk Hr Factor	0.955	0.903				0.914
7 - 9 Volume	428	250	0	0		678	4 - 6 Volume	257	1062	0	0		1319
7 - 9 Peak Hour	07:15	07:15				07:15	4 - 6 Peak Hour	16:00	16:15				16:15
7 - 9 Pk Volume	267	134	0	0		401	4 - 6 Pk Volume	131	571	0	0		698
Pk Hr Factor	0.804	0.882	0.000	0.000		0.829	Pk Hr Factor	0.885	0.903	0.000	0.000		0.914

Prepared by NDS/ATD

VOLUME

Willow Rd Bet. SR-67 & Moreno Ave

Day: Thursday
Date: 2/16/2017

City: Lakeside
Project #: CA17_4047_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,713	4,385	9,098

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			8		31		39		12:00			83		48		131	
00:15			16		23		39		12:15			55		57		112	
00:30			7		27		34		12:30			51		45		96	
00:45			7	38	22	103	29	141	12:45			62	251	58	208	120	459
01:00			6		13		19		13:00			71		47		118	
01:15			2		21		23		13:15			74		62		136	
01:30			2		16		18		13:30			57		67		124	
01:45			3	13	14	64	17	77	13:45			89	291	65	241	154	532
02:00			5		16		21		14:00			83		58		141	
02:15			5		26		31		14:15			98		68		166	
02:30			3		12		15		14:30			81		96		177	
02:45			4	17	14	68	18	85	14:45			105	367	60	282	165	649
03:00			3		11		14		15:00			105		71		176	
03:15			4		15		19		15:15			93		51		144	
03:30			3		12		15		15:30			101		75		176	
03:45			7	17	14	52	21	69	15:45			109	408	79	276	188	684
04:00			7		15		22		16:00			123		84		207	
04:15			4		23		27		16:15			112		88		200	
04:30			7		12		19		16:30			124		104		228	
04:45			10	28	25	75	35	103	16:45			106	465	84	360	190	825
05:00			11		31		42		17:00			111		91		202	
05:15			20		30		50		17:15			115		94		209	
05:30			31		43		74		17:30			126		79		205	
05:45			45	107	44	148	89	255	17:45			123	475	79	343	202	818
06:00			40		50		90		18:00			67		67		134	
06:15			25		54		79		18:15			96		61		157	
06:30			64		70		134		18:30			84		45		129	
06:45			118	247	45	219	163	466	18:45			80	327	33	206	113	533
07:00			58		64		122		19:00			69		39		108	
07:15			33		89		122		19:15			80		36		116	
07:30			40		80		120		19:30			59		23		82	
07:45			43	174	68	301	111	475	19:45			51	259	34	132	85	391
08:00			27		69		96		20:00			52		52		104	
08:15			37		47		84		20:15			35		31		66	
08:30			46		51		97		20:30			30		26		56	
08:45			57	167	55	222	112	389	20:45			38	155	44	153	82	308
09:00			40		65		105		21:00			33		24		57	
09:15			50		34		84		21:15			29		35		64	
09:30			56		59		115		21:30			31		38		69	
09:45			50	196	53	211	103	407	21:45			34	127	36	133	70	260
10:00			38		45		83		22:00			24		21		45	
10:15			47		53		100		22:15			22		32		54	
10:30			64		52		116		22:30			21		33		54	
10:45			52	201	37	187	89	388	22:45			24	91	34	120	58	211
11:00			53		39		92		23:00			15		34		49	
11:15			58		44		102		23:15			25		25		50	
11:30			52		42		94		23:30			22		30		52	
11:45			52	215	45	170	97	385	23:45			15	77	22	111	37	188
TOTALS				1420		1820		3240	TOTALS				3293		2565		5858
SPLIT %				43.8%		56.2%		35.6%	SPLIT %				56.2%		43.8%		64.4%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,713	4,385	9,098

AM Peak Hour			06:30	07:15	06:30	PM Peak Hour			17:00	16:30	16:30
AM Pk Volume			273	306	541	PM Pk Volume			475	373	829
Pk Hr Factor			0.578	0.860	0.830	Pk Hr Factor			0.942	0.897	0.909
7 - 9 Volume	0	0	341	523	864	4 - 6 Volume	0	0	940	703	1643
7 - 9 Peak Hour			07:00	07:15	07:00	4 - 6 Peak Hour			17:00	16:30	16:30
7 - 9 Pk Volume	0	0	174	306	475	4 - 6 Pk Volume	0	0	475	373	829
Pk Hr Factor	0.000	0.000	0.750	0.860	0.973	Pk Hr Factor	0.000	0.000	0.942	0.897	0.909

Prepared by NDS/ATD

VOLUME

SR-67 Bet. Kuhner Way & Willow Rd

Day: Thursday
Date: 2/16/2017

City: Lakeside
Project #: CA17_4047_003

DAILY TOTALS	NB	SB	EB	WB	Total
	14,539	14,013	0	0	28,552

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	26		20				46		12:00	157		145				302	
00:15	22		22				44		12:15	142		170				312	
00:30	17		14				31		12:30	168		168				336	
00:45	26	91	17	73			43	164	12:45	165	632	160	643			325	1275
01:00	11		10				21		13:00	191		216				407	
01:15	12		12				24		13:15	181		202				383	
01:30	19		7				26		13:30	187		208				395	
01:45	14	56	10	39			24	95	13:45	197	756	197	823			394	1579
02:00	17		4				21		14:00	218		222				440	
02:15	29		9				38		14:15	244		214				458	
02:30	10		13				23		14:30	206		309				515	
02:45	15	71	13	39			28	110	14:45	219	887	311	1056			530	1943
03:00	12		10				22		15:00	225		310				535	
03:15	26		17				43		15:15	247		310				557	
03:30	22		14				36		15:30	253		303				556	
03:45	26	86	18	59			44	145	15:45	222	947	310	1233			532	2180
04:00	34		28				62		16:00	230		309				539	
04:15	69		43				112		16:15	215		313				528	
04:30	100		69				169		16:30	226		302				528	
04:45	117	320	64	204			181	524	16:45	230	901	326	1250			556	2151
05:00	94		105				199		17:00	211		315				526	
05:15	176		150				326		17:15	220		296				516	
05:30	248		139				387		17:30	212		301				513	
05:45	232	750	190	584			422	1334	17:45	214	857	295	1207			509	2064
06:00	311		233				544		18:00	174		290				464	
06:15	359		179				538		18:15	142		292				434	
06:30	368		181				549		18:30	181		279				460	
06:45	344	1382	174	767			518	2149	18:45	122	619	227	1088			349	1707
07:00	379		153				532		19:00	137		195				332	
07:15	407		173				580		19:15	86		159				245	
07:30	363		164				527		19:30	113		133				246	
07:45	362	1511	168	658			530	2169	19:45	103	439	97	584			200	1023
08:00	333		187				520		20:00	85		87				172	
08:15	307		187				494		20:15	75		79				154	
08:30	289		218				507		20:30	74		68				142	
08:45	288	1217	194	786			482	2003	20:45	75	309	51	285			126	594
09:00	216		157				373		21:00	83		67				150	
09:15	237		157				394		21:15	52		80				132	
09:30	185		194				379		21:30	55		66				121	
09:45	168	806	207	715			375	1521	21:45	56	246	37	250			93	496
10:00	165		162				327		22:00	58		46				104	
10:15	183		149				332		22:15	54		47				101	
10:30	177		189				366		22:30	41		55				96	
10:45	143	668	137	637			280	1305	22:45	33	186	33	181			66	367
11:00	157		183				340		23:00	32		43				75	
11:15	165		176				341		23:15	40		33				73	
11:30	179		186				365		23:30	44		26				70	
11:45	159	660	186	731			345	1391	23:45	26	142	19	121			45	263
TOTALS		7618		5292				12910	TOTALS		6921		8721				15642
SPLIT %		59.0%		41.0%				45.2%	SPLIT %		44.2%		55.8%				54.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	14,539	14,013	0	0	28,552

AM Peak Hour	07:00	08:00			06:30	PM Peak Hour	15:15	16:15			15:15
AM Pk Volume	1511	786			2179	PM Pk Volume	952	1256			2184
Pk Hr Factor	0.928	0.901			0.939	Pk Hr Factor	0.941	0.963			0.980
7 - 9 Volume	2728	1444	0	0	4172	4 - 6 Volume	1758	2457	0	0	4215
7 - 9 Peak Hour	07:00	08:00			07:00	4 - 6 Peak Hour	16:00	16:15			16:00
7 - 9 Pk Volume	1511	786	0	0	2169	4 - 6 Pk Volume	901	1256	0	0	2151
Pk Hr Factor	0.928	0.901	0.000	0.000	0.935	Pk Hr Factor	0.979	0.963	0.000	0.000	0.967

Prepared by NDS/ATD

VOLUME

SR-67 S/O Willow Rd

Day: Thursday
Date: 2/16/2017

City: Lakeside
Project #: CA17_4047_004

DAILY TOTALS	NB	SB	EB	WB	Total
	18,041	16,644	0	0	34,685

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	28		43				71		12:00	233		225				458	
00:15	29		32				61		12:15	193		210				403	
00:30	22		27				49		12:30	212		217				429	
00:45	25	104	30	132			55	236	12:45	195	833	221	873			416	1706
01:00	11		26				37		13:00	253		213				466	
01:15	15		22				37		13:15	239		252				491	
01:30	14		17				31		13:30	225		236				461	
01:45	10	50	17	82			27	132	13:45	258	975	244	945			502	1920
02:00	15		18				33		14:00	279		264				543	
02:15	24		23				47		14:15	324		283				607	
02:30	13		11				24		14:30	257		347				604	
02:45	21	73	21	73			42	146	14:45	328	1188	367	1261			695	2449
03:00	18		13				31		15:00	302		368				670	
03:15	26		16				42		15:15	313		342				655	
03:30	24		16				40		15:30	341		352				693	
03:45	27	95	17	62			44	157	15:45	310	1266	386	1448			696	2714
04:00	40		29				69		16:00	325		358				683	
04:15	66		54				120		16:15	315		389				704	
04:30	103		69				172		16:30	320		382				702	
04:45	127	336	94	246			221	582	16:45	326	1286	382	1511			708	2797
05:00	100		116				216		17:00	306		366				672	
05:15	183		137				320		17:15	322		386				708	
05:30	267		191				458		17:30	306		379				685	
05:45	255	805	203	647			458	1452	17:45	315	1249	378	1509			693	2758
06:00	328		226				554		18:00	232		350				582	
06:15	355		201				556		18:15	227		330				557	
06:30	406		226				632		18:30	247		268				515	
06:45	430	1519	211	864			641	2383	18:45	201	907	212	1160			413	2067
07:00	391		220				611		19:00	203		196				399	
07:15	372		219				591		19:15	143		139				282	
07:30	424		227				651		19:30	168		101				269	
07:45	368	1555	242	908			610	2463	19:45	154	668	99	535			253	1203
08:00	361		219				580		20:00	123		98				221	
08:15	293		218				511		20:15	116		89				205	
08:30	358		266				624		20:30	96		78				174	
08:45	300	1312	227	930			527	2242	20:45	123	458	93	358			216	816
09:00	249		196				445		21:00	115		62				177	
09:15	282		185				467		21:15	82		86				168	
09:30	233		223				456		21:30	76		84				160	
09:45	190	954	220	824			410	1778	21:45	81	354	66	298			147	652
10:00	210		199				409		22:00	74		43				117	
10:15	210		205				415		22:15	65		65				130	
10:30	241		202				443		22:30	50		57				107	
10:45	179	840	196	802			375	1642	22:45	45	234	53	218			98	452
11:00	203		207				410		23:00	32		47				79	
11:15	197		192				389		23:15	51		34				85	
11:30	217		208				425		23:30	49		40				89	
11:45	197	814	204	811			401	1625	23:45	34	166	26	147			60	313
TOTALS		8457		6381				14838	TOTALS		9584		10263				19847
SPLIT %		57.0%		43.0%				42.8%	SPLIT %		48.3%		51.7%				57.2%

DAILY TOTALS	NB	SB	EB	WB	Total
	18,041	16,644	0	0	34,685

AM Peak Hour	06:45	07:45			06:45	PM Peak Hour	15:30	16:15			16:00
AM Pk Volume	1617	945			2494	PM Pk Volume	1291	1519			2797
Pk Hr Factor	0.940	0.888			0.958	Pk Hr Factor	0.946	0.976			0.988
7 - 9 Volume	2867	1838	0	0	4705	4 - 6 Volume	2535	3020	0	0	5555
7 - 9 Peak Hour	07:00	07:45			07:00	4 - 6 Peak Hour	16:00	16:15			16:00
7 - 9 Pk Volume	1555	945	0	0	2463	4 - 6 Pk Volume	1286	1519	0	0	2797
Pk Hr Factor	0.917	0.888	0.000	0.000	0.946	Pk Hr Factor	0.986	0.976	0.000	0.000	0.988

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-4046-001 **Day:** Thursday

City: Lakeside **Date:** 2/16/2017

AM

NS/EW Streets:	Moreno Ave			Moreno Ave			Willow Rd			Willow Rd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	1	0	0	1	0	
7:00 AM	0	0	0	11	0	21	11	55	0	0	48	52	198
7:15 AM	0	0	0	5	0	24	17	15	0	0	52	61	174
7:30 AM	0	0	0	10	0	24	22	15	0	0	51	57	179
7:45 AM	0	0	0	10	0	22	16	25	0	0	40	38	151
8:00 AM	0	0	0	4	0	14	7	19	0	0	47	36	127
8:15 AM	0	0	0	6	0	30	13	23	0	0	34	22	128
8:30 AM	0	0	0	9	0	29	19	28	0	0	37	19	141
8:45 AM	0	0	0	6	0	27	27	32	0	0	31	18	141
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	61	0	191	132	212	0	0	340	303	1239
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	24.21%	0.00%	75.79%	38.37%	61.63%	0.00%	0.00%	52.88%	47.12%	
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	0	0	0	36	0	91	66	110	0	0	191	208	702
PEAK HR FACTOR :	0.000			0.934			0.667			0.883			0.886

UTURNS

NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : 1-Way Stop(SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-4046-001 **Day:** Thursday

City: Lakeside **Date:** 2/16/2017

PM

NS/EW Streets:	Moreno Ave			Moreno Ave			Willow Rd			Willow Rd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	1	0	0	1	0	
4:00 PM	0	0	0	47	0	42	23	99	0	0	28	9	248
4:15 PM	0	0	0	71	0	53	21	92	0	0	32	11	280
4:30 PM	0	0	0	82	0	73	32	87	0	0	27	9	310
4:45 PM	0	1	0	82	0	60	21	89	0	0	37	10	300
5:00 PM	0	0	0	79	0	57	22	82	0	0	28	12	280
5:15 PM	0	0	1	74	0	60	19	90	0	0	34	16	294
5:30 PM	0	0	0	72	0	58	21	105	0	0	29	14	299
5:45 PM	0	0	0	63	0	55	26	98	0	0	29	10	281
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1	1	570	0	458	185	742	0	0	244	91	2292
APPROACH %'s :	0.00%	50.00%	50.00%	55.45%	0.00%	44.55%	19.96%	80.04%	0.00%	0.00%	72.84%	27.16%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	1	1	317	0	250	94	348	0	0	126	47	1184
PEAK HR FACTOR :	0.500			0.915			0.929			0.865			0.955

UTURNS

NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : 1-Way Stop(SB)

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Moreno Ave and Willow Rd , Lakeside

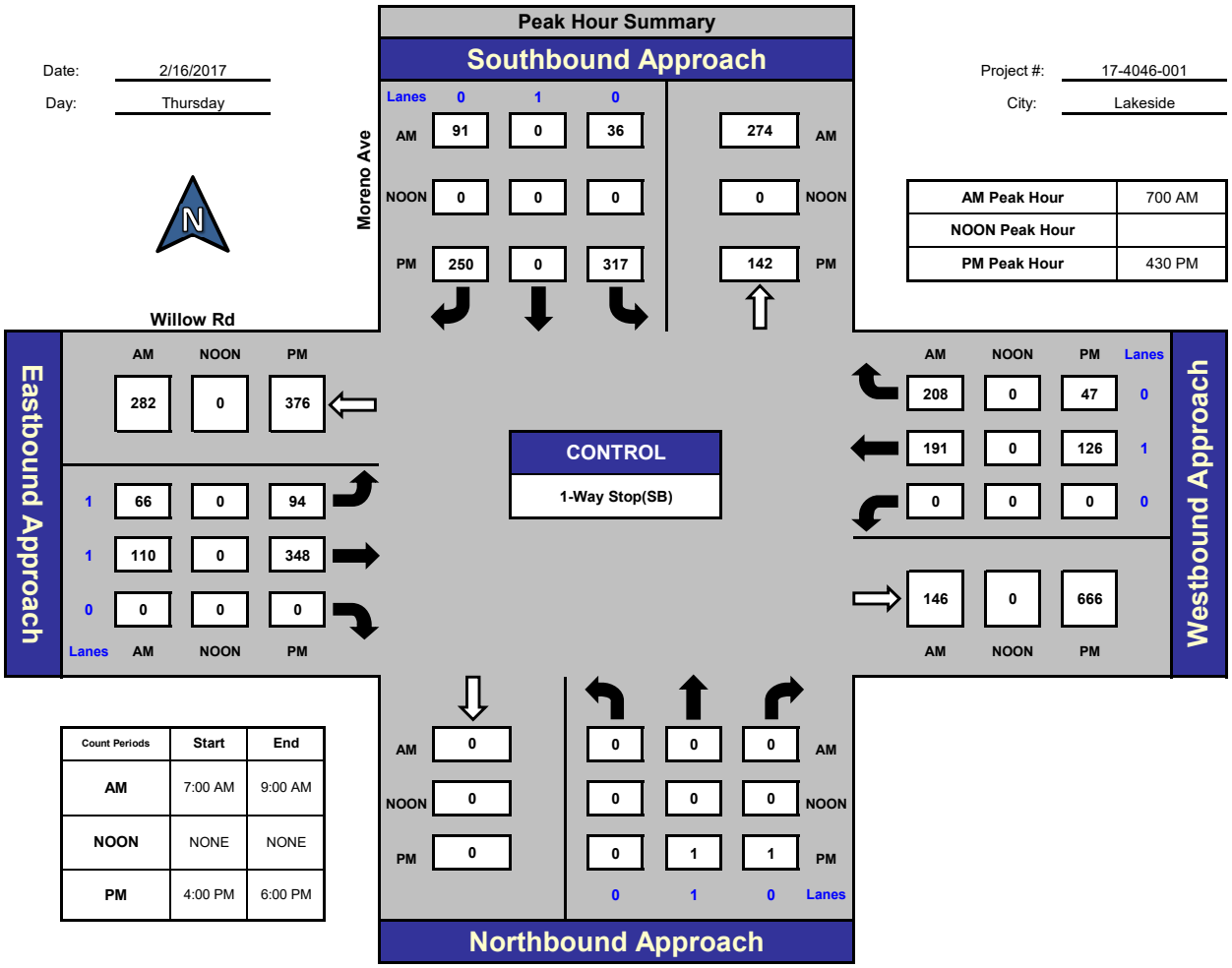
Date: 2/16/2017

Day: Thursday

Project #: 17-4046-001

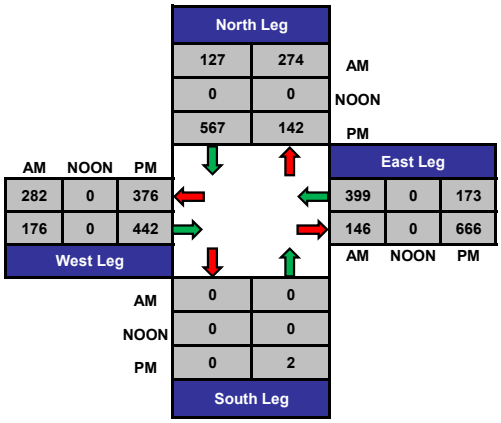
City: Lakeside

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	430 PM

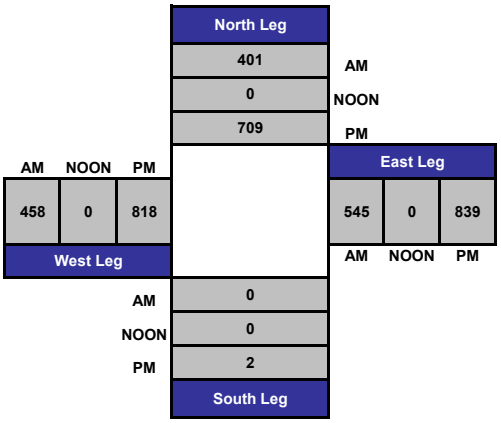


Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-4046-002 **Day:** Thursday

City: Lakeside **Date:** 2/16/2017

AM

NS/EW Streets:	SR-67			SR-67			Willow Rd			Willow Rd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	1	1	1	0	0	0	0	0	1	0	
7:00 AM	0	355	62	15	125	0	0	0	0	58	0	18	633
7:15 AM	0	399	28	5	175	0	0	0	0	49	0	15	671
7:30 AM	0	334	32	9	144	0	0	0	0	63	0	20	602
7:45 AM	0	367	31	15	140	0	0	0	0	49	0	10	612
8:00 AM	0	304	22	8	172	0	0	0	0	61	0	17	584
8:15 AM	0	306	31	8	166	0	0	0	0	44	0	16	571
8:30 AM	0	257	35	10	200	0	0	0	0	65	0	14	581
8:45 AM	0	280	53	9	178	0	0	0	0	40	0	15	575
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	2602	294	79	1300	0	0	0	0	429	0	125	4829
APPROACH %'s :	0.00%	89.85%	10.15%	5.73%	94.27%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	77.44%	0.00%	22.56%	
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	0	1455	153	44	584	0	0	0	0	219	0	63	2518
PEAK HR FACTOR :		0.941			0.872			0.000			0.849		0.938

UTURNS				
NB	SB	EB	WB	
NB	SB	EB	WB	
0	0	0	0	

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-4046-002 **Day:** Thursday

City: Lakeside **Date:** 2/16/2017

PM

NS/EW Streets:	SR-67			SR-67			Willow Rd			Willow Rd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	1	1	1	0	0	0	0	0	1	0	
4:00 PM	0	202	109	20	288	0	0	0	0	61	0	15	695
4:15 PM	0	201	103	5	329	0	0	0	0	63	0	14	715
4:30 PM	0	219	121	8	303	0	0	0	0	82	0	9	742
4:45 PM	0	210	83	7	300	0	0	0	0	86	0	18	704
5:00 PM	0	184	124	1	297	0	0	0	0	92	0	13	711
5:15 PM	0	221	102	14	307	0	0	0	0	59	0	13	716
5:30 PM	0	198	116	13	271	0	0	0	0	92	0	11	701
5:45 PM	0	196	94	13	264	0	0	0	0	82	0	13	662
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1631	852	81	2359	0	0	0	0	617	0	106	5646
APPROACH %'s :	0.00%	65.69%	34.31%	3.32%	96.68%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	85.34%	0.00%	14.66%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	834	430	30	1207	0	0	0	0	319	0	53	2873
PEAK HR FACTOR :		0.929			0.963			0.000			0.886		0.968

