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LOCAL MOBILITY ANALYSIS

SMILAX PROPERTY

County of San Diego, California July 30, 2020

LLG Ref. 3-19-3067

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LOCAL MOBILITY ANALYSIS

SMILAX PROPERTY

County of San Diego, California July 30, 2020

1.0 INTRODUCTION

Linscott, Law & Greenspan Engineers (LLG) has been retained to assess the traffic impacts associated with the Smilax Property project. The project is located on the west side of Smilax Road, south of SR 78 in the County of San Diego.

The project proposes to develop 62 multi-family units. This transportation report addresses the potential transportation impacts associated with the proposed project.

The following sections are included in this report:

- Project Description
- Existing Conditions Discussion
- Analysis Approach and Methodology
- Existing Conditions Analysis
- Trip Generation/Distribution/Assignment
- Cumulative Projects Discussion
- Near-Term Analysis
- Long-Term Analysis
- Site Access and Circulation Review
- Conclusions

2.0 PROJECT LOCATION AND DESCRIPTION

2.1 Project Location

The project is located on the west side of Smilax Road, south of SR 78 in the County of San Diego.

Figure 2–1 shows the general vicinity of the project and *Figure 2–2* shows a more detailed project area map.

2.2 Project Description

The project proposes to develop the project site with 62 multi-family units and access to the property is proposed via a single driveway to Smilax Road.

Figure 2–3 shows the conceptual site plan for the project.





Project Area Map

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Project Site Plan

Smilax Property

3.0 EXISTING CONDITIONS

The intersections and segments included in the study area are listed below. The S. Santa Fe Avenue / Smilax Road intersection was not included in the study area since the project only adds 19 AM peak hour trips (3 inbound / 16 outbound) and 24 PM peak hour trips (17 inbound / 7 outbound).

Intersections

- 1. Poinsettia Avenue / Oleander Avenue
- 2. Smilax Road / Oleander Avenue

Street Segments

Poinsettia Avenue

• South of Oleander Avenue

Smilax Road

Mimosa Avenue to Oleander Avenue

Oleander Avenue

- Parkwood Avenue to Poinsettia Avenue
- Poinsettia Avenue to Smilax Road
- Smilax Road to Alamitos Way

3.1 Existing Transportation Conditions

Effective evaluation of the traffic impacts associated with the proposed Project requires an understanding of the existing transportation system within the project area. *Figure 3–1* depicts the existing conditions diagram, including signalized intersections and lane configurations.

3.2 Existing Street Network

The following is a description of the existing street network in the study area.

Poinsettia Road is classified in the San Diego County Mobility Element as a 4-lane arterial. It is currently constructed as a 2-lane undivided roadway. It has a posted speed limit of 40 MPH. Curb, gutter, and sidewalks are not provided.

Smilax Road is classified in the City of San Marcos Mobility Element as a 4-lane arterial. It is currently constructed as a 2-lane undivided roadway. It has a posted speed limit of 35 MPH and parking is permitted along the east curb. Curb and gutter are provided mainly along the west side of the roadway. Sidewalk is provided only along the west curb.

Oleander Avenue is classified in the City of San Marcos Mobility Element as a 4-lane arterial. It is currently constructed as a 2-lane undivided roadway. It has a posted speed limit of 25 MPH and parking is generally provided. Curb and gutter are provided. Sidewalk is provided only along the north curb.

3.3 Existing Bicycle Network

There are no bicycle facilities provided along the street segments within the study area.

3.4 Existing Pedestrian Conditions

Sidewalks are provided along the north side of Oleander Avenue and the west side of Smilax Road, but not on the southside of Oleander Avenue and the east side of Smilax Road in the study area. Sidewalks are not provided along Poinsettia Avenue in the study area.

3.5 Existing Traffic Volumes

Table 3–1 is a summary of the most recent available average daily traffic volumes (ADTs) from LLG counts conducted in October 2018 and March 2019. Manual hand counts at the study area intersections, including bicycle and pedestrian counts, were also conducted in October 2018 and March 2019.

Figure 3–2 depicts the Existing Traffic Volumes. *Appendix A* contains copies of the intersection and roadway segment count sheets.

Street Segment	ADT ^a	Date	Source
Poinsettia Avenue			
Oleander Avenue to Roadrunner Road	8,170	October 18, 2018	LLG
Smilax Road			
Mimosa Avenue to Oleander Avenue	7,740	October 11, 2018	LLG
Oleander Avenue			
Parkwood Avenue to Poinsettia Avenue	5,685	March 5, 2019	LLG
Poinsettia Avenue to Smilax Road	9,210	October 11, 2018	LLG
Smilax Road to Alamitos Way	7,615	March 5, 2019	LLG

TABLE 3–1 EXISTING TRAFFIC VOLUMES

Footnotes:

a. Average Daily Traffic Volumes.





