TABLE 10-1
TRIP GENERATION YEAR 2030 (PHASE V & VI)

Land Use	Quantity	Daily Trip Ends (ADT)		AM Peak Hour					PM Peak Hour				
		Rate	Volume	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
						In	Out	Total			In	Out	Total
Park Expansion	19.7 Acres	50 /Acre[3]	985	2%	5:5	10	10	20	13%	5:5	65	64	129
Park Expansion	16 Acres	50 /Acre[3]	800	2%	5:5	8	8	16	13%	5:5	52	52	104
Total Trip Generation (Phase 5&6)			**1,785**			**18**	**18**	**36**			**117**	**116**	**233**
Trip Generation (Phases 1-4) From Table 9-1			32,819			686	474	1,160			1,679	1,658	3,337
Net Year 2030 Trip Generation			**34,604**			**704**	**492**	**1,196**			**1,796**	**1,774**	**3,570**
Net Year 2030 Total Primary Trip Generation			29,614			592	418	1,010			1,483	1,461	2,944
Pass-by Trip Generation For Village Commercial & Commercial Site B			4,990			112	74	186			313	313	626

Footnotes:

1. Generation rate obtained from the SANDAG Brief Guide (April 2002) for Hotel (w/ convention facilities/restaurant).

2. Generation rate obtained from the SANDAG Brief Guide (April 2002) for Specialty Retail/Strip Commercial.

3. Generation rate for daily traffic obtained from the SANDAG Brief Guide (April 2002) for City park (Active Park), and the peak hour percentages and split is based on the additional survey conducted by LLG..

3.4 Project Traffic Generation

The project is a Plan Block Development Plan that will require a General Plan Amendment and rezone from light industrial uses to residential on two parcels for a total of 25.6 acres (Kawano parcel 9.7 acres and Nagata parcel 15.9 acres). A maximum of 400 dwelling units is proposed for a density of 15.6 units per acre (400 units / 25.6 acres).

The site has historically been used for agricultural, packing, and shipping uses. A trip credit was not applied because the previous uses were not in operation when off-site traffic data was collected.

The project traffic generation was calculated using SANDAG trip rates from the *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002. Based on the project acreage of 25.6 acres and proposed 400 dwelling units, the density is 15.6 units per acre. The SANDAG trip rate is 8 daily trips per dwelling unit for densities between 6 and 20 units per acre.

Using SANDAG traffic generation rates, the project is calculated to generate 3,200 daily trips, 256 AM peak hour trips (51 inbound and 205 outbound), and 320 PM peak hour trips (224 inbound and 96 outbound) as shown in **Table 8**.

TABLE 8: PROJECT TRAFFIC GENERATION

Proposed								AM					PM	
Land Use	Rate	Size & Units	ADT	%	Split		IN	OUT	%	Split		IN	OUT
Residential (density 6-20 du/ac)	8 /DU	400 DU	**3,200**	8%	0.2	0.8	51	205	10%	0.7	0.3	224	96
					Peak hour totals:		**256**					**320**	

Source: SANDAG *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region,* April 2002. ADT-Average Daily Traffic.

The final product may have a mix of small lot single family and multi-family units; therefore, the trip generation levels (ADT, AM & PM) as analyzed within this report will define the upper limit of traffic that can be generated by the final project type and unit count.

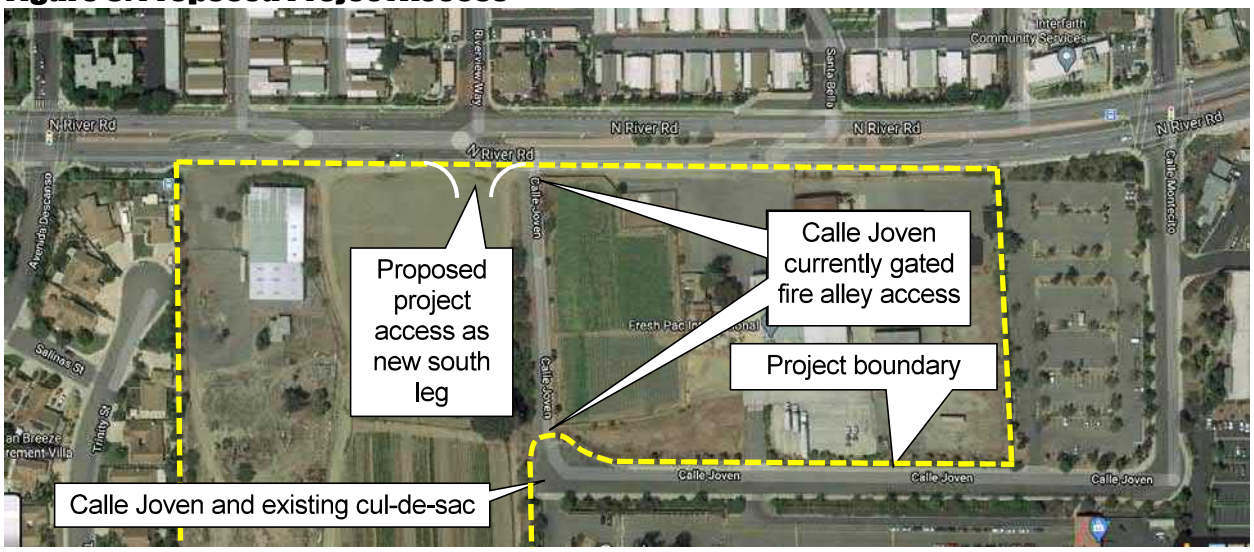
The proposed rezone will replace the existing industrial use with a proposed residential use. The existing industrial zoning could generate a range of traffic based on the type of industrial use. SANDAG trip rates document a range of 200 ADT/acre for an Industrial/Business Park (commercial included) to 90 ADT/acre for an Industrial/Business Park (no commercial). For the project site of 25.6 acres, the industrial trips could range from 5,120 ADT (Industrial/Business Park with commercial) to 2,304 ADT (Industrial/Business Park without commercial). The existing land use has the potential to generate more traffic than the proposed residential land use. However, this is a ground to plan analysis; therefore, a trip credit was not applied for the potential industrial land uses.

3.5 Project Access

Primary project access is proposed by constructing a south leg at the intersection of N. River Road/ Riverview Way. The project applicant proposed to signalize this intersection based on Signal Warrant Condition B "Interruption of Continuous Traffic", which is satisfied with the addition of project traffic. Signal warrant calculations for the project driveway and lane configurations are described within Section 4.16.1 of this report.

A portion of the southern project boundary borders Calle Joven. A secondary access is anticipated to connect with Calle Joven; however, a site design is not completed, thus the internal circulation and connection with Calle Joven has yet to be determined. There is currently a gated fire access alley labeled Calle Joven immediately east of Riverview Way that will be addressed in the final site design. The proposed project access, Calle Joven, and the gated fire access alley are shown in **Figure 8**.

Figure 8: Proposed Project Access



Source: Google Maps

3.6 Project Distribution and Assignment

Project trips were distributed to the adjacent roadway network based on a San Diego Association of Governments (SANDAG) Series 12 Select Zone Assignment (SZA) that was reviewed and adjusted by City staff. A copy of the SZA is included in **Appendix G**. The project distribution shown in **Figure 9**. The project assignment is shown in **Figure 10.**

Figure 9: Project Distribution

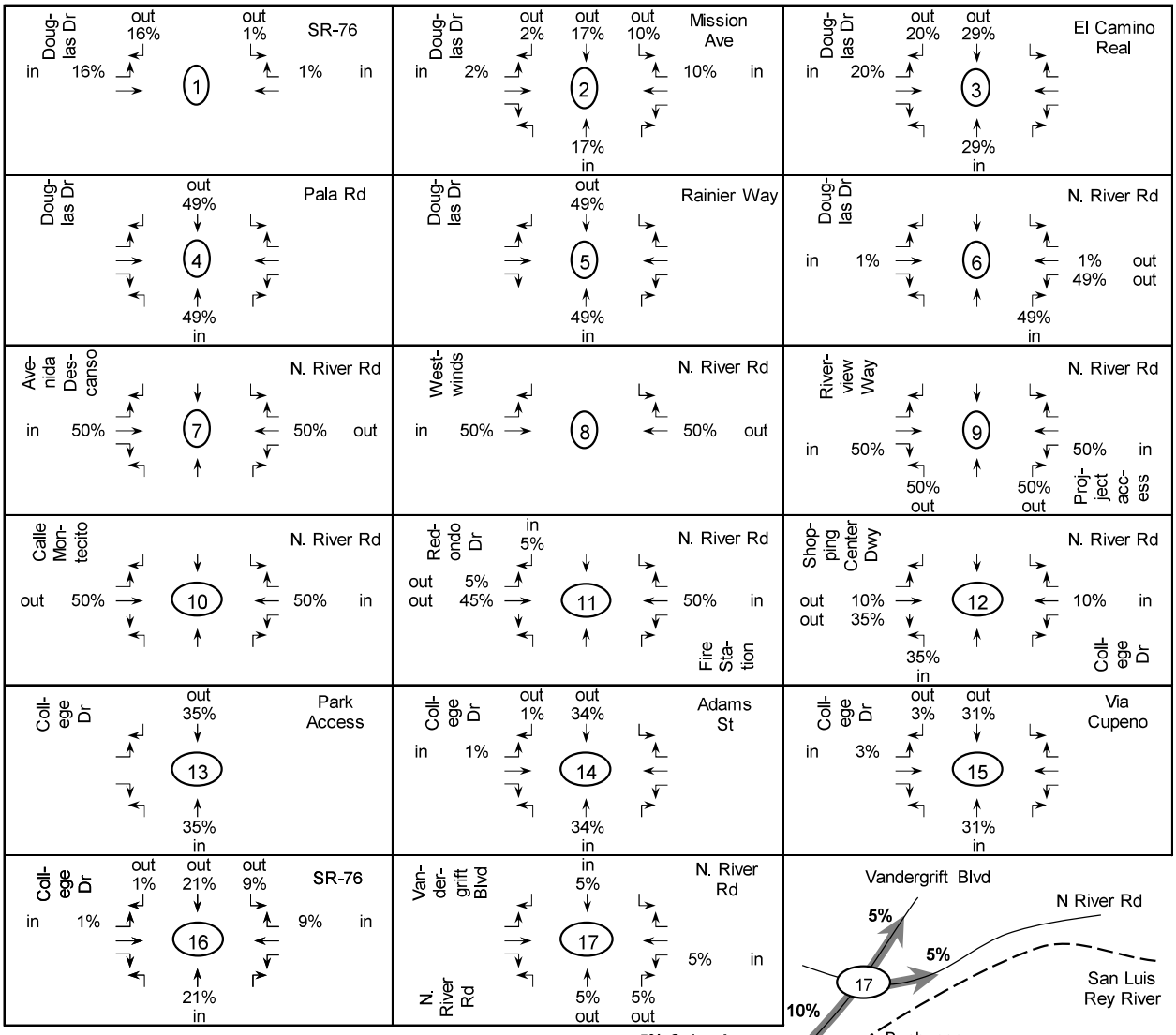
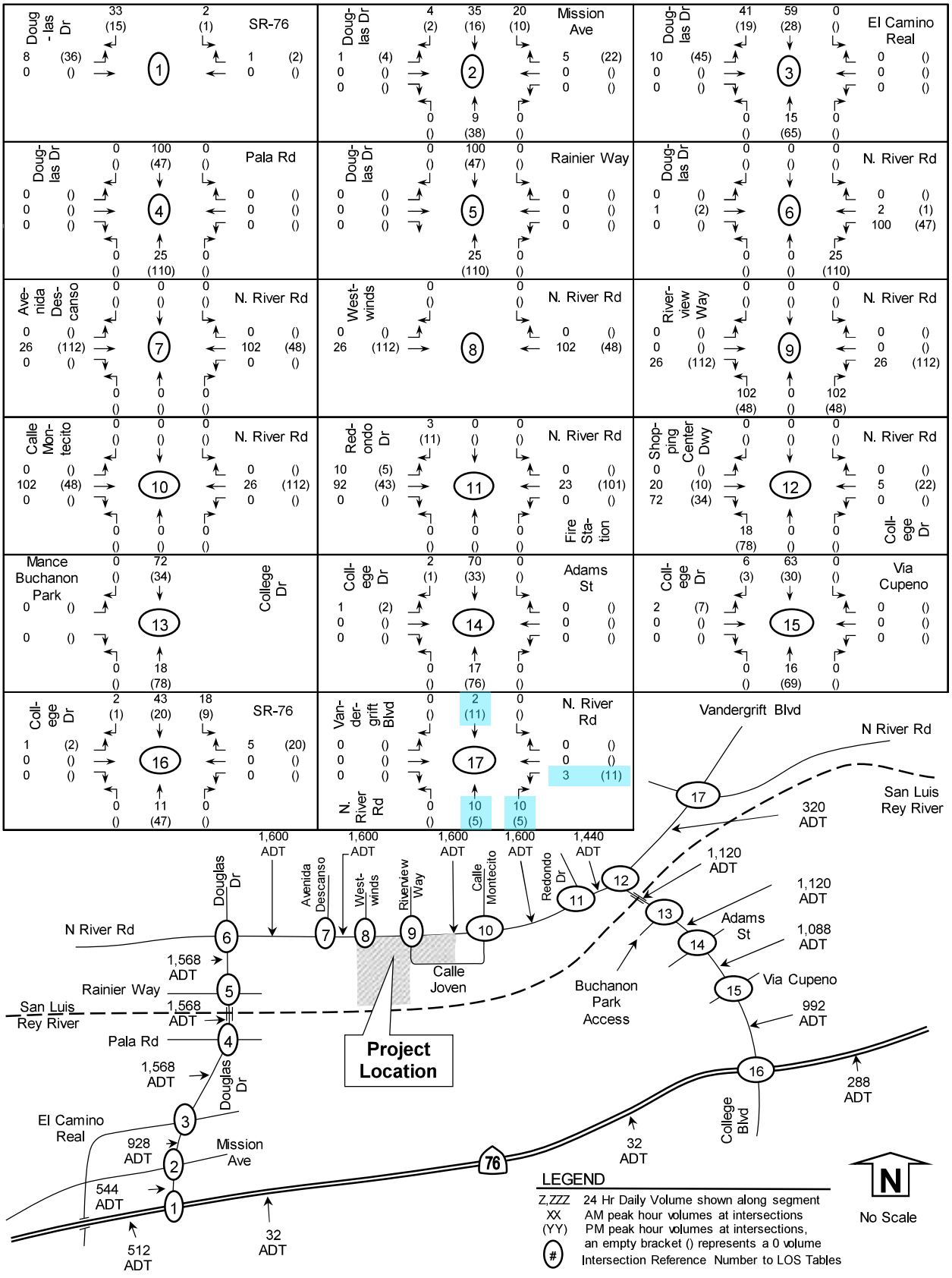


Figure 10: Project Volumes



7.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

A highly descriptive discussion of the proposed Project land uses is detailed in *Section 2.2* of this report. As discussed in *Section 2.2* of this report, the Project proposes to develop the approximately 176.63-acre site with 689 residential units and would also include commercial and restaurant uses, a local farm, and a hotel. The residential portion of the Project proposes a mix of housing types including single-family detached homes, multi-family attached homes, and mixed-use residential units (located above or in close proximity to commercial uses in the Village Core). The following is a discussion on the traffic expected to be generated with the development of the Project.

7.1 Trip Generation

Gross Trip Generation

Trip generation for the proposed development was calculated using the SANDAG *(Not so) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002. With the changes in housing types proposed, three (3) different residential trip rates were used to calculate the total Project trip generation. The residential trip rates were selected based on the density for each Planning Area. The commercial portion of the site representing the Maker Spaces and Farmers' Market land use types uses the SANDAG "specialty retail" rates and the restaurant uses the "quality restaurant" rate. The proposed farm use uses the SANDAG "agriculture" rate in the calculations and the hotel use utilizes a modified "hotel" rate from SANDAG. The hotel rate was reduced from 10 ADT/room to 9 ADT/room since the hotel does not propose to include convention facilities that are included in the typical "hotel w/ convention facilities/restaurant" rate from SANDAG. The hotel is labeled as a "boutique" hotel that would utilize the community amenities as ancillary uses to the hotel.

Primary / Pass-By Trips

Development of new land uses will create trips on a street system that are new, or "primary" trips. However, several types of retail/commercial developments experience local and regional trips at the driveway that are already on the street system whether that development exists or not. These trips are known as "pass-by" trips.

Pass-by trips that are already on the street system passing along the Project frontage (North River Road), and only appear as new trips in and out of the Project driveways. Using engineering guidelines, 10% of daily and PM peak hour commercial traffic is categorized as pass-by.

Primary Trips

The remaining trips (90%) are those that are new to the street system, also called "primary" trips. These trips occur due to the development of the Project and the Project itself becomes one end of a primary trip, either the origin or the destination.

Net Trip Generation

After accounting for pass-by trips, a mixed-use reduction was applied to the remaining commercial and residential trips. Per the SANDAG guide, up to a 10% mixed-use reduction can be applied to

projects “where residential and commercial retail are combined (demonstrate mode split of walking trips to replace vehicular trips).” Given the detailed explanation of the walkability of the Project site in *Section 2.2* of this report, as well as in the Planned Development Plan prepared by the applicant, a mixed-use reduction was deemed appropriate. To provide a conservative reduction, 5% was applied to the Project trip generation.

Table 7–1 shows the Project traffic generation.

TABLE 7–1
PROJECT TRIP GENERATION

	Land Use	Size		Daily Trip Ends (ADTs)		AM Peak Hour						PM Peak Hour					
				Rate [a]	Volume	% of ADT [a]	In:Out Split		Volume In	Volume Out	Volume Total	% of ADT [a]	In:Out Split		Volume In	Volume Out	Volume Total
–	**RESIDENTIAL TRIPS**																
–	**UNIT TYPE**																
–	Single-Family Detached and Multi-Family Attached (≥ 20 DU per acre) [f]	130	DU	6 /DU	780	8%	20%	80%	12	50	62	9%	70%	30%	49	21	70
–	Single-Family Detached (≤ 20 DU per acre) [g]	250	DU	8 /DU	2,000	8%	20%	80%	32	128	160	10%	70%	30%	140	60	200
–	Single-Family Detached (≤ 6 DU per acre) [h]	309	DU	10 /DU	3,090	8%	30%	70%	74	173	247	10%	70%	30%	216	93	309
A	**RESIDENTIAL TRIP GENERATION**	**689**	**DU**	—	**5,870**	—	—	—	**118**	**351**	**469**	—	—	—	**405**	**174**	**579**
–	**NON-RESIDENTIAL COMPONENT**																
B	Commercial (C + D)	25	KSF	40 /KSF	1,000	3%	60%	40%	18	12	30	9%	50%	50%	45	45	90
C	Primary External Trips [d]	90%		—	900	—	—	—	18	12	30	9%	50%	50%	40	40	80
D	*Pass-by External Trips* [d]	*10%*		—	*100*	—	—	—	—	—	—	*9%*	*50%*	*50%*	*5*	*5*	*10*
E	Restaurant [b] (F + G)	5	KSF	100 /KSF	500	1%	60%	40%	3	2	5	8%	70%	30%	28	12	40
F	Primary External Trips [d]	90%		—	450	—	—	—	3	2	5	8%	70%	30%	25	11	36
G	*Pass-by External Trips* [d]	*10%*		—	*50*	—	—	—	—	—	—	*8%*	*70%*	*30%*	*3*	*1*	*4*
H	Farm [c]	30	acres	2 /acre	60	0.26	43%	57%	7	9	16	0.45	57%	43%	15	12	27
I	Hotel [e]	100	rooms	9 /room	900	8%	40%	60%	29	43	72	9%	60%	40%	49	32	81
J	**Subtotal Primary Trips (Residential + Primary Commercial Trips + Hotel Trips) (A + C + F + H + I)**				**8,180**	—	—	—	**175**	**417**	**592**	—	—	—	**534**	**269**	**803**
K	*Mixed Use Reduction* [d] *(J x 5%)*	*5%*		—	*(409)*	—	—	—	*(9)*	*(21)*	*(30)*	—	—	—	*(27)*	*(13)*	*(40)*
L	**TOTAL PRIMARY TRIPS (J – K)**				**7,771**	—	—	—	**166**	**396**	**562**	—	—	—	**507**	**256**	**763**
M	**TOTAL DRIVEWAY TRIPS (A + B + E + H + I) – K**				**7,921**	—	—	—	**166**	**396**	**562**	—	—	—	**515**	**262**	**777**

Footnotes:

a. Rates based on SANDAG's *(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002
b. Restaurant uses "Quality Restaurant" rate from SANDAG.
c. For Farm, SANDAG "agriculture" rate applied. For peak splits, ITE 818 "Nursery (Wholesale)" rate applied.
d. Primary trips, pass-by trips, and mixed-use credit percentages sourced to SANDAG.
e. For Hotel, SANDAG "hotel" rate reduced from 10 ADT/room to 9 ADT/room since the "hotel" rate includes trips generated by convention facilities, which are not proposed by the Project.
f. These units are assigned the "Apartment" trip rate.
g. These units are assigned the "Condominium" trip rate.
~~e~~ h. These units are assigned the "Single Family" trip rate.

7.2 Trip Distribution/Assignment

The distribution of Project traffic was determined using a Select Zone Assignment (SZA) computerized traffic model prepared by SANDAG. The SZA used SANDAG's Series 12 model with the base year (existing) roadway network and land use conditions, and matches trip generating uses (such as residential) with trip-attracting uses (such as retail/commercial), and presents the relative percentage of traffic on the roadway system.