UTURNS	NB	SB	EB	WB
TOTAL VOLUMES :	0	0	0	0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

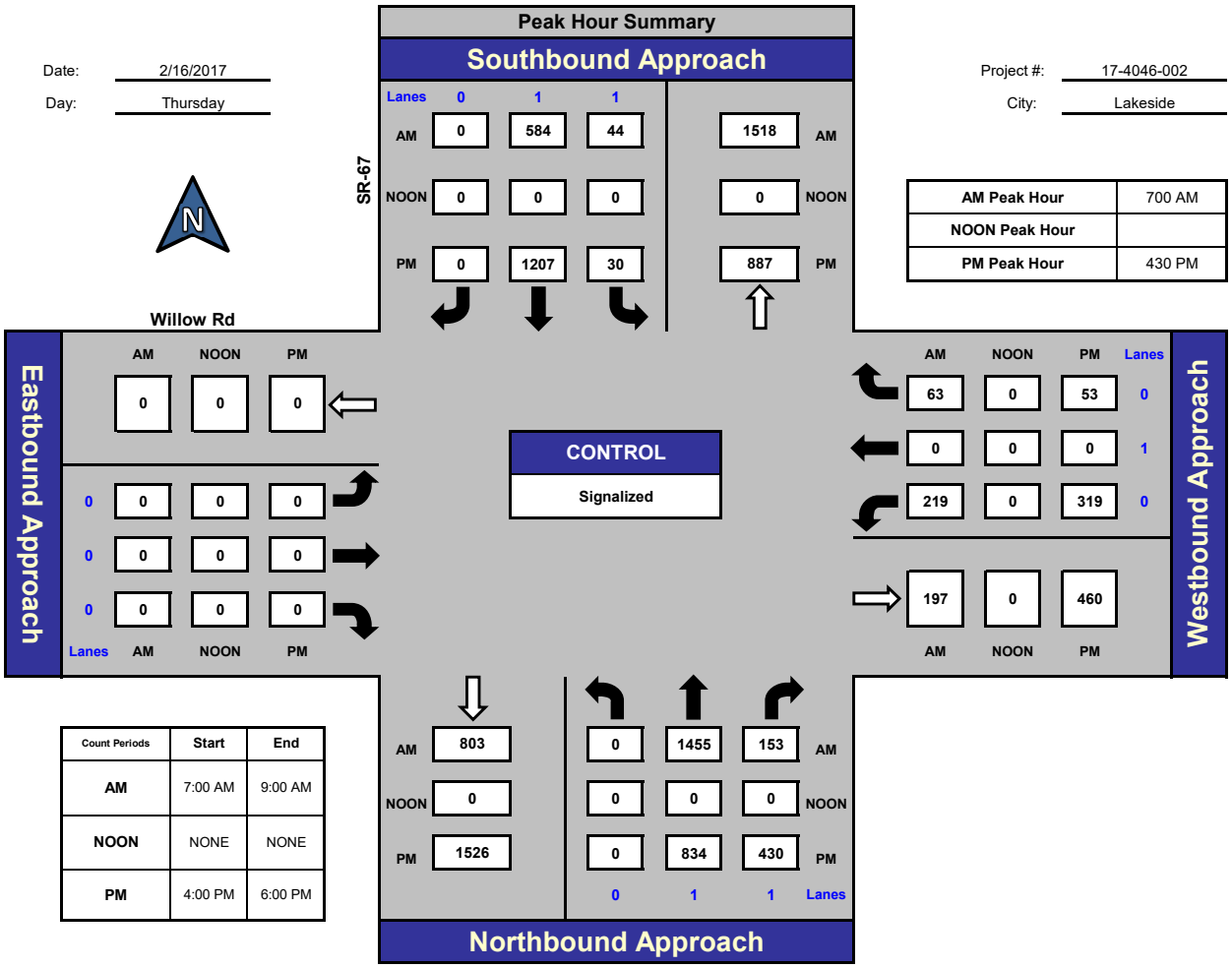
National Data & Surveying Services

SR-67 and Willow Rd , Lakeside

Date: 2/16/2017
Day: Thursday

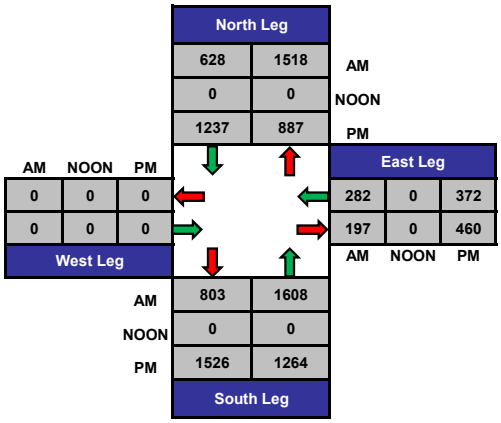
Project #: 17-4046-002
City: Lakeside

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	430 PM

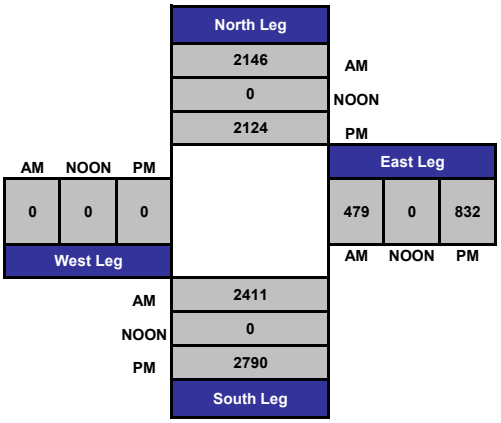


Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-4046-003 **Day:** Thursday

City: Lakeside **Date:** 2/16/2017

AM

NS/EW Streets:	SR-67			SR-67			Mapleview St			Mapleview St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 0	ET 0.5	ER 0.5	WL 1.5	WT 0.5	WR 1	TOTAL
7:00 AM	6	149	125	29	110	9	33	22	6	186	18	43	736
7:15 AM	7	113	113	23	129	14	49	6	4	173	18	45	694
7:30 AM	10	147	152	24	155	8	56	14	9	149	21	34	779
7:45 AM	8	133	132	25	114	10	44	18	5	179	20	30	718
8:00 AM	3	160	119	32	145	14	19	17	8	131	29	38	715
8:15 AM	13	185	109	29	129	20	23	16	7	155	20	28	734
8:30 AM	6	196	101	23	138	17	29	15	11	142	28	37	743
8:45 AM	6	139	120	29	149	15	25	15	5	150	26	23	702
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	59	1222	971	214	1069	107	278	123	55	1265	180	278	5821
APPROACH %'s :	2.62%	54.26%	43.12%	15.40%	76.91%	7.70%	60.96%	26.97%	12.06%	73.42%	10.45%	16.13%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	34	625	512	110	543	52	142	65	29	614	90	130	2946
PEAK HR FACTOR :		0.947			0.923			0.747			0.910		0.945

UTURNS	NB	SB	EB	WB
	0	1	0	0
	0	1	0	0
	2	1	0	0
	1	0	0	0
	0	0	0	0
	0	0	0	0
	0	2	0	0
	0	0	0	0
	NB	SB	EB	WB
	3	5	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-4046-003 **Day:** Thursday

City: Lakeside **Date:** 2/16/2017

PM

NS/EW Streets:	SR-67			SR-67			Mapleview St			Mapleview St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 0	ET 0.5	ER 0.5	WL 1.5	WT 0.5	WR 1	TOTAL
4:00 PM	8	227	166	67	226	22	36	30	8	129	23	22	964
4:15 PM	6	177	141	51	237	26	22	36	8	159	24	45	932
4:30 PM	5	224	169	59	246	27	38	40	10	157	20	22	1017
4:45 PM	1	177	161	45	258	26	30	26	7	147	19	27	924
5:00 PM	5	208	153	61	207	21	31	40	7	135	31	31	930
5:15 PM	2	209	147	56	285	20	15	37	1	139	23	39	973
5:30 PM	7	183	144	67	214	25	25	31	6	148	18	12	880
5:45 PM	4	174	152	60	223	22	20	31	6	109	23	28	852
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	38	1579	1233	466	1896	189	217	271	53	1123	181	226	7472
APPROACH %'s :	1.33%	55.40%	43.26%	18.27%	74.32%	7.41%	40.11%	50.09%	9.80%	73.40%	11.83%	14.77%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	13	818	630	221	996	94	114	143	25	578	93	119	3844
PEAK HR FACTOR :		0.918			0.908			0.801			0.983		0.945

UTURNS

	NB	SB	EB	WB
4:00 PM	3	1	0	0
4:15 PM	0	1	0	0
4:30 PM	0	1	0	0
4:45 PM	0	0	0	0
5:00 PM	1	0	0	0
5:15 PM	0	0	0	0
5:30 PM	2	0	0	0
5:45 PM	0	0	0	0
	NB	SB	EB	WB
TOTAL VOLUMES :	6	3	0	0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

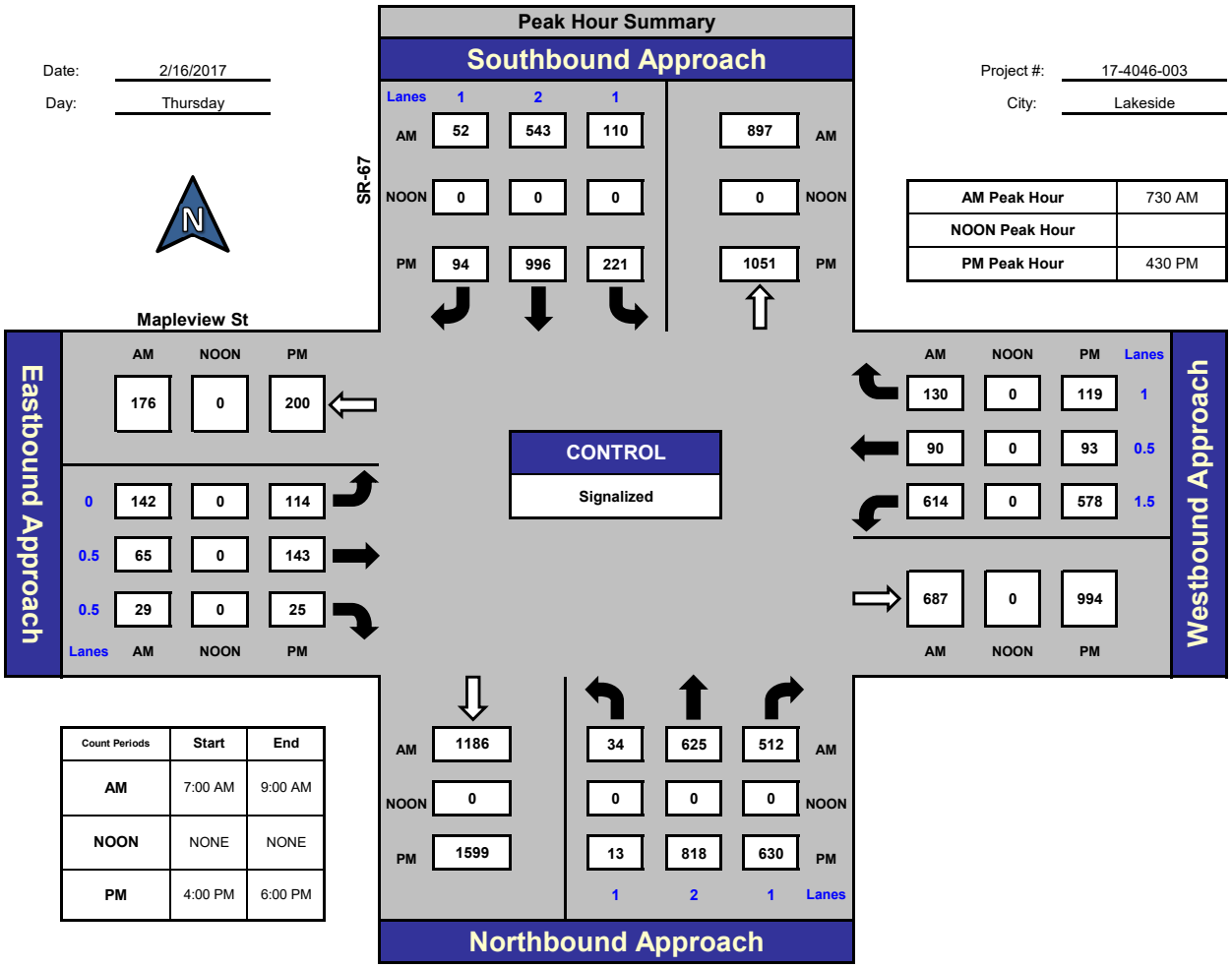
National Data & Surveying Services

SR-67 and Mapleview St , Lakeside

Date: 2/16/2017
Day: Thursday

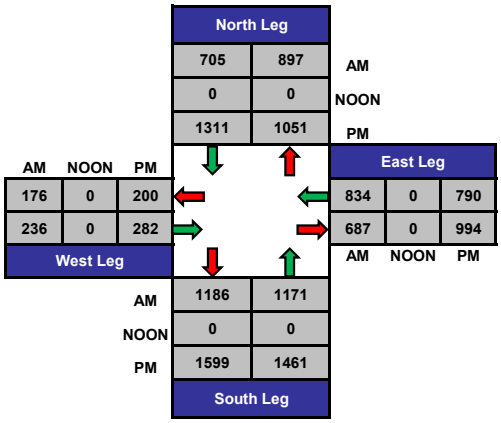
Project #: 17-4046-003
City: Lakeside

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

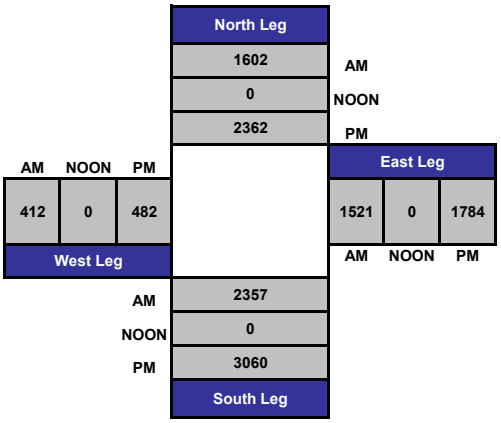


Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-4046-103 **Day:** Thursday

City: Lakeside **Date:** 2/16/2017

AM

NS/EW Streets:	Maine Ave			Maine Ave			Mapleview St			Mapleview St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	1	0	1	0	0	0.5	0.5	0.5	1.5	1	
7:00 AM	40	0	5	0	0	2	0	141	33	6	204	1	432
7:15 AM	47	1	8	0	0	0	0	117	26	3	190	0	392
7:30 AM	41	0	10	0	0	5	0	156	31	2	159	3	407
7:45 AM	38	0	13	0	0	1	0	141	34	7	189	0	423
8:00 AM	37	1	13	1	1	1	0	139	28	6	163	1	391
8:15 AM	29	1	9	0	0	1	0	121	37	3	171	1	373
8:30 AM	42	0	4	0	0	2	0	109	27	3	160	2	349
8:45 AM	34	1	7	0	0	3	0	128	36	10	158	3	380
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	308	4	69	1	1	15	0	1052	252	40	1394	11	3147
APPROACH %'s :	80.84%	1.05%	18.11%	5.88%	5.88%	88.24%	0.00%	80.67%	19.33%	2.77%	96.47%	0.76%	
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	166	1	36	0	0	8	0	555	124	18	742	4	1654
PEAK HR FACTOR :	0.906			0.400			0.908			0.905			0.957

UTURNS

NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 17-4046-103 **Day:** Thursday

City: Lakeside **Date:** 2/16/2017

PM

NS/EW Streets:	Maine Ave			Maine Ave			Mapleview St			Mapleview St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	1	0	1	0	0	0.5	0.5	0.5	1.5	1	
4:00 PM	28	0	12	1	1	1	0	211	48	6	143	2	453
4:15 PM	42	0	15	0	0	2	0	192	36	15	188	2	492
4:30 PM	24	2	11	0	1	2	0	222	43	9	171	1	486
4:45 PM	41	2	20	0	0	2	0	190	43	11	152	1	462
5:00 PM	34	0	8	0	1	2	0	202	53	7	160	3	470
5:15 PM	45	0	20	0	1	2	0	202	37	10	158	2	477
5:30 PM	29	2	13	1	2	4	0	199	47	7	143	5	452
5:45 PM	42	0	16	0	0	0	0	205	35	11	120	0	429
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	285	6	115	2	6	15	0	1623	342	76	1235	16	3721
APPROACH %'s :	70.20%	1.48%	28.33%	8.70%	26.09%	65.22%	0.00%	82.60%	17.40%	5.73%	93.07%	1.21%	
PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	141	4	54	0	2	8	0	806	175	42	671	7	1910
PEAK HR FACTOR :	0.790			0.833			0.925			0.878			0.971

UTURNS

NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

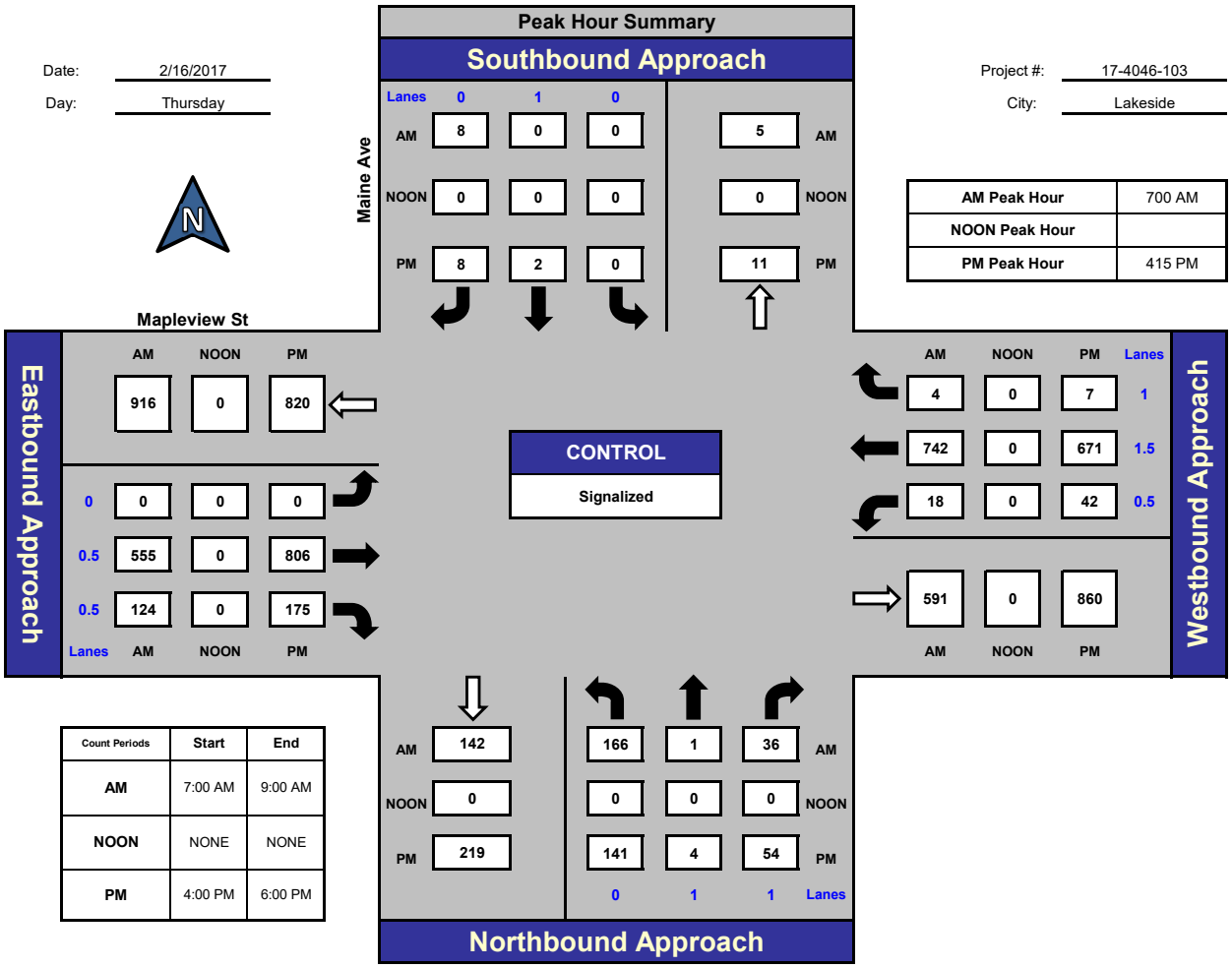
National Data & Surveying Services

Maine Ave and Mapleview St , Lakeside

Date: 2/16/2017
Day: Thursday

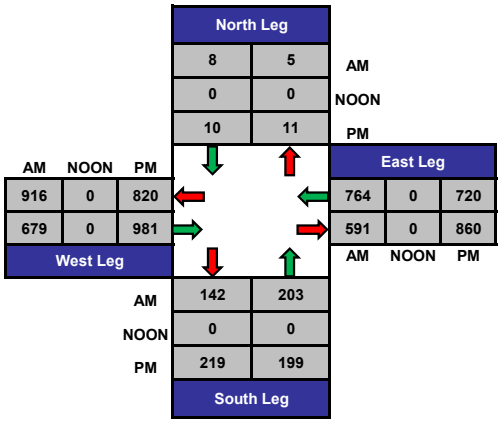
Project #: 17-4046-103
City: Lakeside

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	415 PM

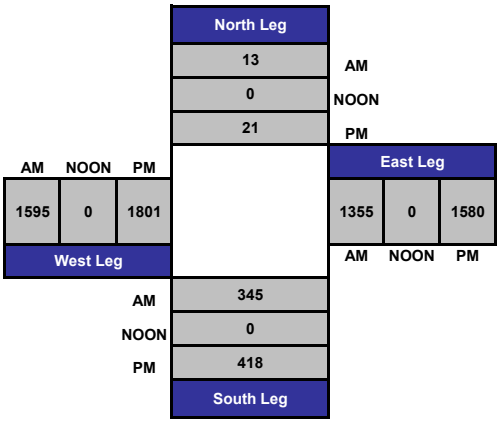


Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



APPENDIX B – Peak Hour Intersection Capacity Worksheets – Existing Conditions

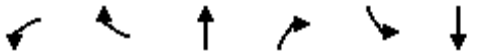
Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	66	110	191	208	36	91
Future Vol, veh/h	66	110	191	208	36	91
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	65	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	67	67	88	88	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	99	164	217	236	39	98