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4.0 ANALYSIS APPROACH AND METHODOLOGY

Level of service (LOS) is the term used to denote the different operating conditions which occur on a given roadway segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Level of service designation is reported differently for signalized intersections, unsignalized intersections and roadway segments.

4.1 Intersections

All study area intersections are unsignalized. *Unsignalized intersections* were analyzed under AM and PM peak hour conditions. Average vehicle delay and Levels of Service (LOS) was determined based upon the procedures found in Chapter 20 and 21 of the latest *Highway Capacity Manual (HCM)*, with the assistance of the *Synchro* 10 computer software. Unsignalized intersection calculation worksheets and a more detailed explanation of the methodology are attached in *Appendix B*.

4.2 Road Segments

Street segment analysis is based upon the comparison of daily traffic volumes (ADTs) to the County of San Diego and City of San Marcos' Roadway Classification Tables. These tables provide segment capacities for different street classifications, based on traffic volumes and roadway characteristics. The County of San Diego and City of San Marcos' Roadway Classification tables are attached in *Appendix C*.

5.0 ANALYSIS OF EXISTING CONDITIONS

The analysis of existing conditions includes the assessment of the study area intersections and street segments using the methodologies described in *Section 4.0*.

5.1 Peak Hour Intersection Levels of Service

Table 5–1 summarizes the existing intersections level of service. As seen in *Table 6–1*, all study area intersections are calculated to currently operate at LOS D or better with the exception of the following:

• Poinsettia Avenue / Oleander Avenue – LOS E during the AM peak hour and LOS F during the PM peak hour

Appendix D contains the Existing intersection analysis worksheets.

5.2 Daily Street Segment Levels of Service

Table 5–2 summarizes the existing roadway segment operations. As seen in *Table 6–2*, the following segments are calculated to currently operate at LOS E/F:

- Smilax Road between Mimosa Avenue and Oleander Avenue LOS E
- Oleander Avenue between Poinsettia Avenue and Smilax Road LOS F
- Oleander Avenue between Smilax Road and Alamitos Way LOS E

TABLE 5–1 EXISTING INTERSECTION OPERATIONS

	Interaction	Control	Inviadiation	Peak	Existing		
	Intersection	Туре	JULISUICION	Hour	Delay ^a	LOS ^b	
1.	Poinsettia Avenue / Oleander Avenue	AWSC ^c	San Diego County	AM PM	35.3 76.2	E F	
2.	Smilax Road / Oleander Avenue	AWSC	City of San Marcos	AM PM	21.1 29.7	C D	

Footnotes:

a. Average delay expressed in seconds per vehicle.

b. LOS = Level of Service.

c. AWSC = All-Way Stop-Controlled intersection.

UNSIGNALIZED

DELAY/LOS THRESHOLDS

Delay	LOS
$0.0 \leq 10.0$	А
10.1 to 15.0	В
15.1 to 25.0	С
25.1 to 35.0	D
35.1 to 50.0	E
≥ 50.1	F

TABLE 5–2
EXISTING STREET SEGMENT OPERATIONS

Street Segment	Jurisdiction	Classification	Capacity (LOS E) ^a	ADT ^b	LOS °	V/C ^d
Poinsettia Ave Oleander Ave to Roadrunner Rd	San Diego County	2.2F Light Collector	9,700	8,170	D	0.842
Smilax Rd Mimosa Ave to Oleander Ave	City of San Marcos	2-Lane Collector	8,000	7,740	Е	0.968
Oleander Ave						
Parkwood Ave to Poinsettia Ave	San Diego County	2.2F Light Collector	9,700	5,685	А	0.586
Poinsettia Ave to Smilax Rd	City of San Marcos	2-Lane Collector	8,000	9,210	F	1.151
Smilax Rd to Alamitos Way	City of San Marcos	2-Lane Collector	8,000	7,615	Е	0.952

Footnotes:

a. Capacities based on San Diego County Roadway Classification Table and City of San Marcos Daily Roadway Segment Capacity.

b. ADT = Average Daily Traffic volumes.

c. LOS = Level of Service.

d. V/C = Volume to Capacity.

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6.0 PROJECT TRIP GENERATION, DISTRIBUTION, AND ASSIGNMENT

6.1 **Project Trip Generation**

The project trip generation was calculated using the trip rates published by the San Diego Association of Governments (SANDAG) in the (*Not So*) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region, April 2002 for Residential Condominiums. **Table 6–1** tabulates the total project traffic generation.

The total project is calculated to generate 496 ADT with 40 AM peak hour trips (8 inbound / 32 outbound) and 50 PM peak hour trips (35 inbound / 15 outbound).

6.2 Project Trip Distribution and Assignment

The project traffic was distributed and assigned to the street system based on the Project site's proximity to SR 78 and the location of employment, recreational, and retail opportunities. *Figure 6–1* depicts the *Project's Primary Traffic Distribution*. *Figure 6–2* depicts the *Project's Total Traffic Volumes*. *Figure 6–3* depicts the *Existing + Total Project Traffic Volumes*.