The future connection of Melrose Drive between North River Road and SR-76 and Spur Avenue and S. Santa Fe Avenue, which is included in later model years of the Series 12 traffic model, is in close proximity to the Project site. Under existing and near-term conditions, this connection does not exist. The connection of Melrose Drive between its current terminus, north of SR-76 to North River Road would have a considerable effect on Project trip distribution. This connection would allow a substantial share of Project-related traffic to use Melrose Drive to access SR-76 and the regional street system. In its absence, the majority of Project-related traffic bound for SR-76 will travel via Vandegrift Boulevard and College Boulevard, through locations already subject to congestion during peak hours. Therefore, two separate distributions were prepared focusing on the connection or elimination of the Melrose Drive extensions. The baseline existing and near-term analyses assume the current conditions without the Melrose Drive extensions.

By the Year 2035, the City's Circulation Element Master Transportation Roadway Plan is assumed to be completed. Therefore, the Year 2035 baseline analysis redistributes Project traffic within the study area to account for the future extension of Melrose Drive. Further details on this scenario are provided later on in *Section 11.0* of this report.

The connection of Melrose Drive over the San Luis Rey Bridge is affected by significant environmental constraints and a lack of funding. Therefore, a separate "Year 2035 Without Melrose Drive Extension" analysis is provided later on in *Section 14.0* of this report using the existing and near-term Project distribution without this connection.

Once the traffic distribution was established, the Project-generated traffic was assigned to the adjacent street system.

Figure 7–1 shows the regional and local distribution of Project trips (under existing and near-term conditions, without Melrose Drive extension). ***Figure 7–2*** depicts the proposed Project traffic assignment. ***Figure 7–3*** depicts the Existing + Project traffic volumes.

It should be noted the Project driveway distribution and access traffic volumes are provided later on in *Section 13.0* of this report.

Appendix D contains a copy of the SANDAG Select Zone Assignment traffic model.

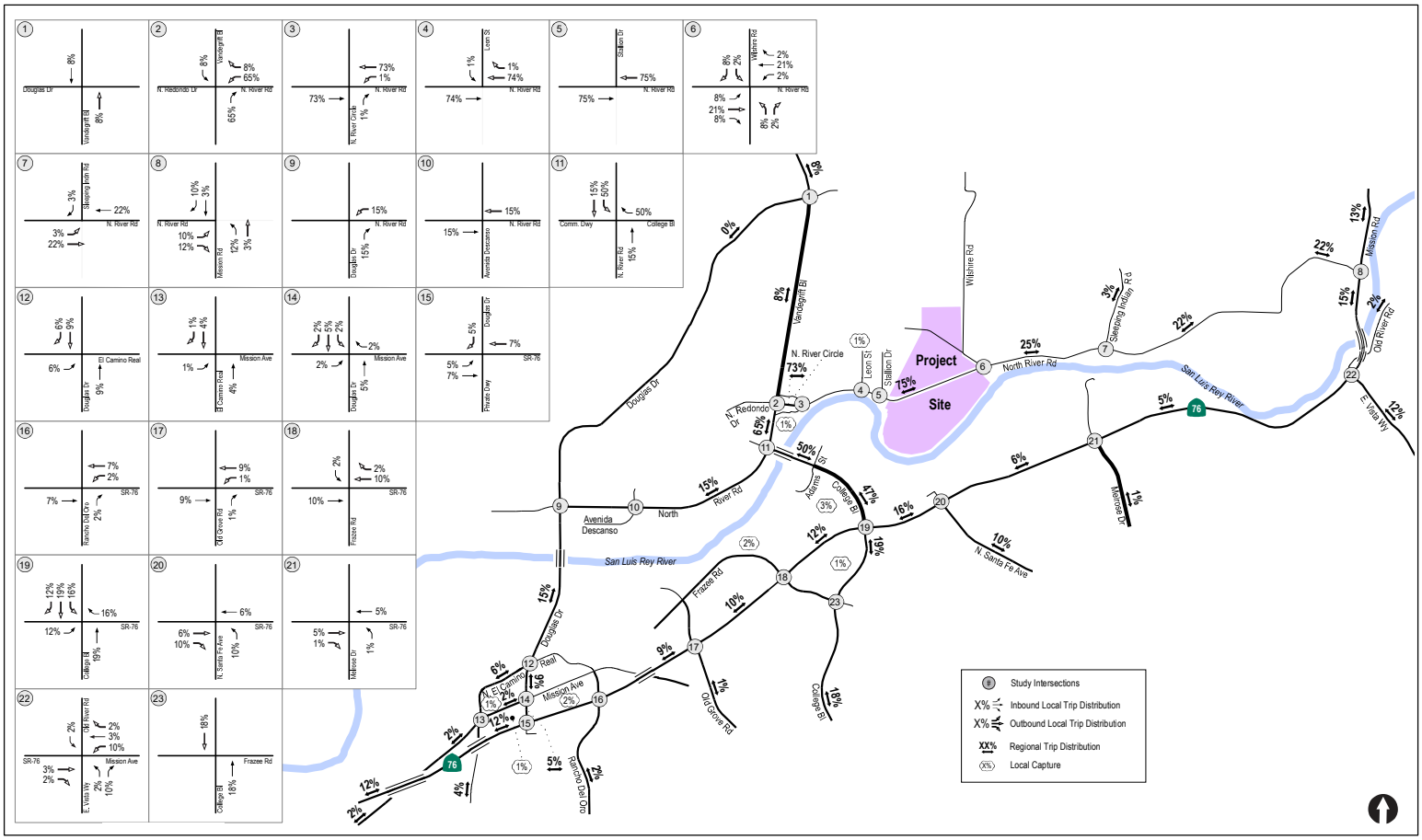


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Figure 7-1

Project Traffic Distribution

North River Farms

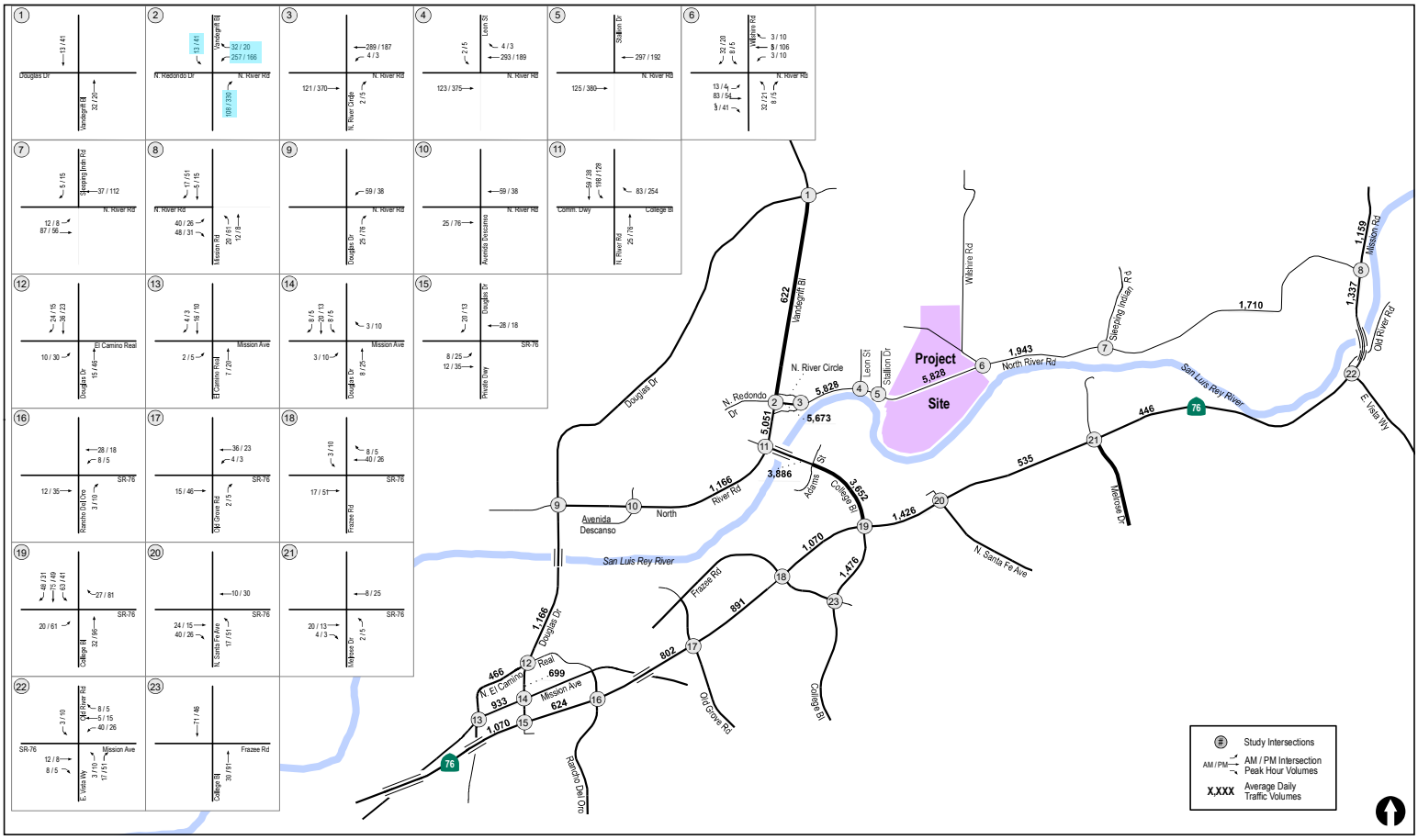

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Figure 7-2

Project Traffic Volumes

North River Farms

TABLE 7–2
WEEKDAY PROJECT TRIP GENERATION

Land Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour					PM Peak Hour				
		Rate [a]	Volume	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
						In	Out	Total			In	Out	Total
Hotel (w/ convention facilities / restaurant)	300 Rooms	10 / Room	3,000	6%	60:40	108	72	180	8%	60:40	144	96	240
Multi-Family Residential	700 Units	8 / DU	5,600	8%	20:80	90	358	448	10%	70:30	392	168	560
Retail / Commercial Center	126 KSF	80 / KSF	10,080	4%	60:40	242	161	403	10%	50:50	504	504	1,008
Pass-by Credit (30% PM peak)	-	-	-	-		-	-	-			*-151*	*-151*	*-302*
Surf Lagoon / Resort Pass Guests [b]	1 Site	-	360	-	-	13	13	26	-		13	13	26
Proposed Project Weekday Total			**19,040**			**453**	**604**	**1,057**			**902**	**630**	**1,532**
Proposed Project Weekday Total (Driveway Trips) [c]			**19,040**			**453**	**604**	**1,057**			**1,053**	**781**	**1,834**

Footnotes:

a. Rates based on SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002 except where noted.

b. 120 Surf Lagoon guests and 50 Report Pass guests expected daily. See *Appendix E* for Trip Generation Calculations.

c. Driveway trip calculations do not include pass-by credits.

General Notes:

1. ADT = Average daily traffic

TABLE 7–3
WEEKEND PROJECT TRIP GENERATION

Land Use	Size	Daily Trip Ends (ADTs)		Peak Hour				
		Rate [a]	Volume	% of ADT	In:Out Split	Volume		
						In	Out	Total
Hotel (w/ convention facilities / restaurant)	300 Rooms	8.19 / Room	2,457	0.72	56:44	121	95	216
Multi-Family Residential	700 Units	8.14 / DU	5,698	0.70	50:50	245	245	490
Retail / Commercial Center	126 KSF	46.12 / KSF	5,811	4.50	52:48	295	272	567
Surf Lagoon / Resort Pass Guests [b]	1 Site	-	460	-	-	23	23	46
Proposed Project Weekend Total			**14,426**			**684**	**635**	**1,319**

Footnotes:

a. Rates based on the Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, September 2017 except where noted.

b. 120 Surf Lagoon guests and 100 Report Pass guests expected daily. See *Appendix E* for Trip Generation Calculations.

General Notes:

1. ADT = Average daily traffic

7.3 Trip Distribution/Assignment

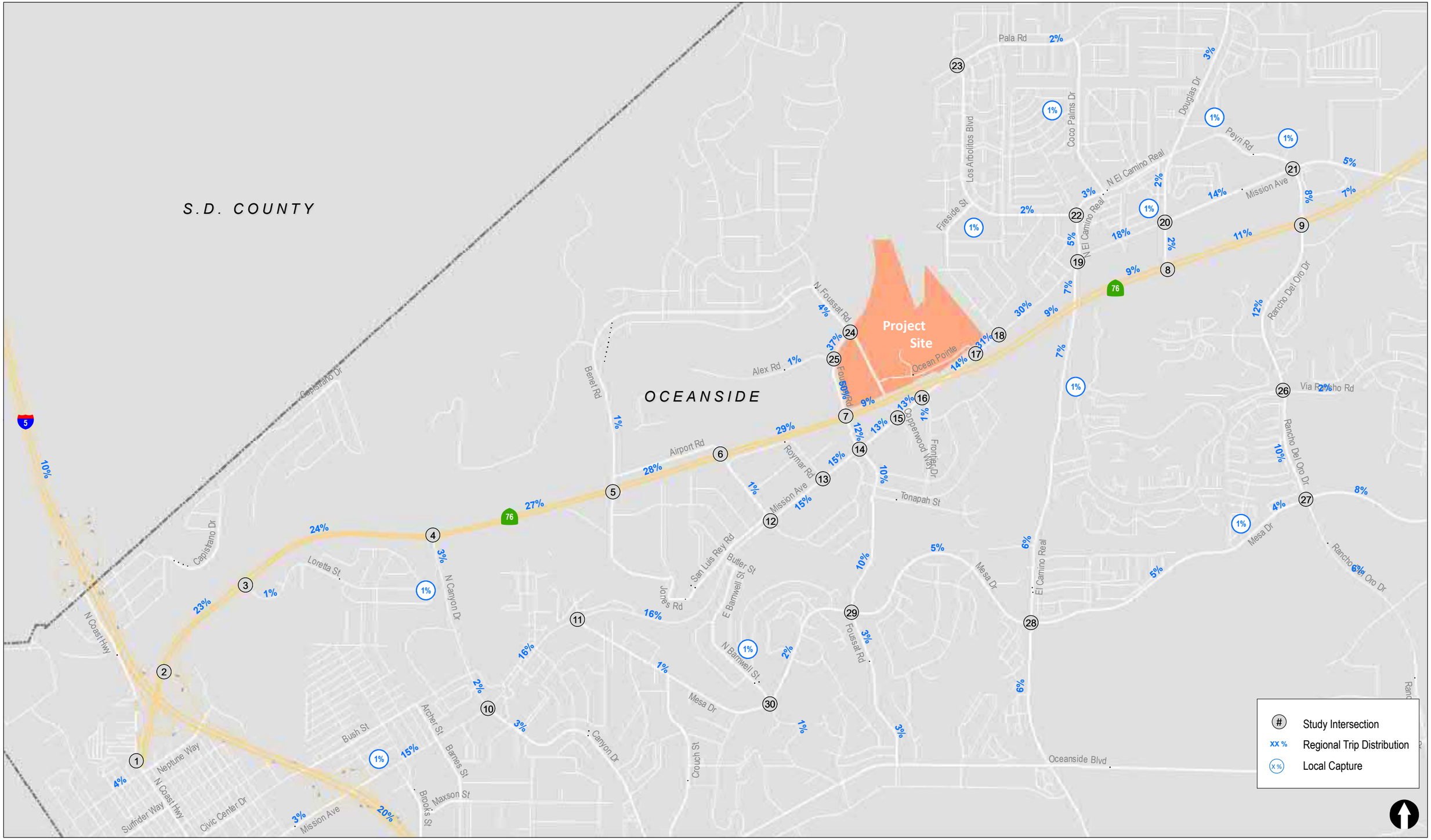
The distribution of Project traffic was determined based on information in the previously approved TIA for the Pavilion at Oceanside project as well as the locations of the proposed access points, traffic patterns observed from the existing traffic counts, and the proximity of the project to surrounding freeways, attractions, and residential and commercial areas. The trip distribution was developed in consultation with City staff.

Figures 7–1a and ***7-1b*** show the distribution of Project trips to the study street segments and intersections, respectively.

Once the traffic distribution was established, the Project-generated traffic was assigned to the adjacent street system. It should be noted that the Project's Weekday and Weekend distribution was assumed to be the same.

Figures 7–2a and ***7-2b*** depict the Weekday Project daily traffic volumes and AM / PM peak hour traffic volumes, respectively.

Figure 7–3 depicts the Weekend Project daily traffic and peak hour traffic volumes.



LINSCOTT LAW & GREENSPAN engineers

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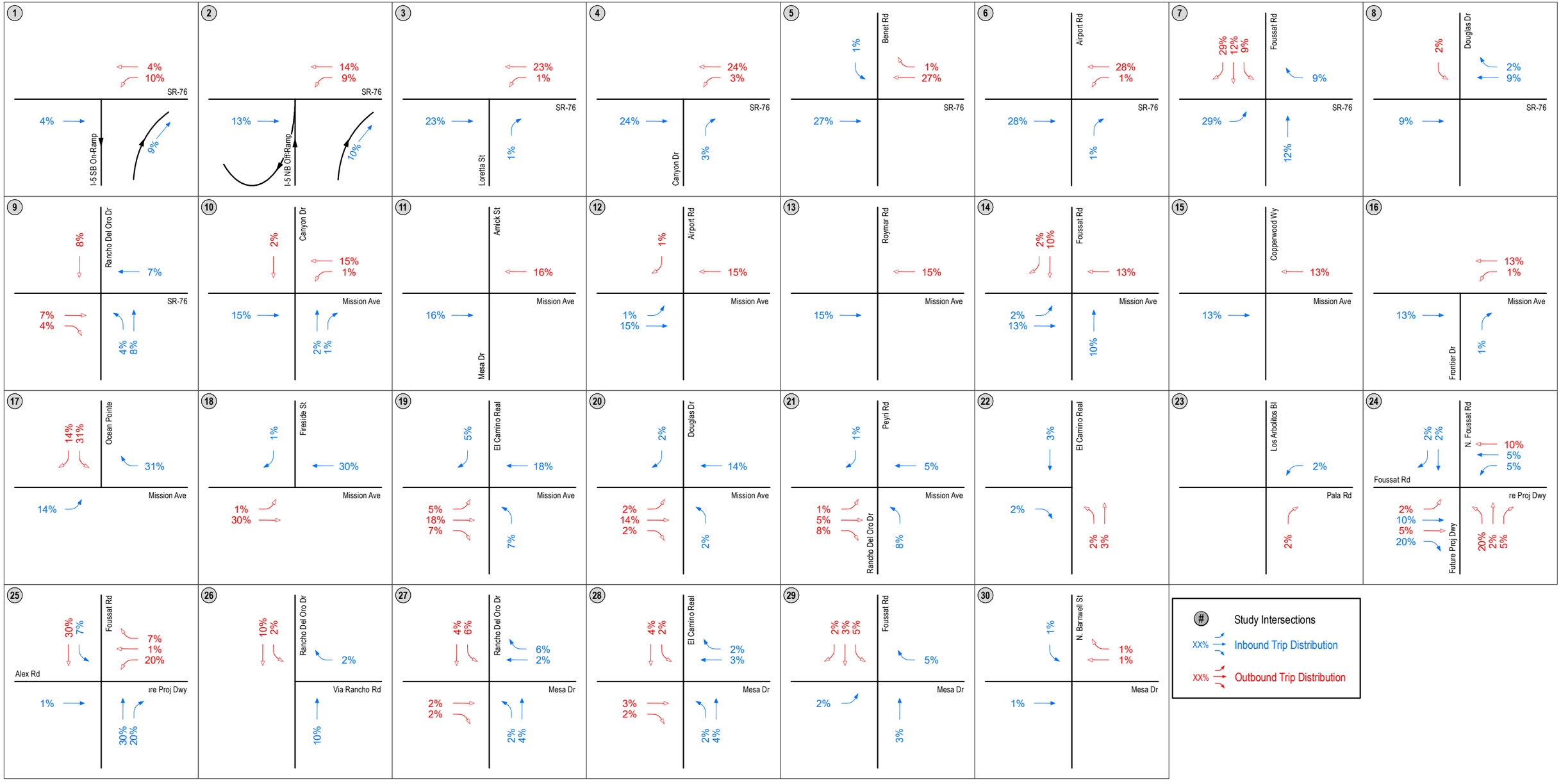
Figure 7-1

Project Traffic Distribution

(Page 1 of 2)

OCEAN KAMP



LINSCOTT LAW & GREENSPAN engineers

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Figure 7-1
Project Traffic Distribution
(Page 2 of 2)
OCEAN KAMP