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	453	0	-	0	696	335
Stage 1	-	-	-	-	335	-
Stage 2	-	-	-	-	361	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1108	-	-	-	408	707
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	705	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1108	-	-	-	372	707
Mov Cap-2 Maneuver	-	-	-	-	372	-
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	642	-

Approach	EB	WB	SB
HCM Control Delay, s	3.2	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1108	-	-	-	563
HCM Lane V/C Ratio	0.089	-	-	-	0.243
HCM Control Delay (s)	8.6	-	-	-	13.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.9



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	219	63	1455	153	44	584
Future Volume (veh/h)	219	63	1455	153	44	584
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	258	67	1548	163	51	671
Adj No. of Lanes	0	0	1	1	1	1
Peak Hour Factor	0.85	0.85	0.94	0.94	0.87	0.87
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	221	57	1285	1092	63	1403
Arrive On Green	0.16	0.16	0.69	0.69	0.04	0.75
Sat Flow, veh/h	1370	356	1863	1583	1774	1863
Grp Volume(v), veh/h	326	0	1548	163	51	671
Grp Sat Flow(s),veh/h/ln	1731	0	1863	1583	1774	1863
Q Serve(g_s), s	24.2	0.0	103.5	5.3	4.3	20.8
Cycle Q Clear(g_c), s	24.2	0.0	103.5	5.3	4.3	20.8
Prop In Lane	0.79	0.21		1.00	1.00	
Lane Grp Cap(c), veh/h	279	0	1285	1093	63	1403
V/C Ratio(X)	1.17	0.00	1.20	0.15	0.81	0.48
Avail Cap(c_a), veh/h	279	0	1285	1093	63	1403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.9	0.0	23.3	8.0	71.9	7.1
Incr Delay (d2), s/veh	106.8	0.0	99.6	0.3	58.9	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.9	0.0	88.0	2.4	3.1	11.1
LnGrp Delay(d),s/veh	169.7	0.0	122.8	8.3	130.7	8.3
LnGrp LOS	F		F	A	F	A
Approach Vol, veh/h	326		1711			722
Approach Delay, s/veh	169.7		111.9			17.0
Approach LOS	F		F			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.5	110.5				120.0		30.0
Change Period (Y+Rc), s	* 4.2	7.0				7.0		5.8
Max Green Setting (Gmax), s	* 5.3	103.5				113.0		24.2
Max Q Clear Time (g_c+I1), s	6.3	105.5				22.8		26.2
Green Ext Time (p_c), s	0.0	0.0				89.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	93.9
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	65	29	614	90	130	34	625	512	110	543	52
Future Volume (veh/h)	142	65	29	614	90	130	34	625	512	110	543	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	189	87	0	746	0	0	36	658	539	120	590	0
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	2	1
Peak Hour Factor	0.75	0.75	0.75	0.91	0.91	0.91	0.95	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	425	168	532	1063	0	532	98	971	434	168	1186	531
Arrive On Green	0.34	0.34	0.00	0.34	0.00	0.00	0.06	0.27	0.27	0.09	0.34	0.00
Sat Flow, veh/h	1034	498	1583	2610	0	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	276	0	0	746	0	0	36	658	539	120	590	0
Grp Sat Flow(s),veh/h/ln	1532	0	1583	1305	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	11.1	0.0	0.0	9.4	0.0	0.0	1.5	13.0	21.5	5.1	10.4	0.0
Cycle Q Clear(g_c), s	11.4	0.0	0.0	20.8	0.0	0.0	1.5	13.0	21.5	5.1	10.4	0.0
Prop In Lane	0.68		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	593	0	532	1063	0	532	98	971	434	168	1186	531
V/C Ratio(X)	0.47	0.00	0.00	0.70	0.00	0.00	0.37	0.68	1.24	0.72	0.50	0.00
Avail Cap(c_a), veh/h	593	0	532	1451	0	768	181	971	434	190	1186	531
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.0	0.0	0.0	24.1	0.0	0.0	35.7	25.3	28.4	34.4	20.8	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.9	0.0	0.0	2.3	3.8	126.6	10.5	1.5	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	0.0	7.6	0.0	0.0	0.8	6.8	24.6	3.0	5.3	0.0
LnGrp Delay(d),s/veh	21.8	0.0	0.0	25.1	0.0	0.0	37.9	29.1	155.0	44.9	22.3	0.0
LnGrp LOS	C			C			D	C	F	D	C	
Approach Vol, veh/h		276			746			1233			710	
Approach Delay, s/veh		21.8			25.1			84.4			26.1	
Approach LOS		C			C			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.6	31.0		33.7	8.8	35.8		33.7
Change Period (Y+Rc), s	* 6.2	9.5		7.4	4.5	* 9.5		7.4
Max Green Setting (Gmax), s	* 8.4	21.5		16.6	8.0	* 24		38.0
Max Q Clear Time (g_c+I1), s	7.1	23.5		13.4	3.5	12.4		22.8
Green Ext Time (p_c), s	0.0	0.0		1.7	0.0	11.1		3.6

Intersection Summary	
HCM 2010 Ctrl Delay	49.7
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	555	124	18	742	4	166	1	36	0	0	8
Future Volume (veh/h)	0	555	124	18	742	4	166	1	36	0	0	8
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	610	0	20	815	4	182	1	40	0	0	20
Adj No. of Lanes	0	1	1	0	3	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.40	0.40	0.40
Percent Heavy Veh, %	0	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	659	561	27	1184	6	350	1	654	0	0	298
Arrive On Green	0.00	0.35	0.00	0.23	0.23	0.23	0.19	0.19	0.19	0.00	0.00	0.19
Sat Flow, veh/h	0	1863	1583	121	5262	27	1305	7	1583	0	0	1583
Grp Volume(v), veh/h	0	610	0	306	254	279	183	0	40	0	0	20
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1857	1695	1858	1312	0	1583	0	0	1583
Q Serve(g_s), s	0.0	21.6	0.0	10.5	9.4	9.4	8.6	0.0	1.0	0.0	0.0	0.7
Cycle Q Clear(g_c), s	0.0	21.6	0.0	10.5	9.4	9.4	9.3	0.0	1.0	0.0	0.0	0.7
Prop In Lane	0.00		1.00	0.07		0.01	0.99		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	0	659	561	418	381	418	351	0	654	0	0	298
V/C Ratio(X)	0.00	0.93	0.00	0.73	0.67	0.67	0.52	0.00	0.06	0.00	0.00	0.07
Avail Cap(c_a), veh/h	0	705	599	486	444	487	797	0	1163	0	0	806
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)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.3	0.0	24.7	24.3	24.3	26.8	0.0	12.1	0.0	0.0	22.9
Incr Delay (d2), s/veh	0.0	16.9	0.0	5.5	3.8	3.4	1.7	0.0	0.1	0.0	0.0	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	0.0	14.1	0.0	6.0	4.8	5.2	3.5	0.0	0.6	0.0	0.0	0.3
LnGrp Delay(d),s/veh	0.0	38.2	0.0	30.2	28.0	27.7	28.5	0.0	12.2	0.0	0.0	23.1
LnGrp LOS		D		C	C	C	C		B			C
Approach Vol, veh/h		610			839			223			20	
Approach Delay, s/veh		38.2			28.7			25.5			23.1	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		30.0		17.5		21.2		17.5
Change Period (Y+Rc), s		5.7		4.6		5.7		4.6
Max Green Setting (Gmax), s		26.0		35.0		18.0		35.0
Max Q Clear Time (g_c+I1), s		23.6		11.3		12.5		2.7
Green Ext Time (p_c), s		0.7		1.8		3.0		2.0

Intersection Summary		
HCM 2010 Ctrl Delay		31.7
HCM 2010 LOS		C

Intersection	
Int Delay, s/veh	83

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	94	348	126	47	317	250
Future Vol, veh/h	94	348	126	47	317	250
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	65	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	86	86	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	101	374	147	55	345	272

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	201	0	-	0	750	174
Stage 1	-	-	-	-	174	-
Stage 2	-	-	-	-	576	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1371	-	-	-	379	869
Stage 1	-	-	-	-	856	-
Stage 2	-	-	-	-	562	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1371	-	-	-	351	869
Mov Cap-2 Maneuver	-	-	-	-	351	-
Stage 1	-	-	-	-	856	-
Stage 2	-	-	-	-	521	-

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	172.7
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1371	-	-	-	476
HCM Lane V/C Ratio	0.074	-	-	-	1.295
HCM Control Delay (s)	7.8	-	-	-	172.7
HCM Lane LOS	A	-	-	-	F
HCM 95th %tile Q(veh)	0.2	-	-	-	26.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	319	53	834	430	30	1207
Future Volume (veh/h)	319	53	834	430	30	1207
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	358	54	897	462	31	1257
Adj No. of Lanes	0	0	1	1	1	1
Peak Hour Factor	0.89	0.89	0.93	0.93	0.96	0.96
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	348	53	1162	987	44	1264
Arrive On Green	0.23	0.23	0.62	0.62	0.03	0.68
Sat Flow, veh/h	1514	228	1863	1583	1774	1863
Grp Volume(v), veh/h	413	0	897	462	31	1257
Grp Sat Flow(s),veh/h/ln	1747	0	1863	1583	1774	1863
Q Serve(g_s), s	32.2	0.0	49.0	21.7	2.4	93.4
Cycle Q Clear(g_c), s	32.2	0.0	49.0	21.7	2.4	93.4
Prop In Lane	0.87	0.13		1.00	1.00	
Lane Grp Cap(c), veh/h	402	0	1162	987	44	1264
V/C Ratio(X)	1.03	0.00	0.77	0.47	0.70	0.99
Avail Cap(c_a), veh/h	402	0	1162	987	68	1264
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.9	0.0	19.1	14.0	67.7	22.2
Incr Delay (d2), s/veh	52.3	0.0	5.0	1.6	34.6	24.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.3	0.0	26.5	9.9	1.6	55.9
LnGrp Delay(d),s/veh	106.2	0.0	24.1	15.6	102.3	46.3
LnGrp LOS	F		C	B	F	D
Approach Vol, veh/h	413		1359			1288
Approach Delay, s/veh	106.2		21.2			47.6
Approach LOS	F		C			D

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.7	94.3				102.0		38.0
Change Period (Y+Rc), s	* 4.2	7.0				7.0		5.8
Max Green Setting (Gmax), s	* 5.4	85.4				95.0		32.2
Max Q Clear Time (g_c+I1), s	4.4	51.0				95.4		34.2
Green Ext Time (p_c), s	0.0	34.3				0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	43.8
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	143	25	578	93	119	13	818	630	221	996	94
Future Volume (veh/h)	114	143	25	578	93	119	13	818	630	221	996	94
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	142	179	0	658	0	0	14	889	685	243	1095	0
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	2	1
Peak Hour Factor	0.80	0.80	0.80	0.98	0.98	0.98	0.92	0.92	0.92	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	270	296	508	771	0	508	44	1387	621	182	1711	765
Arrive On Green	0.32	0.32	0.00	0.32	0.00	0.00	0.02	0.39	0.39	0.10	0.48	0.00
Sat Flow, veh/h	713	922	1583	2401	0	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	321	0	0	658	0	0	14	889	685	243	1095	0
Grp Sat Flow(s),veh/h/ln	1635	0	1583	1200	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	20.2	0.0	0.0	19.4	0.0	0.0	1.0	25.5	49.0	12.8	28.9	0.0
Cycle Q Clear(g_c), s	20.7	0.0	0.0	40.1	0.0	0.0	1.0	25.5	49.0	12.8	28.9	0.0
Prop In Lane	0.44		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	566	0	508	771	0	508	44	1387	621	182	1711	765
V/C Ratio(X)	0.57	0.00	0.00	0.85	0.00	0.00	0.32	0.64	1.10	1.34	0.64	0.00
Avail Cap(c_a), veh/h	566	0	508	771	0	508	114	1387	621	182	1711	765
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.8	0.0	0.0	44.2	0.0	0.0	59.9	30.9	38.0	56.1	24.2	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.0	9.2	0.0	0.0	4.1	2.3	67.9	184.3	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.0	0.0	12.3	0.0	0.0	0.5	12.9	33.1	15.6	14.6	0.0
LnGrp Delay(d),s/veh	37.5	0.0	0.0	53.5	0.0	0.0	64.1	33.1	105.9	240.4	26.0	0.0
LnGrp LOS	D			D			E	C	F	F	C	
Approach Vol, veh/h		321			658			1588			1338	
Approach Delay, s/veh		37.5			53.5			64.8			64.9	
Approach LOS		D			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.0	58.5		47.5	7.6	69.9		47.5
Change Period (Y+Rc), s	* 6.2	9.5		7.4	4.5	* 9.5		7.4
Max Green Setting (Gmax), s	* 13	49.0		40.1	8.0	* 56		40.1
Max Q Clear Time (g_c+I1), s	14.8	51.0		22.7	3.0	30.9		42.1
Green Ext Time (p_c), s	0.0	0.0		5.5	0.0	24.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	60.7
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	806	175	42	671	7	141	4	54	0	2	8
Future Volume (veh/h)	0	806	175	42	671	7	141	4	54	0	2	8
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	867	0	48	762	8	178	5	68	0	2	10
Adj No. of Lanes	0	1	1	0	3	0	0	1	1	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.88	0.88	0.88	0.79	0.79	0.79	0.83	0.83	0.83
Percent Heavy Veh, %	0	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	922	784	56	946	10	287	6	561	0	45	226
Arrive On Green	0.00	0.49	0.00	0.19	0.19	0.19	0.17	0.17	0.17	0.00	0.17	0.17
Sat Flow, veh/h	0	1863	1583	298	5044	55	1317	37	1583	0	271	1353
Grp Volume(v), veh/h	0	867	0	298	248	272	183	0	68	0	0	12
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1848	1695	1853	1354	0	1583	0	0	1624
Q Serve(g_s), s	0.0	46.8	0.0	16.6	14.8	14.8	13.4	0.0	3.1	0.0	0.0	0.7
Cycle Q Clear(g_c), s	0.0	46.8	0.0	16.6	14.8	14.8	14.0	0.0	3.1	0.0	0.0	0.7
Prop In Lane	0.00		1.00	0.16		0.03	0.97		1.00	0.00		0.83
Lane Grp Cap(c), veh/h	0	922	784	347	318	348	293	0	561	0	0	271
V/C Ratio(X)	0.00	0.94	0.00	0.86	0.78	0.78	0.62	0.00	0.12	0.00	0.00	0.04
Avail Cap(c_a), veh/h	0	1105	940	363	333	364	521	0	818	0	0	535
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)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	25.4	0.0	41.8	41.1	41.1	43.0	0.0	23.1	0.0	0.0	37.2
Incr Delay (d2), s/veh	0.0	12.6	0.0	18.5	11.7	10.8	3.1	0.0	0.1	0.0	0.0	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	0.0	27.1	0.0	10.2	8.0	8.7	5.4	0.0	1.8	0.0	0.0	0.3
LnGrp Delay(d),s/veh	0.0	38.0	0.0	60.3	52.8	51.9	46.1	0.0	23.3	0.0	0.0	37.3
LnGrp LOS		D		E	D	D	D		C			D
Approach Vol, veh/h		867			818			251			12	
Approach Delay, s/veh		38.0			55.2			40.0			37.3	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		58.3		22.3		25.6		22.3
Change Period (Y+Rc), s		5.7		4.6		5.7		4.6
Max Green Setting (Gmax), s		63.1		35.0		20.9		35.0
Max Q Clear Time (g_c+I1), s		48.8		16.0		18.6		2.7
Green Ext Time (p_c), s		3.9		1.8		1.3		2.1

Intersection Summary	
HCM 2010 Ctrl Delay	45.5
HCM 2010 LOS	D

APPENDIX C – Peak Hour Intersection Capacity Worksheets – Existing Plus Project Conditions

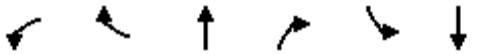
Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	86	110	191	209	36	91
Future Vol, veh/h	86	110	191	209	36	91
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	65	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	67	67	88	88	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	128	164	217	238	39	98

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	455	0	-	0	757	336
Stage 1	-	-	-	-	336	-
Stage 2	-	-	-	-	421	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1106	-	-	-	375	706
Stage 1	-	-	-	-	724	-
Stage 2	-	-	-	-	662	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1106	-	-	-	332	706
Mov Cap-2 Maneuver	-	-	-	-	332	-
Stage 1	-	-	-	-	724	-
Stage 2	-	-	-	-	585	-

Approach	EB	WB	SB
HCM Control Delay, s	3.8	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1106	-	-	-	535
HCM Lane V/C Ratio	0.116	-	-	-	0.255
HCM Control Delay (s)	8.7	-	-	-	14
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.4	-	-	-	1



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	219	63	1455	170	47	584
Future Volume (veh/h)	219	63	1455	170	47	584
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	258	74	1548	181	54	671
Adj No. of Lanes	0	0	1	1	1	1
Peak Hour Factor	0.85	0.85	0.94	0.94	0.87	0.87
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	207	59	1298	1103	63	1416
Arrive On Green	0.15	0.15	0.70	0.70	0.04	0.76
Sat Flow, veh/h	1339	384	1863	1583	1774	1863
Grp Volume(v), veh/h	333	0	1548	181	54	671
Grp Sat Flow(s),veh/h/ln	1728	0	1863	1583	1774	1863
Q Serve(g_s), s	23.2	0.0	104.5	5.9	4.5	20.3
Cycle Q Clear(g_c), s	23.2	0.0	104.5	5.9	4.5	20.3
Prop In Lane	0.77	0.22		1.00	1.00	
Lane Grp Cap(c), veh/h	267	0	1298	1103	63	1416
V/C Ratio(X)	1.25	0.00	1.19	0.16	0.86	0.47
Avail Cap(c_a), veh/h	267	0	1298	1103	63	1416
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.4	0.0	22.7	7.8	72.0	6.8
Incr Delay (d2), s/veh	138.0	0.0	94.7	0.3	71.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.3	0.0	87.1	2.7	3.5	10.7
LnGrp Delay(d),s/veh	201.4	0.0	117.4	8.1	143.0	7.9
LnGrp LOS	F		F	A	F	A
Approach Vol, veh/h	333		1729			725
Approach Delay, s/veh	201.4		106.0			18.0
Approach LOS	F		F			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.5	111.5				121.0		29.0
Change Period (Y+Rc), s	* 4.2	7.0				7.0		5.8
Max Green Setting (Gmax), s	* 5.3	104.5				114.0		23.2
Max Q Clear Time (g_c+I1), s	6.5	106.5				22.3		25.2
Green Ext Time (p_c), s	0.0	0.0				91.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	94.5
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	65	29	614	90	133	34	639	512	110	543	52
Future Volume (veh/h)	142	65	29	614	90	133	34	639	512	110	543	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	189	87	0	746	0	0	36	673	539	120	590	0
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	2	1
Peak Hour Factor	0.75	0.75	0.75	0.91	0.91	0.91	0.95	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	425	168	532	1063	0	532	98	971	434	168	1186	531
Arrive On Green	0.34	0.34	0.00	0.34	0.00	0.00	0.06	0.27	0.27	0.09	0.34	0.00
Sat Flow, veh/h	1034	498	1583	2610	0	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	276	0	0	746	0	0	36	673	539	120	590	0
Grp Sat Flow(s),veh/h/ln	1532	0	1583	1305	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	11.1	0.0	0.0	9.4	0.0	0.0	1.5	13.4	21.5	5.1	10.4	0.0
Cycle Q Clear(g_c), s	11.4	0.0	0.0	20.8	0.0	0.0	1.5	13.4	21.5	5.1	10.4	0.0
Prop In Lane	0.68		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	593	0	532	1063	0	532	98	971	434	168	1186	531
V/C Ratio(X)	0.47	0.00	0.00	0.70	0.00	0.00	0.37	0.69	1.24	0.72	0.50	0.00
Avail Cap(c_a), veh/h	593	0	532	1451	0	768	181	971	434	190	1186	531
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.0	0.0	0.0	24.1	0.0	0.0	35.7	25.5	28.4	34.4	20.8	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.9	0.0	0.0	2.3	4.1	126.6	10.5	1.5	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	0.0	7.6	0.0	0.0	0.8	7.1	24.6	3.0	5.3	0.0
LnGrp Delay(d),s/veh	21.8	0.0	0.0	25.1	0.0	0.0	37.9	29.5	155.0	44.9	22.3	0.0
LnGrp LOS	C			C			D	C	F	D	C	
Approach Vol, veh/h		276			746			1248			710	
Approach Delay, s/veh		21.8			25.1			84.0			26.1	
Approach LOS		C			C			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.6	31.0		33.7	8.8	35.8		33.7
Change Period (Y+Rc), s	* 6.2	9.5		7.4	4.5	* 9.5		7.4
Max Green Setting (Gmax), s	* 8.4	21.5		16.6	8.0	* 24		38.0
Max Q Clear Time (g_c+I1), s	17.1	23.5		13.4	3.5	12.4		22.8
Green Ext Time (p_c), s	0.0	0.0		1.7	0.0	11.1		3.6

Intersection Summary	
HCM 2010 Ctrl Delay	49.7
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	555	124	18	745	4	166	1	36	0	0	8
Future Volume (veh/h)	0	555	124	18	745	4	166	1	36	0	0	8
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	610	0	20	819	4	182	1	40	0	0	9
Adj No. of Lanes	0	1	1	0	3	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.91	0.91	0.90	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	651	553	28	1241	6	350	1	659	0	0	286
Arrive On Green	0.00	0.35	0.00	0.24	0.24	0.24	0.18	0.18	0.18	0.00	0.00	0.18
Sat Flow, veh/h	0	1863	1583	121	5263	27	1358	7	1583	0	0	1583
Grp Volume(v), veh/h	0	610	0	308	255	280	183	0	40	0	0	9
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1857	1695	1858	1366	0	1583	0	0	1583
Q Serve(g_s), s	0.0	21.6	0.0	10.4	9.3	9.3	8.4	0.0	1.0	0.0	0.0	0.3
Cycle Q Clear(g_c), s	0.0	21.6	0.0	10.4	9.3	9.3	8.8	0.0	1.0	0.0	0.0	0.3
Prop In Lane	0.00		1.00	0.07		0.01	0.99		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	0	651	553	438	400	438	351	0	659	0	0	286
V/C Ratio(X)	0.00	0.94	0.00	0.70	0.64	0.64	0.52	0.00	0.06	0.00	0.00	0.03
Avail Cap(c_a), veh/h	0	663	564	536	489	536	818	0	1185	0	0	812
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)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.5	0.0	23.9	23.5	23.5	26.7	0.0	11.9	0.0	0.0	23.1
Incr Delay (d2), s/veh	0.0	20.4	0.0	3.9	2.6	2.4	1.7	0.0	0.1	0.0	0.0	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	0.0	14.7	0.0	5.8	4.6	5.0	3.4	0.0	0.6	0.0	0.0	0.1
LnGrp Delay(d),s/veh	0.0	41.9	0.0	27.7	26.1	25.9	28.4	0.0	12.0	0.0	0.0	23.1
LnGrp LOS		D		C	C	C	C		B			C
Approach Vol, veh/h		610			843			223			9	
Approach Delay, s/veh		41.9			26.6			25.4			23.1	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		29.5		16.9		21.8		16.9
Change Period (Y+Rc), s		5.7		4.6		5.7		4.6
Max Green Setting (Gmax), s		24.3		35.0		19.7		35.0
Max Q Clear Time (g_c+I1), s		23.6		10.8		12.4		2.3
Green Ext Time (p_c), s		0.2		1.7		3.7		1.9