		Dail	y Trip		AM Pe	ak H	lour			PM Pe	ak H	our	
Land Use	Size Ends		(ADT)	% of	In:Out	Volume		% of	In:Out	Volume			
		Rate	Volume	ADT	Split	In	Out	Total	ADT	Split	In	Out	Total
Condominium	62 DU	8/DU	496	8%	20:80	8	32	40	10%	70:30	35	15	50

TABLE 6–1 PROJECT TRIP GENERATION

General Notes:

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





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7.0 NEAR-TERM CONDITIONS

The Near-Term analysis assesses the effects of cumulative traffic in addition to Project traffic. There are other projects in the study area that may generate traffic within the next several years in conjunction with traffic generated by the Project. In order to encompass a geographic range of potential cumulative projects in the study area, LLG used a "cumulative growth" method.

LLG calculated cumulative growth by comparing Year 2035 forecast volumes from the SANDAG Series 13 traffic model to existing (Year 2019) volumes at each intersection and street segment within the Project study area. LLG prorated the expected growth in traffic volumes between existing (Year 2019) and the horizon year (Year 2035). It was found that a 2% growth is expected in the near term, and therefore, this growth factor was used to estimate near term cumulative traffic.

Figure 7–1 depicts the Near-Term Cumulative Traffic Volumes. *Figure 7–2* depicts the Existing + Project + Cumulative traffic volumes.



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8.0 ANALYSIS OF NEAR-TERM SCENARIOS

8.1 Existing + Project Conditions

Intersection and street segment analyses were conducted for the study intersections under Existing + Project conditions.

8.1.1 Peak Hour Intersection Levels of Service

Table 8–1 summarizes the *Existing* + *Project* intersections level of service. As shown in *Table 9–1*, with the addition of project traffic, all study area intersections are calculated to continue to operate at LOS D or better with the exception of the following:

 Poinsettia Avenue / Oleander Avenue – LOS E/F during the AM/PM peak hours, respectively

Appendix E contains the Existing + Project intersection analysis worksheets.

8.1.2 Segment Operations

Table 8–2 summarizes the *Existing* + *Project* roadway segment level of service. As shown in *Table* 8–2, with the addition of project traffic, all study area segments are calculated to continue to operate at LOS D or better with the exception of the following:

- Smilax Road between Mimosa Avenue and Oleander Avenue LOS E
- Oleander Avenue between Poinsettia Avenue and Smilax Road LOS F
- Oleander Avenue between Smilax Road and Alamitos Way LOS E

8.2 Existing + Project + Cumulative Conditions

Intersection and street segment analyses were conducted for the study intersections under Existing + Project + Cumulative conditions.

8.2.1 Peak Hour Intersection Levels of Service

Table 8–1 summarizes the *Existing* + *Project* + *Cumulative* intersections level of service. As shown in *Table* 8–1, with the addition of cumulative and project traffic, all study area intersections are calculated to continue to operate at LOS D or better with the exception of the following:

• Poinsettia Avenue / Oleander Avenue - LOS E/F during the AM/PM peak hours, respectively

Appendix F contains the Existing + Project + Cumulative intersection analysis worksheets.

8.2.2 Segment Operations

Table 8–2 summarizes the *Existing* + *Project* + *Cumulative* roadway segment level of service. As shown in *Table* 8–2 with the addition of project traffic, all study area segments are calculated to continue to operate at LOS D or better with the exception of the following:

- Smilax Road between Mimosa Avenue and Oleander Avenue LOS F
- Oleander Avenue between Poinsettia Avenue and Smilax Road LOS F
- Oleander Avenue between Smilax Road and Alamitos Way LOS E

Intersection	Control Type	Peak	Existing		Exis	ting + Pr	oject	Existing + Project + Cumulative			
		nour	Delay ^a	LOS ^b	Delay	LOS	Δc	Delay	LOS	Δ	
1. Poinsettia Avenue / Oleander Avenue ^e	AWSC d	AM PM	35.3 76.2	E F	36.9 79.2	E F	7 3	40.0 86.3	E F	14 5	
2. Smilax Road / Oleander Avenue ^f	AWSC	AM PM	21.1 29.7	C D	22.1 32.6	C D	0.6 1.8	23.4 34.9	C D	1.1 2.4	
<i>Footnotes:</i> a. Average delay expressed in seconds per vehicle.									JNSIGNALI	ZED	

 TABLE 8–1

 NEAR-TERM INTERSECTION OPERATIONS

	CHORONALIZED				
Average delay expressed in seconds per vehicle.					
LOS = Level of Service.	DELAY/LOS THRESHOLDS				
" Δ " denotes the project-induced increase in delay for San Marcos intersections or Project Traffic added to the Critical	Delay	LOS			
Movement for County of San Diego unsignalized intersections operating at LOS E or F only.	$0.0 \leq 10.0$	А			
AWSC = All-Way Stop Controlled intersection.	10.1 to 15.0	В			
County of San Diego intersection.	15.1 to 25.0	С			
City of San Marcos intersection.	25.1 to 35.0	D			
	35.1 to 50.0	Е			
	≥ 50.1	F			

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b.
c.
d.
e.
f.