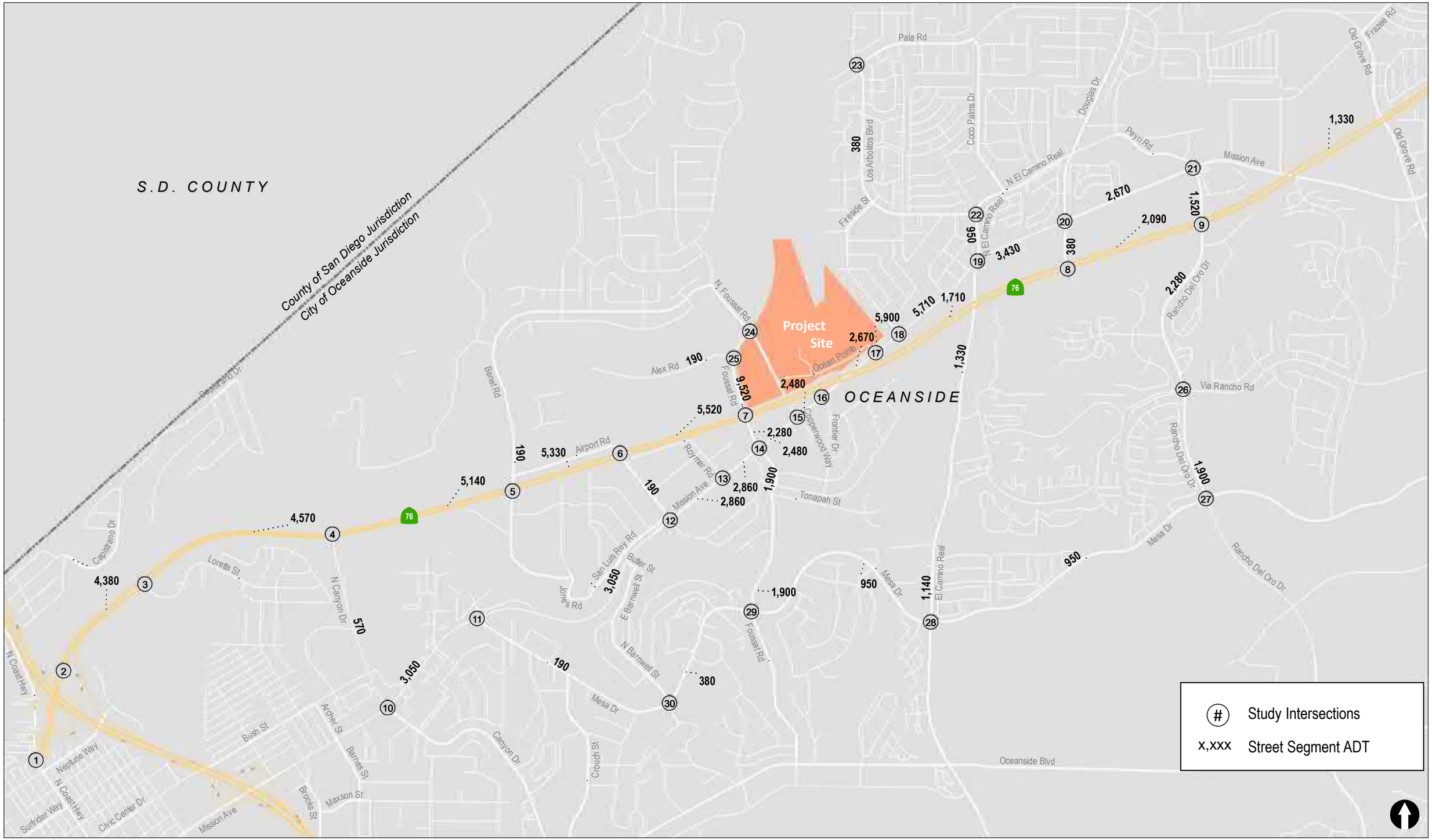

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Figure 7-2a

Weekday Project Traffic Volumes

(Page 1 of 2)

OCEAN KAMP

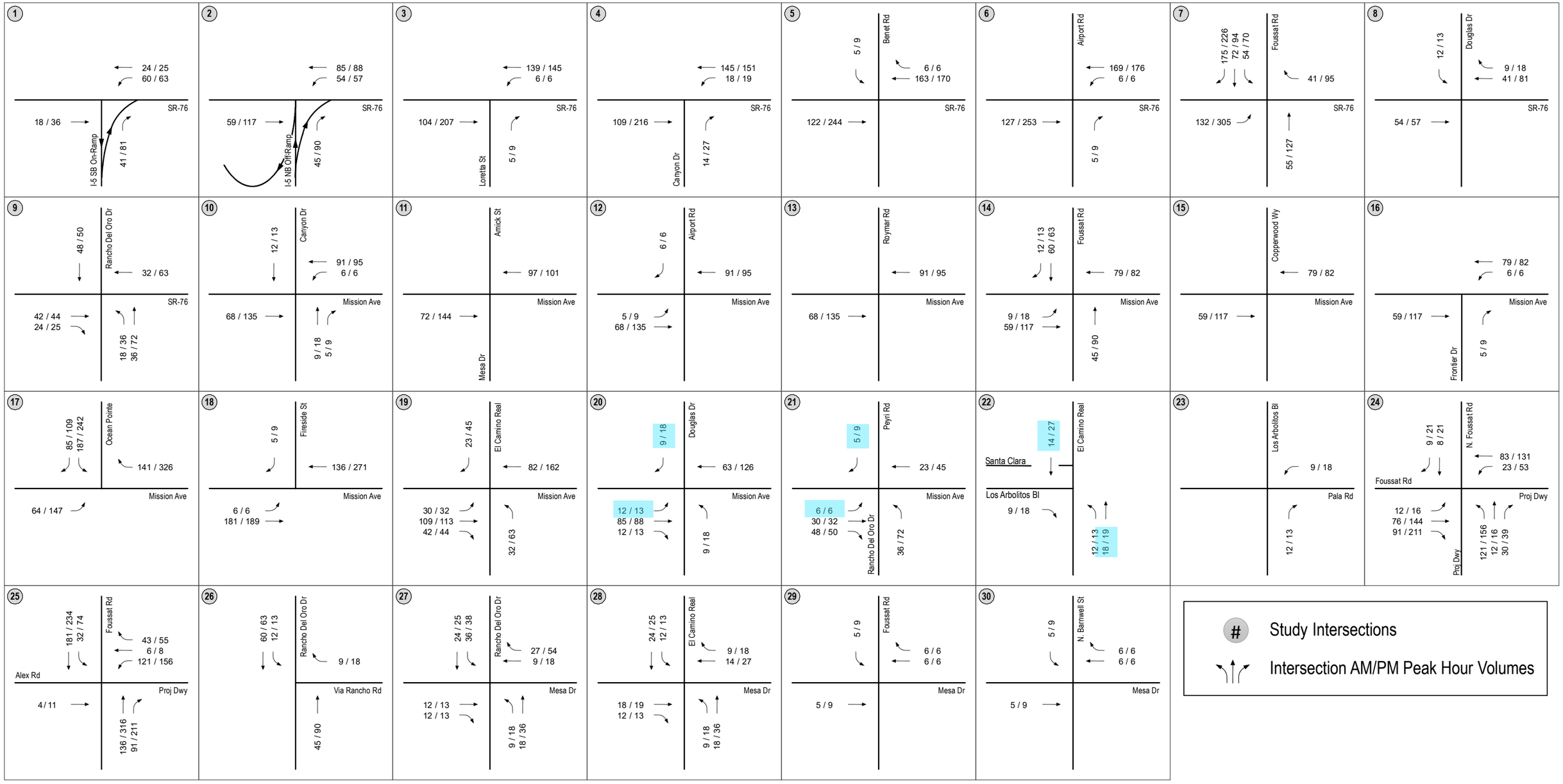

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Figure 7-2b

Weekday Project Traffic Volumes

(Page 2 of 2)

Ocean Kamp

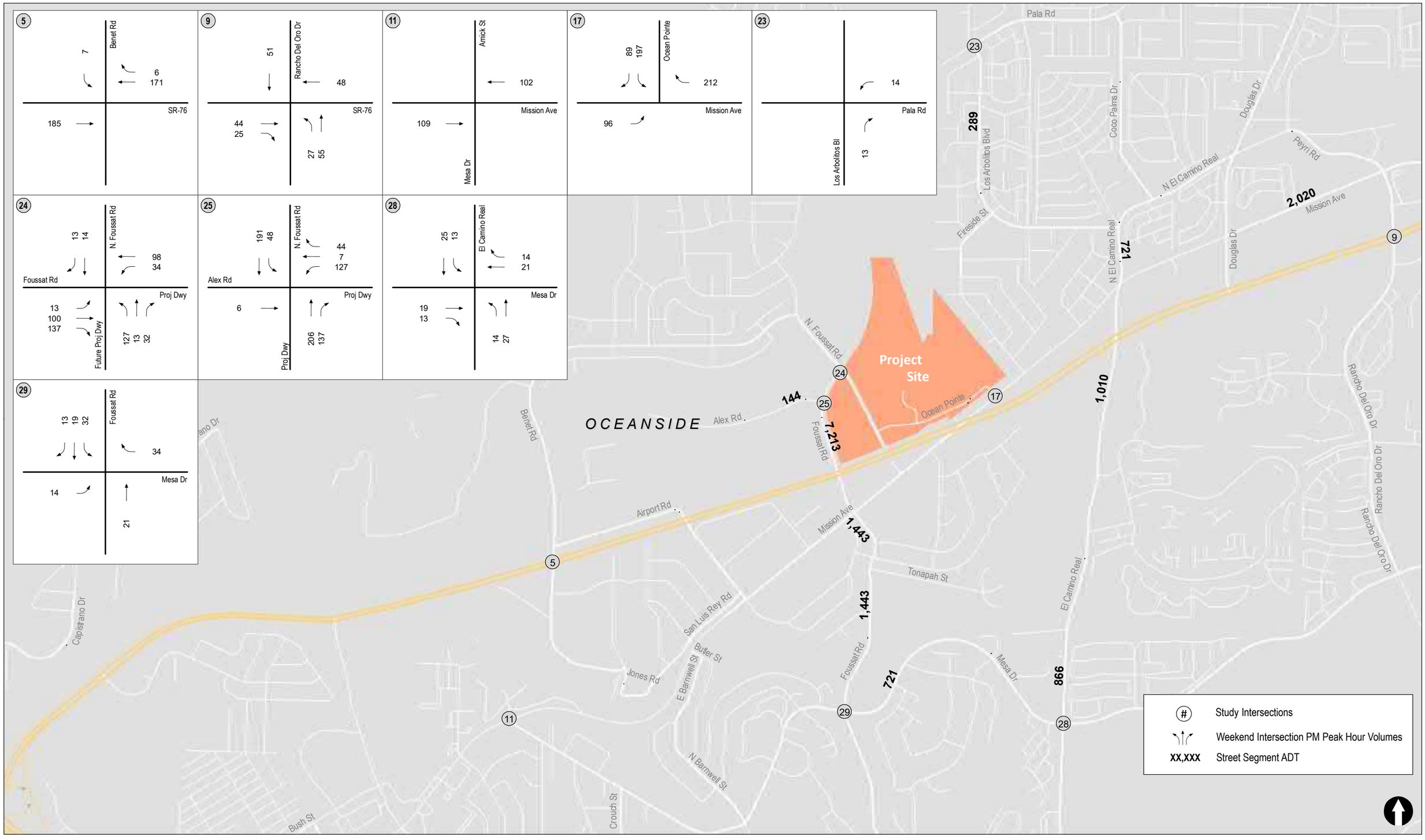

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Figure 7-3

Weekend Project Traffic Volumes

Saturday

OCEAN KAMP

7.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

7.1 Trip Generation

Trip generation rates were obtained from the (Not So) *Brief guide of Vehicular Traffic Generation Rates for the San Diego Region* (April 2002) by SANDAG. The "Residential, Apartment" (6 ADT / DU)" were used for the apartments, and the "Strip Commercial" (40 ADT /KSF)" trip rates were used for the local serving retail to estimate the Project trip generation.

Table 7–1 summarizes the trip generation for the Project. As shown in *Table 7–1*, the Project is calculated to generate 2,038 daily trips with 159 trips during the AM peak hour (33 inbound/ 126 outbound trips) and 183 trips during PM peak hour (127 inbound/ 56 outbound trips).

7.2 Trip Distribution and Assignment

Project traffic was distributed to the street system based on existing traffic patterns in the area, the Project's proximity to freeways and arterials, locations of retail, places of employment, schools, and other shopping opportunities in the study area.

24% of the Project trips were assigned to the west on Oceanside Boulevard, 26% to the north on N. Melrose Drive, 28% to the south on N. Melrose Drove and 20% to the east on W. Bobier Drive. The remaining 2% of the Project trips were assigned on Sports Park Way, north of the site.

Figure 7–1 shows the Project trip distribution. ***Figure 7–2*** shows the Project traffic volumes. ***Figure 7-3*** shows the Existing + Project traffic volumes.

TABLE 7–1
PROJECT TRIP GENERATION

Use	Quantity	Daily Trip Ends (ADT)[a]		AM Peak Hour					PM Peak Hour				
		Rate [b]	Volume	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
						In	Out	Total			In	Out	Total
Apartments	324 DU	6/ DU[c]	1,944	8%	2:8	31	125	156	9%	7:3	123	52	175
Retail [c]	2,338 SF	40/ KSF[d]	94	3%	6:4	2	1	3	9%	5:5	4	4	8
Total			**2,038**			**33**	**126**	**159**			**127**	**56**	**183**

Footnotes:

a Average Daily Trips

b Trip Generation Rate from the SANDAG's *Not So Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, 2002.

c Trip rates for Apartments used.

d Trip rates for Strip Commercial used.

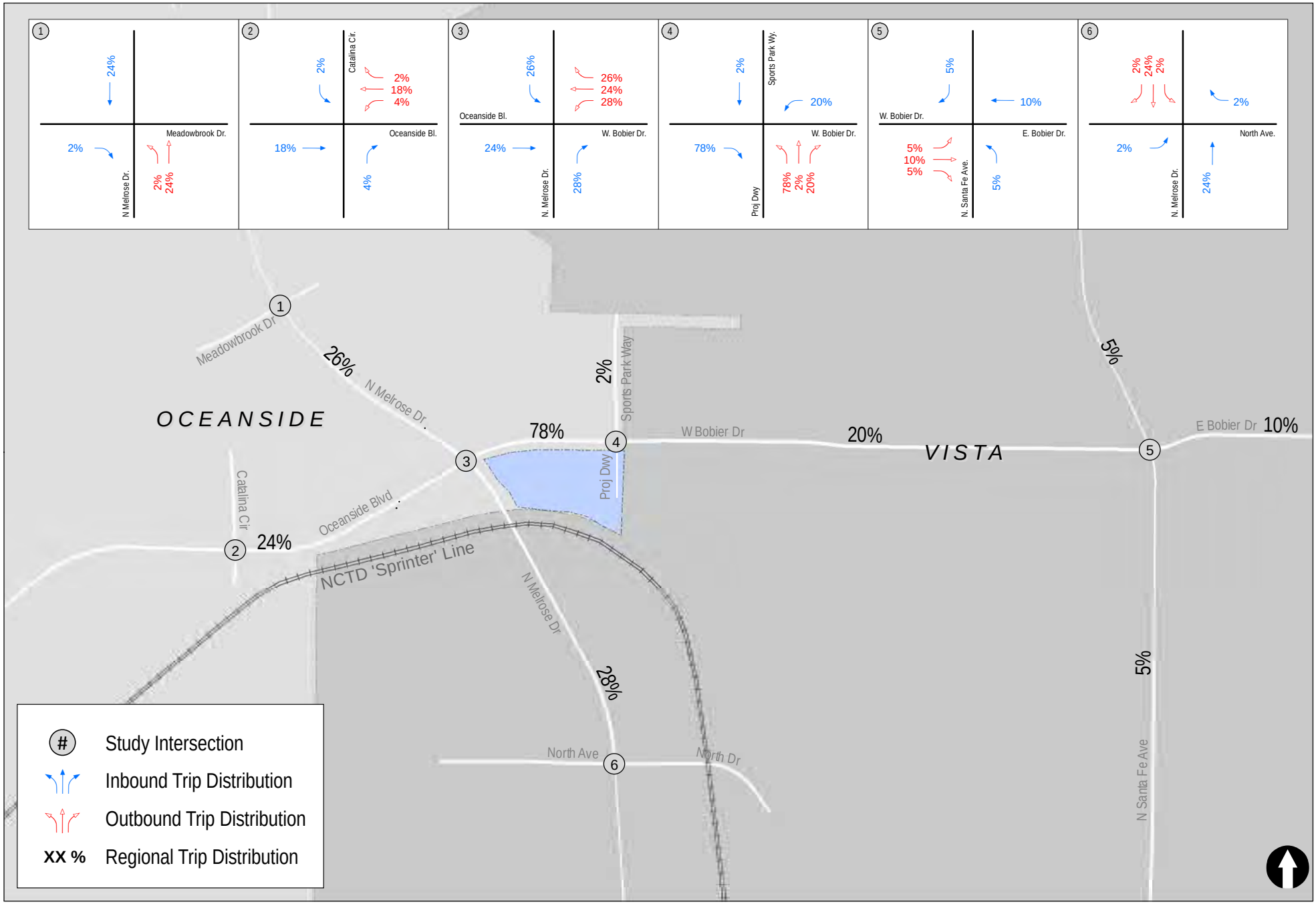

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Figure 7-1

Project Traffic Distribution

Modera Melrose

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Figure 7-2

Project Traffic Volumes

Modera Melrose

7.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

The weekday project trip generation was estimated using the Traffic Generation Rates for the San Diego Region, April 2002, published by SANDAG. The proposed Project includes the development of 50 single family residential units and 54 attached town homes. Trip rates corresponding to single family units and multi-family units were used to estimate the trips generated by the Project.

7.1 Trip Generation

Table 7–1 tabulates the total project traffic generation. The total project is calculated to generate 932 ADT with 75 AM peak hour trips (19 inbound / 56 outbound) and 93 PM peak hour trips (65 inbound / 28 outbound).

7.2 Trip Distribution/Assignment

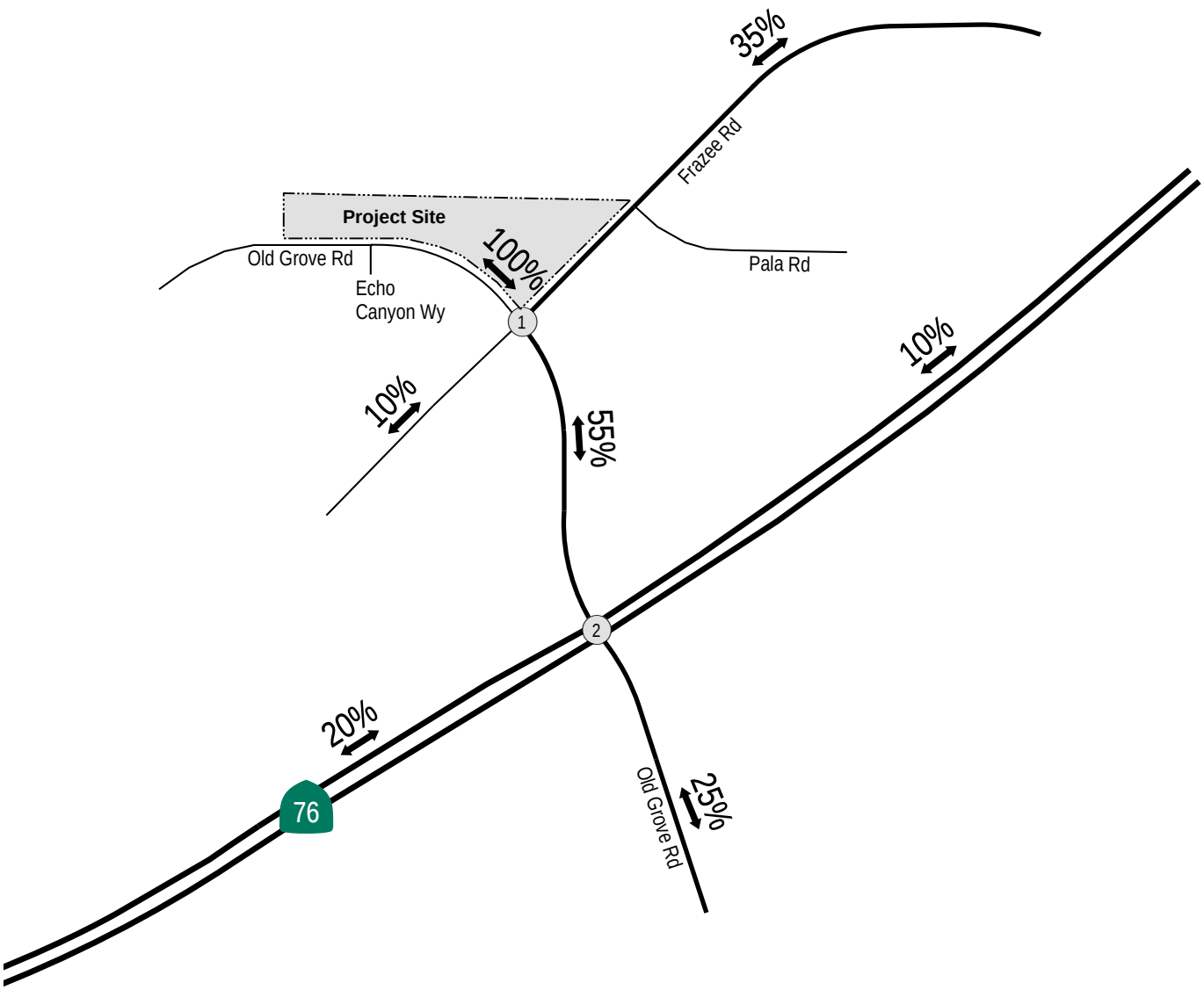
Project trip distribution was developed based on current travel patterns at the study are intersections based on the existing traffic counts and on the locations of employment centers, schools and retail opportunities. Based on the trip distribution percentages, the Project traffic was assigned to the study area intersections and segments.

Figure 7–1 depicts the Project trip distribution. ***Figure 7–2*** depicts the Project trip Assignment during the AM and PM peak hours. ***Figure 7–3*** depicts the Existing + Project traffic volumes during the AM and PM peak hours.

TABLE 7-1
TRIP GENERATION

Land Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour					PM Peak Hour				
		Rate [a]	Volume	% of ADT [a]	In : Out Split	Volume			% of ADT	In : Out Split	Volume		
						In	Out	Total			In	Out	Total
Detached Single Family Homes	50 DU	10 /DU	500	8%	30:70	12	28	40	10%	70:30	35	15	50
Attached Town Homes	54 DU	8/ DU	432	8%	20:80	7	28	35	10%	70:30	30	13	43
Total	**104 DU**	**-**	**932**	**-**	**-**	**19**	**56**	**75**	**-**	**-**	**65**	**28**	**93**

Footnotes:
a. Rates are based on SANDAG's *(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002.