Intersection Summary		
HCM 2010 Ctrl Delay		32.0
HCM 2010 LOS		C

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	252	21	0	128
Future Vol, veh/h	0	0	252	21	0	128
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	274	23	0	139

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	424	285	0	0	297	0
Stage 1	285	-	-	-	-	-
Stage 2	139	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	587	754	-	-	1264	-
Stage 1	763	-	-	-	-	-
Stage 2	888	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	587	754	-	-	1264	-
Mov Cap-2 Maneuver	587	-	-	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	888	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1264	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	132.9

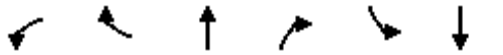
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	155	348	126	50	318	270
Future Vol, veh/h	155	348	126	50	318	270
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	65	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	96	86	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	167	374	131	58	346	293

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	189	0	-	0	868	160
Stage 1	-	-	-	-	160	-
Stage 2	-	-	-	-	708	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1385	-	-	-	~ 323	885
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	488	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1385	-	-	-	~ 284	885
Mov Cap-2 Maneuver	-	-	-	-	~ 284	-
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	429	-

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	282.7
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1385	-	-	-	413
HCM Lane V/C Ratio	0.12	-	-	-	1.548
HCM Control Delay (s)	8	-	-	-	282.7
HCM Lane LOS	A	-	-	-	F
HCM 95th %tile Q(veh)	0.4	-	-	-	35.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	336	56	834	481	40	1207
Future Volume (veh/h)	336	56	834	481	40	1207
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	378	63	897	517	42	1257
Adj No. of Lanes	0	0	2	1	1	1
Peak Hour Factor	0.89	0.89	0.93	0.93	0.96	0.96
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	343	57	2187	979	54	1264
Arrive On Green	0.23	0.23	0.62	0.62	0.03	0.68
Sat Flow, veh/h	1492	249	3632	1583	1774	1863
Grp Volume(v), veh/h	442	0	897	517	42	1257
Grp Sat Flow(s),veh/h/ln	1744	0	1770	1583	1774	1863
Q Serve(g_s), s	32.2	0.0	18.2	25.9	3.3	93.4
Cycle Q Clear(g_c), s	32.2	0.0	18.2	25.9	3.3	93.4
Prop In Lane	0.86	0.14		1.00	1.00	
Lane Grp Cap(c), veh/h	401	0	2187	979	54	1264
V/C Ratio(X)	1.10	0.00	0.41	0.53	0.78	0.99
Avail Cap(c_a), veh/h	401	0	2187	979	85	1264
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.9	0.0	13.7	15.2	67.4	22.2
Incr Delay (d2), s/veh	75.3	0.0	0.6	2.0	38.6	24.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.9	0.0	9.0	11.8	2.2	55.9
LnGrp Delay(d),s/veh	129.2	0.0	14.2	17.2	106.0	46.3
LnGrp LOS	F		B	B	F	D
Approach Vol, veh/h	442		1414			1299
Approach Delay, s/veh	129.2		15.3			48.2
Approach LOS	F		B			D

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.5	93.5				102.0		38.0
Change Period (Y+Rc), s	* 4.2	7.0				7.0		5.8
Max Green Setting (Gmax), s	* 6.7	84.1				95.0		32.2
Max Q Clear Time (g_c+I1), s	5.3	27.9				95.4		34.2
Green Ext Time (p_c), s	0.0	55.8				0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	44.8
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	143	25	578	93	129	13	859	630	224	1010	94
Future Volume (veh/h)	114	143	25	578	93	129	13	859	630	224	1010	94
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	142	179	0	658	0	0	14	934	685	246	1110	0
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	2	1
Peak Hour Factor	0.80	0.80	0.80	0.98	0.98	0.98	0.92	0.92	0.92	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	270	296	508	771	0	508	44	1387	621	182	1711	765
Arrive On Green	0.32	0.32	0.00	0.32	0.00	0.00	0.02	0.39	0.39	0.10	0.48	0.00
Sat Flow, veh/h	713	922	1583	2401	0	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	321	0	0	658	0	0	14	934	685	246	1110	0
Grp Sat Flow(s),veh/h/ln	1635	0	1583	1200	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	20.2	0.0	0.0	19.4	0.0	0.0	1.0	27.2	49.0	12.8	29.5	0.0
Cycle Q Clear(g_c), s	20.7	0.0	0.0	40.1	0.0	0.0	1.0	27.2	49.0	12.8	29.5	0.0
Prop In Lane	0.44		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	566	0	508	771	0	508	44	1387	621	182	1711	765
V/C Ratio(X)	0.57	0.00	0.00	0.85	0.00	0.00	0.32	0.67	1.10	1.35	0.65	0.00
Avail Cap(c_a), veh/h	566	0	508	771	0	508	114	1387	621	182	1711	765
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.8	0.0	0.0	44.2	0.0	0.0	59.9	31.4	38.0	56.1	24.3	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.0	9.2	0.0	0.0	4.1	2.6	67.9	191.0	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.0	0.0	12.3	0.0	0.0	0.5	13.7	33.1	15.9	14.8	0.0
LnGrp Delay(d),s/veh	37.5	0.0	0.0	53.5	0.0	0.0	64.1	34.0	105.9	247.1	26.2	0.0
LnGrp LOS	D			D			E	C	F	F	C	
Approach Vol, veh/h		321			658			1633			1356	
Approach Delay, s/veh		37.5			53.5			64.4			66.3	
Approach LOS		D			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.0	58.5		47.5	7.6	69.9		47.5
Change Period (Y+Rc), s	* 6.2	9.5		7.4	4.5	* 9.5		7.4
Max Green Setting (Gmax), s	* 13	49.0		40.1	8.0	* 56		40.1
Max Q Clear Time (g_c+I1), s	14.8	51.0		22.7	3.0	31.5		42.1
Green Ext Time (p_c), s	0.0	0.0		5.5	0.0	24.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	61.1
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	809	175	42	681	7	141	4	54	0	2	8
Future Volume (veh/h)	0	809	175	42	681	7	141	4	54	0	2	8
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	889	0	46	748	8	155	4	59	0	2	9
Adj No. of Lanes	0	1	1	0	3	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.92	0.91	0.92	0.91	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	921	783	61	1061	12	260	5	566	0	44	197
Arrive On Green	0.00	0.49	0.00	0.21	0.21	0.21	0.15	0.15	0.15	0.00	0.15	0.15
Sat Flow, veh/h	0	1863	1583	291	5050	56	1317	34	1583	0	296	1332
Grp Volume(v), veh/h	0	889	0	292	243	266	159	0	59	0	0	11
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1848	1695	1853	1351	0	1583	0	0	1628
Q Serve(g_s), s	0.0	49.9	0.0	16.0	14.3	14.3	11.8	0.0	2.7	0.0	0.0	0.6
Cycle Q Clear(g_c), s	0.0	49.9	0.0	16.0	14.3	14.3	12.5	0.0	2.7	0.0	0.0	0.6
Prop In Lane	0.00		1.00	0.16		0.03	0.97		1.00	0.00		0.82
Lane Grp Cap(c), veh/h	0	921	783	388	356	389	265	0	566	0	0	240
V/C Ratio(X)	0.00	0.97	0.00	0.75	0.68	0.68	0.60	0.00	0.10	0.00	0.00	0.05
Avail Cap(c_a), veh/h	0	953	810	490	450	492	513	0	845	0	0	527
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)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	26.5	0.0	40.1	39.4	39.4	44.9	0.0	23.2	0.0	0.0	39.6
Incr Delay (d2), s/veh	0.0	20.6	0.0	5.9	3.9	3.6	3.1	0.0	0.1	0.0	0.0	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	0.0	30.7	0.0	8.8	7.1	7.7	4.8	0.0	1.6	0.0	0.0	0.3
LnGrp Delay(d),s/veh	0.0	47.1	0.0	46.0	43.3	43.0	48.0	0.0	23.3	0.0	0.0	39.7
LnGrp LOS		D		D	D	D	D		C			D
Approach Vol, veh/h		889			802			218			11	
Approach Delay, s/veh		47.1			44.1			41.3			39.7	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		59.2		20.6		28.4		20.6
Change Period (Y+Rc), s		5.7		4.6		5.7		4.6
Max Green Setting (Gmax), s		55.3		35.0		28.7		35.0
Max Q Clear Time (g_c+I1), s		51.9		14.5		18.0		2.6
Green Ext Time (p_c), s		1.5		1.5		4.7		1.8

Intersection Summary	
HCM 2010 Ctrl Delay	45.2
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	0	126	64	0	571
Future Vol, veh/h	21	0	126	64	0	571
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	0	137	70	0	621

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	793	172	0	0	-	-
Stage 1	172	-	-	-	-	-
Stage 2	621	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	358	872	-	-	0	-
Stage 1	858	-	-	-	0	-
Stage 2	536	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	358	872	-	-	-	-
Mov Cap-2 Maneuver	358	-	-	-	-	-
Stage 1	858	-	-	-	-	-
Stage 2	536	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	358	-
HCM Lane V/C Ratio	-	-	0.064	-
HCM Control Delay (s)	-	-	15.7	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.2	-

APPENDIX D – Cumulative Projects Information

8.0 CUMULATIVE PROJECTS

8.1 Summary of Cumulative Projects Trips

Cumulative projects are other projects in the study area that will add traffic to the local circulation system in the near future. LLG coordinated with the County of San Diego staff regarding the cumulative projects in the study area.

Table 8–1 contains the list of cumulative projects. ***Figure 8–1*** shows the location of each cumulative project. ***Figure 8–2*** shows the cumulative project traffic assignment.

TABLE 8–1
CUMULATIVE PROJECTS

Project Name	Type of Development	Project Size	ADT
1. Lake Jennings Marketplace (TM 5590)	Shopping Center Gasoline w/ Food Mart and Car Wash	76,100 SF 12 pumps	4,683
2. Foothills Christian School (MUP72-650)	Elementary	3,000 SF	40
3. Ashwood II Condo conversion (TM 5356)	Condominium	9 DU	72
4. Greenhills Ranch (TM 5140,TM 5563)	Estate Residential	60 DU	720
5. Adlai Ranch Estates (TM 5186)	Single Family Detached	21 DU	210
6. Rios Canyon Ranch (TM 5218)	Estate Residential	107 DU	1,284
7. Crest/Dehesa - Lakeside Ranch (TM 5317)	Estate Residential	123 DU	1,476
8. Ashwood I Condo conversion (TM 5376)	Condominium	67 DU	536
9. Settler's Point (TM 5423)	Multi-Family Residential	266 DU	2,128
10. Carroll (TMP 20530)	Multi-Family Residential	35 DU	207
11. 7-11 Inc. (SP00-003)	Convenience Market (w/ gasoline pumps)	1 space	400
12. Currier (SP03-031)	Office Warehouse	3,000 SF 3,000 SF	66
13. Payton Hardware (SP98-011)	Hardware Store	10 TSF	600
14. Lakeside Tractor Supply Co. (MUP 14-015)	Specialty Store Storage/Display	19,169 SF 17,958 SF	857
15. P&P Saksa (TPM 20128)	Single Family Detached	4 DU	36
16. Crestlake (TM 5082)	Single Family Detached	84 DU	840
17. Lakeside Burger King (SP 97-041)	Fastfood (w/ drive-thru)	3,000 SF	2,080
18. Ortega Construction (SP 98-031)	Office	1,000 SF	28
19. Glenview Glass and Screen (SP 98-019)	Office	3,000 SF	50
20. Rieken (SP 99-035)	Office	7,000 SF	136

TABLE 8–1
CUMULATIVE PROJECTS

Project Name	Type of Development	Project Size	ADT
21. Magnolia Courts (TM 5541)	Single Family Detached	21 DU	210
22. High Meadow Ranch (TM 3702)	Single Family Detached	145 DU	1,450
23. TM 5286	Single Family Detached	13 DU	130
24. TM 5191	Single Family Detached	32 DU	320
25. Blossom Valley Ranch (TM 5197)	Single Family Detached	25 DU	250
26. TM 5539	Single Family Detached	8 DU	80
27. Oakmont II (TM 5421)	Single Family Detached	20 DU	200
28. Flinn Springs Estates (TM 5470)	Single Family Detached	15 DU	150
29. Oak Creek RV (MUP 85-079)	Campground/RV Park	84 spaces	336
30. Sunny Ridge Estates (TM 5436)	Single Family Detached	13 DU	130
31. Eniss Sand Mine	Trucks Staff Vehicles	52 trucks 11 person	251
32. Turner Sand Mine	Trucks Staff Vehicles	61 trucks 8 person	276
33. Fanita Ranch	Residential	3,000 DU	30,000
34. Braverman Drive Residential	Single Family Detached	83 DU	830

General Notes:

1. LLG coordinated with the County of San Diego in June 2015 regarding the above cumulative project information.
2. DU – dwelling unit.
3. SF – square feet.
4. ADT – average daily traffic

LEGEND:

1. Lake Jennings Marketplace
2. Foothills Christian School
3. Ashwood II Condo Conversion
4. Greenhills Ranch
5. Adlai Canyon Ranch
6. Rios Canyon Ranch
7. Crest / Dehesa
8. Ashwood I Condo Conversion
9. Settler's Point
10. Carroll
11. 7-11 Inc.
12. Currier
13. Payton Hardware
14. Lakeside Tractor Suply Co.
15. P&P Saksa
16. Crestlake
17. Lakeside Burger King
18. Ortega Construction
19. Glenview Glass & Screen
20. Rieken
21. Magnolia Courts
22. High Meadow Ranch (TM 3702)
23. TM 5286
24. TM 5191
25. Blossom Valley Ranch
26. TM 5539
27. Oakmont II (TM 5421)
28. Flinn Springs Estates (TM 5470)
29. Oak Creek RV
30. Sunny Ridge Estates (TM 5436)
31. Eniss Sand Mine
32. Turner Sand Mine
33. Fanita Ranch
34. Braverman Drive Residential