Street Segment	Jurisdiction	Classification	Capacity (LOS E) ^a	Existing			Existing + Project				Existing + Project + Cumulative		
				ADT ^b	LOS °	V/C ^d	ADT	LOS	V/C	Δe	ADT	LOS	V/C
Poinsettia Ave													
Oleander Ave to Roadrunner Rd	San Diego County	2.2F Light Collector	9,700	8,170	D	0.842	8,269	D	0.852	99	8,432	D	0.869
Smilax Rd													
Mimosa Ave to Oleander Ave	City of San Marcos	2-Lane Collector	8,000	7,740	Е	0.968	7,988	Е	0.999	0.031	8,143	F	1.018
Oleander Ave													
Parkwood Ave to Poinsettia Ave	San Diego County	2.2F Light Collector	9,700	5,685	А	0.586	5,735	А	0.591	50	5,849	В	0.603
Poinsettia Ave to Smilax Rd	City of San Marcos	2-Lane Collector	8,000	9,210	F	1.151	9,359	F	1.170	0.019	9,543	F	1.193
Smilax Rd to Alamitos Way	City of San Marcos	2-Lane Collector	8,000	7,615	Е	0.952	7,714	Е	0.964	0.012	7,866	Е	0.983

 TABLE 8–2

 NEAR-TERM STREET SEGMENT OPERATIONS

Footnotes:

a. Capacities based on San Diego County Roadway Classification Table and City of San Marcos Daily Roadway Segment Capacity.

b. ADT = Average Daily Traffic Volumes.

c. LOS = Level of Service.

d. V/C = Volume to Capacity.

e. "\D" denotes the project-induced increase in ADT for segments in County of San Diego jurisdiction or the Volume to Capacity ratio for City of San Marcos jurisdiction.

9.0 HORIZON YEAR 2035 ANALYSIS

The Horizon Year 2035 volumes were obtained from the SANDAG Series 13 model. The Year 2035 analysis assumes the SR 78 / Smilax Road interchange is built.

Based on the General Plan designation for the project site, nine (9) single family units could be built on the site. The traffic generated by these units is included in the 2035 traffic volume forecast. *Table 9-1* shows the increase in traffic volumes which would result from the Project's General Plan Amendment. This extra traffic was distributed to the street system.

Land Use	Size	Daily Trip Ends (ADT)			AM P		PM Peak Hour						
				% of	In:Out	Volume			% of	In:Out	Volume		
		Rate	Volume	ADT	Split	In	Out	Total	ADT	Split	In	Out	Total
Proposed Project (Condominium)	62 DU	8/DU	496	8%	20:80	8	32	40	10%	70:30	35	15	50
General Plan Land Use (Single Family)	9 DU	12/DU	(108)	8%	30:70	(3)	(6)	(9)	10%	70:30	(8)	(3)	(11)
Net Increase		388			5	26	31			27	12	39	

TABLE 9–1 YEAR 2035 PROJECT TRIP GENERATION

General Notes:

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

Table 9-2 summarizes the Year 2035 Street Segment Operations. As seen in *Table 9-2*, all subject segments are calculated to operate at an acceptable LOS C or better in Year 2035, with and without the addition of net Project traffic. The roadways were assumed to be built to their mobility element classifications.

Street Segment	Invidiation	Classification	Capacity	Y	ear 203	5	Year 2035 + Project				
	Jurisalcuon	Classification	(LOS E) ^a	ADT $^{\rm b}$	LOS °	V/C ^d	ADT	LOS	V/C	Δe	
Poinsettia Ave											
Oleander Ave to Roadrunner Rd	San Diego County	4.2B Boulevard	28,000	15,300	А	0.546	15,378	А	0.549	78	
Smilax Rd											
Mimosa Ave to Oleander Ave	City of San Marcos	4-Lane Collector	30,000	14,600	С	0.487	14,794	С	0.493	0.006	
Oleander Ave											
Parkwood Ave to Poinsettia Ave	San Diego County	4.2B Boulevard	28,000	2,500	А	0.089	2,539	А	0.091	39	
Poinsettia Ave to Smilax Rd	City of San Marcos	4-Lane Collector	30,000	16,100	С	0.537	16,216	С	0.541	0.004	
Smilax Rd to Alamitos Way	City of San Marcos	4-Lane Collector	30,000	4,800	А	0.160	4,878	А	0.163	0.003	

 TABLE 9–2

 YEAR 2035 STREET SEGMENT OPERATIONS

Footnotes:

a. Capacities based on San Diego County Roadway Classification Table and City of San Marcos Daily Roadway Segment Capacity.

b. ADT = Average Daily Traffic Volumes.

c. LOS = Level of Service.

d. V/C = Volume to Capacity.

e. "Δ" denotes the project-induced increase in ADT for segments in County of San Diego jurisdiction or the Volume to Capacity ratio for City of San Marcos jurisdiction.