LINSCOTT LAW & GREENSPAN engineers

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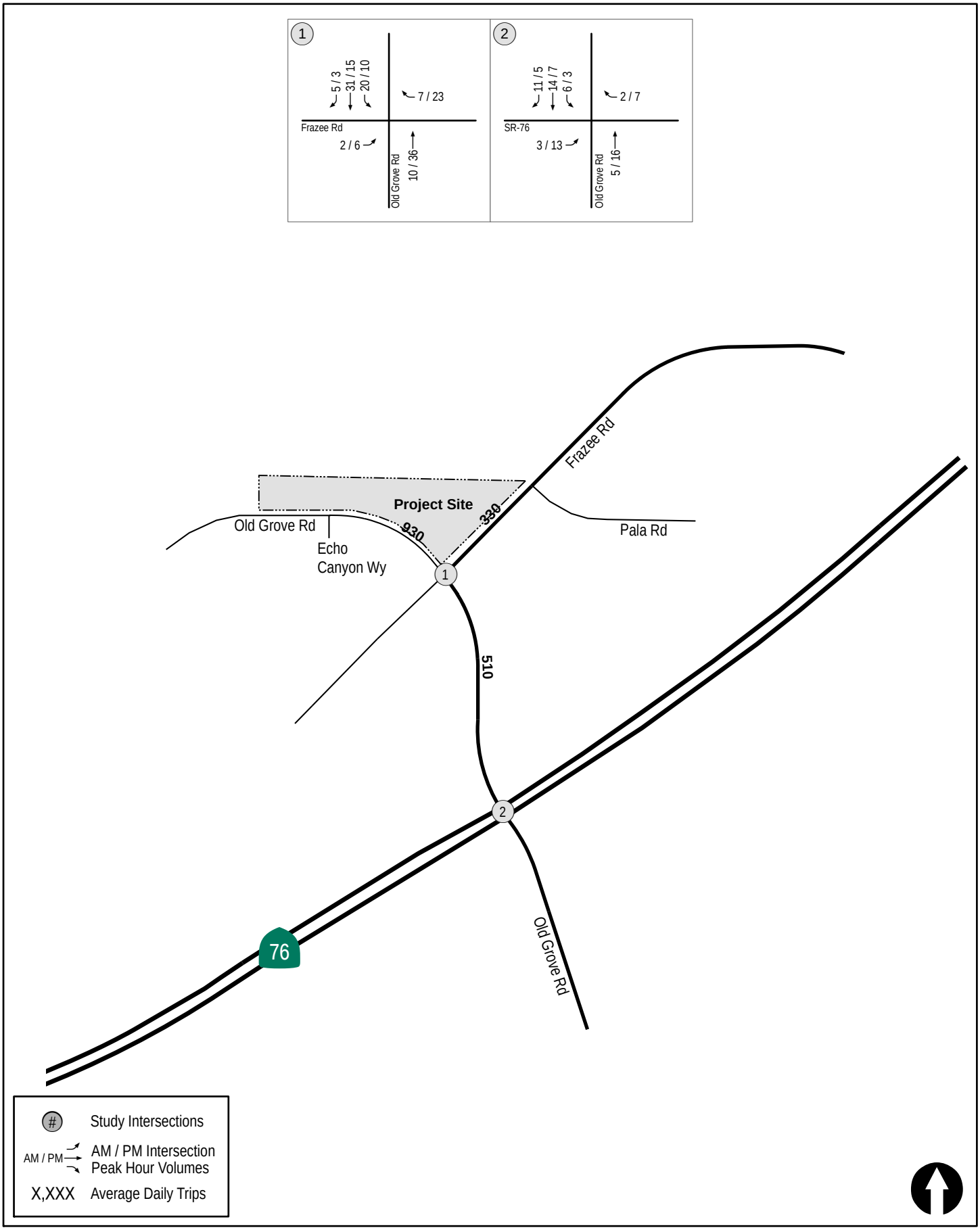
Date: 12/16/19

Figure 7-1

Project Traffic Distribution

OCEANSIDE RIO ROCKWELL PROJECT



LINSCOTT LAW & GREENSPAN engineers

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Date: 12/16/19

Figure 7-2

Project Traffic Volumes

(AM/PM Commuter hours)

OCEANSIDE RIO ROCKWELL PROJECT

8.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

8.1 Trip Generation

Trip generation rates were obtained from the (Not So) *Brief guide of Vehicular Traffic Generation Rates for the San Diego Region* (April 2002) by SANDAG. The "Residential, Single Family Detached (average 3-6 DU/acre)" trip rate was used to estimate the Project trip generation.

Table 8–1 summarizes the trip generation for the Project. As shown in *Table 8–1*, the Project is calculated to generate 540 daily trips with 42 trips during the AM peak hour (13 inbound/ 29 outbound trips) and 53 trips during PM peak hour (37 inbound/ 16 outbound trips).

TABLE 8–1
PROJECT TRIP GENERATION

Use	Quantity	Daily Trip Ends (ADT)[a]		AM Peak Hour				PM Peak Hour			
		Rate [b]	Volume	% of ADT	In:Out Split	Volume		% of ADT	In:Out Split	Volume	
						In	Out			In	Out
Residential – Single Family Detached	54 DU	10/DU	540	8%	30:70	13	29	10%	70:30	37	16

Footnotes:

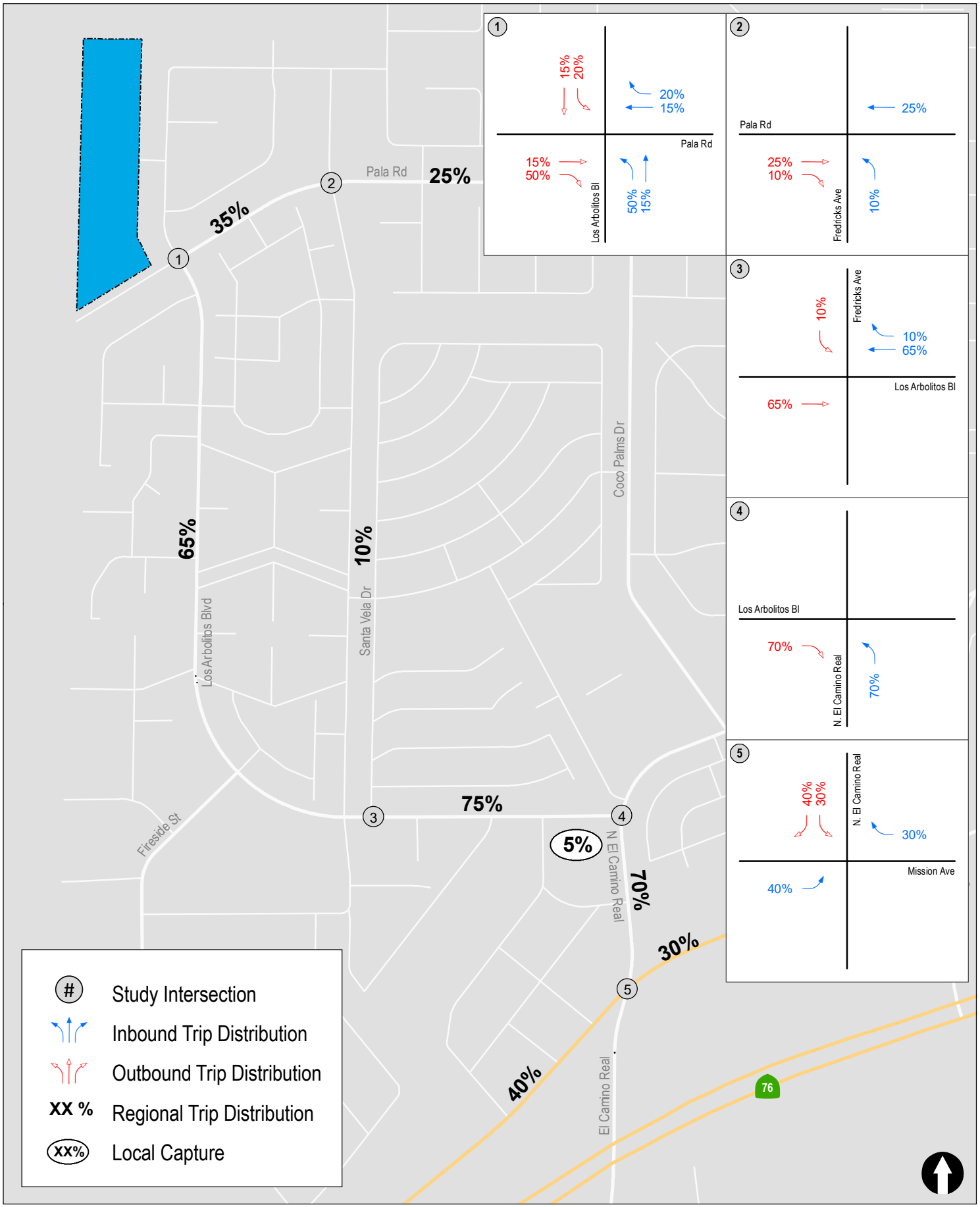
b. Average Daily Trips

c. Trip Generation Rate from the SANDAG's *Not So Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region,* 2002.

8.2 Trip Distribution and Assignment

Project traffic was distributed to the street system based on existing traffic patterns in the area, the Project's proximity to freeways and arterials, locations of retail, places of employment, schools, and other shopping opportunities. 100% of the Project trips were assigned to western leg of the Los Arbolitos Boulevard / Pala Road intersection, which will form the Project's only day-to-day access point.

Figure 8–1 shows the distribution of the Project trips. ***Figure 8–2*** shows the Project traffic volumes. ***Figure 8-3*** shows the Existing + Project traffic volumes.



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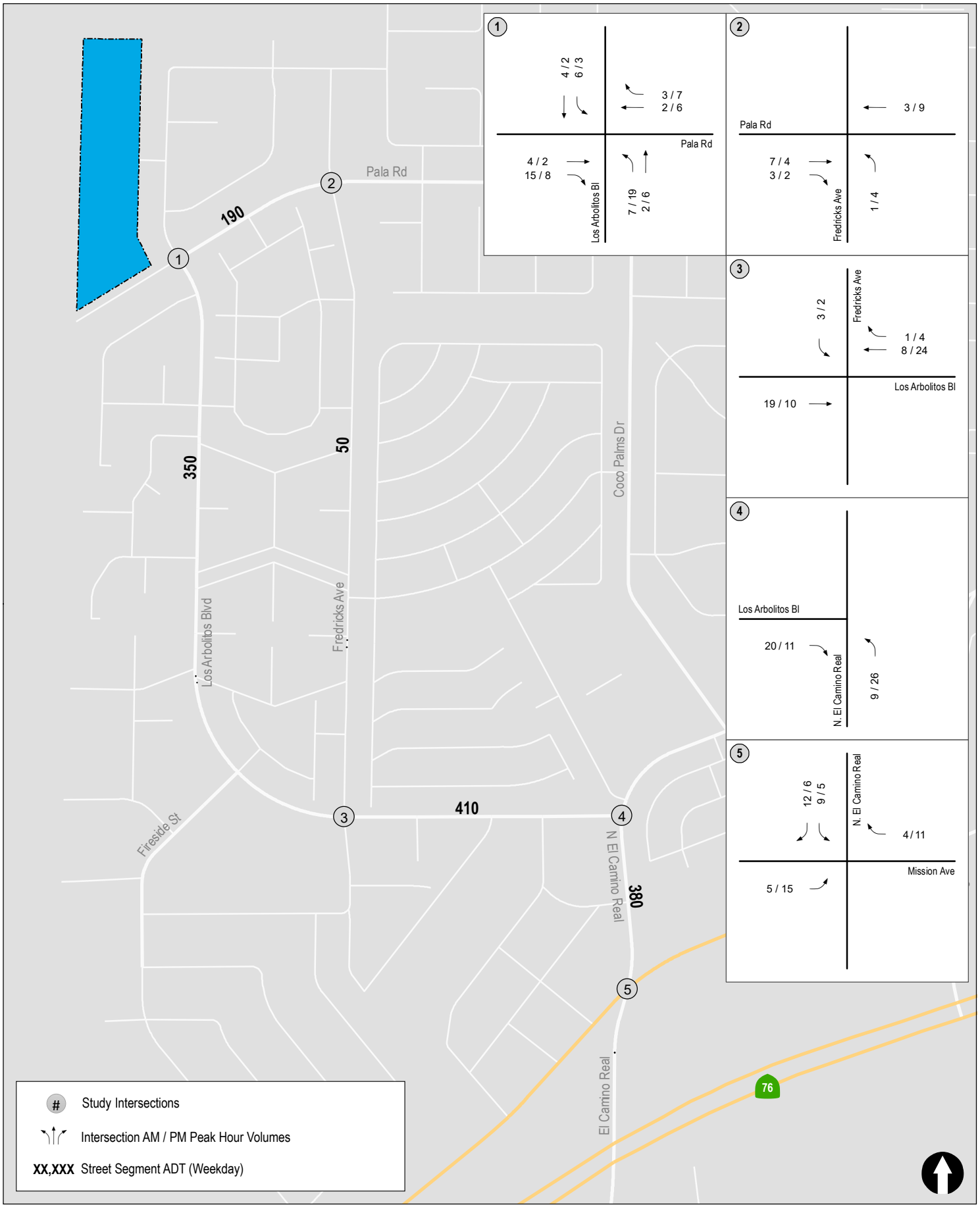
Time: 8:05 AM

Figure 8-1

Project Traffic Distribution



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Date: 11/17/2020
Time: 1:28 PM

Figure 8-2

Project Traffic Volumes

3.4 Project Traffic Generation

The proposed residential single family home subdivision with 83 lots is located at 2839 Guajome Lake Road in Oceanside, California. The project site of approximately 16.79 acres has one existing single family home.

The project traffic generation was calculated using SANDAG trip rates from the *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002. Copies of SANDAG rates are included in **Appendix F**. Using SANDAG traffic generation rates, the project is calculated to generate 830 ADT, 66 AM peak hour trips (20 inbound and 46 outbound), and 83 PM peak hour trips (58 inbound and 25 outbound) as shown in **Table 8**.

TABLE 8: PROJECT TRAFFIC GENERATION

Proposed							AM				PM	
Land Use	Rate	Size & Units	ADT	%	Split		IN	OUT	%	Split	IN	OUT
Residential - Single Family	10 /DU	83 DU	**830**	8%	0.3	0.7	**20**	**46**	10%	0.7 0.3	**58**	**25**

Source: SANDAG *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region,* April 2002.

DU-Dwelling Unit; ADT-Average Daily Traffic; Split-percent inbound and outbound.

3.4.1 Project Access

The project will have two driveways that will connect with Guajome Lake Rd.

3.4.2 Project Distribution and Assignment

Project trips were distributed to the adjacent roadway network using traffic engineering judgement and factors such as proximity to SR-76, local productions, and attractions. The project distribution is shown in **Figure 9** while the project assignment is shown in **Figure 10.**

Figure 9: Project Distribution

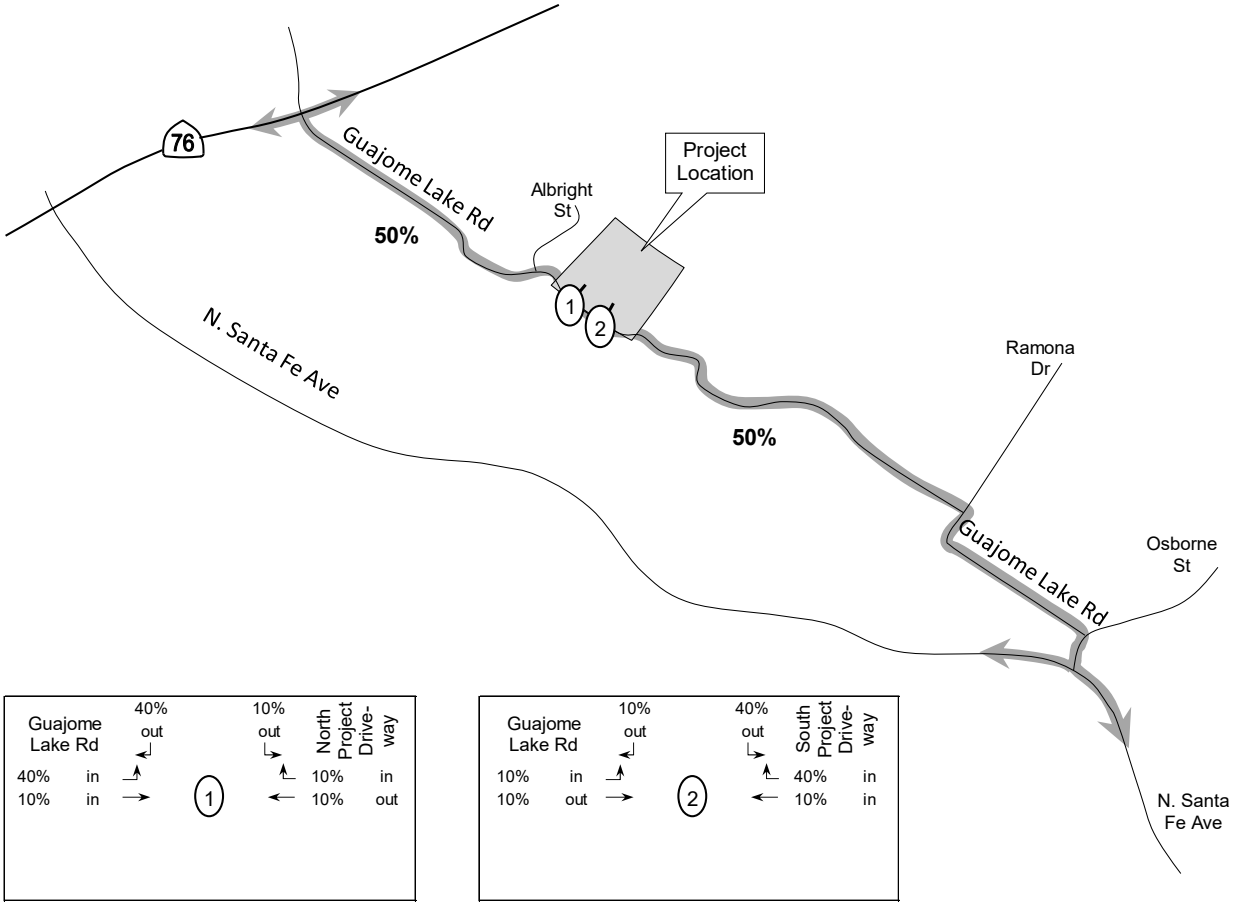
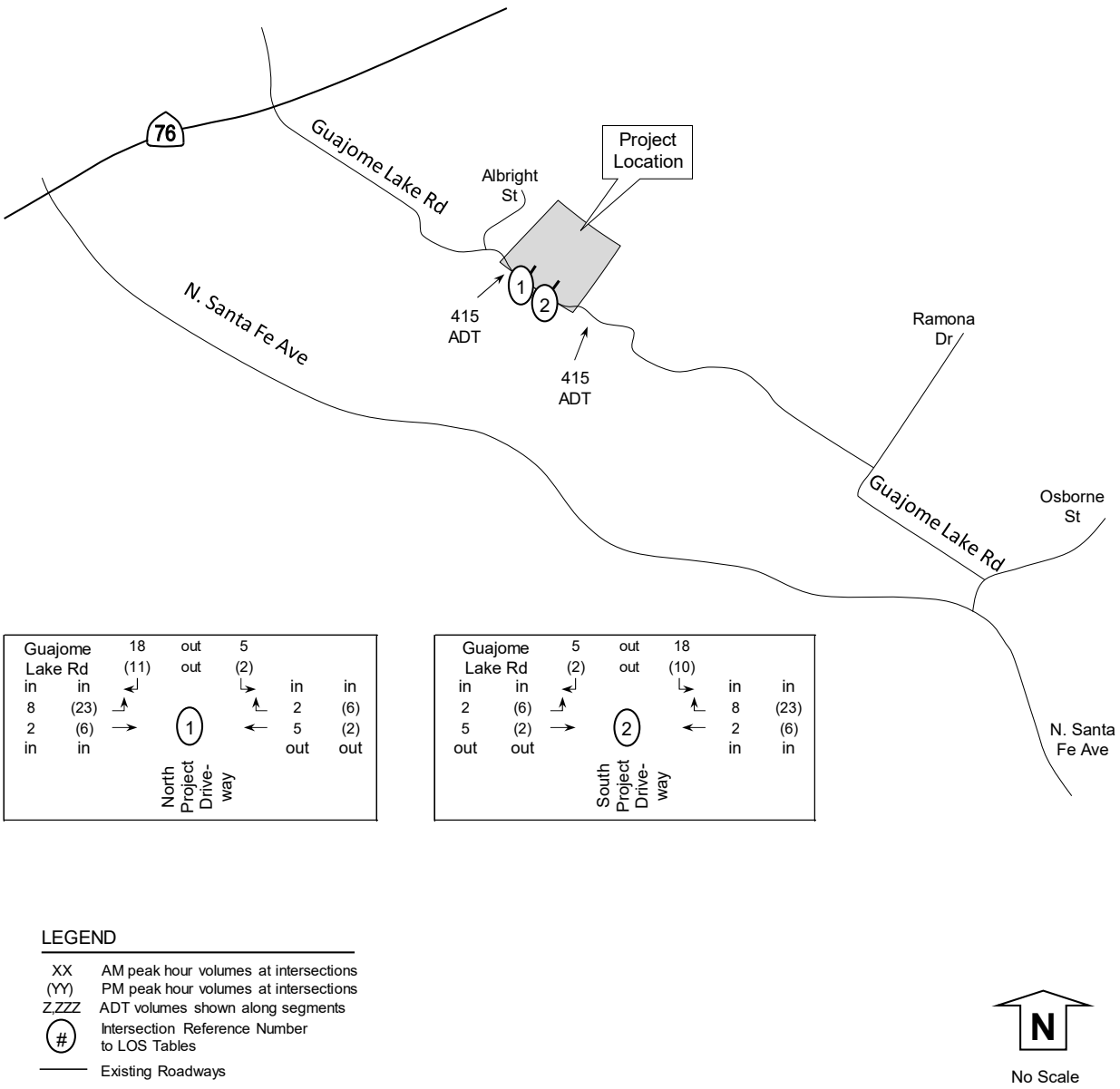


Figure 10: Project Volumes



8.0 TRIP GENERATION/DISTRIBUTION/ASSIGNMENT

The following is a discussion of the Project trip generation calculations and the Project traffic distribution and assignment through the local street system.