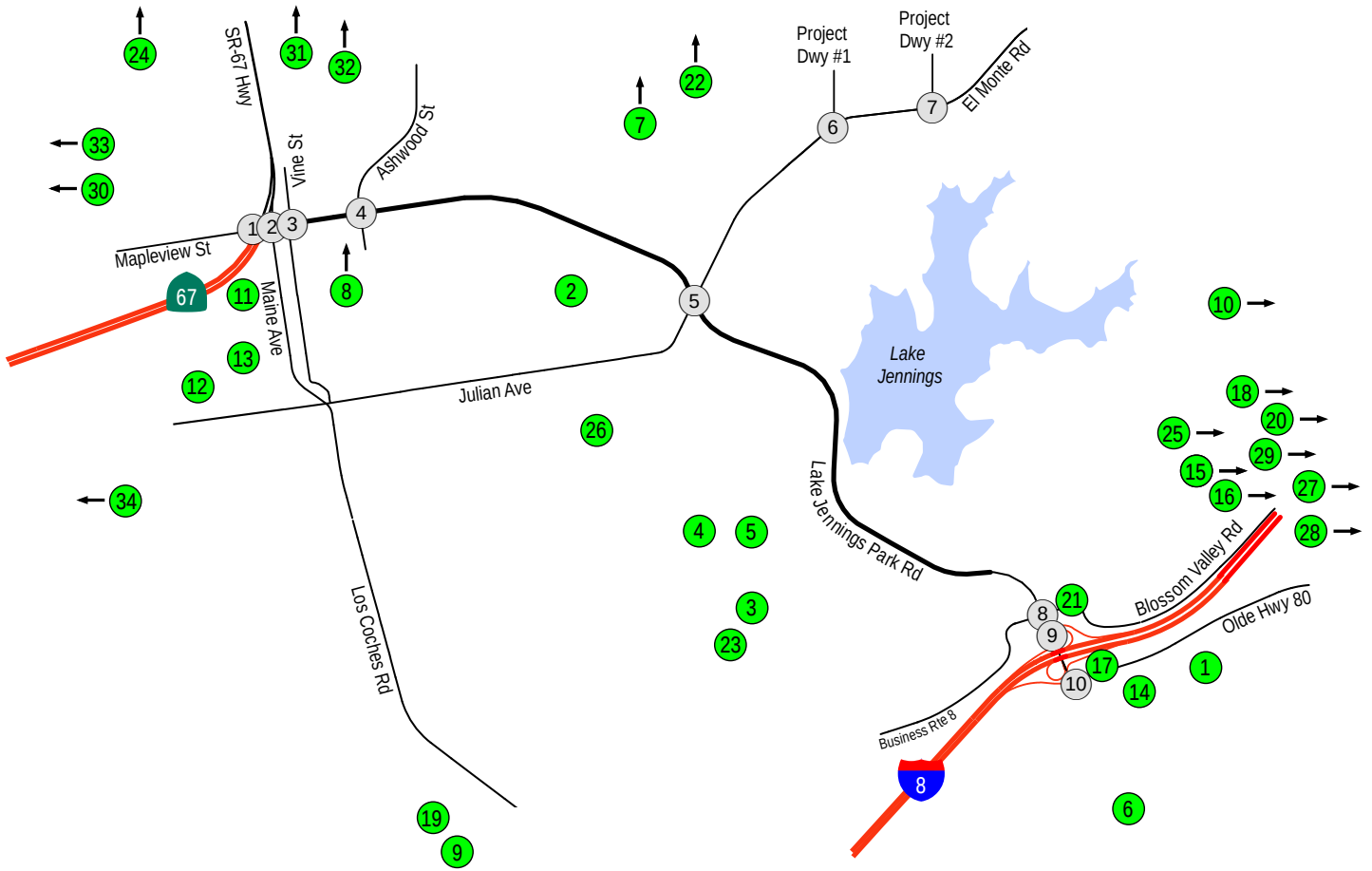


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Figure 8-1

Cumulative Projects Location Map

EL MONTE SAND MINING PROJECT

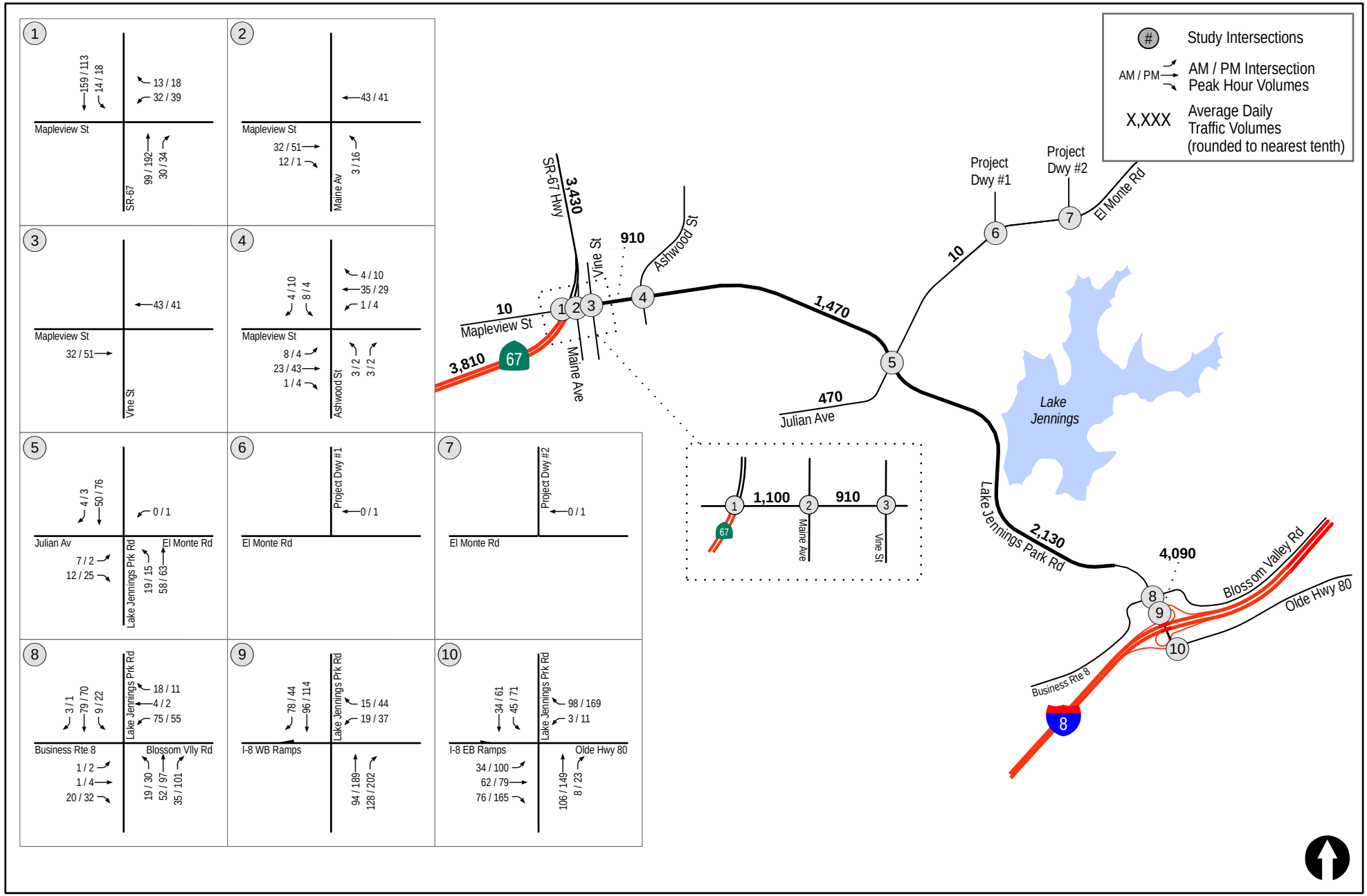

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Figure 8-2

Cumulative Projects Traffic Volumes

EL MONTE SAND MINING PROJECT

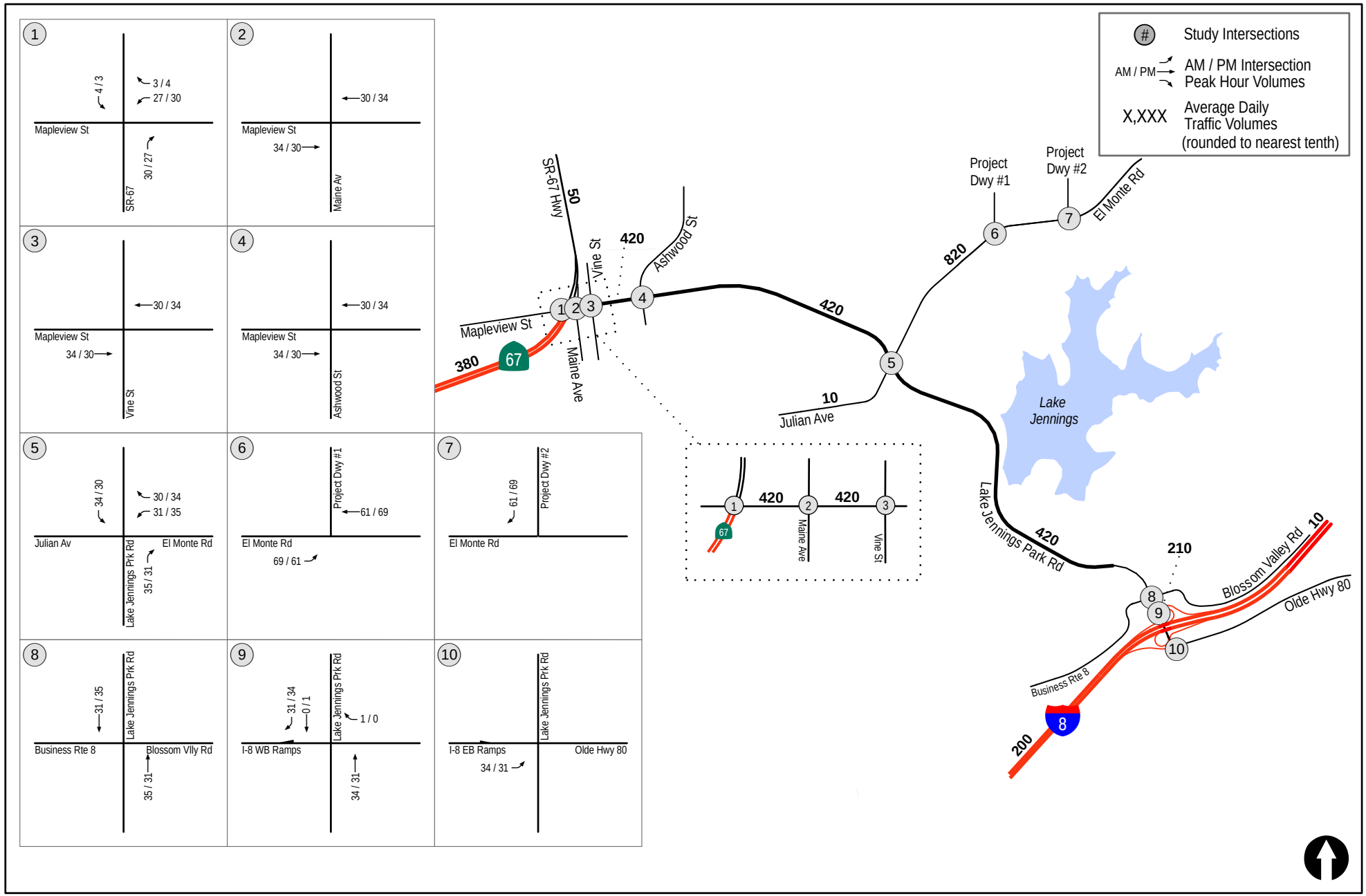

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Figure 7-5

Total Project Traffic Volumes

El Monte Sand Mining Project

APPENDIX E – Peak Hour Intersection Capacity Worksheets – Cumulative Conditions

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	66	110	191	208	36	91
Future Vol, veh/h	66	110	191	208	36	91
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	65	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	67	67	88	88	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	99	164	217	236	39	98

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	453	0	-	0	696	335
Stage 1	-	-	-	-	335	-
Stage 2	-	-	-	-	361	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1108	-	-	-	408	707
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	705	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1108	-	-	-	372	707
Mov Cap-2 Maneuver	-	-	-	-	372	-
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	642	-

Approach	EB	WB	SB
HCM Control Delay, s	3.2	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1108	-	-	-	563
HCM Lane V/C Ratio	0.089	-	-	-	0.243
HCM Control Delay (s)	8.6	-	-	-	13.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	219	63	1570	153	44	761
Future Volume (veh/h)	219	63	1570	153	44	761
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	258	67	1670	163	51	875
Adj No. of Lanes	0	0	1	1	1	1
Peak Hour Factor	0.85	0.85	0.94	0.94	0.87	0.87
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	221	57	1285	1092	63	1403
Arrive On Green	0.16	0.16	0.69	0.69	0.04	0.75
Sat Flow, veh/h	1370	356	1863	1583	1774	1863
Grp Volume(v), veh/h	326	0	1670	163	51	875
Grp Sat Flow(s),veh/h/ln	1731	0	1863	1583	1774	1863
Q Serve(g_s), s	24.2	0.0	103.5	5.3	4.3	32.8
Cycle Q Clear(g_c), s	24.2	0.0	103.5	5.3	4.3	32.8
Prop In Lane	0.79	0.21		1.00	1.00	
Lane Grp Cap(c), veh/h	279	0	1285	1093	63	1403
V/C Ratio(X)	1.17	0.00	1.30	0.15	0.81	0.62
Avail Cap(c_a), veh/h	279	0	1285	1093	63	1403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.9	0.0	23.3	8.0	71.9	8.6
Incr Delay (d2), s/veh	106.8	0.0	140.5	0.3	58.9	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.9	0.0	102.7	2.4	3.1	17.3
LnGrp Delay(d),s/veh	169.7	0.0	163.8	8.3	130.7	10.7
LnGrp LOS	F		F	A	F	B
Approach Vol, veh/h	326		1833			926
Approach Delay, s/veh	169.7		149.9			17.3
Approach LOS	F		F			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.5	110.5				120.0		30.0
Change Period (Y+Rc), s	* 4.2	7.0				7.0		5.8
Max Green Setting (Gmax), s	* 5.3	103.5				113.0		24.2
Max Q Clear Time (g_c+I1), s	6.3	105.5				34.8		26.2
Green Ext Time (p_c), s	0.0	0.0				78.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	112.2
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	65	29	673	90	146	34	724	572	128	702	52
Future Volume (veh/h)	142	65	29	673	90	146	34	724	572	128	702	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	189	87	0	811	0	0	36	762	602	139	763	0
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	2	1
Peak Hour Factor	0.75	0.75	0.75	0.91	0.91	0.91	0.95	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	438	175	561	1093	0	561	96	991	443	167	1204	539
Arrive On Green	0.35	0.35	0.00	0.35	0.00	0.00	0.05	0.28	0.28	0.09	0.34	0.00
Sat Flow, veh/h	1037	495	1583	2610	0	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	276	0	0	811	0	0	36	762	602	139	763	0
Grp Sat Flow(s),veh/h/ln	1532	0	1583	1305	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	11.7	0.0	0.0	12.8	0.0	0.0	1.7	16.8	23.8	6.5	15.4	0.0
Cycle Q Clear(g_c), s	12.0	0.0	0.0	24.8	0.0	0.0	1.7	16.8	23.8	6.5	15.4	0.0
Prop In Lane	0.68		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	614	0	561	1093	0	561	96	991	443	167	1204	539
V/C Ratio(X)	0.45	0.00	0.00	0.74	0.00	0.00	0.38	0.77	1.36	0.83	0.63	0.00
Avail Cap(c_a), veh/h	614	0	561	1336	0	708	167	991	443	167	1204	539
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.6	0.0	0.0	25.7	0.0	0.0	38.8	28.1	30.6	37.8	23.6	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	1.8	0.0	0.0	2.4	5.7	175.2	28.6	2.5	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.0	0.0	9.2	0.0	0.0	0.9	8.9	31.9	4.5	7.9	0.0
LnGrp Delay(d),s/veh	22.3	0.0	0.0	27.5	0.0	0.0	41.3	33.8	205.8	66.5	26.1	0.0
LnGrp LOS	C			C			D	C	F	E	C	
Approach Vol, veh/h		276			811			1400			902	
Approach Delay, s/veh		22.3			27.5			107.9			32.3	
Approach LOS		C			C			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.2	33.3		37.5	9.1	38.4		37.5
Change Period (Y+Rc), s	* 6.2	9.5		7.4	4.5	* 9.5		7.4
Max Green Setting (Gmax), s	* 8	23.8		14.7	8.0	* 26		38.0
Max Q Clear Time (g_c+I1), s	12.5	25.8		14.0	3.7	17.4		26.8
Green Ext Time (p_c), s	0.0	0.0		0.4	0.0	8.4		3.3

Intersection Summary		
HCM 2010 Ctrl Delay	61.6	
HCM 2010 LOS	E	

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	621	136	18	815	4	169	1	36	0	0	8
Future Volume (veh/h)	0	621	136	18	815	4	169	1	36	0	0	8
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	682	0	20	896	4	186	1	40	0	0	20
Adj No. of Lanes	0	1	1	0	3	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.40	0.40	0.40
Percent Heavy Veh, %	0	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	745	633	25	1204	6	323	1	651	0	0	290
Arrive On Green	0.00	0.40	0.00	0.23	0.23	0.23	0.18	0.18	0.18	0.00	0.00	0.18
Sat Flow, veh/h	0	1863	1583	111	5276	24	1302	7	1583	0	0	1583
Grp Volume(v), veh/h	0	682	0	336	279	306	187	0	40	0	0	20
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1857	1695	1858	1309	0	1583	0	0	1583
Q Serve(g_s), s	0.0	29.3	0.0	14.4	12.9	12.9	10.9	0.0	1.3	0.0	0.0	0.9
Cycle Q Clear(g_c), s	0.0	29.3	0.0	14.4	12.9	12.9	11.8	0.0	1.3	0.0	0.0	0.9
Prop In Lane	0.00		1.00	0.06		0.01	0.99		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	0	745	633	424	387	424	325	0	651	0	0	290
V/C Ratio(X)	0.00	0.92	0.00	0.79	0.72	0.72	0.58	0.00	0.06	0.00	0.00	0.07
Avail Cap(c_a), veh/h	0	940	799	467	427	468	645	0	1016	0	0	655
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)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	24.1	0.0	30.8	30.2	30.2	33.5	0.0	15.0	0.0	0.0	28.6
Incr Delay (d2), s/veh	0.0	10.3	0.0	9.0	6.0	5.5	2.3	0.0	0.1	0.0	0.0	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	0.0	17.1	0.0	8.4	6.7	7.3	4.4	0.0	0.8	0.0	0.0	0.4
LnGrp Delay(d),s/veh	0.0	34.3	0.0	39.8	36.1	35.6	35.8	0.0	15.1	0.0	0.0	28.7
LnGrp LOS		C		D	D	D	D		B			C
Approach Vol, veh/h		682			920			227			20	
Approach Delay, s/veh		34.3			37.3			32.1			28.7	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		39.5		20.1		25.0		20.1
Change Period (Y+Rc), s		5.7		4.6		5.7		4.6
Max Green Setting (Gmax), s		42.7		35.0		21.3		35.0
Max Q Clear Time (g_c+I1), s		31.3		13.8		16.4		2.9
Green Ext Time (p_c), s		2.5		1.8		2.9		2.0

Intersection Summary		
HCM 2010 Ctrl Delay		35.5
HCM 2010 LOS		D

Intersection	
Int Delay, s/veh	83

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	94	348	126	47	317	250
Future Vol, veh/h	94	348	126	47	317	250
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	65	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	86	86	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	101	374	147	55	345	272

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	201	0	-	0	750	174
Stage 1	-	-	-	-	174	-
Stage 2	-	-	-	-	576	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1371	-	-	-	379	869
Stage 1	-	-	-	-	856	-
Stage 2	-	-	-	-	562	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1371	-	-	-	351	869
Mov Cap-2 Maneuver	-	-	-	-	351	-
Stage 1	-	-	-	-	856	-
Stage 2	-	-	-	-	521	-

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	172.7
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1371	-	-	-	476
HCM Lane V/C Ratio	0.074	-	-	-	1.295
HCM Control Delay (s)	7.8	-	-	-	172.7
HCM Lane LOS	A	-	-	-	F
HCM 95th %tile Q(veh)	0.2	-	-	-	26.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	319	53	1048	430	30	1341
Future Volume (veh/h)	319	53	1048	430	30	1341
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	358	54	1127	462	31	1397
Adj No. of Lanes	0	0	1	1	1	1
Peak Hour Factor	0.89	0.89	0.93	0.93	0.96	0.96
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	326	49	1170	994	46	1278
Arrive On Green	0.22	0.22	0.63	0.63	0.03	0.69
Sat Flow, veh/h	1514	228	1863	1583	1774	1863
Grp Volume(v), veh/h	413	0	1127	462	31	1397
Grp Sat Flow(s),veh/h/ln	1747	0	1863	1583	1774	1863
Q Serve(g_s), s	28.0	0.0	74.1	19.9	2.3	89.2
Cycle Q Clear(g_c), s	28.0	0.0	74.1	19.9	2.3	89.2
Prop In Lane	0.87	0.13		1.00	1.00	
Lane Grp Cap(c), veh/h	376	0	1170	994	46	1278
V/C Ratio(X)	1.10	0.00	0.96	0.46	0.67	1.09
Avail Cap(c_a), veh/h	376	0	1170	994	72	1278
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.0	0.0	22.8	12.7	62.8	20.4
Incr Delay (d2), s/veh	75.4	0.0	18.9	1.6	31.0	54.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.4	0.0	44.0	9.0	1.5	64.8
LnGrp Delay(d),s/veh	126.4	0.0	41.7	14.3	93.8	74.9
LnGrp LOS	F		D	B	F	F
Approach Vol, veh/h	413		1589			1428
Approach Delay, s/veh	126.4		33.7			75.4
Approach LOS	F		C			E

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.6	88.6				96.2		33.8
Change Period (Y+Rc), s	* 4.2	7.0				7.0		5.8
Max Green Setting (Gmax), s	* 5.3	79.7				89.2		28.0
Max Q Clear Time (g_c+I1), s	4.3	76.1				91.2		30.0
Green Ext Time (p_c), s	0.0	3.6				0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	62.2
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	143	25	647	93	141	13	1010	691	242	1109	94
Future Volume (veh/h)	114	143	25	647	93	141	13	1010	691	242	1109	94
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	142	179	0	728	0	0	14	1098	751	266	1219	0
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	2	1
Peak Hour Factor	0.80	0.80	0.80	0.98	0.98	0.98	0.92	0.92	0.92	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	311	356	587	967	0	587	47	978	438	173	1296	580
Arrive On Green	0.37	0.37	0.00	0.37	0.00	0.00	0.03	0.28	0.28	0.10	0.37	0.00
Sat Flow, veh/h	685	959	1583	2401	0	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	321	0	0	728	0	0	14	1098	751	266	1219	0
Grp Sat Flow(s),veh/h/ln	1644	0	1583	1200	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	11.9	0.0	0.0	15.6	0.0	0.0	0.7	25.0	25.0	8.8	30.1	0.0
Cycle Q Clear(g_c), s	13.6	0.0	0.0	29.2	0.0	0.0	0.7	25.0	25.0	8.8	30.1	0.0
Prop In Lane	0.44		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	667	0	587	967	0	587	47	978	438	173	1296	580
V/C Ratio(X)	0.48	0.00	0.00	0.75	0.00	0.00	0.30	1.12	1.72	1.54	0.94	0.00
Avail Cap(c_a), veh/h	667	0	587	1085	0	665	157	978	438	173	1296	580
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.1	0.0	0.0	28.0	0.0	0.0	43.2	32.7	32.7	40.8	27.7	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	2.7	0.0	0.0	3.6	68.6	331.7	270.2	14.3	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	0.0	0.0	9.0	0.0	0.0	0.4	21.4	51.1	17.2	17.3	0.0
LnGrp Delay(d),s/veh	22.9	0.0	0.0	30.7	0.0	0.0	46.8	101.3	364.4	311.0	42.0	0.0
LnGrp LOS	C			C			D	F	F	F	D	
Approach Vol, veh/h		321			728			1863			1485	
Approach Delay, s/veh		22.9			30.7			206.9			90.2	
Approach LOS		C			C			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.0	34.5		40.9	6.9	42.6		40.9
Change Period (Y+Rc), s	* 6.2	9.5		7.4	4.5	* 9.5		7.4
Max Green Setting (Gmax), s	* 8.8	25.0		22.7	8.0	* 28		38.0
Max Q Clear Time (g_c+I1), s	10.8	27.0		15.6	2.7	32.1		31.2
Green Ext Time (p_c), s	0.0	0.0		3.4	0.0	0.0		2.3

Intersection Summary	
HCM 2010 Ctrl Delay	124.9
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	887	176	42	746	7	157	4	54	0	2	8
Future Volume (veh/h)	0	887	176	42	746	7	157	4	54	0	2	8
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	954	0	48	848	8	199	5	68	0	2	10
Adj No. of Lanes	0	1	1	0	3	0	0	1	1	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.88	0.88	0.88	0.79	0.79	0.79	0.83	0.83	0.83
Percent Heavy Veh, %	0	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	976	830	48	913	9	285	6	561	0	47	237
Arrive On Green	0.00	0.52	0.00	0.18	0.18	0.18	0.17	0.17	0.17	0.00	0.17	0.17
Sat Flow, veh/h	0	1863	1583	270	5079	49	1323	33	1583	0	271	1353
Grp Volume(v), veh/h	0	954	0	329	274	300	204	0	68	0	0	12
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1849	1695	1854	1356	0	1583	0	0	1624
Q Serve(g_s), s	0.0	65.9	0.0	23.4	20.9	20.9	18.6	0.0	3.8	0.0	0.0	0.8
Cycle Q Clear(g_c), s	0.0	65.9	0.0	23.4	20.9	20.9	19.4	0.0	3.8	0.0	0.0	0.8
Prop In Lane	0.00		1.00	0.15		0.03	0.98		1.00	0.00		0.83
Lane Grp Cap(c), veh/h	0	976	830	332	305	333	291	0	561	0	0	284
V/C Ratio(X)	0.00	0.98	0.00	0.99	0.90	0.90	0.70	0.00	0.12	0.00	0.00	0.04
Avail Cap(c_a), veh/h	0	993	844	332	305	333	418	0	705	0	0	431
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)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	30.6	0.0	54.0	53.0	53.0	53.3	0.0	28.7	0.0	0.0	45.2
Incr Delay (d2), s/veh	0.0	22.8	0.0	46.9	28.4	26.7	4.3	0.0	0.1	0.0	0.0	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	0.0	39.8	0.0	16.3	12.2	13.2	7.6	0.0	2.2	0.0	0.0	0.4
LnGrp Delay(d),s/veh	0.0	53.4	0.0	100.9	81.3	79.6	57.6	0.0	28.8	0.0	0.0	45.3
LnGrp LOS		D		F	F	E	E		C			D
Approach Vol, veh/h		954			904			272			12	
Approach Delay, s/veh		53.4			87.9			50.4			45.3	
Approach LOS		D			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		74.8		27.7		29.4		27.7
Change Period (Y+Rc), s		5.7		4.6		5.7		4.6
Max Green Setting (Gmax), s		70.3		35.0		23.7		35.0
Max Q Clear Time (g_c+I1), s		67.9		21.4		25.4		2.8
Green Ext Time (p_c), s		1.2		1.6		0.0		2.3

Intersection Summary	
HCM 2010 Ctrl Delay	67.5
HCM 2010 LOS	E

APPENDIX F – Peak Hour Intersection Capacity Worksheets – Cumulative Plus Project Conditions

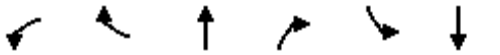
Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	86	110	191	209	36	91
Future Vol, veh/h	86	110	191	209	36	91
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	65	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	67	67	88	88	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	128	164	217	238	39	98

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	455	0	-	0	757	336
Stage 1	-	-	-	-	336	-
Stage 2	-	-	-	-	421	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1106	-	-	-	375	706
Stage 1	-	-	-	-	724	-
Stage 2	-	-	-	-	662	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1106	-	-	-	332	706
Mov Cap-2 Maneuver	-	-	-	-	332	-
Stage 1	-	-	-	-	724	-
Stage 2	-	-	-	-	585	-

Approach	EB	WB	SB
HCM Control Delay, s	3.8	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1106	-	-	-	535
HCM Lane V/C Ratio	0.116	-	-	-	0.255
HCM Control Delay (s)	8.7	-	-	-	14
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.4	-	-	-	1