Figure 9–1 depicts the Year 2035 Traffic Volumes, while *Figure 9–2* depicts the Year 2035 + Project Traffic Volumes



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10.0 SITE ACCESS AND CIRCULATION REVIEW

The project proposes direct site access via one (1) driveway along Smilax Road. Full movements can be allowed due to very small volumes in and out of the driveway. A dedicated left turn pocket is recommended to be installed on Smilax Road at the project driveway.

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11.0 SMILAX ROAD MOBILITY ELEMENT REMOVAL

There is a portion of Smilax Road between the current Smilax Road and Poinsettia Avenue which is on the current County Mobility Element. LLG prepared a traffic study under separate cover for the removal of this small 900-foot portion and the County agreed to remove it from the Mobility Element. This report dated November 5, 2018 is included in *Appendix G*.

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12.0 CONCLUSIONS

It is recommended that a northbound left-turn lane be provided on Smilax Road at the project driveway to improve access to the site. It is also recommended that the project dedicate right-of-way on Smilax Road along the Project frontage to City of San Marcos' four-lane standards to support the eventual widening of this road to four lanes.

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TECHNICAL APPENDICES

SMILAX PROPERTY

County of San Diego, California July 30, 2020

LLG Ref. 3-19-3067

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APPENDIX A

INTERSECTION AND ROADWAY SEGMENT COUNT SHEETS
National Data & Surveying Services

Intersection Turning Movement Count

City: Vista

Control: 4-Way Stop

Project ID: 18-04373-002 Date: 10/9/2018

_								Το	tal								
NS/EW Streets:		Poinsett	ia Ave			Poinsett	ia Ave			Oleande	er Ave			Oleande	er Ave		
		NORTH	BOUND			SOUTH	BOUND			EASTB	OUND			WESTE	OUND		
AM	0	1	0	0	0.5	0.5	1	0	0	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ΕT	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	17	2	30	0	5	4	5	0	8	43	49	0	112	14	11	0	300
7:15 AM	12	3	16	0	11	8	8	0	14	29	46	0	103	13	20	0	283
7:30 AM	26	3	29	0	12	2	4	0	12	29	38	1	113	18	23	0	310
7:45 AM	13	7	19	0	5	3	6	0	10	25	39	0	140	13	37	0	317
8:00 AM	22	3	24	0	33	13	12	0	27	40	33	0	89	10	73	0	379
8:15 AM	14	6	22	0	29	13	18	0	33	30	27	0	70	7	62	0	331
8:30 AM	23	4	19	0	46	13	17	0	34	29	25	0	70	8	109	0	397
8:45 AM	15	2	28	0	5	4	1	0	11	48	19	0	83	16	11	0	243
┣─────┣	NI	NT	NR	NU	SI	ST	SR	SU	FI	FT	FR	FU	WI	WT	WR	WU	ΤΟΤΑΙ
TOTAL VOLUMES :	142	30	187	0	146	60	71	0	149	273	276	1	780	99	346	0	2560
APPROACH %'s :	39.55%	8.36%	52.09%	0.00%	52.71%	21.66%	25.63%	0.00%	21.32%	39.06%	39.48%	0.14%	63.67%	8.08%	28.24%	0.00%	2000
PEAK HR :		07:45 AM -	08:45 AM						08:30 AM								TOTAL
PEAK HR VOL :	72	20	84	0	113	42	53	0	104	124	124	0	369	38	281	0	1424
PEAK HR FACTOR :	0.783	0.714	0.875	0.000	0.614	0.808	0.736	0.000	0.765	0.775	0.795	0.000	0.659	0.731	0.644	0.000	0.007
		0.89	98			0.68	34			0.88	30			0.90)5		0.897
		NORTH	BOUND			SOUTH	BOUND			EASTB	OUND			WESTE	OUND		
PM	0	1	0	0	0.5	0.5	1	0	0	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	70	1	84	0	0	0	0	0	1	33	14	0	35	32	2	0	272
4:15 PM	60	1	90	0	2	0	3	0	2	28	12	0	40	30	5	0	273
4:30 PM	67	2	101	0	10	0	2	0	4	34	19	0	28	26	6	0	299
4:45 PM	61	2	107	0	7	1		0	5	33	16	0	36	34	6	0	315
5:00 PM	60	4	106	0	/	3	8	0	3	42	16	0	26	34	9	0	318
5:15 PM	69	1	84	0	9			0	6	29	14	0	18	41	13	0	286
5:30 PM	48	0	81	0		3	6	0	4	32	19	0	29	31	4	0	269
5:45 PIVI	34	4	59	0	5	0	0	0	8	27	8	0	27	25	0	0	209
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	469	15	712	0	52	8	33	0	33	258	118	0	239	253	51	0	2241
APPROACH %'s :	39.21%	1.25%	59.53%	0.00%	55.91%	8.60%	35.48%	0.00%	8.07%	63.08%	28.85%	0.00%	44.01%	46.59%	9.39%	0.00%	
PEAK HR :		04:30 PM -	05:30 PM		04:30 PM				05:00 PM								TOTAL
PEAK HR VOL :	257	9	398	0	33	5	18	0	18	138	65	0	108	135	34	0	1218
PEAK HR FACTOR :	0.931 0.563 0.930 0.000				0.825	0.417	0.563	0.000	0.750	0.821	0.855	0.000	0.750	0.823	0.654	0.000	0.958
		0.9	76			0.77	'8			0.90)6			0.91	11		0.750