8.1 Trip Generation

The Project traffic generation calculations were conducted using the trip generation rates published in the Institute of Transportation Engineers *Trip Generation Manual*, 10th edition for the "assisted living" land use (Land Use Code 254). The typical trip generation rates used in the City of Oceanside are the regional SANDAG "Brief Guide" rates (2002). However, these rates do not include a land use similar to the proposed assisted living.

Table 8–1 tabulates the total Project traffic generation. The total Project is calculated to generate approximately 247 ADT with 11 inbound / 7 outbound trips during the AM peak hour and 10 inbound / 15 outbound trips during the PM peak hour.

TABLE 8–1
PROJECT TRIP GENERATION

Land Use	Size	Daily Trip Ends (ADTs)[b]		AM Peak Hour					PM Peak Hour				
		Rate [a]	Volume	% of ADT	In:Out Split	Volume			% of ADT	In:Out Split	Volume		
						In	Out	Total			In	Out	Total
Assisted Living	95 DU	2.6 / Bed	247	0.19	63:37	11	7	18	0.26	38:62	10	15	25

Footnotes:

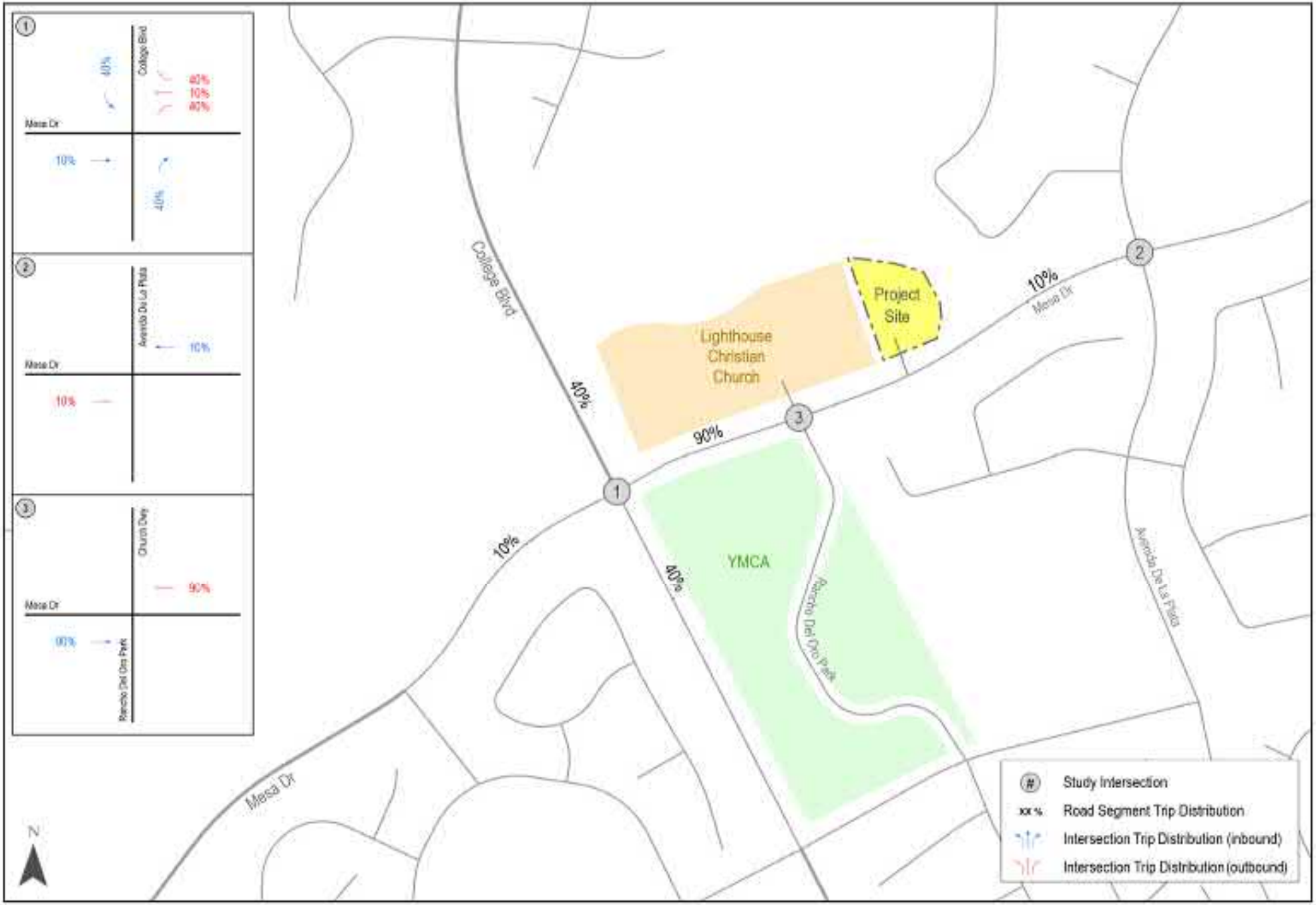
a. Rates based on the Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, September 2017, Land Use 254.

b. ADT = Average daily traffic

8.2 Trip Distribution/Assignment

Project trip distribution was developed using professional engineering judgment based on the available local and regional access as well as existing traffic patterns and flows observed from existing traffic count data at study area intersections.

Figure 8–1 depicts the Project trip distribution percentages. ***Figure 8–2*** shows the assigned Project traffic volumes and ***Figure 8–3*** shows the Existing + Project traffic volumes. ***Figure 8–4*** shows Existing + Cumulative Projects + Project traffic volumes.



LINSCOTT LAW & GREENSPAN engineers

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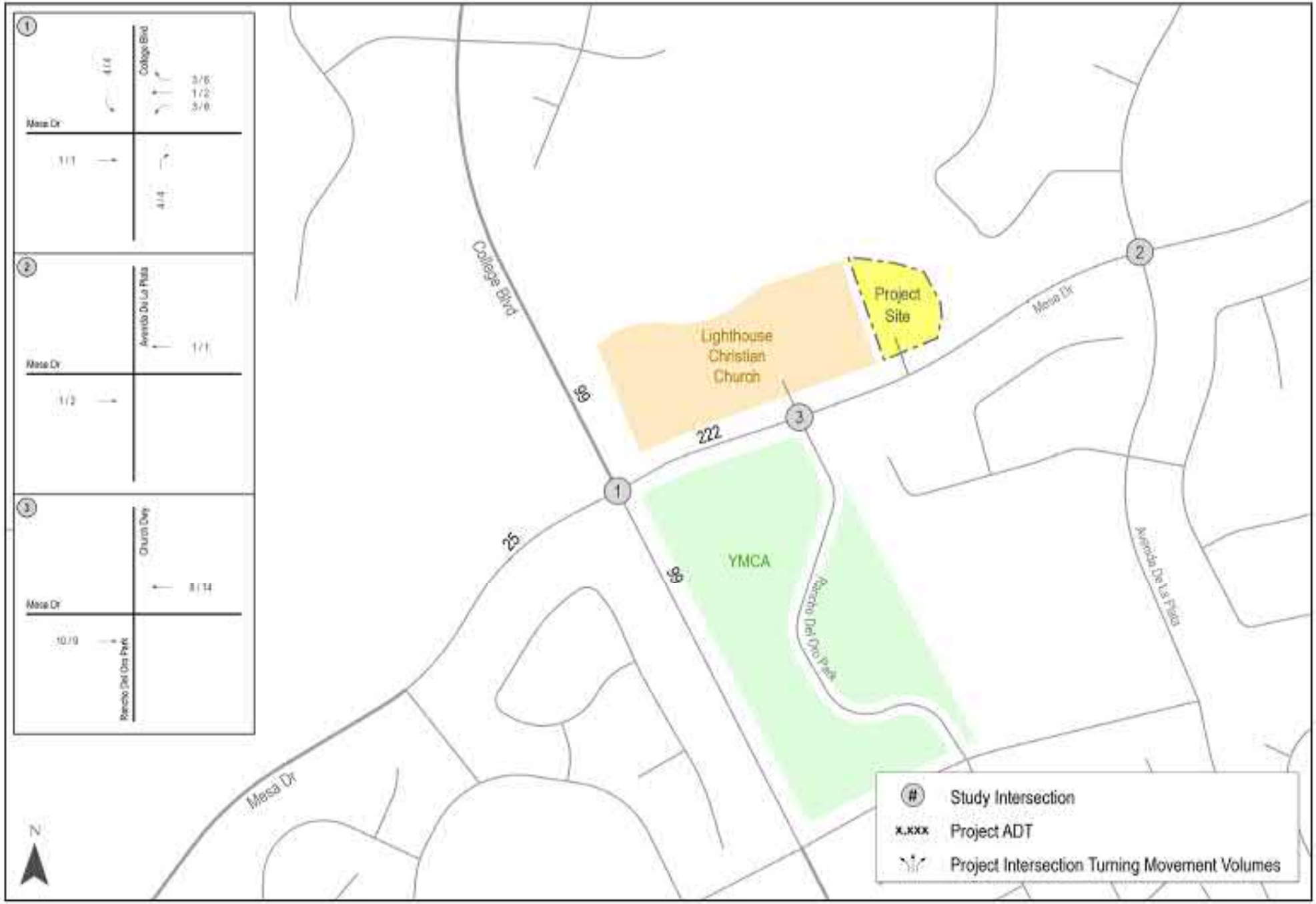
Time: 1:32 PM

Figure 8-1
Project Traffic Distribution

SUNRISE OF OCEANSIDE



LINSCOTT LAW & GREENSPAN engineers

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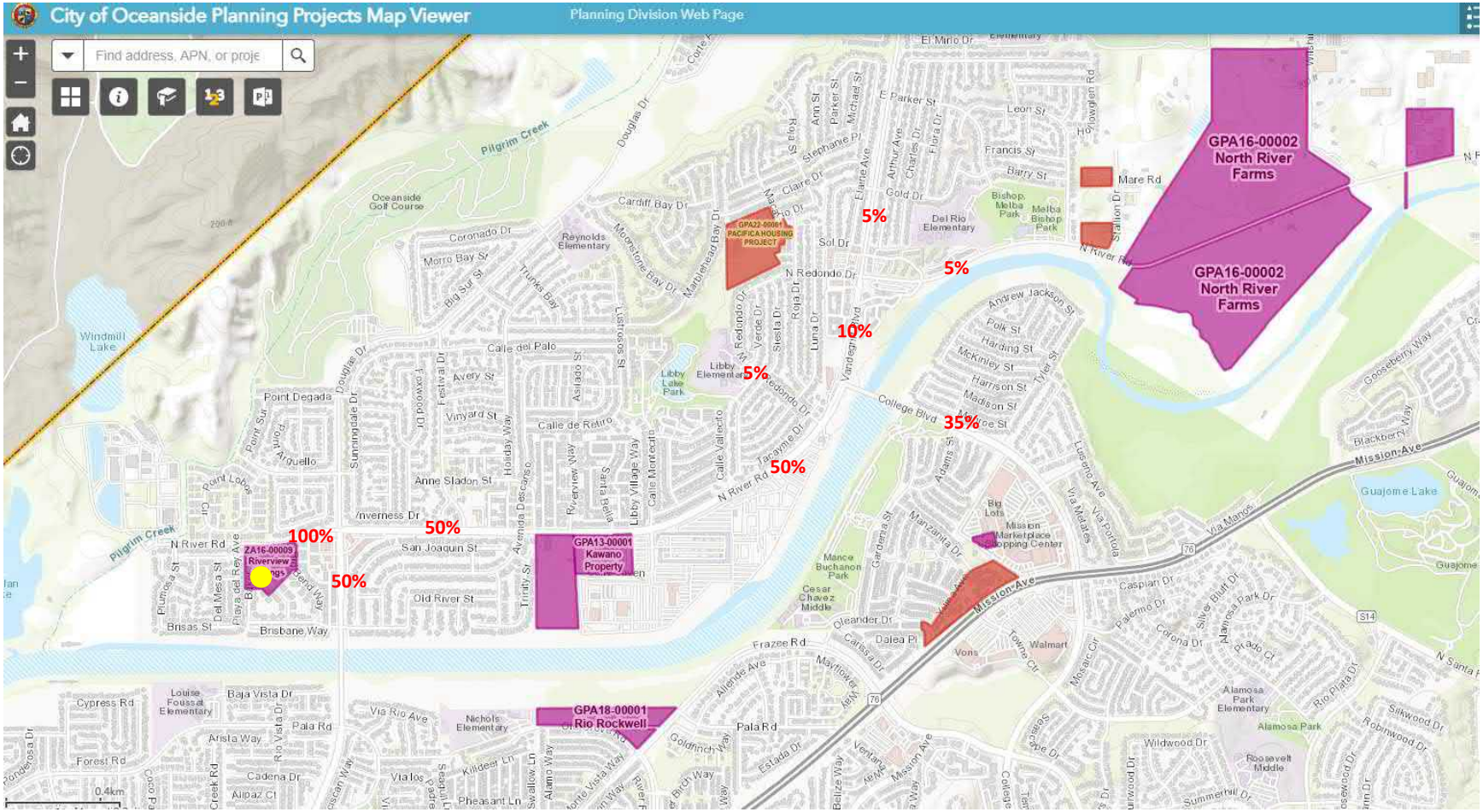
Time: 1:32 PM

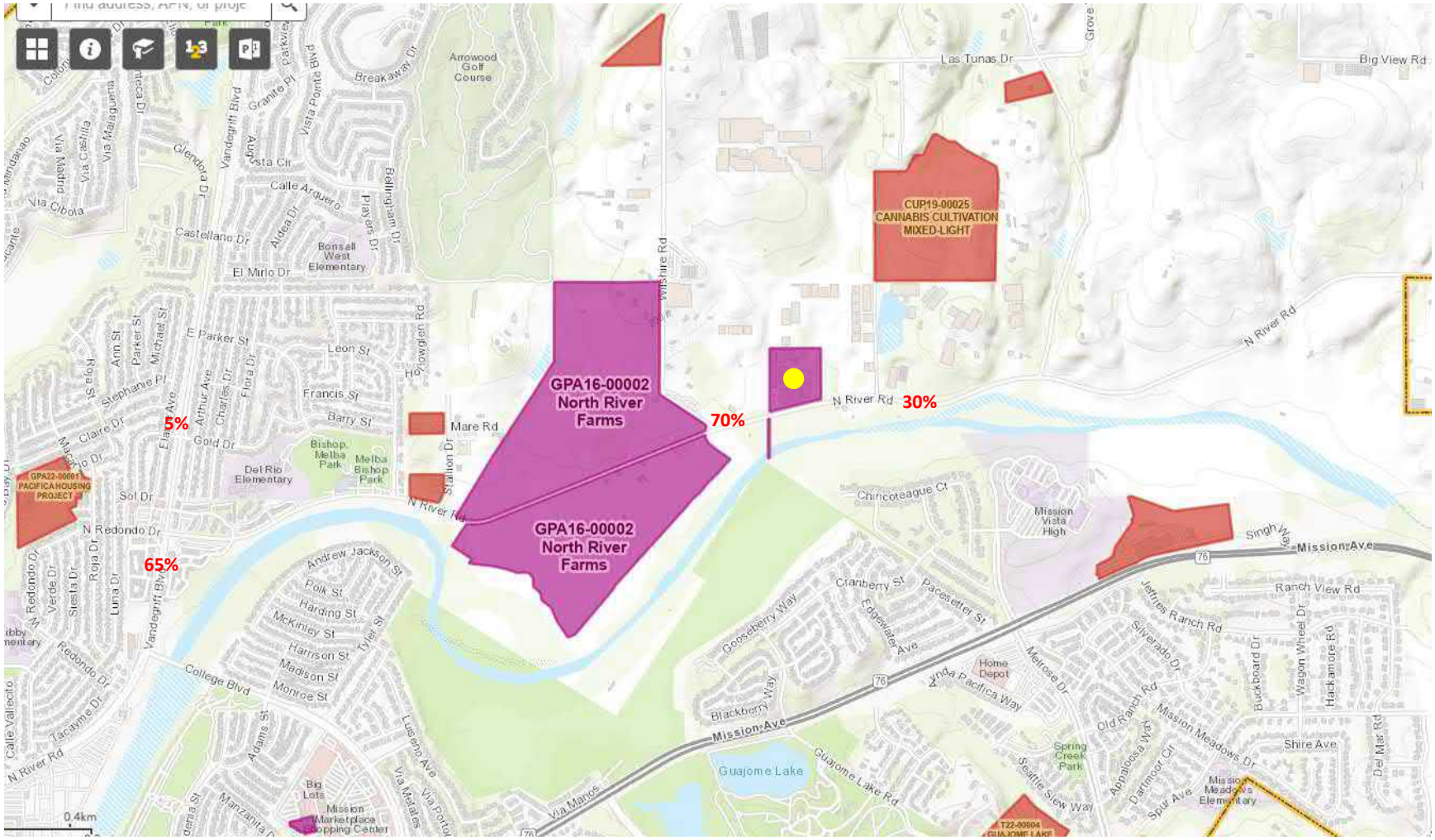
Figure 8-2
Project Traffic Volumes

SUNRISE OF OCEANSIDE

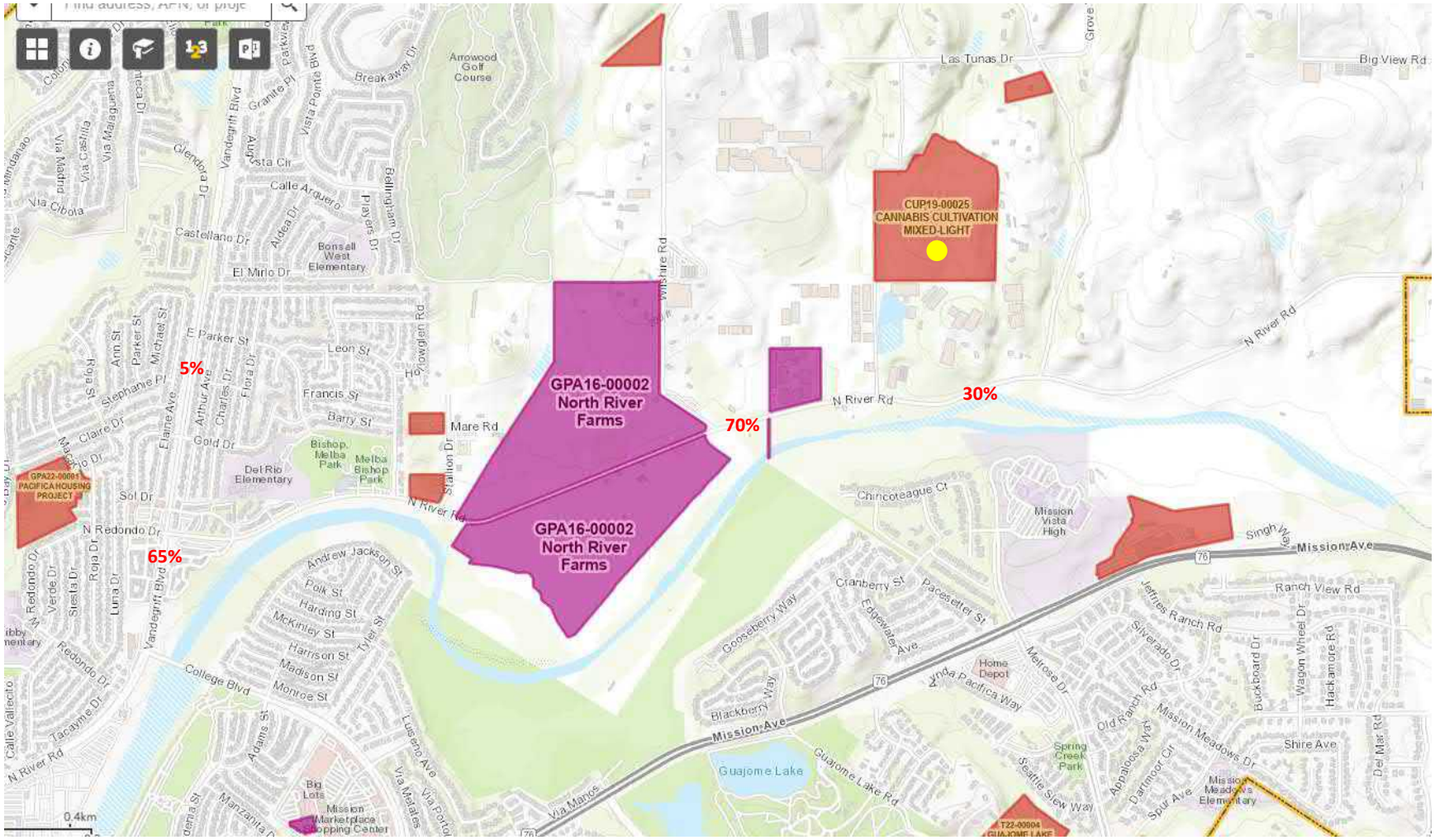
- Trip Distribution Assumptions – Riverview Springs (addition of 47 DU to existing development) – Distribution based on assumptions for recently submitted adjacent cumulative project in Terra North Residential Development Plan (Nagata property).