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	219	63	1570	170	47	761
Future Volume (veh/h)	219	63	1570	170	47	761
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	258	67	1670	181	54	875
Adj No. of Lanes	0	0	1	1	1	1
Peak Hour Factor	0.85	0.85	0.94	0.94	0.87	0.87
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	226	59	1279	1087	63	1397
Arrive On Green	0.16	0.16	0.69	0.69	0.04	0.75
Sat Flow, veh/h	1370	356	1863	1583	1774	1863
Grp Volume(v), veh/h	326	0	1670	181	54	875
Grp Sat Flow(s),veh/h/ln	1731	0	1863	1583	1774	1863
Q Serve(g_s), s	24.7	0.0	103.0	6.1	4.5	33.2
Cycle Q Clear(g_c), s	24.7	0.0	103.0	6.1	4.5	33.2
Prop In Lane	0.79	0.21		1.00	1.00	
Lane Grp Cap(c), veh/h	285	0	1279	1087	63	1397
V/C Ratio(X)	1.14	0.00	1.31	0.17	0.86	0.63
Avail Cap(c_a), veh/h	285	0	1279	1087	63	1397
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.7	0.0	23.5	8.3	72.0	8.8
Incr Delay (d2), s/veh	97.8	0.0	143.3	0.3	71.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.5	0.0	103.1	2.7	3.5	17.6
LnGrp Delay(d),s/veh	160.4	0.0	166.8	8.6	143.0	11.0
LnGrp LOS	F		F	A	F	B
Approach Vol, veh/h	326		1851			929
Approach Delay, s/veh	160.4		151.3			18.6
Approach LOS	F		F			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.5	110.0				119.5		30.5
Change Period (Y+Rc), s	* 4.2	7.0				7.0		5.8
Max Green Setting (Gmax), s	* 5.3	103.0				112.5		24.7
Max Q Clear Time (g_c+I1), s	6.5	105.0				35.2		26.7
Green Ext Time (p_c), s	0.0	0.0				77.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	112.6
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	65	29	673	90	149	34	738	572	128	702	52
Future Volume (veh/h)	142	65	29	673	90	149	34	738	572	128	702	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	189	87	0	811	0	0	36	777	602	139	763	0
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	2	1
Peak Hour Factor	0.75	0.75	0.75	0.91	0.91	0.91	0.95	0.95	0.95	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	438	175	561	1093	0	561	96	991	443	167	1204	539
Arrive On Green	0.35	0.35	0.00	0.35	0.00	0.00	0.05	0.28	0.28	0.09	0.34	0.00
Sat Flow, veh/h	1037	495	1583	2610	0	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	276	0	0	811	0	0	36	777	602	139	763	0
Grp Sat Flow(s),veh/h/ln	1532	0	1583	1305	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	11.7	0.0	0.0	12.8	0.0	0.0	1.7	17.2	23.8	6.5	15.4	0.0
Cycle Q Clear(g_c), s	12.0	0.0	0.0	24.8	0.0	0.0	1.7	17.2	23.8	6.5	15.4	0.0
Prop In Lane	0.68		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	614	0	561	1093	0	561	96	991	443	167	1204	539
V/C Ratio(X)	0.45	0.00	0.00	0.74	0.00	0.00	0.38	0.78	1.36	0.83	0.63	0.00
Avail Cap(c_a), veh/h	614	0	561	1336	0	708	167	991	443	167	1204	539
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.6	0.0	0.0	25.7	0.0	0.0	38.8	28.2	30.6	37.8	23.6	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	1.8	0.0	0.0	2.4	6.2	175.2	28.6	2.5	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.0	0.0	9.2	0.0	0.0	0.9	9.3	31.9	4.5	7.9	0.0
LnGrp Delay(d),s/veh	22.3	0.0	0.0	27.5	0.0	0.0	41.3	34.4	205.8	66.5	26.1	0.0
LnGrp LOS	C			C			D	C	F	E	C	
Approach Vol, veh/h		276			811			1415			902	
Approach Delay, s/veh		22.3			27.5			107.5			32.3	
Approach LOS		C			C			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.2	33.3		37.5	9.1	38.4		37.5
Change Period (Y+Rc), s	* 6.2	9.5		7.4	4.5	* 9.5		7.4
Max Green Setting (Gmax), s	* 8	23.8		14.7	8.0	* 26		38.0
Max Q Clear Time (g_c+I1), s	19.5	25.8		14.0	3.7	17.4		26.8
Green Ext Time (p_c), s	0.0	0.0		0.4	0.0	8.4		3.3

Intersection Summary	
HCM 2010 Ctrl Delay	61.6
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	621	136	18	818	4	169	1	36	0	0	8
Future Volume (veh/h)	0	621	136	18	818	4	169	1	36	0	0	8
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	682	0	20	899	4	186	1	40	0	0	20
Adj No. of Lanes	0	1	1	0	3	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.40	0.40	0.40
Percent Heavy Veh, %	0	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	744	633	25	1205	6	323	1	651	0	0	290
Arrive On Green	0.00	0.40	0.00	0.23	0.23	0.23	0.18	0.18	0.18	0.00	0.00	0.18
Sat Flow, veh/h	0	1863	1583	110	5276	24	1302	7	1583	0	0	1583
Grp Volume(v), veh/h	0	682	0	337	280	307	187	0	40	0	0	20
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1857	1695	1858	1309	0	1583	0	0	1583
Q Serve(g_s), s	0.0	29.4	0.0	14.5	12.9	12.9	10.9	0.0	1.3	0.0	0.0	0.9
Cycle Q Clear(g_c), s	0.0	29.4	0.0	14.5	12.9	12.9	11.8	0.0	1.3	0.0	0.0	0.9
Prop In Lane	0.00		1.00	0.06		0.01	0.99		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	0	744	633	424	387	424	324	0	651	0	0	290
V/C Ratio(X)	0.00	0.92	0.00	0.79	0.72	0.72	0.58	0.00	0.06	0.00	0.00	0.07
Avail Cap(c_a), veh/h	0	939	798	467	426	467	644	0	1016	0	0	654
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)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	24.1	0.0	30.8	30.2	30.2	33.5	0.0	15.1	0.0	0.0	28.6
Incr Delay (d2), s/veh	0.0	10.3	0.0	9.1	6.0	5.5	2.3	0.0	0.1	0.0	0.0	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	0.0	17.1	0.0	8.5	6.7	7.3	4.4	0.0	0.8	0.0	0.0	0.4
LnGrp Delay(d),s/veh	0.0	34.4	0.0	39.9	36.2	35.7	35.8	0.0	15.1	0.0	0.0	28.8
LnGrp LOS		C		D	D	D	D		B			C
Approach Vol, veh/h		682			923			227			20	
Approach Delay, s/veh		34.4			37.4			32.2			28.8	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		39.6		20.1		25.0		20.1
Change Period (Y+Rc), s		5.7		4.6		5.7		4.6
Max Green Setting (Gmax), s		42.7		35.0		21.3		35.0
Max Q Clear Time (g_c+I1), s		31.4		13.8		16.5		2.9
Green Ext Time (p_c), s		2.5		1.8		2.9		2.0

Intersection Summary		
HCM 2010 Ctrl Delay		35.6
HCM 2010 LOS		D

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	252	21	0	128
Future Vol, veh/h	0	0	252	21	0	128
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	274	23	0	139

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	424	285	0	0	297	0
Stage 1	285	-	-	-	-	-
Stage 2	139	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	587	754	-	-	1264	-
Stage 1	763	-	-	-	-	-
Stage 2	888	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	587	754	-	-	1264	-
Mov Cap-2 Maneuver	587	-	-	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	888	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1264	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	139.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	155	348	126	50	318	270
Future Vol, veh/h	155	348	126	50	318	270
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	65	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	86	86	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	167	374	147	58	346	293

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	205	0	-	0	884	176
Stage 1	-	-	-	-	176	-
Stage 2	-	-	-	-	708	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1366	-	-	-	~ 316	867
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	488	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1366	-	-	-	~ 277	867
Mov Cap-2 Maneuver	-	-	-	-	~ 277	-
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	428	-

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	299.9
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1366	-	-	-	403
HCM Lane V/C Ratio	0.122	-	-	-	1.586
HCM Control Delay (s)	8	-	-	-	299.9
HCM Lane LOS	A	-	-	-	F
HCM 95th %tile Q(veh)	0.4	-	-	-	36.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	336	56	1048	481	40	1341
Future Volume (veh/h)	336	56	1048	481	40	1341
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	378	57	1127	517	42	1397
Adj No. of Lanes	0	0	1	1	1	1
Peak Hour Factor	0.89	0.89	0.93	0.93	0.96	0.96
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	305	46	1220	1037	54	1329
Arrive On Green	0.20	0.20	0.65	0.65	0.03	0.71
Sat Flow, veh/h	1514	228	1863	1583	1774	1863
Grp Volume(v), veh/h	436	0	1127	517	42	1397
Grp Sat Flow(s),veh/h/ln	1747	0	1863	1583	1774	1863
Q Serve(g_s), s	30.2	0.0	79.3	25.1	3.5	107.0
Cycle Q Clear(g_c), s	30.2	0.0	79.3	25.1	3.5	107.0
Prop In Lane	0.87	0.13		1.00	1.00	
Lane Grp Cap(c), veh/h	352	0	1220	1037	54	1329
V/C Ratio(X)	1.24	0.00	0.92	0.50	0.78	1.05
Avail Cap(c_a), veh/h	352	0	1220	1037	64	1329
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.9	0.0	22.6	13.3	72.2	21.5
Incr Delay (d2), s/veh	129.9	0.0	13.0	1.7	49.3	39.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	27.2	0.0	44.8	11.4	2.5	68.8
LnGrp Delay(d),s/veh	189.8	0.0	35.6	15.0	121.6	60.9
LnGrp LOS	F		D	B	F	F
Approach Vol, veh/h	436		1644			1439
Approach Delay, s/veh	189.8		29.1			62.7
Approach LOS	F		C			E

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.8	105.2				114.0		36.0
Change Period (Y+Rc), s	* 4.2	7.0				7.0		5.8
Max Green Setting (Gmax), s	* 5.4	97.4				107.0		30.2
Max Q Clear Time (g_c+I1), s	5.5	81.3				109.0		32.2
Green Ext Time (p_c), s	0.0	16.1				0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	62.7
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	143	25	647	93	151	13	1051	691	245	1123	94
Future Volume (veh/h)	114	143	25	647	93	151	13	1051	691	245	1123	94
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	142	179	0	728	0	0	14	1142	751	269	1234	0
Adj No. of Lanes	0	1	1	2	0	1	1	2	1	1	2	1
Peak Hour Factor	0.80	0.80	0.80	0.98	0.98	0.98	0.92	0.92	0.92	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	311	356	587	967	0	587	47	978	438	173	1296	580
Arrive On Green	0.37	0.37	0.00	0.37	0.00	0.00	0.03	0.28	0.28	0.10	0.37	0.00
Sat Flow, veh/h	685	959	1583	2401	0	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	321	0	0	728	0	0	14	1142	751	269	1234	0
Grp Sat Flow(s),veh/h/ln	1644	0	1583	1200	0	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	11.9	0.0	0.0	15.6	0.0	0.0	0.7	25.0	25.0	8.8	30.7	0.0
Cycle Q Clear(g_c), s	13.6	0.0	0.0	29.2	0.0	0.0	0.7	25.0	25.0	8.8	30.7	0.0
Prop In Lane	0.44		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	667	0	587	967	0	587	47	978	438	173	1296	580
V/C Ratio(X)	0.48	0.00	0.00	0.75	0.00	0.00	0.30	1.17	1.72	1.56	0.95	0.00
Avail Cap(c_a), veh/h	667	0	587	1085	0	665	157	978	438	173	1296	580
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.1	0.0	0.0	28.0	0.0	0.0	43.2	32.7	32.7	40.8	27.9	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	2.7	0.0	0.0	3.6	86.4	331.7	277.6	15.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	0.0	0.0	9.0	0.0	0.0	0.4	23.8	51.1	17.6	17.8	0.0
LnGrp Delay(d),s/veh	22.9	0.0	0.0	30.7	0.0	0.0	46.8	119.1	364.4	318.4	43.7	0.0
LnGrp LOS	C			C			D	F	F	F	D	
Approach Vol, veh/h		321			728			1907			1503	
Approach Delay, s/veh		22.9			30.7			215.2			92.9	
Approach LOS		C			C			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.0	34.5		40.9	6.9	42.6		40.9
Change Period (Y+Rc), s	* 6.2	9.5		7.4	4.5	* 9.5		7.4
Max Green Setting (Gmax), s	* 8.8	25.0		22.7	8.0	* 28		38.0
Max Q Clear Time (g_c+I1), s	10.8	27.0		15.6	2.7	32.7		31.2
Green Ext Time (p_c), s	0.0	0.0		3.4	0.0	0.0		2.3

Intersection Summary		
HCM 2010 Ctrl Delay	130.0	
HCM 2010 LOS	F	

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	890	176	42	756	7	157	4	54	0	2	8
Future Volume (veh/h)	0	890	176	42	756	7	157	4	54	0	2	8
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	0	957	0	48	859	8	199	5	68	0	2	10
Adj No. of Lanes	0	1	1	0	3	0	0	1	1	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.88	0.88	0.88	0.79	0.79	0.79	0.83	0.83	0.83
Percent Heavy Veh, %	0	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	978	831	48	911	9	285	6	561	0	47	237
Arrive On Green	0.00	0.52	0.00	0.18	0.18	0.18	0.17	0.17	0.17	0.00	0.17	0.17
Sat Flow, veh/h	0	1863	1583	266	5084	49	1323	33	1583	0	271	1353
Grp Volume(v), veh/h	0	957	0	333	278	304	204	0	68	0	0	12
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1849	1695	1854	1356	0	1583	0	0	1624
Q Serve(g_s), s	0.0	66.4	0.0	23.7	21.3	21.3	18.7	0.0	3.8	0.0	0.0	0.8
Cycle Q Clear(g_c), s	0.0	66.4	0.0	23.7	21.3	21.3	19.5	0.0	3.8	0.0	0.0	0.8
Prop In Lane	0.00		1.00	0.14		0.03	0.98		1.00	0.00		0.83
Lane Grp Cap(c), veh/h	0	978	831	332	304	332	291	0	561	0	0	284
V/C Ratio(X)	0.00	0.98	0.00	1.01	0.91	0.91	0.70	0.00	0.12	0.00	0.00	0.04
Avail Cap(c_a), veh/h	0	990	842	332	304	332	417	0	703	0	0	430
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)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	30.7	0.0	54.3	53.3	53.3	53.4	0.0	28.8	0.0	0.0	45.3
Incr Delay (d2), s/veh	0.0	23.2	0.0	50.8	30.8	29.1	4.3	0.0	0.1	0.0	0.0	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	0.0	40.3	0.0	16.7	12.6	13.6	7.6	0.0	2.2	0.0	0.0	0.4
LnGrp Delay(d),s/veh	0.0	53.9	0.0	105.0	84.1	82.4	57.8	0.0	28.9	0.0	0.0	45.4
LnGrp LOS		D		F	F	F	E		C			D
Approach Vol, veh/h		957			915			272			12	
Approach Delay, s/veh		53.9			91.2			50.6			45.4	
Approach LOS		D			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		75.1		27.7		29.4		27.7
Change Period (Y+Rc), s		5.7		4.6		5.7		4.6
Max Green Setting (Gmax), s		70.3		35.0		23.7		35.0
Max Q Clear Time (g_c+I1), s		68.4		21.5		25.7		2.8
Green Ext Time (p_c), s		1.0		1.6		0.0		2.3

Intersection Summary	
HCM 2010 Ctrl Delay	69.3
HCM 2010 LOS	E

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	0	126	64	0	571
Future Vol, veh/h	21	0	126	64	0	571
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	0	137	70	0	621

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	793	172	0	0	207	0
Stage 1	172	-	-	-	-	-
Stage 2	621	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	358	872	-	-	1364	-
Stage 1	858	-	-	-	-	-
Stage 2	536	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	358	872	-	-	1364	-
Mov Cap-2 Maneuver	358	-	-	-	-	-
Stage 1	858	-	-	-	-	-
Stage 2	536	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	358	1364	-
HCM Lane V/C Ratio	-	-	0.064	-	-
HCM Control Delay (s)	-	-	15.7	0	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

CHEN RYAN

MEMORANDUM

TO: Mary Bilse, Senior Environmental Planner; ICF

FROM: Jonathan Sanchez & Nick Mesler; Chen Ryan Associates

DATE: March 29, 2019

RE: **Lakeside Equestrian Facility – Data Validation Memorandum**

The purpose of this memorandum is to determine whether or not the traffic counts utilized in the *Lakeside Equestrian Facility Traffic Impact Analysis Report prepared by Chen Ryan Associates, February 26, 2018 (Proposed Project TIA)* are still valid, or if new traffic counts and the re-analysis of Existing conditions within the Proposed Project TIA is required.

Overview

The Lakeside Equestrian Facility is planned to be developed on an approximate 14-acre parcel, located on the northeast corner of the Willow Road and Moreno Avenue intersection, in the unincorporated community of Lakeside. The facility is to be developed by the County of San Diego Department of Parks and Recreation (Proposed Project).

Traffic counts for the study area roadway segments and intersections were originally conducted on Thursday, February 16, 2017 in support of the Proposed Project TIA. Since these traffic counts were conducted over 2 years ago, a sample of new roadway counts were conducted in March 2019 to ensure the counts utilized in the Proposed Project TIA are still valid.

A total of four (4) roadway segments were analyzed in the Lakeside Equestrian Facility TIA, these roadway segments are identified below:

1. SR-67, between Kuhner Way and Willow Road
2. SR-67, between Willow Road and Mapleview Street
3. Moreno Avenue, between Mary Lane and Willow Road
4. Willow Road, between SR-67 and Moreno Avenue

Data Analysis

Table 1 below displays the change in roadway average daily traffic (ADT) between the initial roadway counts conducted for the TIA and the roadway counts conducted in March 2019.

Table 1 Change in Roadway Segment Daily Traffic Volumes & LOS – Existing Counts

Roadway	From	To	Tuesday, 3/12/2019		Lakeside Equestrian Facility TIA		LOS D Threshold	Difference in Volume	Percent Difference
			Count	LOS	Count	LOS			
SR-67*	Kuhner Way	Willow Road	29,425	**F**	28,552	**F**	16,200	+873	+3.1%
	Willow Road	Mapleview Street	32,427	**F**	34,685	**F**	16,200	-2,258	-6.5%
Moreno Avenue	Mary Lane	Willow Road	5,228	C	5,094	C	10,900	+134	+2.6%
Willow Road	SR-67	Moreno Avenue	8,584	D	9,098	D	10,900	-514	-5.6%

Source: Chen Ryan Associates, Inc., March 2019; Lakeside Equestrian Facility TIA, February 2018

Notes:
* = The counts along SR-67 are an average of 3 days, from Tuesday, March 12, 2019 to Thursday, March 14, 2019.
Bold letter indicates unacceptable LOS E or F.
LOS = Level of Service.

As shown, the daily traffic volumes along all study area roadway segments have fluctuated from an increase of 3.1% and a decrease of 6.5% (873 more trips and 2,258 less trips) over the last two years. However, all roadway segments currently operate at the same LOS as determined in the Lakeside Equestrian TIA, thus no significant changes have been overserved since the TIA submittal.

Results and Findings

As shown in the Table 1, the results show a marginal difference in ADT between the current traffic volumes (March 12-14, 2019) and those utilized in the Lakeside Equestrian Facility TIA (February 26, 2018). Additionally, as shown in the Lakeside Equestrian Facility TIA, the increase in ADT from the Proposed Project is *not* anticipated to add a significant amount of traffic to any roadway segment and incur an impact; therefore, no additional analysis would be required from a roadway perspective. In light of these findings, the Chen Ryan Associates TIA (February 2018) should continue to satisfy all traffic related impacts.

Please feel free to contact me at (619) 795-6086 with any questions and/or comments.

Sincerely,

Jonathan Sanchez

CHEN RYAN

Attachment A
Traffic Counts

CHEN RYAN

Lakeside Equestrian Facility Counts
(Thursday, February 16, 2017)

Prepared by NDS/ATD

VOLUME

SR-67 Bet. Kuhner Way & Willow Rd

Day: Thursday
Date: 2/16/2017

City: Lakeside
Project #: CA17_4047_003

DAILY TOTALS	NB	SB	EB	WB	Total
	14,539	14,013	0	0	28,552

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	26		20				46		12:00	157		145				302	
00:15	22		22				44		12:15	142		170				312	
00:30	17		14				31		12:30	168		168				336	
00:45	26	91	17	73			43	164	12:45	165	632	160	643			325	1275
01:00	11		10				21		13:00	191		216				407	
01:15	12		12				24		13:15	181		202				383	
01:30	19		7				26		13:30	187		208				395	
01:45	14	56	10	39			24	95	13:45	197	756	197	823			394	1579
02:00	17		4				21		14:00	218		222				440	
02:15	29		9				38		14:15	244		214				458	
02:30	10		13				23		14:30	206		309				515	
02:45	15	71	13	39			28	110	14:45	219	887	311	1056			530	1943
03:00	12		10				22		15:00	225		310				535	
03:15	26		17				43		15:15	247		310				557	
03:30	22		14				36		15:30	253		303				556	
03:45	26	86	18	59			44	145	15:45	222	947	310	1233			532	2180
04:00	34		28				62		16:00	230		309				539	
04:15	69		43				112		16:15	215		313				528	
04:30	100		69				169		16:30	226		302				528	
04:45	117	320	64	204			181	524	16:45	230	901	326	1250			556	2151
05:00	94		105				199		17:00	211		315				526	
05:15	176		150				326		17:15	220		296				516	
05:30	248		139				387		17:30	212		301				513	
05:45	232	750	190	584			422	1334	17:45	214	857	295	1207			509	2064
06:00	311		233				544		18:00	174		290				464	
06:15	359		179				538		18:15	142		292				434	
06:30	368		181				549		18:30	181		279				460	
06:45	344	1382	174	767			518	2149	18:45	122	619	227	1088			349	1707
07:00	379		153				532		19:00	137		195				332	
07:15	407		173				580		19:15	86		159				245	
07:30	363		164				527		19:30	113		133				246	
07:45	362	1511	168	658			530	2169	19:45	103	439	97	584			200	1023
08:00	333		187				520		20:00	85		87				172	
08:15	307		187				494		20:15	75		79				154	
08:30	289		218				507		20:30	74		68				142	
08:45	288	1217	194	786			482	2003	20:45	75	309	51	285			126	594
09:00	216		157				373		21:00	83		67				150	
09:15	237		157				394		21:15	52		80				132	
09:30	185		194				379		21:30	55		66				121	
09:45	168	806	207	715			375	1521	21:45	56	246	37	250			93	496
10:00	165		162				327		22:00	58		46				104	
10:15	183		149				332		22:15	54		47				101	
10:30	177		189				366		22:30	41		55				96	
10:45	143	668	137	637			280	1305	22:45	33	186	33	181			66	367
11:00	157		183				340		23:00	32		43				75	
11:15	165		176				341		23:15	40		33				73	
11:30	179		186				365		23:30	44		26				70	
11:45	159	660	186	731			345	1391	23:45	26	142	19	121			45	263
TOTALS		7618		5292				12910	TOTALS		6921		8721				15642
SPLIT %		59.0%		41.0%				45.2%	SPLIT %		44.2%		55.8%				54.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	14,539	14,013	0	0	28,552

AM Peak Hour	07:00	08:00			06:30	PM Peak Hour	15:15	16:15			15:15
AM Pk Volume	1511	786			2179	PM Pk Volume	952	1256			2184
Pk Hr Factor	0.928	0.901			0.939	Pk Hr Factor	0.941	0.963			0.980
7 - 9 Volume	2728	1444	0	0	4172	4 - 6 Volume	1758	2457	0	0	4215
7 - 9 Peak Hour	07:00	08:00			07:00	4 - 6 Peak Hour	16:00	16:15			16:00
7 - 9 Pk Volume	1511	786	0	0	2169	4 - 6 Pk Volume	901	1256	0	0	2151
Pk Hr Factor	0.928	0.901	0.000	0.000	0.935	Pk Hr Factor	0.979	0.963	0.000	0.000	0.967