Poinsettia Ave & Oleander Ave

Peak Hour Turning Movement Count



National Data & Surveying Services

Intersection Turning Movement Count

Location: Smilax Rd & Oleander Ave City: Vista Control: 3-Way Stop(SB/EB/WB)

Project ID: 18-04373-003 Date: 10/9/2018

-	s: Smilax Rd Smilax Rd Oleander Ave Oleander Ave																
NS/EW Streets:		Smila	ax Rd			Smila	Rd			Oleande	er Ave			Oleande	er Ave		
		NORTH	HBOUND			SOUTH	BOUND			EASTB	OUND			WESTE	OUND		
AM	0	0	0	0	1	0	1	0	0	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	44	0	84	0	20	51	0	0	0	47	8	0	254
7:15 AM	0	0	0	0	39	0	92	0	26	34	0	0	0	55	11	0	257
7:30 AM	0	0	0	0	53	0	87	0	24	43	0	0	0	64	12	0	283
7:45 AM	0	0	0	0	38	0	113	0	16	36	0	0	0	70	19	0	292
8:00 AM	0	0	0	0	61	0	113	0	48	40	0	0	0	58	25	0	345
8:15 AM	0	0	0	0	63	0	102	0	25	62	0	0	0	49	17	0	318
8:30 AM	0	0	0	0	38	0	129	0	35	48	0	0	0	50	27	0	327
8:45 AM	0	0	0	0	16	0	70	0	33	61	0	0	0	47	15	0	242
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	352	0	790	0	227	375	0	0	0	440	134	0	2318
APPROACH %'s :	-	-	-	•	30.82%	0.00%	69.18%	0.00%	37.71%	62.29%	0.00%	0.00%	0.00%	76.66%	23.34%	0.00%	
PEAK HR :		07:45 AM	- 08:45 AM						08:00 AM								TOTAL
PEAK HR VOL :	0	0	0	0	200	0	457	0	124	186	0	0	0	227	88	0	1282
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.794	0.000	0.886	0.000	0.646	0.750	0.000	0.000	0.000	0.811	0.815	0.000	0.000
						0.94	4			0.88	31			0.88	35		0.929
		NORTH	HBOUND			SOUTH	BOUND			EASTB	OUND			WESTE	OUND		
PM	0	0	0	0	1	0	1	0	0	1	0	0	0	1	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	29	0	39	0	44	66	0	0	0	35	33	0	246
4:15 PM	0	0	0	0	26	0	27	0	73	58	0	0	0	43	39	0	266
4:30 PM	0	0	0	0	20	0	26	0	59	73	0	0	0	32	35	0	245
4:45 PM	0	0	0	0	24	0	36	0	78	67	0	0	0	42	47	0	294
5:00 PM	0	0	0	0	22	0	27	0	91	58	0	0	0	39	28	0	265
5:15 PM	0	0	0	0	32	0	28	0	88	49	0	0	0	42	38	0	277
5:30 PM	0	0	0	0	34	0	31	0	69	55	0	0	0	36	33	0	258
5:45 PM	0	0	0	0	32	0	29	0	59	37	0	0	0	38	30	0	225
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	219	0	243	0	561	463	0	0	0	307	283	0	2076
APPROACH %'s :					47.40%	0.00%	52.60%	0.00%	54.7 <mark>9</mark> %	45.21%	0.00%	0.00%	0.0%	52.03%	<u>47.97%</u>	0.00%	
PEAK HR :		04:45 PM	- 05:45 PM		04:45 PM				04:45 PM								TOTAL
PEAK HR VOL :	0	0	0	0	112	0	122	0	326	229	0	0	0	159	146	0	1094
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.824	0.000	0.847	0.000	0.896	0.854	0.000	0.000	0.000	0.946	0.777	0.000	0.020
						0.90	00			0.93	31			0.85	57		0.930