- Trip Distribution - Cannabis Cultivation (CUP19-00023)



- Trip Distribution - Cannabis Cultivation (CUP19-00025)



Graph Look Up

Query Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
190

LAND USE GROUP:
(100-199) Industrial

LAND USE :
190 - Marijuana Cultivation and Processing Fa

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

INDEPENDENT VARIABLE (IV):
1000 Sq. Ft. GFA

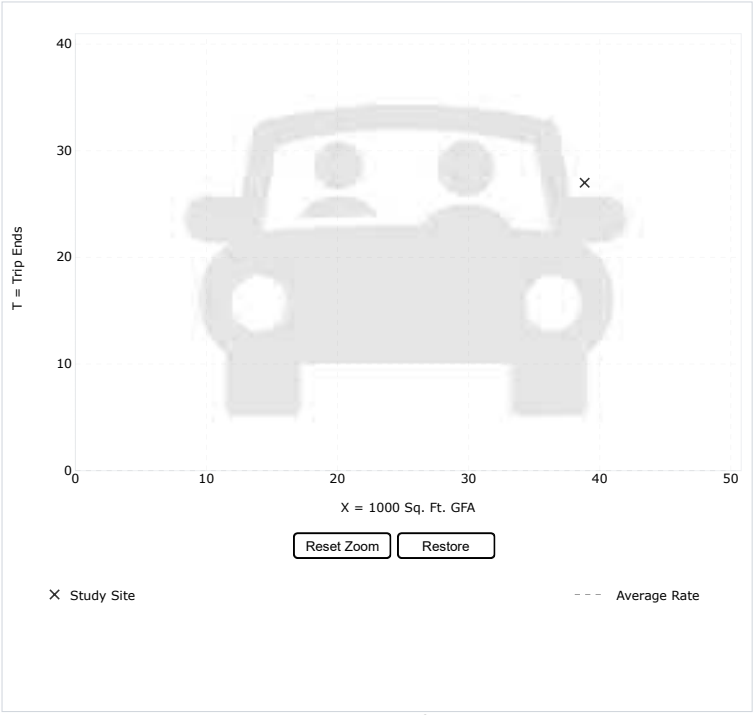
TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
440 Calculate

Data Plot and Equation

Caution – Small Sample Size



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Marijuana Cultivation and Processing Facility (190)
Click for Description and Data Plots

Independent Variable:
1000 Sq. Ft. GFA

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 7 and 9 a.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
1

Avg. 1000 Sq. Ft. GFA:
39

Average Rate:
0.69

Range of Rates:
0.69 - 0.69

Standard Deviation:
****

Fitted Curve Equation:
Not Given

R^2:
****

Directional Distribution:
93% entering, 7% exiting

Calculated Trip Ends:
Average Rate: 304 (Total), 282 (Entry), 22 (Exit)

Graph Look Up

Query Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
190

LAND USE GROUP:
(100-199) Industrial

LAND USE :
190 - Marijuana Cultivation and Processing Fa

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

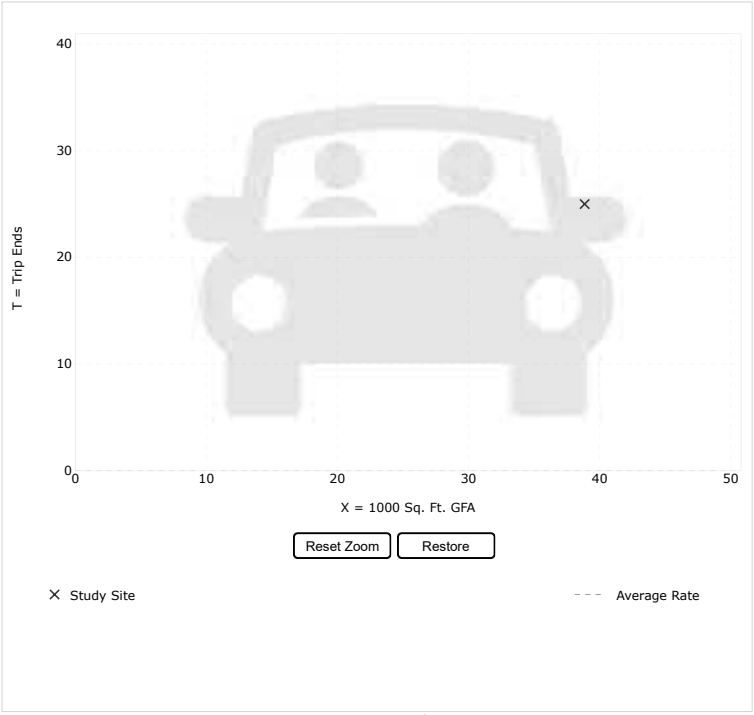
INDEPENDENT VARIABLE (IV):
1000 Sq. Ft. GFA

TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
440 Calculate

Data Plot and Equation *Caution – Small Sample Size*



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Marijuana Cultivation and Processing Facility (190)
Click for Description and Data Plots

Independent Variable:
1000 Sq. Ft. GFA

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
1

Avg. 1000 Sq. Ft. GFA:
39

Average Rate:
0.64

Range of Rates:
0.64 - 0.64

Standard Deviation:
****

Fitted Curve Equation:
Not Given

R^2:
****

Directional Distribution:
28% entering, 72% exiting

Calculated Trip Ends:
Average Rate: 282 (Total), 79 (Entry), 203 (Exit)

Graph Look Up

Query Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
190

LAND USE GROUP:
(100-199) Industrial

LAND USE :
190 - Marijuana Cultivation and Processing Fa

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

INDEPENDENT VARIABLE (IV):
1000 Sq. Ft. GFA

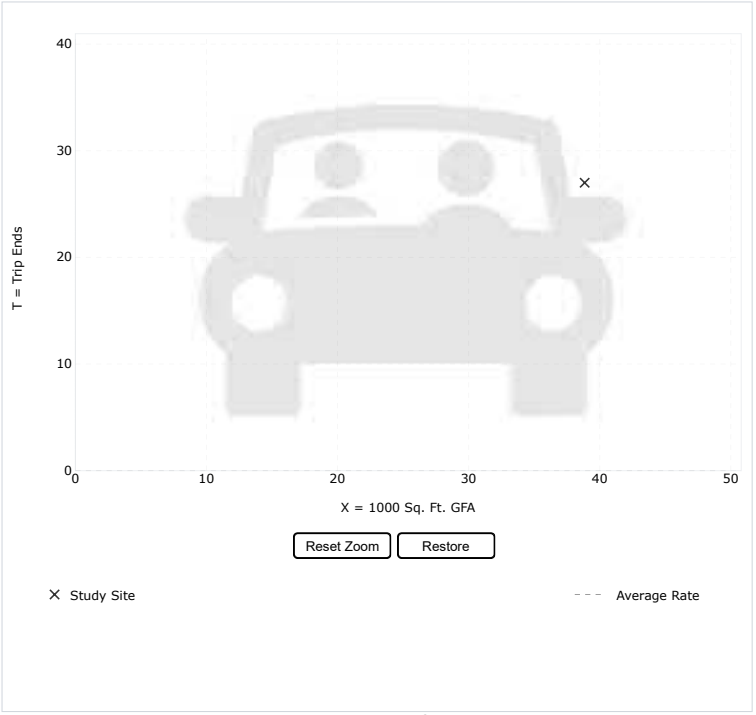
TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
88 Calculate

Data Plot and Equation

Caution – Small Sample Size



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Marijuana Cultivation and Processing Facility (190)
Click for Description and Data Plots

Independent Variable:
1000 Sq. Ft. GFA

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 7 and 9 a.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
1

Avg. 1000 Sq. Ft. GFA:
39

Average Rate:
0.69

Range of Rates:
0.69 - 0.69

Standard Deviation:
****

Fitted Curve Equation:
Not Given

R^2:
****

Directional Distribution:
93% entering, 7% exiting

Calculated Trip Ends:
Average Rate: 61 (Total), 56 (Entry), 5 (Exit)

Graph Look Up

Query Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
190

LAND USE GROUP:
(100-199) Industrial

LAND USE :
190 - Marijuana Cultivation and Processing Fa

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

INDEPENDENT VARIABLE (IV):
1000 Sq. Ft. GFA

TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
88 Calculate

Data Plot and Equation *Caution – Small Sample Size*

Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Marijuana Cultivation and Processing Facility (190)
Click for Description and Data Plots

Independent Variable:
1000 Sq. Ft. GFA

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
1

Avg. 1000 Sq. Ft. GFA:
39

Average Rate:
0.64

Range of Rates:
0.64 - 0.64

Standard Deviation:
****

Fitted Curve Equation:
Not Given

R^2:
****

Directional Distribution:
28% entering, 72% exiting

Calculated Trip Ends:
Average Rate: 56 (Total), 15 (Entry), 41 (Exit)

Cumulative Project Trip Generation

Project	Land Use	Units	Trip Rate	ADT	AM Peak Hour					PM Peak Hour				
					%	Trips	Split	In	Out	%	Trips	Split	In	Out
Riverview Springs	Multi-Family (6-20 DU/acre)	47 DU	8/DU	376	8%	31	2:8	6	25	10%	38	7:3	27	11
Cannabis (CUP19-00025)	Marijuana Cultivation and Processing Facility	440 KSF	-	586	-	304	.93:.07	282	22	-	282	.28:.72	79	203
Cannabis (CUP19-00023)		88 KSF	-	117	-	61	.93:.07	56	5	-	56	.28:.72	15	41

Source: SANDAG (not so) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002), ITE Trip Generation Manual 11th Edition

Notes:
ADT = Average Daily Traffic
DU = Dwelling Unit
KSF = 1,000 Square Feet

Trip Assignment - Cumulative Projects AM

60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total
		1	0	0	0	0	0	0	0	0	0	0	0	0	0
		2	0	0	0	0	0	0	0	0	0	0	0	0	0
		3	0	0	0	0	0	0	0	0	0	0	0	0	0
		4	0	37	339	30	29	0	0	0	0	278	0	34	747
		5	0	0	0	0	0	0	0	0	0	0	0	0	0
															747

Trip Assignment - Cumulative Projects PM

60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total
		1	0	0	0	0	0	0	0	0	0	0	0	0	0
		2	0	0	0	0	0	0	0	0	0	0	0	0	0
		3	0	0	0	0	0	0	0	0	0	0	0	0	0
		4	0	47	397	46	64	0	0	0	0	338	0	32	924
		5	0	0	0	0	0	0	0	0	0	0	0	0	0
															924

Trip Assignment - Riverview AM

60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
			1											
			2											
			3											
			4		1		2			0				1
			5											

Trip Assignment - Riverview PM

60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
			1											
			2											
			3											
			4		0	1		1					2	
			5											

Trip Assignment - Nagata Property AM

60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
			1											
			2											
			3											
			4		10	10		2					3	
			5											

Trip Assignment - Nagata Property PM
60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
			1											
			2											
			3											
			4		5	5		11					11	
			5											

Trip Assignment - N River Farms AM

60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
			1												
			2												
			3												
			4			108	13					257			32
			5												

Trip Assignment - N River Farms PM

60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
			1											
			2											
			3											
			4			330	41					166		20
			5											

Trip Assignment - Cannabis 1 AM

60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
			1												
			2												
			3												
			4			183	14						14		1
			5												

Trip Assignment - Cannabis 1 PM

60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
			1												
			2												
			3												
			4			51	4					132			10
			5												

Trip Assignment - Cannabis 2 AM

60 Minute Counts

DATE	TIME	INTID		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
			1													
			2													
			3													
			4				36	3						3		1
			5													

Trip Assignment - Cannabis 2 PM

60 Minute Counts

DATE	TIME	INTID		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
			1													
			2													
			3													
			4				10	1						27		2
			5													

Trip Assignment - El Corazon AM

60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
			1											
			2											
			3											
			4		8			13						
			5											

Trip Assignment - El Corazon PM

60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
			1											
			2											
			3											
			4		23			25						
			5											

Trip Assignment - Ocean Kamp AM

60 Minute Counts

DATE	TIME	INTID		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
			1												
			2												
			3												
			4			18			14						
			5												

Trip Assignment - Ocean Kamp PM

60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
			1											
			2											
			3											
			4		19			27						
			5											

Trip Assignment - Modera Melrose AM

60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
			1											
			2											
			3				Project Does Not Contribute Trips to Study Area							
			4											
			5											

Trip Assignment - Modera Melrose PM

60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
			1											
			2											
			3				Project Does Not Contribute Trips to Study Area							
			4											
			5											

Trip Assignment - Rio Rockwell AM

60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
			1											
			2											
			3				Project Does Not Contribute Trips to Study Area							
			4											
			5											

Trip Assignment - Rio Rockwell PM

60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
			1											
			2											
			3				Project Does Not Contribute Trips to Study Area							
			4											
			5											

Trip Assignment - Cypress Point AM

60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
			1											
			2											
			3				Project Does Not Contribute Trips to Study Area							
			4											
			5											

Trip Assignment - Cypress Point PM

60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
			1											
			2											
			3				Project Does Not Contribute Trips to Study Area							
			4											
			5											

Trip Assignment - Guajome Lake Road Subdivision AM

60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
			1											
			2											
			3				Project Does Not Contribute Trips to Study Area							
			4											
			5											

Trip Assignment - Guajome Lake Road Subdivision PM

60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
			1											
			2											
			3				Project Does Not Contribute Trips to Study Area							
			4											
			5											

Trip Assignment - Sunrise Assisted Care Facility AM

60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
			1											
			2											
			3				Project Does Not Contribute Trips to Study Area							
			4											
			5											

Trip Assignment - Sunrise Assisted Care Facility PM

60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
			1											
			2											
			3				Project Does Not Contribute Trips to Study Area							
			4											
			5											

Appendix H - LOS Calculation Worksheets – Near-Term Year 2025 Base Conditions

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	12	54	1	19	4	35	13	3	5	17	16
Future Vol, veh/h	9	12	54	1	19	4	35	13	3	5	17	16
Conflicting Peds, #/hr	0	0	4	4	0	0	3	0	1	1	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	14	64	1	22	5	41	15	4	6	20	19

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	158	147	37	185	154	18	42	0	0	20	0	0
Stage 1	45	45	-	100	100	-	-	-	-	-	-	-
Stage 2	113	102	-	85	54	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	808	744	1035	776	738	1061	1567	-	-	1596	-	-
Stage 1	969	857	-	906	812	-	-	-	-	-	-	-
Stage 2	892	811	-	923	850	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	764	718	1028	697	712	1060	1563	-	-	1594	-	-
Mov Cap-2 Maneuver	764	718	-	697	712	-	-	-	-	-	-	-
Stage 1	940	851	-	881	789	-	-	-	-	-	-	-
Stage 2	840	788	-	845	844	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	10	5.1	1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1563	-	-	926	752	1594	-	-
HCM Lane V/C Ratio	0.026	-	-	0.095	0.038	0.004	-	-
HCM Control Delay (s)	7.4	0	-	9.3	10	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	16	33	2	7	1	45	27	5	1	18	11
Future Vol, veh/h	20	16	33	2	7	1	45	27	5	1	18	11
Conflicting Peds, #/hr	0	0	1	1	0	0	8	0	3	3	0	8
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	18	36	2	8	1	49	30	5	1	20	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	171	172	35	190	176	36	40	0	0	38	0	0
Stage 1	36	36	-	134	134	-	-	-	-	-	-	-
Stage 2	135	136	-	56	42	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	792	721	1038	770	717	1037	1570	-	-	1572	-	-
Stage 1	980	865	-	869	785	-	-	-	-	-	-	-
Stage 2	868	784	-	956	860	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	759	689	1029	708	685	1034	1558	-	-	1568	-	-
Mov Cap-2 Maneuver	759	689	-	708	685	-	-	-	-	-	-	-
Stage 1	942	857	-	839	758	-	-	-	-	-	-	-
Stage 2	831	757	-	902	852	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	10.1	4.3	0.2
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1558	-	-	845	714	1568	-	-
HCM Lane V/C Ratio	0.032	-	-	0.09	0.015	0.001	-	-
HCM Control Delay (s)	7.4	0	-	9.7	10.1	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0	0	-	-

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2	83	64	2	39	24
Future Vol, veh/h	2	83	64	2	39	24
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	102	79	2	48	30
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7	7.9	7.6
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	62%	0%	97%
Vol Thru, %	0%	2%	3%
Vol Right, %	38%	98%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	63	85	66
LT Vol	39	0	64
Through Vol	0	2	2
RT Vol	24	83	0
Lane Flow Rate	78	105	81
Geometry Grp	1	1	1
Degree of Util (X)	0.09	0.103	0.098
Departure Headway (Hd)	4.147	3.545	4.345
Convergence, Y/N	Yes	Yes	Yes
Cap	856	999	821
Service Time	2.215	1.61	2.396
HCM Lane V/C Ratio	0.091	0.105	0.099
HCM Control Delay	7.6	7	7.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.3	0.3	0.3

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2	50	28	4	76	33
Future Vol, veh/h	2	50	28	4	76	33
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	58	33	5	88	38
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	6.9	7.7	7.8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	70%	0%	88%
Vol Thru, %	0%	4%	12%
Vol Right, %	30%	96%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	109	52	32
LT Vol	76	0	28
Through Vol	0	2	4
RT Vol	33	50	0
Lane Flow Rate	127	60	37
Geometry Grp	1	1	1
Degree of Util (X)	0.143	0.061	0.045
Departure Headway (Hd)	4.06	3.608	4.38
Convergence, Y/N	Yes	Yes	Yes
Cap	881	980	810
Service Time	2.097	1.678	2.446
HCM Lane V/C Ratio	0.144	0.061	0.046
HCM Control Delay	7.8	6.9	7.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.5	0.2	0.1

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	40	1	3	45	41	3	5	9	108	9	37
Future Vol, veh/h	20	40	1	3	45	41	3	5	9	108	9	37
Conflicting Peds, #/hr	28	0	35	35	0	28	2	0	9	9	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	53	1	4	59	54	4	7	12	142	12	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	141	0	0	89	0	0	268	290	98	246	263	116
Stage 1	-	-	-	-	-	-	141	141	-	122	122	-
Stage 2	-	-	-	-	-	-	127	149	-	124	141	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1442	-	-	1506	-	-	685	620	958	708	642	936
Stage 1	-	-	-	-	-	-	862	780	-	882	795	-
Stage 2	-	-	-	-	-	-	877	774	-	880	780	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1404	-	-	1456	-	-	606	570	918	657	591	909
Mov Cap-2 Maneuver	-	-	-	-	-	-	606	570	-	657	591	-
Stage 1	-	-	-	-	-	-	817	740	-	842	771	-
Stage 2	-	-	-	-	-	-	813	751	-	837	740	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.5	0.3	10.1	12.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	723	1404	-	-	1456	-	-	699
HCM Lane V/C Ratio	0.031	0.019	-	-	0.003	-	-	0.29
HCM Control Delay (s)	10.1	7.6	0	-	7.5	0	-	12.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	1.2

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	30	2	9	37	94	2	8	5	70	3	15
Future Vol, veh/h	15	30	2	9	37	94	2	8	5	70	3	15
Conflicting Peds, #/hr	6	0	16	16	0	6	1	0	14	14	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	34	2	10	43	108	2	9	6	80	3	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	157	0	0	54	0	0	215	264	67	214	211	104
Stage 1	-	-	-	-	-	-	87	87	-	123	123	-
Stage 2	-	-	-	-	-	-	128	177	-	91	88	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1423	-	-	1551	-	-	742	641	997	743	686	951
Stage 1	-	-	-	-	-	-	921	823	-	681	794	-
Stage 2	-	-	-	-	-	-	876	753	-	916	822	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1415	-	-	1524	-	-	702	615	967	706	658	945
Mov Cap-2 Maneuver	-	-	-	-	-	-	702	615	-	706	658	-
Stage 1	-	-	-	-	-	-	894	799	-	685	784	-
Stage 2	-	-	-	-	-	-	849	743	-	877	798	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.4	0.5	10.2	10.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	713	1415	-	-	1524	-	-	736
HCM Lane V/C Ratio	0.024	0.012	-	-	0.007	-	-	0.137
HCM Control Delay (s)	10.2	7.6	0	-	7.4	0	-	10.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	68	130	743	89	249	100	853	648	134	846	42
Future Volume (veh/h)	24	68	130	743	89	249	100	853	648	134	846	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.99	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	70	107	766	92	231	103	879	534	138	872	35
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	42	288	220	582	140	351	128	2060	619	165	1507	647
Arrive On Green	0.02	0.15	0.15	0.17	0.30	0.30	0.07	0.40	0.40	0.09	0.42	0.42
Sat Flow, veh/h	1781	1870	1431	3456	468	1176	1781	5106	1535	1781	3554	1525
Grp Volume(v), veh/h	25	70	107	766	0	323	103	879	534	138	872	35
Grp Sat Flow(s),veh/h/ln	1781	1870	1431	1728	0	1645	1781	1702	1535	1781	1777	1525
Q Serve(g_s), s	1.7	3.9	8.2	20.2	0.0	20.6	6.8	14.9	38.2	9.1	22.5	1.6
Cycle Q Clear(g_c), s	1.7	3.9	8.2	20.2	0.0	20.6	6.8	14.9	38.2	9.1	22.5	1.6
Prop In Lane	1.00		1.00	1.00		0.72	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	42	288	220	582	0	491	128	2060	619	165	1507	647
V/C Ratio(X)	0.60	0.24	0.49	1.32	0.00	0.66	0.81	0.43	0.86	0.84	0.58	0.05
Avail Cap(c_a), veh/h	211	373	285	582	0	491	211	2060	619	211	1507	647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.0	44.6	46.4	49.9	0.0	36.7	54.9	25.8	32.7	53.6	26.4	20.4
Incr Delay (d2), s/veh	9.6	0.4	1.7	154.4	0.0	3.2	8.5	0.6	14.7	18.9	1.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.9	2.9	20.9	0.0	8.4	3.3	5.9	15.9	4.8	9.2	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.6	45.0	48.1	204.3	0.0	39.9	63.4	26.4	47.5	72.4	28.0	20.5
LnGrp LOS	E	D	D	F	A	D	E	C	D	E	C	C
Approach Vol, veh/h		202			1089			1516			1045	
Approach Delay, s/veh		49.4			155.6			36.4			33.6	
Approach LOS		D			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	54.2	25.3	24.3	13.7	56.7	7.9	41.7
Change Period (Y+Rc), s	5.1	5.8	5.1	5.8	5.1	5.8	5.1	5.8
Max Green Setting (Gmax), s	14.2	39.9	20.2	23.9	14.2	39.9	14.2	29.9
Max Q Clear Time (g_c+I1), s	11.1	40.2	22.2	10.2	8.8	24.5	3.7	22.6
Green Ext Time (p_c), s	0.1	0.0	0.0	0.6	0.1	7.4	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	70.0
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	83	121	593	103	119	225	812	824	294	1045	49
Future Volume (veh/h)	60	83	121	593	103	119	225	812	824	294	1045	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.87	1.00		0.97	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	61	84	98	599	104	108	227	820	666	297	1056	39
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	310	227	658	256	268	253	1579	469	319	1230	531
Arrive On Green	0.04	0.17	0.17	0.19	0.31	0.31	0.14	0.31	0.31	0.18	0.35	0.35
Sat Flow, veh/h	1781	1870	1373	3456	828	860	1781	5106	1518	1781	3554	1534
Grp Volume(v), veh/h	61	84	98	599	0	212	227	820	666	297	1056	39
Grp Sat Flow(s),veh/h/ln	1781	1870	1373	1728	0	1687	1781	1702	1518	1781	1777	1534
Q Serve(g_s), s	4.7	5.5	9.0	23.8	0.0	13.9	17.5	18.5	43.3	23.0	38.7	2.4
Cycle Q Clear(g_c), s	4.7	5.5	9.0	23.8	0.0	13.9	17.5	18.5	43.3	23.0	38.7	2.4
Prop In Lane	1.00		1.00	1.00		0.51	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	79	310	227	658	0	526	253	1579	469	319	1230	531
V/C Ratio(X)	0.77	0.27	0.43	0.91	0.00	0.40	0.90	0.52	1.42	0.93	0.86	0.07
Avail Cap(c_a), veh/h	461	350	257	763	0	526	461	1579	469	333	1230	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	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.2	51.0	52.5	55.5	0.0	37.9	59.0	39.8	48.4	56.6	42.6	30.7
Incr Delay (d2), s/veh	11.2	0.5	1.3	13.4	0.0	0.5	8.3	1.2	200.7	31.0	7.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	2.7	3.1	11.3	0.0	5.7	8.3	7.8	42.0	12.8	17.6	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.4	51.5	53.8	68.9	0.0	38.4	67.3	41.0	249.1	87.6	50.5	31.0
LnGrp LOS	E	D	D	E	A	D	E	D	F	F	D	C
Approach Vol, veh/h		243			811			1713			1392	
Approach Delay, s/veh		58.9			61.0			125.4			57.9	
Approach LOS		E			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.2	49.1	31.7	29.0	25.0	54.3	11.3	49.4
Change Period (Y+Rc), s	5.1	5.8	5.1	5.8	5.1	5.8	5.1	5.8
Max Green Setting (Gmax), s	26.2	34.9	30.9	26.2	36.2	24.9	36.2	20.9
Max Q Clear Time (g_c+I1), s	25.0	45.3	25.8	11.0	19.5	40.7	6.7	15.9
Green Ext Time (p_c), s	0.1	0.0	0.9	0.7	0.4	0.0	0.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	86.3
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Appendix I - LOS Calculation Worksheets – Near-Term Year 2025 Base with Project Conditions