Prepared by NDS/ATD

VOLUME

SR-67 S/O Willow Rd

Day: Thursday
Date: 2/16/2017

City: Lakeside
Project #: CA17_4047_004

DAILY TOTALS	NB	SB	EB	WB	Total
	18,041	16,644	0	0	34,685

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	28		43				71		12:00	233		225				458	
00:15	29		32				61		12:15	193		210				403	
00:30	22		27				49		12:30	212		217				429	
00:45	25	104	30	132			55	236	12:45	195	833	221	873			416	1706
01:00	11		26				37		13:00	253		213				466	
01:15	15		22				37		13:15	239		252				491	
01:30	14		17				31		13:30	225		236				461	
01:45	10	50	17	82			27	132	13:45	258	975	244	945			502	1920
02:00	15		18				33		14:00	279		264				543	
02:15	24		23				47		14:15	324		283				607	
02:30	13		11				24		14:30	257		347				604	
02:45	21	73	21	73			42	146	14:45	328	1188	367	1261			695	2449
03:00	18		13				31		15:00	302		368				670	
03:15	26		16				42		15:15	313		342				655	
03:30	24		16				40		15:30	341		352				693	
03:45	27	95	17	62			44	157	15:45	310	1266	386	1448			696	2714
04:00	40		29				69		16:00	325		358				683	
04:15	66		54				120		16:15	315		389				704	
04:30	103		69				172		16:30	320		382				702	
04:45	127	336	94	246			221	582	16:45	326	1286	382	1511			708	2797
05:00	100		116				216		17:00	306		366				672	
05:15	183		137				320		17:15	322		386				708	
05:30	267		191				458		17:30	306		379				685	
05:45	255	805	203	647			458	1452	17:45	315	1249	378	1509			693	2758
06:00	328		226				554		18:00	232		350				582	
06:15	355		201				556		18:15	227		330				557	
06:30	406		226				632		18:30	247		268				515	
06:45	430	1519	211	864			641	2383	18:45	201	907	212	1160			413	2067
07:00	391		220				611		19:00	203		196				399	
07:15	372		219				591		19:15	143		139				282	
07:30	424		227				651		19:30	168		101				269	
07:45	368	1555	242	908			610	2463	19:45	154	668	99	535			253	1203
08:00	361		219				580		20:00	123		98				221	
08:15	293		218				511		20:15	116		89				205	
08:30	358		266				624		20:30	96		78				174	
08:45	300	1312	227	930			527	2242	20:45	123	458	93	358			216	816
09:00	249		196				445		21:00	115		62				177	
09:15	282		185				467		21:15	82		86				168	
09:30	233		223				456		21:30	76		84				160	
09:45	190	954	220	824			410	1778	21:45	81	354	66	298			147	652
10:00	210		199				409		22:00	74		43				117	
10:15	210		205				415		22:15	65		65				130	
10:30	241		202				443		22:30	50		57				107	
10:45	179	840	196	802			375	1642	22:45	45	234	53	218			98	452
11:00	203		207				410		23:00	32		47				79	
11:15	197		192				389		23:15	51		34				85	
11:30	217		208				425		23:30	49		40				89	
11:45	197	814	204	811			401	1625	23:45	34	166	26	147			60	313
TOTALS		8457		6381				14838	TOTALS		9584		10263				19847
SPLIT %		57.0%		43.0%				42.8%	SPLIT %		48.3%		51.7%				57.2%

DAILY TOTALS	NB	SB	EB	WB	Total
	18,041	16,644	0	0	34,685

AM Peak Hour	06:45	07:45			06:45	PM Peak Hour	15:30	16:15			16:00
AM Pk Volume	1617	945			2494	PM Pk Volume	1291	1519			2797
Pk Hr Factor	0.940	0.888			0.958	Pk Hr Factor	0.946	0.976			0.988
7 - 9 Volume	2867	1838	0	0	4705	4 - 6 Volume	2535	3020	0	0	5555
7 - 9 Peak Hour	07:00	07:45			07:00	4 - 6 Peak Hour	16:00	16:15			16:00
7 - 9 Pk Volume	1555	945	0	0	2463	4 - 6 Pk Volume	1286	1519	0	0	2797
Pk Hr Factor	0.917	0.888	0.000	0.000	0.946	Pk Hr Factor	0.986	0.976	0.000	0.000	0.988

Prepared by NDS/ATD

VOLUME

Moreno Ave Bet. Mary Ln & Willow Rd

Day: Thursday
Date: 2/16/2017

City: Lakeside
Project #: CA17_4047_001

DAILY TOTALS	NB	SB	EB	WB	Total
	2,187	2,907	0	0	5,094

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	9		2				11		12:00	20		35				55	
00:15	10		4				14		12:15	34		22				56	
00:30	2		1				3		12:30	28		34				62	
00:45	3	24	1	8			4	32	12:45	30	112	32	123			62	235
01:00	2		2				4		13:00	30		25				55	
01:15	4		2				6		13:15	37		32				69	
01:30	2		2				4		13:30	36		41				77	
01:45	3	11	3	9			6	20	13:45	28	131	37	135			65	266
02:00	8		1				9		14:00	31		38				69	
02:15	2		2				4		14:15	30		35				65	
02:30	4		2				6		14:30	27		71				98	
02:45	2	16	3	8			5	24	14:45	41	129	50	194			91	323
03:00	1		1				2		15:00	29		61				90	
03:15	2		1				3		15:15	38		47				85	
03:30	4		2				6		15:30	35		90				125	
03:45	3	10	3	7			6	17	15:45	39	141	80	278			119	419
04:00	2		2				4		16:00	37		105				142	
04:15	1		6				7		16:15	33		131				164	
04:30	3		4				7		16:30	30		154				184	
04:45	10	16	6	18			16	34	16:45	31	131	128	518			159	649
05:00	15		10				25		17:00	33		158				191	
05:15	17		21				38		17:15	32		131				163	
05:30	35		19				54		17:30	28		138				166	
05:45	48	115	12	62			60	177	17:45	33	126	117	544			150	670
06:00	42		31				73		18:00	33		54				87	
06:15	50		25				75		18:15	31		43				74	
06:30	70		30				100		18:30	23		33				56	
06:45	47	209	29	115			76	324	18:45	22	109	22	152			44	261
07:00	43		32				75		19:00	10		24				34	
07:15	83		38				121		19:15	15		18				33	
07:30	72		32				104		19:30	17		15				32	
07:45	54	252	26	128			80	380	19:45	15	57	11	68			26	125
08:00	58		38				96		20:00	14		12				26	
08:15	52		25				77		20:15	14		7				21	
08:30	31		36				67		20:30	12		4				16	
08:45	35	176	23	122			58	298	20:45	11	51	9	32			20	83
09:00	31		38				69		21:00	5		4				9	
09:15	24		22				46		21:15	13		11				24	
09:30	24		36				60		21:30	15		3				18	
09:45	23	102	27	123			50	225	21:45	12	45	4	22			16	67
10:00	20		27				47		22:00	5		2				7	
10:15	20		34				54		22:15	3		4				7	
10:30	21		24				45		22:30	5		5				10	
10:45	20	81	21	106			41	187	22:45	5	18	4	15			9	33
11:00	30		20				50		23:00	1		4				5	
11:15	21		22				43		23:15	6		3				9	
11:30	33		28				61		23:30	4		5				9	
11:45	29	113	36	106			65	219	23:45	1	12	2	14			3	26
TOTALS		1125		812				1937	TOTALS		1062		2095				3157
SPLIT %		58.1%		41.9%				38.0%	SPLIT %		33.6%		66.4%				62.0%

DAILY TOTALS	NB	SB	EB	WB	Total
	2,187	2,907	0	0	5,094

AM Peak Hour	07:15	07:15				07:15	PM Peak Hour	15:15	16:15				16:15
AM Pk Volume	267	134				401	PM Pk Volume	149	571				698
Pk Hr Factor	0.804	0.882				0.829	Pk Hr Factor	0.955	0.903				0.914
7 - 9 Volume	428	250	0	0		678	4 - 6 Volume	257	1062	0	0		1319
7 - 9 Peak Hour	07:15	07:15				07:15	4 - 6 Peak Hour	16:00	16:15				16:15
7 - 9 Pk Volume	267	134	0	0		401	4 - 6 Pk Volume	131	571	0	0		698
Pk Hr Factor	0.804	0.882	0.000	0.000		0.829	Pk Hr Factor	0.885	0.903	0.000	0.000		0.914

Prepared by NDS/ATD

VOLUME

Willow Rd Bet. SR-67 & Moreno Ave

Day: Thursday
Date: 2/16/2017

City: Lakeside
Project #: CA17_4047_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,713	4,385	9,098

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			8		31		39		12:00			83		48		131	
00:15			16		23		39		12:15			55		57		112	
00:30			7		27		34		12:30			51		45		96	
00:45			7	38	22	103	29	141	12:45			62	251	58	208	120	459
01:00			6		13		19		13:00			71		47		118	
01:15			2		21		23		13:15			74		62		136	
01:30			2		16		18		13:30			57		67		124	
01:45			3	13	14	64	17	77	13:45			89	291	65	241	154	532
02:00			5		16		21		14:00			83		58		141	
02:15			5		26		31		14:15			98		68		166	
02:30			3		12		15		14:30			81		96		177	
02:45			4	17	14	68	18	85	14:45			105	367	60	282	165	649
03:00			3		11		14		15:00			105		71		176	
03:15			4		15		19		15:15			93		51		144	
03:30			3		12		15		15:30			101		75		176	
03:45			7	17	14	52	21	69	15:45			109	408	79	276	188	684
04:00			7		15		22		16:00			123		84		207	
04:15			4		23		27		16:15			112		88		200	
04:30			7		12		19		16:30			124		104		228	
04:45			10	28	25	75	35	103	16:45			106	465	84	360	190	825
05:00			11		31		42		17:00			111		91		202	
05:15			20		30		50		17:15			115		94		209	
05:30			31		43		74		17:30			126		79		205	
05:45			45	107	44	148	89	255	17:45			123	475	79	343	202	818
06:00			40		50		90		18:00			67		67		134	
06:15			25		54		79		18:15			96		61		157	
06:30			64		70		134		18:30			84		45		129	
06:45			118	247	45	219	163	466	18:45			80	327	33	206	113	533
07:00			58		64		122		19:00			69		39		108	
07:15			33		89		122		19:15			80		36		116	
07:30			40		80		120		19:30			59		23		82	
07:45			43	174	68	301	111	475	19:45			51	259	34	132	85	391
08:00			27		69		96		20:00			52		52		104	
08:15			37		47		84		20:15			35		31		66	
08:30			46		51		97		20:30			30		26		56	
08:45			57	167	55	222	112	389	20:45			38	155	44	153	82	308
09:00			40		65		105		21:00			33		24		57	
09:15			50		34		84		21:15			29		35		64	
09:30			56		59		115		21:30			31		38		69	
09:45			50	196	53	211	103	407	21:45			34	127	36	133	70	260
10:00			38		45		83		22:00			24		21		45	
10:15			47		53		100		22:15			22		32		54	
10:30			64		52		116		22:30			21		33		54	
10:45			52	201	37	187	89	388	22:45			24	91	34	120	58	211
11:00			53		39		92		23:00			15		34		49	
11:15			58		44		102		23:15			25		25		50	
11:30			52		42		94		23:30			22		30		52	
11:45			52	215	45	170	97	385	23:45			15	77	22	111	37	188
TOTALS				1420		1820		3240	TOTALS				3293		2565		5858
SPLIT %				43.8%		56.2%		35.6%	SPLIT %				56.2%		43.8%		64.4%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,713	4,385	9,098

AM Peak Hour			06:30	07:15	06:30	PM Peak Hour			17:00	16:30	16:30
AM Pk Volume			273	306	541	PM Pk Volume			475	373	829
Pk Hr Factor			0.578	0.860	0.830	Pk Hr Factor			0.942	0.897	0.909
7 - 9 Volume	0	0	341	523	864	4 - 6 Volume	0	0	940	703	1643
7 - 9 Peak Hour			07:00	07:15	07:00	4 - 6 Peak Hour			17:00	16:30	16:30
7 - 9 Pk Volume	0	0	174	306	475	4 - 6 Pk Volume	0	0	475	373	829
Pk Hr Factor	0.000	0.000	0.750	0.860	0.973	Pk Hr Factor	0.000	0.000	0.942	0.897	0.909

CHEN RYAN

Newly Collected Counts
(Tuesday, March 12, 2019
– Thursday, March 14, 2019)

Prepared by NDS/ATD

VOLUME

SR-67 Bet. Kuhner Way & Willow Rd

Day: Tuesday
Date: 3/12/2019

City: Lakeside
Project #: CA19_4126_001

DAILY TOTALS	NB	SB	EB	WB	Total
	14,355	13,535	0	0	27,890

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	21		16				37		12:00	165		154				319	
00:15	13		12				25		12:15	166		148				314	
00:30	15		12				27		12:30	196		170				366	
00:45	22	71	17	57			39	128	12:45	192	719	184	656			376	1375
01:00	16		11				27		13:00	195		181				376	
01:15	21		28				49		13:15	167		145				312	
01:30	16		9				25		13:30	226		167				393	
01:45	14	67	9	57			23	124	13:45	205	793	153	646			358	1439
02:00	17		7				24		14:00	197		193				390	
02:15	8		11				19		14:15	167		255				422	
02:30	21		8				29		14:30	212		291				503	
02:45	12	58	5	31			17	89	14:45	189	765	314	1053			503	1818
03:00	16		9				25		15:00	233		318				551	
03:15	17		18				35		15:15	194		329				523	
03:30	34		21				55		15:30	226		311				537	
03:45	42	109	25	73			67	182	15:45	252	905	307	1265			559	2170
04:00	37		23				60		16:00	242		329				571	
04:15	66		42				108		16:15	230		299				529	
04:30	95		55				150		16:30	253		297				550	
04:45	116	314	74	194			190	508	16:45	207	932	306	1231			513	2163
05:00	118		65				183		17:00	217		301				518	
05:15	157		128				285		17:15	203		310				513	
05:30	241		152				393		17:30	223		305				528	
05:45	238	754	155	500			393	1254	17:45	165	808	303	1219			468	2027
06:00	277		157				434		18:00	156		322				478	
06:15	343		152				495		18:15	158		257				415	
06:30	376		162				538		18:30	122		206				328	
06:45	363	1359	179	650			542	2009	18:45	116	552	233	1018			349	1570
07:00	327		172				499		19:00	113		147				260	
07:15	380		194				574		19:15	134		128				262	
07:30	322		218				540		19:30	114		113				227	
07:45	369	1398	183	767			552	2165	19:45	104	465	104	492			208	957
08:00	319		170				489		20:00	97		83				180	
08:15	351		240				591		20:15	83		66				149	
08:30	340		208				548		20:30	88		82				170	
08:45	273	1283	194	812			467	2095	20:45	79	347	61	292			140	639
09:00	230		151				381		21:00	74		59				133	
09:15	236		191				427		21:15	78		89				167	
09:30	173		173				346		21:30	64		68				132	
09:45	173	812	152	667			325	1479	21:45	59	275	55	271			114	546
10:00	167		129				296		22:00	54		46				100	
10:15	139		168				307		22:15	47		49				96	
10:30	174		187				361		22:30	49		30				79	
10:45	156	636	173	657			329	1293	22:45	34	184	32	157			66	341
11:00	171		151				322		23:00	28		31				59	
11:15	158		176				334		23:15	38		28				66	
11:30	140		167				307		23:30	23		19				42	
11:45	163	632	182	676			345	1308	23:45	28	117	16	94			44	211
TOTALS		7493		5141				12634	TOTALS		6862		8394				15256
SPLIT %		59.3%		40.7%				45.3%	SPLIT %		45.0%		55.0%				54.7%

DAILY TOTALS	NB	SB	EB	WB	Total
	14,355	13,535	0	0	27,890

AM Peak Hour	06:30	08:00					07:45		PM Peak Hour	15:45	15:15					15:45		
AM Pk Volume	1446	812					2180		PM Pk Volume	977	1276					2209		
Pk Hr Factor	0.951	0.846					0.922		Pk Hr Factor	0.965	0.970					0.967		
7 - 9 Volume	2681	1579	0	0			4260		4 - 6 Volume	1740	2450	0	0			4190		
7 - 9 Peak Hour	07:00	08:00					07:45		4 - 6 Peak Hour	16:00	16:00					16:00		
7 - 9 Pk Volume	1398	812	0	0			2180		4 - 6 Pk Volume	932	1231	0	0			2163		
Pk Hr Factor	0.920	0.846	0.000	0.000			0.922		Pk Hr Factor	0.921	0.935	0.000	0.000			0.947		

Prepared by NDS/ATD

VOLUME

SR-67 Bet. Kuhner Way & Willow Rd

Day: Wednesday
Date: 3/13/2019

City: Lakeside
Project #: CA19_4126_001

DAILY TOTALS	NB	SB	EB	WB	Total
	15,162	14,339	0	0	29,501

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	26		23				49		12:00	139		186				325	
00:15	19		23				42		12:15	164		182				346	
00:30	22		15				37		12:30	195		196				391	
00:45	35	102	21	82			56	184	12:45	186	684	209	773			395	1457
01:00	15		13				28		13:00	194		192				386	
01:15	14		24				38		13:15	223		172				395	
01:30	20		15				35		13:30	246		222				468	
01:45	20	69	12	64			32	133	13:45	199	862	215	801			414	1663
02:00	14		10				24		14:00	170		253				423	
02:15	16		10				26		14:15	195		258				453	
02:30	26		8				34		14:30	227		284				511	
02:45	10	66	9	37			19	103	14:45	231	823	313	1108			544	1931
03:00	18		9				27		15:00	223		303				526	
03:15	24		24				48		15:15	237		321				558	
03:30	39		28				67		15:30	229		298				527	
03:45	63	144	22	83			85	227	15:45	248	937	306	1228			554	2165
04:00	35		32				67		16:00	241		309				550	
04:15	68		47				115		16:15	243		316				559	
04:30	124		76				200		16:30	231		304				535	
04:45	114	341	67	222			181	563	16:45	201	916	300	1229			501	2145
05:00	116		126				242		17:00	209		300				509	
05:15	166		121				287		17:15	225		318				543	
05:30	242		143				385		17:30	233		315				548	
05:45	228	752	162	552			390	1304	17:45	190	857	308	1241			498	2098
06:00	318		190				508		18:00	159		309				468	
06:15	391		172				563		18:15	142		300				442	
06:30	366		167				533		18:30	132		282				414	
06:45	353	1428	185	714			538	2142	18:45	116	549	227	1118			343	1667
07:00	390		170				560		19:00	129		154				283	
07:15	367		187				554		19:15	126		141				267	
07:30	300		237				537		19:30	109		119				228	
07:45	354	1411	187	781			541	2192	19:45	104	468	101	515			205	983
08:00	355		197				552		20:00	111		94				205	
08:15	338		195				533		20:15	118		103				221	
08:30	344		210				554		20:30	110		63				173	
08:45	316	1353	189	791			505	2144	20:45	96	435	72	332			168	767
09:00	248		172				420		21:00	95		70				165	
09:15	230		170				400		21:15	64		89				153	
09:30	223		211				434		21:30	81		64				145	
09:45	206	907	140	693			346	1600	21:45	75	315	43	266			118	581
10:00	161		174				335		22:00	50		44				94	
10:15	206		142				348		22:15	54		45				99	
10:30	190		191				381		22:30	53		35				88	
10:45	155	712	187	694			342	1406	22:45	51	208	27	151			78	359
11:00	171		184				355		23:00	39		28				67	
11:15	181		172				353		23:15	39		43				82	
11:30	173		193				366		23:30	23		17				40	
11:45	160	685	212	761			372	1446	23:45	37	138	15	103			52	241
TOTALS		7970		5474				13444	TOTALS		7192		8865				16057
SPLIT %		59.3%		40.7%				45.6%	SPLIT %		44.8%		55.2%				54.4%

DAILY TOTALS	NB	SB	EB	WB	Total
	15,162	14,339	0	0	29,501

AM Peak Hour	06:15	07:30				06:15	PM Peak Hour	15:45	17:15				15:45
AM Pk Volume	1500	816				2194	PM Pk Volume	963	1250				2198
Pk Hr Factor	0.959	0.861				0.974	Pk Hr Factor	0.971	0.983				0.983
7 - 9 Volume	2764	1572	0	0		4336	4 - 6 Volume	1773	2470	0	0		4243
7 - 9 Peak Hour	07:00	07:30				07:00	4 - 6 Peak Hour	16:00	17:00				16:00
7 - 9 Pk Volume	1411	816	0	0		2192	4 - 6 Pk Volume	916	1241	0	0		2145
Pk Hr Factor	0.904	0.861	0.000	0.000		0.979	Pk Hr Factor	0.942	0.976	0.000	0.000		0.959

Prepared by NDS/ATD

VOLUME

SR-67 Bet. Kuhner Way & Willow Rd

Day: Thursday
Date: 3/14/2019

City: Lakeside
Project #: CA19_4126_001

DAILY TOTALS	NB	SB	EB	WB	Total
	16,292	14,593	0	0	30,885

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	25		24				49		12:00	193		198				391	
00:15	31		10				41		12:15	191		198				389	
00:30	18		13				31		12:30	208		181				389	
00:45	21	95	17	64			38	159	12:45	196	788	220	797			416	1585
01:00	19		17				36		13:00	222		195				417	
01:15	16		23				39		13:15	203		206				409	
01:30	15		14				29		13:30	207		240				447	
01:45	11	61	5	59			16	120	13:45	213	845	234	875			447	1720
02:00	19		2				21		14:00	219		217				436	
02:15	12		10				22		14:15	211		279				490	
02:30	15		4				19		14:30	212		306				518	
02:45	16	62	10	26			26	88	14:45	250	892	325	1127			575	2019
03:00	19		5				24		15:00	258		296				554	
03:15	27		14				41		15:15	267		303				570	
03:30	28		25				53		15:30	302		293				595	
03:45	46	120	21	65			67	185	15:45	312	1139	319	1211			631	2350
04:00	38		26				64		16:00	315		296				611	
04:15	68		41				109		16:15	321		309				630	
04:30	117		70				187		16:30	310		295				605	
04:45	90	313	79	216			169	529	16:45	306	1252	286	1186			592	2438
05:00	132		94				226		17:00	286		289				575	
05:15	159		130				289		17:15	269		298				567	
05:30	226		156				382		17:30	304		292				596	
05:45	242	759	162	542			404	1301	17:45	261	1120	295	1174			556	2294
06:00	305		174				479		18:00	215		295				510	
06:15	371		179				550		18:15	180		312				492	
06:30	350		162				512		18:30	174		267				441	
06:45	362	1388	154	669			516	2057	18:45	174	743	285	1159			459	1902
07:00	355		204				559		19:00	168		198				366	
07:15	326		204				530		19:15	132		165				297	
07:30	371		184				555		19:30	145		132				277	
07:45	313	1365	224	816			537	2181	19:45	95	540	124	619			219	1159
08:00	346		168				514		20:00	113		104				217	
08:15	321		204				525		20:15	111		87				198	
08:30	317		224				541		20:30	113		75				188	
08:45	312	1296	175	771			487	2067	20:45	89	426	66	332			155	758
09:00	261		215				476		21:00	73		66				139	
09:15	238		162				400		21:15	94		81				175	
09:30	205		200				405		21:30	72		78				150	
09:45	172	876	200	777			372	1653	21:45	79	318	57	282			136	600
10:00	191		154				345		22:00	70		47				117	
10:15	198		190				388		22:15	53		44				97	
10:30	193		190				383		22:30	53		31				84	
10:45	189	771	211	745			400	1516	22:45	40	216	31	153			71	369
11:00	172		190				362		23:00	36		24				60	
11:15	195		211				406		23:15	48		36				84	
11:30	174		197				371		23:30	45		23				68	
11:45	199	740	222	820			421	1560	23:45	38	167	25	108			63	275
TOTALS		7846		5570				13416	TOTALS		8446		9023				17469
SPLIT %		58.5%		41.5%				43.4%	SPLIT %		48.3%		51.7%				56.6%