Smilax Rd & Oleander Ave

Peak Hour Turning Movement Count



VOLUME

Poinsettia Ave Bet. Oleander Ave & Roadrunner Rd

Day: Tuesday Date: 10/16/2018

						NB		SB	EB		WB						То	tal
	U			ALS		3,948	4,	223	0		0						8,1	171
AM Period	NB		SB		EB	WB		TOTAL	PM Period	NB		SB		EB	WE	}	ТО	TAL
00:00	5		4					9	12:00	75		44					119	
00:15	8		3					11	12:15	54		41					95	
00:30	5 4	22	3 5	15				8 9 37	12:30	63 56	248	53 57	195				116 113	443
01:00	15		0	15				<u> </u>	13:00	53	240	37	195				90	
01:15	3		2					5	13:15	53		56					109	
01:30	6 5	20	0	10				6 12 20	13:30 12:45	63 50	220	60	200				123	170
01:45	5	29	<u> </u>	10			-	<u>15 59</u> 5	13:45	66	220	47	200				100	420
02:15	4		0					4	14:15	74		49					123	
02:30	5		3	_				8	14:30	127		45					172	
02:45	2	16	4	7			_	6 23	14:45 15:00	97	364	49	189				146	553
03:15	5		, 11					16	15:15	70		37					107	
03:30	3		11					14	15:30	143		49					192	
03:45	4	19	12	41				16 60	15:45	104	429	40	172				144	601
04:00 04:15	5		10 22					15 24	16:00 16:15	167		23 51					190 154	
04:30	3		32					35	16:30	120		68					188	
04:45	5	15	62	126				67 141	16:45	114	504	72	214				186	718
05:00	7		34					41	17:00	125		63					188	
05:15	4		62 110				1	26	17:15 17:30	84		43 42					127	
05:45	, 13	31	172	387			1	.20	17:45	102	417	39	187				145	604
06:00	16		88				1	.04	18:00	94		39					133	
06:15	20		102				1	.22	18:15	70		31					101	
06:30	32 34	102	119 107	506				.51 31 608	18:30 18:45	62 52	278	29 25	17/				91 77	102
07:00	41	102	125	500			1	.66	19:00	47	270	31	124				78	402
07:15	27		138				1	.65	19:15	33		29					62	
07:30	50	140	136	500			1	.86	19:30	30		19	0.4				49	220
07:45	31 52	149	190	589			1	97	19:45 20:00	34 24	144	15	94				49	238
08:15	47		137				1	.84	20:15	28		21					49	
08:30	34		110				1	.44	20:30	33		13					46	
08:45	36	169	85	477			1	21 646	20:45	25	110	14	66				39	176
09:00	43 42		60 51					.03 93	21:00	21		14 14					35 40	
09:30	22		44					56	21:30	24		9					33	
09:45	42	149	46	201				88 350	21:45	15	86	9	46				24	132
10:00	33		51					84	22:00	16		6					22	
10:15	30 39		50 26					80 65	22:15	30		7 10					40	
10:45	39	141	48	175				87 316	22:45	13	68	8	31				21	99
11:00	40		37					77	23:00	13		2					15	
11:15 11·20	43 17		32 ⊿¤					75 95	23:15 22·20	13 14		7 1					20 15	
11:50	47 54	184	40 38	155				92 339	23:45	14 6	46	1 6	16				13	62
TOTALS		1026		2689				3715	TOTALS		2922		1534					4456
SPLIT %		27.6%		72.4%				45.5%	SPLIT %		65.6%		34.4%					54.5%
						NB		SB	FB		WB						Тс	tal
	D	AILY 1	ΓΟΤΑ	ALS		3,948	4,	223	0		0						8,1	171
AM Peak Hour		11:45		07:15				07:30	PM Peak Hour		15:30		16:15					16:00
AM Pk Volume		246		609				788	PM Pk Volume		517		254					718
Pk Hr Factor		0.820		0.801				0.891	Pk Hr Factor		0.774		0.882					0.945
7 - 9 Volume		318		1066				1384	4 - 6 Volume		921		401					1322
7 - 9 Peak Hour		180		600				07:30	4 - 6 Peak Hour		16:00		16:15 254					16:00 719
Pk Hr Factor		0.865		0.801				0.891	Pk Hr Factor		0.754		0.882					0.945