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	12	56	1	19	4	43	13	3	5	17	16
Future Vol, veh/h	9	12	56	1	19	4	43	13	3	5	17	16
Conflicting Peds, #/hr	0	0	4	4	0	0	3	0	1	1	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	14	66	1	22	5	51	15	4	6	20	19

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	178	167	37	206	174	18	42	0	0	20	0	0
Stage 1	45	45	-	120	120	-	-	-	-	-	-	-
Stage 2	133	122	-	86	54	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	784	726	1035	752	719	1061	1567	-	-	1596	-	-
Stage 1	969	857	-	884	796	-	-	-	-	-	-	-
Stage 2	870	795	-	922	850	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	738	696	1028	670	690	1060	1563	-	-	1594	-	-
Mov Cap-2 Maneuver	738	696	-	670	690	-	-	-	-	-	-	-
Stage 1	934	851	-	854	769	-	-	-	-	-	-	-
Stage 2	813	768	-	842	844	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	10.1	5.4	1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1563	-	-	918	732	1594	-	-
HCM Lane V/C Ratio	0.032	-	-	0.099	0.039	0.004	-	-
HCM Control Delay (s)	7.4	0	-	9.4	10.1	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	16	42	2	7	1	49	27	5	1	18	11
Future Vol, veh/h	20	16	42	2	7	1	49	27	5	1	18	11
Conflicting Peds, #/hr	0	0	1	1	0	0	8	0	3	3	0	8
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	18	46	2	8	1	54	30	5	1	20	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	181	182	35	205	186	36	40	0	0	38	0	0
Stage 1	36	36	-	144	144	-	-	-	-	-	-	-
Stage 2	145	146	-	61	42	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	781	712	1038	753	708	1037	1570	-	-	1572	-	-
Stage 1	980	865	-	859	778	-	-	-	-	-	-	-
Stage 2	858	776	-	950	860	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	747	679	1029	683	675	1034	1558	-	-	1568	-	-
Mov Cap-2 Maneuver	747	679	-	683	675	-	-	-	-	-	-	-
Stage 1	939	857	-	826	748	-	-	-	-	-	-	-
Stage 2	819	747	-	887	852	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	10.2	4.5	0.2
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1558	-	-	856	701	1568	-	-
HCM Lane V/C Ratio	0.035	-	-	0.1	0.016	0.001	-	-
HCM Control Delay (s)	7.4	0	-	9.7	10.2	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0	0	-	-

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	10	150	64	4	56	24
Future Vol, veh/h	10	150	64	4	56	24
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	185	79	5	69	30
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.6	8.1	8.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	70%	0%	94%
Vol Thru, %	0%	6%	6%
Vol Right, %	30%	94%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	80	160	68
LT Vol	56	0	64
Through Vol	0	10	4
RT Vol	24	150	0
Lane Flow Rate	99	198	84
Geometry Grp	1	1	1
Degree of Util (X)	0.12	0.198	0.104
Departure Headway (Hd)	4.375	3.609	4.45
Convergence, Y/N	Yes	Yes	Yes
Cap	807	976	795
Service Time	2.47	1.698	2.535
HCM Lane V/C Ratio	0.123	0.203	0.106
HCM Control Delay	8.1	7.6	8.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.7	0.3

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	6	82	28	13	150	33
Future Vol, veh/h	6	82	28	13	150	33
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	95	33	15	174	38
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.4	8	8.8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	82%	0%	68%
Vol Thru, %	0%	7%	32%
Vol Right, %	18%	93%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	183	88	41
LT Vol	150	0	28
Through Vol	0	6	13
RT Vol	33	82	0
Lane Flow Rate	213	102	48
Geometry Grp	1	1	1
Degree of Util (X)	0.251	0.112	0.062
Departure Headway (Hd)	4.247	3.923	4.668
Convergence, Y/N	Yes	Yes	Yes
Cap	836	919	771
Service Time	2.325	1.925	2.672
HCM Lane V/C Ratio	0.255	0.111	0.062
HCM Control Delay	8.8	7.4	8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1	0.4	0.2

Intersection	
Int Delay, s/veh	8.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	40	1	3	45	56	3	7	9	167	17	37
Future Vol, veh/h	20	40	1	3	45	56	3	7	9	167	17	37
Conflicting Peds, #/hr	28	0	35	35	0	28	2	0	9	9	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	53	1	4	59	74	4	9	12	220	22	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	161	0	0	89	0	0	283	310	98	257	273	126
Stage 1	-	-	-	-	-	-	141	141	-	132	132	-
Stage 2	-	-	-	-	-	-	142	169	-	125	141	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1418	-	-	1506	-	-	669	605	958	696	634	924
Stage 1	-	-	-	-	-	-	862	780	-	871	787	-
Stage 2	-	-	-	-	-	-	861	759	-	879	780	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1380	-	-	1456	-	-	583	557	918	644	583	898
Mov Cap-2 Maneuver	-	-	-	-	-	-	583	557	-	644	583	-
Stage 1	-	-	-	-	-	-	817	740	-	832	763	-
Stage 2	-	-	-	-	-	-	787	736	-	833	740	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.5	0.2	10.4	14.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	690	1380	-	-	1456	-	-	670
HCM Lane V/C Ratio	0.036	0.019	-	-	0.003	-	-	0.434
HCM Control Delay (s)	10.4	7.7	0	-	7.5	0	-	14.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	2.2

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	30	2	9	37	158	2	17	5	98	7	15
Future Vol, veh/h	15	30	2	9	37	158	2	17	5	98	7	15
Conflicting Peds, #/hr	6	0	16	16	0	6	1	0	14	14	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	34	2	10	43	182	2	20	6	113	8	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	231	0	0	54	0	0	255	338	67	256	248	141
Stage 1	-	-	-	-	-	-	87	87	-	160	160	-
Stage 2	-	-	-	-	-	-	168	251	-	96	88	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1337	-	-	1551	-	-	698	583	997	697	655	907
Stage 1	-	-	-	-	-	-	921	823	-	842	766	-
Stage 2	-	-	-	-	-	-	834	699	-	911	822	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1329	-	-	1524	-	-	655	558	967	651	627	901
Mov Cap-2 Maneuver	-	-	-	-	-	-	655	558	-	651	627	-
Stage 1	-	-	-	-	-	-	893	798	-	826	755	-
Stage 2	-	-	-	-	-	-	802	689	-	860	797	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.5	0.3	11.1	11.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	620	1329	-	-	1524	-	-	673
HCM Lane V/C Ratio	0.044	0.013	-	-	0.007	-	-	0.205
HCM Control Delay (s)	11.1	7.7	0	-	7.4	0	-	11.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	85	155	743	93	249	106	853	648	134	846	46
Future Volume (veh/h)	41	85	155	743	93	249	106	853	648	134	846	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		0.99	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	42	88	127	766	96	231	109	879	534	138	872	37
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	56	299	230	582	144	345	134	2030	610	165	1474	632
Arrive On Green	0.03	0.16	0.16	0.17	0.30	0.30	0.08	0.40	0.40	0.09	0.41	0.41
Sat Flow, veh/h	1781	1870	1436	3456	484	1163	1781	5106	1534	1781	3554	1524
Grp Volume(v), veh/h	42	88	127	766	0	327	109	879	534	138	872	37
Grp Sat Flow(s),veh/h/ln	1781	1870	1436	1728	0	1647	1781	1702	1534	1781	1777	1524
Q Serve(g_s), s	2.8	5.0	9.8	20.2	0.0	20.9	7.2	15.0	38.6	9.1	22.8	1.7
Cycle Q Clear(g_c), s	2.8	5.0	9.8	20.2	0.0	20.9	7.2	15.0	38.6	9.1	22.8	1.7
Prop In Lane	1.00		1.00	1.00		0.71	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	56	299	230	582	0	489	134	2030	610	165	1474	632
V/C Ratio(X)	0.75	0.29	0.55	1.32	0.00	0.67	0.81	0.43	0.88	0.84	0.59	0.06
Avail Cap(c_a), veh/h	211	373	286	582	0	489	211	2030	610	211	1474	632
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.7	44.4	46.5	49.9	0.0	37.0	54.6	26.3	33.4	53.6	27.2	21.1
Incr Delay (d2), s/veh	13.9	0.5	2.1	154.4	0.0	3.5	9.8	0.7	16.1	18.9	1.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	2.4	3.5	20.9	0.0	8.6	3.5	6.0	16.3	4.8	9.4	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.5	45.0	46.5	204.3	0.0	40.5	64.4	27.0	49.5	72.4	29.0	21.2
LnGrp LOS	E	D	D	F	A	D	E	C	D	E	C	C
Approach Vol, veh/h		257			1093			1522			1047	
Approach Delay, s/veh		51.1			155.3			37.5			34.4	
Approach LOS		D			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	53.5	25.3	25.0	14.2	55.6	8.9	41.4
Change Period (Y+Rc), s	5.1	5.8	5.1	5.8	5.1	5.8	5.1	5.8
Max Green Setting (Gmax), s	14.2	39.9	20.2	23.9	14.2	39.9	14.2	29.9
Max Q Clear Time (g_c+I1), s	11.1	40.6	22.2	11.8	9.2	24.8	4.8	22.9
Green Ext Time (p_c), s	0.1	0.0	0.0	0.7	0.1	7.3	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	70.5
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	91	133	593	121	119	253	812	824	294	1045	67
Future Volume (veh/h)	68	91	133	593	121	119	253	812	824	294	1045	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.87	1.00		0.97	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	69	92	106	599	122	108	256	820	666	297	1056	54
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	312	229	658	277	245	282	1573	468	319	1168	504
Arrive On Green	0.05	0.17	0.17	0.19	0.31	0.31	0.16	0.31	0.31	0.18	0.33	0.33
Sat Flow, veh/h	1781	1870	1374	3456	902	798	1781	5106	1518	1781	3554	1533
Grp Volume(v), veh/h	69	92	106	599	0	230	256	820	666	297	1056	54
Grp Sat Flow(s),veh/h/ln	1781	1870	1374	1728	0	1700	1781	1702	1518	1781	1777	1533
Q Serve(g_s), s	5.4	6.0	9.7	23.8	0.0	15.2	19.8	18.5	43.1	23.0	39.7	3.4
Cycle Q Clear(g_c), s	5.4	6.0	9.7	23.8	0.0	15.2	19.8	18.5	43.1	23.0	39.7	3.4
Prop In Lane	1.00		1.00	1.00		0.47	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	89	312	229	658	0	522	282	1573	468	319	1168	504
V/C Ratio(X)	0.78	0.30	0.46	0.91	0.00	0.44	0.91	0.52	1.42	0.93	0.90	0.11
Avail Cap(c_a), veh/h	461	350	257	763	0	522	461	1573	468	333	1168	504
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.8	51.1	52.7	55.5	0.0	38.8	57.9	39.9	48.4	56.6	44.9	32.7
Incr Delay (d2), s/veh	10.3	0.5	1.5	13.4	0.0	0.6	12.2	1.2	203.2	31.0	11.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	2.9	3.4	11.3	0.0	6.3	9.7	7.8	42.2	12.8	18.6	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.1	51.6	54.1	68.9	0.0	39.4	70.0	41.2	251.6	87.6	56.4	33.1
LnGrp LOS	E	D	D	E	A	D	E	D	F	F	E	C
Approach Vol, veh/h		267			829			1742			1407	
Approach Delay, s/veh		58.9			60.7			125.9			62.1	
Approach LOS		E			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.2	48.9	31.7	29.1	27.3	51.8	12.1	48.8
Change Period (Y+Rc), s	5.1	5.8	5.1	5.8	5.1	5.8	5.1	5.8
Max Green Setting (Gmax), s	26.2	34.9	30.9	26.2	36.2	24.9	36.2	20.9
Max Q Clear Time (g_c+I1), s	25.0	45.1	25.8	11.7	21.8	41.7	7.4	17.2
Green Ext Time (p_c), s	0.1	0.0	0.9	0.7	0.4	0.0	0.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	87.8
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	51	8	76	72	2
Future Vol, veh/h	19	51	8	76	72	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	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	21	55	9	83	78	2

Major/Minor	Minor2		Major2	
Conflicting Flow All	158	2	0	0
Stage 1	158	-	-	-
Stage 2	0	-	-	-
Critical Hdwy	6.52	6.22	4.12	-
Critical Hdwy Stg 1	5.52	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	4.018	3.318	2.218	-
Pot Cap-1 Maneuver	734	1082	-	-
Stage 1	767	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	0	1082	-	-
Mov Cap-2 Maneuver	0	-	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-

Approach	NB	SB
HCM Control Delay, s	8.6	
HCM LOS	A	

Minor Lane/Major Mvmt	NBLn1	SBL	SBT
Capacity (veh/h)	1082	-	-
HCM Lane V/C Ratio	0.084	-	-
HCM Control Delay (s)	8.6	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	83	77	4	36	53	9
Future Vol, veh/h	83	77	4	36	53	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	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	90	84	4	39	58	10

Major/Minor	Minor2		Major2	
Conflicting Flow All	126	10	0	0
Stage 1	126	-	-	-
Stage 2	0	-	-	-
Critical Hdwy	6.52	6.22	4.12	-
Critical Hdwy Stg 1	5.52	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	4.018	3.318	2.218	-
Pot Cap-1 Maneuver	764	1071	-	-
Stage 1	792	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	0	1071	-	-
Mov Cap-2 Maneuver	0	-	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-

Approach	NB	SB
HCM Control Delay, s	8.5	
HCM LOS	A	

Minor Lane/Major Mvmt	NBLn1	SBL	SBT
Capacity (veh/h)	1071	-	-
HCM Lane V/C Ratio	0.041	-	-
HCM Control Delay (s)	8.5	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-

Appendix J - Transportation Forecast Information Center (TFIC) Volumes and Horizon Year 2050 Volume Development

Observed % per Year

Roadway	Segment	ADT per TFIC (2050)	ADT per TFIC (2016)	Growth per Year (2016 - 2050)	TFIC Growth % per Year (2016 - 2050)
Monica Circle	Claire Drive to Macario Drive	1,100	1,300	-6	-0.45%
Macario Drive	Monica Circle to Roja Drive	1,100	1,300	-6	-0.45%
Roja Drive	Macario Drive to N Redondo Drive	1,900	1,500	12	**0.78%**
N Redondo Drive	Roja Drive to Vandegrift Boulevard	3,000	2,800	6	0.21%

SANDAG Series 14 ABM2+/2021 RP model

Note:
ADT = Average Daily Traffic
TFIC = Transportation Forecast Information Center

Turning Movement Count (Unbalanced)
60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
		1: Monica Circle & Claire Drive	40	20	10	10	20	20	20	20	60	10	20	10
		2: Roja Drive & Macario Drive	50	0	40	0	0	0	0	10	100	70	10	0
		3: Roja Drive & N. Redondo Drive	10	10	10	120	30	50	30	50	10	10	50	50
		4: Vandegrift Boulevard / N. River Road & N. Redor	190	920	420	190	900	120	30	80	140	530	150	280

Turning Movement Count (Unbalanced)
60 Minute Counts

DATE	TIME	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
		1: Monica Circle & Claire Drive	50	40	10	10	20	20	30	20	40	10	10	10
		2: Roja Drive & Macario Drive	90	0	50	0	0	0	0	10	60	30	10	0
		3: Roja Drive & N. Redondo Drive	10	10	10	80	10	30	20	40	10	20	40	100
		4: Vandegrift Boulevard / N. River Road & N. Redor	330	890	550	360	1090	150	70	90	130	300	140	130

Appendix K - LOS Calculation Worksheets – Horizon Year 2050 Conditions

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	20	60	10	20	10	40	20	10	10	30	20
Future Vol, veh/h	20	20	60	10	20	10	40	20	10	10	30	20
Conflicting Peds, #/hr	0	0	4	4	0	0	3	0	1	1	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	24	71	12	24	12	47	24	12	12	35	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	216	205	54	248	211	31	62	0	0	37	0	0
Stage 1	74	74	-	125	125	-	-	-	-	-	-	-
Stage 2	142	131	-	123	86	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	740	691	1013	706	686	1043	1541	-	-	1574	-	-
Stage 1	935	833	-	679	792	-	-	-	-	-	-	-
Stage 2	861	788	-	681	824	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	689	661	1006	617	657	1042	1537	-	-	1573	-	-
Mov Cap-2 Maneuver	689	661	-	617	657	-	-	-	-	-	-	-
Stage 1	903	824	-	851	767	-	-	-	-	-	-	-
Stage 2	800	763	-	786	815	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	10.4	4.2	1.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1537	-	-	841	711	1573	-	-
HCM Lane V/C Ratio	0.031	-	-	0.14	0.066	0.007	-	-
HCM Control Delay (s)	7.4	0	-	10	10.4	7.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.2	0	-	-

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	30	20	40	10	10	10	50	40	10	10	20	20
Future Vol, veh/h	30	20	40	10	10	10	50	40	10	10	20	20
Conflicting Peds, #/hr	0	0	1	1	0	0	8	0	3	3	0	8
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	22	44	11	11	11	55	44	11	11	22	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	234	231	42	252	237	53	52	0	0	58	0	0
Stage 1	63	63	-	163	163	-	-	-	-	-	-	-
Stage 2	171	168	-	89	74	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	721	669	1029	701	664	1014	1554	-	-	1546	-	-
Stage 1	948	842	-	839	763	-	-	-	-	-	-	-
Stage 2	831	759	-	918	833	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	675	633	1020	629	626	1011	1542	-	-	1542	-	-
Mov Cap-2 Maneuver	675	633	-	629	626	-	-	-	-	-	-	-
Stage 1	906	829	-	805	732	-	-	-	-	-	-	-
Stage 2	780	729	-	848	821	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	10.2	3.7	1.5
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1542	-	-	781	719	1542	-	-
HCM Lane V/C Ratio	0.036	-	-	0.127	0.046	0.007	-	-
HCM Control Delay (s)	7.4	0	-	10.3	10.2	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.1	0	-	-

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	10	90	70	10	60	30
Future Vol, veh/h	10	90	70	10	60	30
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	111	86	12	74	37
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.3	8.1	8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	67%	0%	88%
Vol Thru, %	0%	10%	12%
Vol Right, %	33%	90%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	90	100	80
LT Vol	60	0	70
Through Vol	0	10	10
RT Vol	30	90	0
Lane Flow Rate	111	123	99
Geometry Grp	1	1	1
Degree of Util (X)	0.131	0.126	0.121
Departure Headway (Hd)	4.247	3.665	4.401
Convergence, Y/N	Yes	Yes	Yes
Cap	831	959	805
Service Time	2.339	1.758	2.48
HCM Lane V/C Ratio	0.134	0.128	0.123
HCM Control Delay	8	7.3	8.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.4	0.4