DAILY TOTALS	NB	SB	EB	WB	Total
	16,292	14,593	0	0	30,885

AM Peak Hour	06:15	11:15					07:00		PM Peak Hour	15:45	14:30					15:45		
AM Pk Volume	1438	828					2181		PM Pk Volume	1258	1230					2477		
Pk Hr Factor	0.969	0.932					0.975		Pk Hr Factor	0.980	0.946					0.981		
7 - 9 Volume	2661	1587	0	0			4248		4 - 6 Volume	2372	2360	0	0			4732		
7 - 9 Peak Hour	07:00	07:45					07:00		4 - 6 Peak Hour	16:00	16:00					16:00		
7 - 9 Pk Volume	1365	820	0	0			2181		4 - 6 Pk Volume	1252	1186	0	0			2438		
Pk Hr Factor	0.920	0.915	0.000	0.000			0.975		Pk Hr Factor	0.975	0.960	0.000	0.000			0.967		

Prepared by NDS/ATD

VOLUME

SR-67 Bet. Willow Rd & Lakeside Ave

Day: Tuesday
Date: 3/12/2019

City: Lakeside
Project #: CA19_4126_002

DAILY TOTALS	NB	SB	EB	WB	Total
	16,205	15,406	0	0	31,611

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	29		41				70		12:00	183		198				381	
00:15	21		35				56		12:15	202		205				407	
00:30	28		29				57		12:30	227		186				413	
00:45	17	95	35	140			52	235	12:45	227	839	192	781			419	1620
01:00	18		33				51		13:00	235		219				454	
01:15	18		26				44		13:15	200		230				430	
01:30	17		16				33		13:30	241		216				457	
01:45	11	64	24	99			35	163	13:45	243	919	231	896			474	1815
02:00	15		17				32		14:00	247		241				488	
02:15	12		16				28		14:15	211		257				468	
02:30	25		18				43		14:30	278		307				585	
02:45	12	64	16	67			28	131	14:45	251	987	326	1131			577	2118
03:00	15		17				32		15:00	264		300				564	
03:15	21		38				59		15:15	294		304				598	
03:30	33		16				49		15:30	252		321				573	
03:45	46	115	16	87			62	202	15:45	341	1151	313	1238			654	2389
04:00	39		30				69		16:00	314		326				640	
04:15	68		48				116		16:15	296		337				633	
04:30	91		67				158		16:30	306		315				621	
04:45	137	335	74	219			211	554	16:45	280	1196	310	1288			590	2484
05:00	121		115				236		17:00	301		333				634	
05:15	156		176				332		17:15	298		299				597	
05:30	236		180				416		17:30	293		328				621	
05:45	237	750	174	645			411	1395	17:45	225	1117	326	1286			551	2403
06:00	269		204				473		18:00	208		291				499	
06:15	324		218				542		18:15	227		314				541	
06:30	319		201				520		18:30	174		257				431	
06:45	340	1252	179	802			519	2054	18:45	151	760	194	1056			345	1816
07:00	302		222				524		19:00	155		151				306	
07:15	306		207				513		19:15	173		136				309	
07:30	246		208				454		19:30	154		134				288	
07:45	317	1171	232	869			549	2040	19:45	129	611	131	552			260	1163
08:00	331		209				540		20:00	127		94				221	
08:15	318		212				530		20:15	122		94				216	
08:30	332		212				544		20:30	121		64				185	
08:45	277	1258	176	809			453	2067	20:45	96	466	94	346			190	812
09:00	231		188				419		21:00	103		95				198	
09:15	237		211				448		21:15	93		96				189	
09:30	181		218				399		21:30	88		64				152	
09:45	217	866	204	821			421	1687	21:45	65	349	56	311			121	660
10:00	180		173				353		22:00	74		59				133	
10:15	170		211				381		22:15	58		68				126	
10:30	197		205				402		22:30	50		62				112	
10:45	179	726	203	792			382	1518	22:45	38	220	42	231			80	451
11:00	206		169				375		23:00	31		40				71	
11:15	185		186				371		23:15	34		52				86	
11:30	181		196				377		23:30	34		44				78	
11:45	191	763	219	770			410	1533	23:45	32	131	34	170			66	301
TOTALS		7459		6120				13579	TOTALS		8746		9286				18032
SPLIT %		54.9%		45.1%				43.0%	SPLIT %		48.5%		51.5%				57.0%

DAILY TOTALS	NB	SB	EB	WB	Total
	16,205	15,406	0	0	31,611

AM Peak Hour	07:45	07:00				07:45	PM Peak Hour	15:45	15:30				15:45
AM Pk Volume	1298	869				2163	PM Pk Volume	1257	1297				2548
Pk Hr Factor	0.977	0.936				0.985	Pk Hr Factor	0.922	0.962				0.974
7 - 9 Volume	2429	1678	0	0		4107	4 - 6 Volume	2313	2574	0	0		4887
7 - 9 Peak Hour	07:45	07:00				07:45	4 - 6 Peak Hour	16:00	16:15				16:00
7 - 9 Pk Volume	1298	869	0	0		2163	4 - 6 Pk Volume	1196	1295	0	0		2484
Pk Hr Factor	0.977	0.936	0.000	0.000		0.985	Pk Hr Factor	0.952	0.961	0.000	0.000		0.970

Prepared by NDS/ATD

VOLUME

SR-67 Bet. Willow Rd & Lakeside Ave

Day: Wednesday
Date: 3/13/2019

City: Lakeside
Project #: CA19_4126_002

DAILY TOTALS	NB	SB	EB	WB	Total
	17,702	15,404	0	0	33,106

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	26		50				76		12:00	168		184				352	
00:15	23		31				54		12:15	225		181				406	
00:30	27		27				54		12:30	234		206				440	
00:45	31	107	35	143			66	250	12:45	236	863	223	794			459	1657
01:00	13		25				38		13:00	213		194				407	
01:15	18		27				45		13:15	273		198				471	
01:30	21		17				38		13:30	263		212				475	
01:45	22	74	22	91			44	165	13:45	251	1000	236	840			487	1840
02:00	14		17				31		14:00	242		233				475	
02:15	14		24				38		14:15	266		296				562	
02:30	20		25				45		14:30	312		312				624	
02:45	14	62	11	77			25	139	14:45	280	1100	323	1164			603	2264
03:00	26		36				62		15:00	297		317				614	
03:15	27		28				55		15:15	312		295				607	
03:30	50		23				73		15:30	302		296				598	
03:45	64	167	23	110			87	277	15:45	318	1229	328	1236			646	2465
04:00	38		41				79		16:00	332		322				654	
04:15	75		60				135		16:15	296		328				624	
04:30	122		91				213		16:30	331		328				659	
04:45	127	362	76	268			203	630	16:45	287	1246	298	1276			585	2522
05:00	109		113				222		17:00	302		319				621	
05:15	189		146				335		17:15	289		306				595	
05:30	244		167				411		17:30	318		304				622	
05:45	261	803	186	612			447	1415	17:45	264	1173	312	1241			576	2414
06:00	319		189				508		18:00	222		331				553	
06:15	373		192				565		18:15	214		291				505	
06:30	343		148				491		18:30	219		279				498	
06:45	342	1377	185	714			527	2091	18:45	195	850	277	1178			472	2028
07:00	378		185				563		19:00	156		179				335	
07:15	337		259				596		19:15	164		180				344	
07:30	301		218				519		19:30	153		124				277	
07:45	348	1364	221	883			569	2247	19:45	136	609	108	591			244	1200
08:00	331		200				531		20:00	159		101				260	
08:15	311		200				511		20:15	149		95				244	
08:30	351		207				558		20:30	140		89				229	
08:45	309	1302	192	799			501	2101	20:45	132	580	80	365			212	945
09:00	271		229				500		21:00	123		74				197	
09:15	237		178				415		21:15	85		96				181	
09:30	239		228				467		21:30	94		89				183	
09:45	218	965	190	825			408	1790	21:45	80	382	65	324			145	706
10:00	184		177				361		22:00	71		70				141	
10:15	254		166				420		22:15	52		68				120	
10:30	228		187				415		22:30	61		56				117	
10:45	198	864	196	726			394	1590	22:45	51	235	51	245			102	480
11:00	197		162				359		23:00	48		42				90	
11:15	214		207				421		23:15	47		70				117	
11:30	219		156				375		23:30	36		40				76	
11:45	187	817	185	710			372	1527	23:45	40	171	40	192			80	363
TOTALS		8264		5958				14222	TOTALS		9438		9446				18884
SPLIT %		58.1%		41.9%				43.0%	SPLIT %		50.0%		50.0%				57.0%

DAILY TOTALS	NB	SB	EB	WB	Total
	17,702	15,404	0	0	33,106

AM Peak Hour	06:15	07:15				07:00	PM Peak Hour	15:45	15:45				15:45
AM Pk Volume	1436	898				2247	PM Pk Volume	1277	1306				2583
Pk Hr Factor	0.950	0.867				0.943	Pk Hr Factor	0.962	0.995				0.980
7 - 9 Volume	2666	1682	0	0		4348	4 - 6 Volume	2419	2517	0	0		4936
7 - 9 Peak Hour	07:00	07:15				07:00	4 - 6 Peak Hour	16:00	16:00				16:00
7 - 9 Pk Volume	1364	898	0	0		2247	4 - 6 Pk Volume	1246	1276	0	0		2522
Pk Hr Factor	0.902	0.867	0.000	0.000		0.943	Pk Hr Factor	0.938	0.973	0.000	0.000		0.957

Prepared by NDS/ATD

VOLUME

SR-67 Bet. Willow Rd & Lakeside Ave

Day: Thursday
Date: 3/14/2019

City: Lakeside
Project #: CA19_4126_002

DAILY TOTALS	NB	SB	EB	WB	Total
	17,806	14,789	0	0	32,595

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	24		41				65		12:00	225		216				441	
00:15	24		52				76		12:15	214		205				419	
00:30	22		29				51		12:30	242		200				442	
00:45	27	97	40	162			67	259	12:45	242	923	183	804			425	1727
01:00	19		29				48		13:00	255		188				443	
01:15	13		38				51		13:15	255		199				454	
01:30	19		26				45		13:30	256		196				452	
01:45	17	68	15	108			32	176	13:45	252	1018	205	788			457	1806
02:00	19		20				39		14:00	273		241				514	
02:15	13		21				34		14:15	280		250				530	
02:30	25		20				45		14:30	281		273				554	
02:45	15	72	11	72			26	144	14:45	301	1135	300	1064			601	2199
03:00	25		22				47		15:00	298		294				592	
03:15	26		29				55		15:15	278		306				584	
03:30	27		25				52		15:30	310		296				606	
03:45	55	133	26	102			81	235	15:45	311	1197	283	1179			594	2376
04:00	44		37				81		16:00	305		304				609	
04:15	70		56				126		16:15	341		289				630	
04:30	124		59				183		16:30	310		291				601	
04:45	103	341	74	226			177	567	16:45	336	1292	296	1180			632	2472
05:00	145		98				243		17:00	306		333				639	
05:15	169		143				312		17:15	327		313				640	
05:30	241		203				444		17:30	303		320				623	
05:45	276	831	157	601			433	1432	17:45	308	1244	342	1308			650	2552
06:00	306		198				504		18:00	248		311				559	
06:15	354		181				535		18:15	219		319				538	
06:30	309		171				480		18:30	195		281				476	
06:45	355	1324	160	710			515	2034	18:45	164	826	260	1171			424	1997
07:00	345		151				496		19:00	215		133				348	
07:15	274		233				507		19:15	163		123				286	
07:30	329		238				567		19:30	167		133				300	
07:45	321	1269	199	821			520	2090	19:45	114	659	97	486			211	1145
08:00	354		194				548		20:00	131		96				227	
08:15	318		231				549		20:15	141		98				239	
08:30	332		193				525		20:30	134		110				244	
08:45	311	1315	190	808			501	2123	20:45	121	527	82	386			203	913
09:00	265		188				453		21:00	101		89				190	
09:15	270		173				443		21:15	113		102				215	
09:30	239		194				433		21:30	85		61				146	
09:45	208	982	188	743			396	1725	21:45	86	385	69	321			155	706
10:00	212		177				389		22:00	60		53				113	
10:15	230		170				400		22:15	72		85				157	
10:30	236		179				415		22:30	59		61				120	
10:45	216	894	177	703			393	1597	22:45	51	242	48	247			99	489
11:00	199		155				354		23:00	46		42				88	
11:15	222		169				391		23:15	48		35				83	
11:30	186		187				373		23:30	37		32				69	
11:45	249	856	151	662			400	1518	23:45	45	176	28	137			73	313
TOTALS		8182		5718				13900	TOTALS		9624		9071				18695
SPLIT %		58.9%		41.1%				42.6%	SPLIT %		51.5%		48.5%				57.4%

DAILY TOTALS	NB	SB	EB	WB	Total
	17,806	14,789	0	0	32,595

AM Peak Hour	06:15	07:15				07:30	PM Peak Hour	16:15	17:00				17:00
AM Pk Volume	1363	864				2184	PM Pk Volume	1293	1308				2552
Pk Hr Factor	0.960	0.908				0.963	Pk Hr Factor	0.948	0.956				0.982
7 - 9 Volume	2584	1629	0	0		4213	4 - 6 Volume	2536	2488	0	0		5024
7 - 9 Peak Hour	07:45	07:15				07:30	4 - 6 Peak Hour	16:15	17:00				17:00
7 - 9 Pk Volume	1325	864	0	0		2184	4 - 6 Pk Volume	1293	1308	0	0		2552
Pk Hr Factor	0.936	0.908	0.000	0.000		0.963	Pk Hr Factor	0.948	0.956	0.000	0.000		0.982

Prepared by NDS/ATD

VOLUME

Moreno Ave Bet. Mary Ln & Willow Rd

Day: Tuesday
Date: 3/12/2019

City: Lakeside
Project #: CA19_4127_004

DAILY TOTALS	NB	SB	EB	WB	Total
	2,278	2,950	0	0	5,228

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	4		4				8		12:00	16		34				50	
00:15	4		5				9		12:15	26		30				56	
00:30	5		1				6		12:30	40		29				69	
00:45	3	16	2	12			5	28	12:45	34	116	35	128			69	244
01:00	0		0				0		13:00	26		36				62	
01:15	4		1				5		13:15	24		45				69	
01:30	0		0				0		13:30	22		33				55	
01:45	0	4	0	1			0	5	13:45	22	94	30	144			52	238
02:00	3		1				4		14:00	26		33				59	
02:15	2		1				3		14:15	36		36				72	
02:30	2		0				2		14:30	37		60				97	
02:45	0	7	0	2			0	9	14:45	33	132	56	185			89	317
03:00	0		2				2		15:00	31		53				84	
03:15	2		1				3		15:15	38		53				91	
03:30	6		3				9		15:30	40		93				133	
03:45	2	10	1	7			3	17	15:45	42	151	122	321			164	472
04:00	1		0				1		16:00	42		123				165	
04:15	7		6				13		16:15	40		142				182	
04:30	8		1				9		16:30	29		155				184	
04:45	14	30	5	12			19	42	16:45	37	148	142	562			179	710
05:00	10		9				19		17:00	41		128				169	
05:15	13		11				24		17:15	29		139				168	
05:30	32		11				43		17:30	28		91				119	
05:45	52	107	14	45			66	152	17:45	29	127	89	447			118	574
06:00	35		20				55		18:00	24		74				98	
06:15	42		26				68		18:15	35		61				96	
06:30	80		17				97		18:30	29		58				87	
06:45	81	238	29	92			110	330	18:45	29	117	40	233			69	350
07:00	51		43				94		19:00	21		31				52	
07:15	97		37				134		19:15	23		27				50	
07:30	81		29				110		19:30	19		16				35	
07:45	66	295	35	144			101	439	19:45	12	75	14	88			26	163
08:00	63		20				83		20:00	13		15				28	
08:15	47		28				75		20:15	14		8				22	
08:30	38		28				66		20:30	21		11				32	
08:45	33	181	24	100			57	281	20:45	8	56	7	41			15	97
09:00	38		30				68		21:00	12		11				23	
09:15	26		25				51		21:15	12		5				17	
09:30	21		28				49		21:30	9		5				14	
09:45	25	110	26	109			51	219	21:45	8	41	2	23			10	64
10:00	19		25				44		22:00	8		6				14	
10:15	18		35				53		22:15	8		6				14	
10:30	19		24				43		22:30	5		2				7	
10:45	26	82	28	112			54	194	22:45	8	29	3	17			11	46
11:00	26		25				51		23:00	4		3				7	
11:15	11		29				40		23:15	7		3				10	
11:30	24		31				55		23:30	7		4				11	
11:45	28	89	28	113			56	202	23:45	5	23	2	12			7	35
TOTALS		1169		749				**1918**	**TOTALS**		1109		2201				**3310**
SPLIT %		60.9%		39.1%				**36.7%**	**SPLIT %**		33.5%		66.5%				**63.3%**

DAILY TOTALS	NB	SB	EB	WB	Total
	2,278	2,950	0	0	5,228

AM Peak Hour	06:45	07:00						**06:45**	**PM Peak Hour**	15:30	16:15						**16:15**
AM Pk Volume	310	144						**448**	**PM Pk Volume**	164	567						**714**
Pk Hr Factor	0.799	0.837						**0.836**	**Pk Hr Factor**	0.976	0.915						**0.970**
7 - 9 Volume	476	244	0	0				**720**	**4 - 6 Volume**	275	1009	0	0				**1284**
7 - 9 Peak Hour	07:15	07:00						**07:00**	**4 - 6 Peak Hour**	16:00	16:15						**16:15**
7 - 9 Pk Volume	307	144	0	0				**439**	**4 - 6 Pk Volume**	148	567	0	0				**714**
Pk Hr Factor	0.791	0.837	0.000	0.000				**0.819**	**Pk Hr Factor**	0.881	0.915	0.000	0.000				**0.970**

Prepared by NDS/ATD

VOLUME

Willow Rd Bet. SR-67 & Moreno Ave

Day: Tuesday
Date: 3/12/2019

City: Lakeside
Project #: CA19_4127_003

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,324	4,260	8,584

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			12		27		39		12:00			56		52		108	
00:15			11		33		44		12:15			52		58		110	
00:30			14		27		41		12:30			59		56		115	
00:45			8	45	35	122	43	167	12:45			60	227	58	224	118	451
01:00			3		19		22		13:00			51		53		104	
01:15			12		22		34		13:15			59		62		121	
01:30			4		14		18		13:30			54		62		116	
01:45			4	23	14	69	18	92	13:45			55	219	72	249	127	468
02:00			11		17		28		14:00			69		50		119	
02:15			5		16		21		14:15			87		68		155	
02:30			4		10		14		14:30			84		83		167	
02:45			7	27	14	57	21	84	14:45			84	324	76	277	160	601
03:00			4		21		25		15:00			69		60		129	
03:15			4		9		13		15:15			103		51		154	
03:30			8		16		24		15:30			89		96		185	
03:45			4	20	10	56	14	76	15:45			113	374	77	284	190	658
04:00			4		15		19		16:00			105		87		192	
04:15			7		20		27		16:15			102		76		178	
04:30			9		19		28		16:30			90		110		200	
04:45			23	43	22	76	45	119	16:45			84	381	79	352	163	733
05:00			7		24		31		17:00			127		72		199	
05:15			13		42		55		17:15			111		88		199	
05:30			29		29		58		17:30			97		74		171	
05:45			35	84	40	135	75	219	17:45			93	428	71	305	164	733
06:00			22		44		66		18:00			87		56		143	
06:15			26		56		82		18:15			97		60		157	
06:30			30		40		70		18:30			63		50		113	
06:45			69	147	53	193	122	340	18:45			60	307	36	202	96	509
07:00			64		66		130		19:00			66		57		123	
07:15			31		67		98		19:15			63		34		97	
07:30			28		51		79		19:30			77		49		126	
07:45			50	173	67	251	117	424	19:45			52	258	31	171	83	429
08:00			42		43		85		20:00			61		42		103	
08:15			37		62		99		20:15			47		31		78	
08:30			35		45		80		20:30			57		46		103	
08:45			58	172	50	200	108	372	20:45			40	205	30	149	70	354
09:00			42		36		78		21:00			44		35		79	
09:15			36		46		82		21:15			38		32		70	
09:30			43		40		83		21:30			35		17		52	
09:45			50	171	37	159	87	330	21:45			31	148	42	126	73	274
10:00			35		37		72		22:00			28		24		52	
10:15			39		44		83		22:15			30		41		71	
10:30			47		44		91		22:30			22		40		62	
10:45			54	175	39	164	93	339	22:45			23	103	36	141	59	244
11:00			50		31		81		23:00			15		27		42	
11:15			45		53		98		23:15			14		38		52	
11:30			50		49		99		23:30			16		18		34	
11:45			63	208	52	185	115	393	23:45			17	62	30	113	47	175
TOTALS				1288		1667		**2955**	**TOTALS**				3036		2593		**5629**
SPLIT %				43.6%		56.4%		**34.4%**	**SPLIT %**				53.9%		46.1%		**65.6%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,324	4,260	8,584

AM Peak Hour			11:45	07:00	**11:45**	**PM Peak Hour**			17:00	16:00	**16:30**
AM Pk Volume			230	251	**448**	**PM Pk Volume**			428	352	**761**
Pk Hr Factor			0.913	0.937	**0.974**	**Pk Hr Factor**			0.843	0.800	**0.951**
7 - 9 Volume	0	0	345	451	**796**	**4 - 6 Volume**	0	0	809	657	**1466**
7 - 9 Peak Hour			07:00	07:00	**07:00**	**4 - 6 Peak Hour**			17:00	16:00	**16:30**
7 - 9 Pk Volume	0	0	173	251	**424**	**4 - 6 Pk Volume**	0	0	428	352	**761**
Pk Hr Factor	0.000	0.000	0.676	0.937	**0.815**	**Pk Hr Factor**	0.000	0.000	0.843	0.800	**0.951**