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	10	60	40	10	90	40
Future Vol, veh/h	10	60	40	10	90	40
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	70	47	12	105	47
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.2	7.9	8.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	69%	0%	80%
Vol Thru, %	0%	14%	20%
Vol Right, %	31%	86%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	130	70	50
LT Vol	90	0	40
Through Vol	0	10	10
RT Vol	40	60	0
Lane Flow Rate	151	81	58
Geometry Grp	1	1	1
Degree of Util (X)	0.173	0.084	0.071
Departure Headway (Hd)	4.127	3.729	4.423
Convergence, Y/N	Yes	Yes	Yes
Cap	862	943	799
Service Time	2.186	1.823	2.512
HCM Lane V/C Ratio	0.175	0.086	0.073
HCM Control Delay	8.1	7.2	7.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.6	0.3	0.2

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	30	50	10	10	50	50	10	10	10	120	20	40
Future Vol, veh/h	30	50	10	10	50	50	10	10	10	120	20	40
Conflicting Peds, #/hr	28	0	35	35	0	28	2	0	9	9	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	66	13	13	66	66	13	13	13	158	26	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	160	0	0	114	0	0	353	372	117	326	345	129
Stage 1	-	-	-	-	-	-	186	186	-	153	153	-
Stage 2	-	-	-	-	-	-	167	186	-	173	192	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1419	-	-	1475	-	-	602	558	935	627	578	921
Stage 1	-	-	-	-	-	-	816	746	-	849	771	-
Stage 2	-	-	-	-	-	-	835	746	-	829	742	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1381	-	-	1426	-	-	510	504	895	567	523	895
Mov Cap-2 Maneuver	-	-	-	-	-	-	510	504	-	567	523	-
Stage 1	-	-	-	-	-	-	765	700	-	801	742	-
Stage 2	-	-	-	-	-	-	749	718	-	771	696	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.6	0.7	11.5	14.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	593	1381	-	-	1426	-	-	611
HCM Lane V/C Ratio	0.067	0.029	-	-	0.009	-	-	0.368
HCM Control Delay (s)	11.5	7.7	0	-	7.5	0	-	14.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	1.8

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	40	10	20	40	100	10	10	10	80	10	30
Future Vol, veh/h	20	40	10	20	40	100	10	10	10	80	10	30
Conflicting Peds, #/hr	6	0	16	16	0	6	1	0	14	14	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	46	11	23	46	115	11	11	11	92	11	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	167	0	0	75	0	0	289	329	64	279	277	111
Stage 1	-	-	-	-	-	-	116	116	-	156	156	-
Stage 2	-	-	-	-	-	-	173	213	-	123	121	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1411	-	-	1524	-	-	663	590	975	673	631	942
Stage 1	-	-	-	-	-	-	889	800	-	846	769	-
Stage 2	-	-	-	-	-	-	829	726	-	881	796	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1403	-	-	1498	-	-	602	557	945	625	596	936
Mov Cap-2 Maneuver	-	-	-	-	-	-	602	557	-	625	596	-
Stage 1	-	-	-	-	-	-	859	773	-	827	751	-
Stage 2	-	-	-	-	-	-	772	709	-	832	769	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	0.9	10.7	11.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	665	1403	-	-	1498	-	-	679
HCM Lane V/C Ratio	0.052	0.016	-	-	0.015	-	-	0.203
HCM Control Delay (s)	10.7	7.6	0	-	7.4	0	-	11.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	80	140	770	90	260	110	940	680	160	920	60
Future Volume (veh/h)	30	80	140	770	90	260	110	940	680	160	920	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.99	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	31	82	115	794	93	241	113	969	561	165	948	50
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	43	274	209	848	169	437	135	1825	548	187	1376	589
Arrive On Green	0.02	0.15	0.15	0.25	0.37	0.37	0.08	0.36	0.36	0.11	0.39	0.39
Sat Flow, veh/h	1781	1870	1424	3456	458	1187	1781	5106	1532	1781	3554	1522
Grp Volume(v), veh/h	31	82	115	794	0	334	113	969	561	165	948	50
Grp Sat Flow(s),veh/h/ln	1781	1870	1424	1728	0	1645	1781	1702	1532	1781	1777	1522
Q Serve(g_s), s	2.6	5.9	11.2	33.8	0.0	24.2	9.4	22.6	53.6	13.7	33.4	3.1
Cycle Q Clear(g_c), s	2.6	5.9	11.2	33.8	0.0	24.2	9.4	22.6	53.6	13.7	33.4	3.1
Prop In Lane	1.00		1.00	1.00		0.72	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	43	274	209	848	0	605	135	1825	548	187	1376	589
V/C Ratio(X)	0.72	0.30	0.55	0.94	0.00	0.55	0.84	0.53	1.02	0.88	0.69	0.08
Avail Cap(c_a), veh/h	81	324	247	919	0	648	165	1825	548	224	1376	589
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.7	57.1	59.4	55.4	0.0	37.6	66.4	38.2	48.2	66.2	38.4	29.1
Incr Delay (d2), s/veh	15.4	0.6	2.3	15.6	0.0	0.9	24.6	1.1	44.8	26.4	2.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.9	4.1	16.2	0.0	9.7	5.1	9.4	26.6	7.5	14.6	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.0	57.7	61.7	71.0	0.0	38.5	93.0	39.3	93.0	92.6	41.3	29.4
LnGrp LOS	F	E	E	E	A	D	F	D	F	F	D	C
Approach Vol, veh/h		228			1128			1643			1163	
Approach Delay, s/veh		63.8			61.4			61.3			48.0	
Approach LOS		E			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.9	59.4	41.9	27.8	16.4	63.9	8.7	61.0
Change Period (Y+Rc), s	5.1	5.8	5.1	5.8	5.1	5.8	5.1	5.8
Max Green Setting (Gmax), s	16.9	43.4	39.9	26.0	13.9	48.4	6.8	59.1
Max Q Clear Time (g_c+I1), s	15.7	55.6	35.8	13.2	11.4	35.4	4.6	26.2
Green Ext Time (p_c), s	0.1	0.0	1.1	0.7	0.0	7.2	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	57.8
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	90	130	630	110	130	240	860	870	330	1110	70
Future Volume (veh/h)	70	90	130	630	110	130	240	860	870	330	1110	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.86	1.00		0.97	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	71	91	105	636	111	118	242	869	703	333	1121	57
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	296	216	574	224	238	255	1826	544	308	1375	594
Arrive On Green	0.05	0.16	0.16	0.17	0.27	0.27	0.14	0.36	0.36	0.17	0.39	0.39
Sat Flow, veh/h	1781	1870	1364	3456	816	867	1781	5106	1522	1781	3554	1536
Grp Volume(v), veh/h	71	91	105	636	0	229	242	869	703	333	1121	57
Grp Sat Flow(s),veh/h/ln	1781	1870	1364	1728	0	1683	1781	1702	1522	1781	1777	1536
Q Serve(g_s), s	5.9	6.5	10.5	24.9	0.0	17.1	20.2	19.8	53.6	25.9	42.4	3.5
Cycle Q Clear(g_c), s	5.9	6.5	10.5	24.9	0.0	17.1	20.2	19.8	53.6	25.9	42.4	3.5
Prop In Lane	1.00		1.00	1.00		0.52	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	296	216	574	0	462	255	1826	544	308	1375	594
V/C Ratio(X)	0.79	0.31	0.49	1.11	0.00	0.50	0.95	0.48	1.29	1.08	0.82	0.10
Avail Cap(c_a), veh/h	148	324	236	574	0	462	255	1826	544	308	1375	594
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.5	55.8	57.5	62.5	0.0	45.7	63.7	37.3	48.2	62.0	41.2	29.3
Incr Delay (d2), s/veh	11.1	0.6	1.7	71.0	0.0	0.8	41.9	0.9	144.4	75.1	5.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	3.1	3.7	16.4	0.0	7.2	12.0	8.2	41.5	17.8	18.9	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.5	56.4	59.2	133.5	0.0	46.6	105.6	38.2	192.6	137.2	46.6	29.6
LnGrp LOS	F	E	E	F	A	D	F	D	F	F	D	C
Approach Vol, veh/h		267			865			1814			1511	
Approach Delay, s/veh		64.2			110.5			107.0			65.9	
Approach LOS		E			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.0	59.4	30.0	29.6	26.6	63.8	12.6	46.9
Change Period (Y+Rc), s	5.1	5.8	5.1	5.8	5.1	5.8	5.1	5.8
Max Green Setting (Gmax), s	25.9	51.4	24.9	26.0	21.5	55.8	12.5	38.4
Max Q Clear Time (g_c+I1), s	27.9	55.6	26.9	12.5	22.2	44.4	7.9	19.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.7	0.0	7.6	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	91.2
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Appendix L - LOS Calculation Worksheets – Horizon Year 2050 with Project Conditions

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	20	62	10	20	10	48	20	10	10	30	20
Future Vol, veh/h	20	20	62	10	20	10	48	20	10	10	30	20
Conflicting Peds, #/hr	0	0	4	4	0	0	3	0	1	1	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	24	73	12	24	12	56	24	12	12	35	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	234	223	54	267	229	31	62	0	0	37	0	0
Stage 1	74	74	-	143	143	-	-	-	-	-	-	-
Stage 2	160	149	-	124	86	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	721	676	1013	686	671	1043	1541	-	-	1574	-	-
Stage 1	935	833	-	860	779	-	-	-	-	-	-	-
Stage 2	842	774	-	880	824	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	668	643	1006	595	638	1042	1537	-	-	1573	-	-
Mov Cap-2 Maneuver	668	643	-	595	638	-	-	-	-	-	-	-
Stage 1	898	824	-	827	749	-	-	-	-	-	-	-
Stage 2	777	745	-	784	815	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.1	10.6	4.6	1.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1537	-	-	831	693	1573	-	-
HCM Lane V/C Ratio	0.037	-	-	0.144	0.068	0.007	-	-
HCM Control Delay (s)	7.4	0	-	10.1	10.6	7.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.2	0	-	-

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	30	20	49	10	10	10	54	40	10	10	20	20
Future Vol, veh/h	30	20	49	10	10	10	54	40	10	10	20	20
Conflicting Peds, #/hr	0	0	1	1	0	0	8	0	3	3	0	8
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	22	54	11	11	11	59	44	11	11	22	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	242	239	42	265	245	53	52	0	0	58	0	0
Stage 1	63	63	-	171	171	-	-	-	-	-	-	-
Stage 2	179	176	-	94	74	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	712	662	1029	688	657	1014	1554	-	-	1546	-	-
Stage 1	948	842	-	831	757	-	-	-	-	-	-	-
Stage 2	823	753	-	913	833	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	665	624	1020	610	620	1011	1542	-	-	1542	-	-
Mov Cap-2 Maneuver	665	624	-	610	620	-	-	-	-	-	-	-
Stage 1	903	829	-	795	724	-	-	-	-	-	-	-
Stage 2	770	721	-	835	821	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	10.3	3.9	1.5
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1542	-	-	791	707	1542	-	-
HCM Lane V/C Ratio	0.038	-	-	0.136	0.047	0.007	-	-
HCM Control Delay (s)	7.4	0	-	10.3	10.3	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.1	0	-	-

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	18	157	70	12	77	30
Future Vol, veh/h	18	157	70	12	77	30
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	194	86	15	95	37
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8	8.3	8.5
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	72%	0%	85%
Vol Thru, %	0%	10%	15%
Vol Right, %	28%	90%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	107	175	82
LT Vol	77	0	70
Through Vol	0	18	12
RT Vol	30	157	0
Lane Flow Rate	132	216	101
Geometry Grp	1	1	1
Degree of Util (X)	0.168	0.23	0.13
Departure Headway (Hd)	4.572	3.83	4.628
Convergence, Y/N	Yes	Yes	Yes
Cap	786	940	776
Service Time	2.592	1.842	2.645
HCM Lane V/C Ratio	0.168	0.23	0.13
HCM Control Delay	8.5	8	8.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.6	0.9	0.4

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	14	92	40	19	164	40
Future Vol, veh/h	14	92	40	19	164	40
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	107	47	22	191	47
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.7	8.3	9.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	80%	0%	68%
Vol Thru, %	0%	13%	32%
Vol Right, %	20%	87%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	204	106	59
LT Vol	164	0	40
Through Vol	0	14	19
RT Vol	40	92	0
Lane Flow Rate	237	123	69
Geometry Grp	1	1	1
Degree of Util (X)	0.291	0.139	0.091
Departure Headway (Hd)	4.418	4.053	4.758
Convergence, Y/N	Yes	Yes	Yes
Cap	818	886	755
Service Time	2.418	2.071	2.778
HCM Lane V/C Ratio	0.29	0.139	0.091
HCM Control Delay	9.2	7.7	8.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.2	0.5	0.3

Intersection	
Int Delay, s/veh	10.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	30	50	10	10	50	65	10	12	10	179	28	40
Future Vol, veh/h	30	50	10	10	50	65	10	12	10	179	28	40
Conflicting Peds, #/hr	28	0	35	35	0	28	2	0	9	9	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	66	13	13	66	86	13	16	13	236	37	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	180	0	0	114	0	0	368	392	117	337	355	139
Stage 1	-	-	-	-	-	-	186	186	-	163	163	-
Stage 2	-	-	-	-	-	-	182	206	-	174	192	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1396	-	-	1475	-	-	588	544	935	617	571	909
Stage 1	-	-	-	-	-	-	816	746	-	839	763	-
Stage 2	-	-	-	-	-	-	820	731	-	828	742	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1359	-	-	1426	-	-	489	492	896	555	516	883
Mov Cap-2 Maneuver	-	-	-	-	-	-	489	492	-	555	516	-
Stage 1	-	-	-	-	-	-	765	700	-	792	735	-
Stage 2	-	-	-	-	-	-	724	704	-	767	696	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.6	0.6	11.8	18.6
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	571	1359	-	-	1426	-	-	585
HCM Lane V/C Ratio	0.074	0.029	-	-	0.009	-	-	0.556
HCM Control Delay (s)	11.8	7.7	0	-	7.5	0	-	18.6
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	3.4

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	40	10	20	40	164	10	19	10	108	14	30
Future Vol, veh/h	20	40	10	20	40	164	10	19	10	108	14	30
Conflicting Peds, #/hr	6	0	16	16	0	6	1	0	14	14	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	46	11	23	46	189	11	22	11	124	16	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	241	0	0	75	0	0	329	403	64	321	314	148
Stage 1	-	-	-	-	-	-	116	116	-	193	193	-
Stage 2	-	-	-	-	-	-	213	287	-	128	121	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1326	-	-	1524	-	-	624	536	975	632	601	899
Stage 1	-	-	-	-	-	-	889	800	-	809	741	-
Stage 2	-	-	-	-	-	-	789	674	-	876	796	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1318	-	-	1498	-	-	560	505	945	576	566	893
Mov Cap-2 Maneuver	-	-	-	-	-	-	560	505	-	576	566	-
Stage 1	-	-	-	-	-	-	858	772	-	790	723	-
Stage 2	-	-	-	-	-	-	728	658	-	815	768	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	0.7	11.6	13.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	590	1318	-	-	1498	-	-	618
HCM Lane V/C Ratio	0.076	0.017	-	-	0.015	-	-	0.263
HCM Control Delay (s)	11.6	7.8	0	-	7.4	0	-	13.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	97	165	770	94	260	116	940	680	160	920	64
Future Volume (veh/h)	47	97	165	770	94	260	116	940	680	160	920	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.99	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	48	100	135	794	97	241	120	969	561	165	948	52
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	283	216	848	171	425	142	1801	540	187	1345	576
Arrive On Green	0.03	0.15	0.15	0.25	0.36	0.36	0.08	0.35	0.35	0.11	0.38	0.38
Sat Flow, veh/h	1781	1870	1429	3456	473	1175	1781	5106	1532	1781	3554	1522
Grp Volume(v), veh/h	48	100	135	794	0	338	120	969	561	165	948	52
Grp Sat Flow(s),veh/h/ln	1781	1870	1429	1728	0	1647	1781	1702	1532	1781	1777	1522
Q Serve(g_s), s	4.0	7.2	13.3	33.8	0.0	24.7	10.0	22.7	52.9	13.7	33.9	3.3
Cycle Q Clear(g_c), s	4.0	7.2	13.3	33.8	0.0	24.7	10.0	22.7	52.9	13.7	33.9	3.3
Prop In Lane	1.00		1.00	1.00		0.71	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	62	283	216	848	0	597	142	1801	540	187	1345	576
V/C Ratio(X)	0.78	0.35	0.62	0.94	0.00	0.57	0.85	0.54	1.04	0.88	0.71	0.09
Avail Cap(c_a), veh/h	81	324	248	919	0	649	165	1801	540	224	1345	576
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.8	57.1	59.7	55.4	0.0	38.4	68.1	38.8	48.5	66.2	39.5	30.0
Incr Delay (d2), s/veh	25.8	0.7	3.9	15.6	0.0	1.0	27.3	1.2	49.0	26.4	3.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	3.5	5.0	16.2	0.0	10.0	5.6	9.5	26.9	7.5	14.9	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	97.6	57.8	63.5	71.0	0.0	39.4	95.5	39.9	97.5	92.6	42.6	30.3
LnGrp LOS	F	E	E	E	A	D	F	D	F	F	D	C
Approach Vol, veh/h		283			1132			1650			1165	
Approach Delay, s/veh		67.3			61.6			63.5			49.2	
Approach LOS		E			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.9	58.7	41.9	26.5	17.0	62.6	10.3	60.1
Change Period (Y+Rc), s	5.1	5.8	5.1	5.8	5.1	5.8	5.1	5.8
Max Green Setting (Gmax), s	16.9	43.4	39.9	26.0	13.9	46.4	6.8	59.1
Max Q Clear Time (g_c+I1), s	15.7	54.9	35.8	15.3	12.0	35.9	6.0	26.7
Green Ext Time (p_c), s	0.1	0.0	1.1	0.7	0.0	7.0	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	59.3
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	98	142	630	128	130	268	860	870	330	1110	88
Future Volume (veh/h)	78	98	142	630	128	130	268	860	870	330	1110	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.86	1.00		0.97	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	79	99	113	636	129	118	271	869	703	333	1121	71
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	99	298	216	587	243	222	255	1834	547	296	1357	587
Arrive On Green	0.06	0.16	0.16	0.17	0.27	0.27	0.14	0.36	0.36	0.17	0.38	0.38
Sat Flow, veh/h	1781	1870	1366	3456	886	810	1781	5106	1523	1781	3554	1536
Grp Volume(v), veh/h	79	99	113	636	0	247	271	869	703	333	1121	71
Grp Sat Flow(s),veh/h/ln	1781	1870	1366	1728	0	1696	1781	1702	1523	1781	1777	1536
Q Serve(g_s), s	6.6	7.0	11.4	25.5	0.0	18.6	21.5	19.7	53.9	24.9	42.7	4.5
Cycle Q Clear(g_c), s	6.6	7.0	11.4	25.5	0.0	18.6	21.5	19.7	53.9	24.9	42.7	4.5
Prop In Lane	1.00		1.00	1.00		0.48	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	99	298	216	587	0	465	255	1834	547	296	1357	587
V/C Ratio(X)	0.80	0.33	0.52	1.08	0.00	0.53	1.06	0.47	1.29	1.13	0.83	0.12
Avail Cap(c_a), veh/h	156	324	237	587	0	465	255	1834	547	296	1357	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.0	55.9	57.8	62.3	0.0	46.3	64.3	37.1	48.1	62.5	41.9	30.0
Incr Delay (d2), s/veh	11.4	0.6	1.9	61.5	0.0	1.2	73.5	0.9	141.9	90.8	5.9	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	3.4	4.0	16.0	0.0	7.9	14.8	8.2	41.3	18.4	19.1	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.4	56.6	59.7	123.7	0.0	47.4	137.7	36.0	189.9	153.3	47.7	30.5
LnGrp LOS	F	E	E	F	A	D	F	D	F	F	D	C
Approach Vol, veh/h		291			883			1843			1525	
Approach Delay, s/veh		64.5			102.4			110.6			70.0	
Approach LOS		E			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	59.7	30.6	29.7	26.6	63.1	13.4	46.9
Change Period (Y+Rc), s	5.1	5.8	5.1	5.8	5.1	5.8	5.1	5.8
Max Green Setting (Gmax), s	24.9	51.8	25.5	26.0	21.5	55.2	13.1	38.4
Max Q Clear Time (g_c+I1), s	26.9	55.9	27.5	13.4	23.5	44.7	8.6	20.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.8	0.0	7.1	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	92.4
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	3.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	70	8	76	100	2
Future Vol, veh/h	19	70	8	76	100	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	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	21	76	9	83	109	2

Major/Minor	Minor2		Major2	
Conflicting Flow All	220	2	0	0
Stage 1	220	-	-	-
Stage 2	0	-	-	-
Critical Hdwy	6.52	6.22	4.12	-
Critical Hdwy Stg 1	5.52	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	4.018	3.318	2.218	-
Pot Cap-1 Maneuver	678	1082	-	-
Stage 1	721	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	0	1082	-	-
Mov Cap-2 Maneuver	0	-	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-

Approach	NB	SB
HCM Control Delay, s	8.6	
HCM LOS	A	

Minor Lane/Major Mvmt	NBLn1	SBL	SBT
Capacity (veh/h)	1082	-	-
HCM Lane V/C Ratio	0.084	-	-
HCM Control Delay (s)	8.6	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	83	100	4	36	70	9
Future Vol, veh/h	83	100	4	36	70	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	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	90	109	4	39	76	10

Major/Minor	Minor2		Major2	
Conflicting Flow All	162	10	0	0
Stage 1	162	-	-	-
Stage 2	0	-	-	-
Critical Hdwy	6.52	6.22	4.12	-
Critical Hdwy Stg 1	5.52	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	4.018	3.318	2.218	-
Pot Cap-1 Maneuver	730	1071	-	-
Stage 1	764	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	0	1071	-	-
Mov Cap-2 Maneuver	0	-	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-

Approach	NB	SB
HCM Control Delay, s	8.5	
HCM LOS	A	

Minor Lane/Major Mvmt	NBLn1	SBL	SBT
Capacity (veh/h)	1071	-	-
HCM Lane V/C Ratio	0.041	-	-
HCM Control Delay (s)	8.5	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-