VOLUME

Poinsettia Ave Bet. Oleander Ave & Roadrunner Rd

Day: Wednesday Date: 10/17/2018

	D	A II V 7				NB	9	B	EB		WB						Тс	otal
	D		UIA	1LS		3,957	4,	157	0		0						8,	114
AM Period	NB		SB		EB	WB		TOTAL	PM Period	NB		SB		EB	WI	В	ТО	TAL
00:00	8		1					Ð	12:00	81		40					121	
00:15	7		2) -	12:15	58		50					108	
00:30	5 8	28	4	7			1	2 35	12:30	57	256	45 63	198				105	454
01:00	13		1				1	4	13:00	60		43					103	
01:15	3		1					4	13:15	51		52					103	
01:30	3 2	21	1	4				+ 3 25	13:30	67 67	245	57 55	207				124	452
02:00	4		0	•				4 <u>20</u>	14:00	73	- 10	44					117	
02:15	3		3					5	14:15	87		59					146	
02:30 02:45	3 3	13	U g	12				3 225	14:30 14:45	130 94	384	42 47	192				1/2	576
03:00	8	15	10	12			1	.8	15:00	118	504	38	192				156	570
03:15	3		3					5	15:15	89		43					132	
03:30	4	10	12 16	11			1	6	15:30 15:45	140	169	33 41	155				173	622
04:00	4	19	7	41			1	<u>0 00</u> 1	16:00	119	408	38	133				157	025
04:15	3		21				2	4	16:15	126		39					165	
04:30	4	20	29	122			3	3	16:30	140	407	29	450				169	652
04:45	9 11	20	<u>66</u> 42	123				<u>5 143</u> 3	16:45	103	497	50 47	156				162	653
05:15	6		53				5	9	17:15	75		38					113	
05:30	13		122				1	35	17:30	130		47					177	
05:45	15 30	45	<u>192</u> 102	409			2	<u>)7 454</u> 32	17:45 18:00	92 77	400	44 27	176				136	576
06:15	30 14		131				1	45	18:15	85		26					111	
06:30	43		132				1	75	18:30	59		33					92	
06:45	29	116	184	549			2	<u>13 665</u>	18:45	63	284	29	115				92	399
07:00	39 35		138					52	19:00	44 36		21 18					55 54	
07:30	45		152				1	97	19:30	38		29					67	
07:45	36	155	160	577			1	96 732	19:45	32	150	16	84				48	234
08:00	44 29		151 114				1	95	20:00 20:15	18		13 10					31	
08:30	30 37		102					32 39	20:15	21		19					40 39	
08:45	38	157	120	487			1	58 644	20:45	24	90	9	53				33	143
09:00	29		59				8	8	21:00	23		13					36	
09:15	28 29		44 50					2 9	21:15	16 22		11 15					27	
09:45	39	125	52	205			g	1 330	21:45	14	75	15	54				29	129
10:00	26		42				e	8	22:00	21		2					23	
10:15 10:30	27 12		32 46				5	9	22:15 22:30	16 23		3 7					19 30	
10:45	42 34	129	40 47	167				1 296	22:45	11	71	4	16				15	87
11:00	44		45				8	9	23:00	8		2					10	
11:15	36 45		35 22				7	1	23:15	9		3					12	
11:50	45 49	174	55 43	156				2 330	23:30	6	35	4 5	14				10	49
TOTALS		1002		2737				3739	TOTALS		2955	-	1420					4375
SPLIT %		26.8%		73.2%				46.1%	SPLIT %		67.5%		32.5%					53.9%
						NP		`P	FD								T	tal
	D	AILY 1	ΓΟΤΑ	LS		3,957	_4.	157	EB		<u>0</u>						10	114
				0.0.15			.,				45.00		42.45					
AIVI Peak Hour		11:45 248		06:45 601				07:15	PIVI Peak Hour		15:30 506		12:45 215					15:30 657
Pk Hr Factor		0.765		0.817				0.952	Pk Hr Factor		0.904		0.853					0.949
7 - 9 Volume		312		1064	0		0	1376	4 - 6 Volume		897		332		0	0		1229
7 - 9 Peak Hour		07:30		07:15				07:15	4 - 6 Peak Hour		16:00		16:45					16:00
7 - 9 Pk Volume		163		590				750	4 - 6 Pk Volume		497		182					653
PK Hr Factor		0.906		0.922				0.952	PK Hr Factor		0.888		0.910					0.966

VOLUME

Poinsettia Ave Bet. Oleander Ave & Roadrunner Rd

Day: Thursday Date: 10/18/2018

	Л					NB		SB		EB		WB						Тс	otal
				1LJ		4,036		4,198		0		0						8,	234
AM Period	NB		SB		EB	WB		TO	TAL	PM Period	NB		SB		EB	١	NB	TO	TAL
00:00 00:15	13 7		1 7					14 14		12:00 12:15	76 56		44 48					120 104	
00:30	8		2					14		12:30	58		48 52					1104	
00:45	2	30	1	11				3	41	12:45	36	226	73	217				109	443
01:00	14 5		2					16 7		13:00	64 56		44 31					87	
01:30	7	•••	1	4.0				8	20	13:30	55	2.45	53	400				108	405
01:45 02:00	3	29	<u>5</u> 1	10				8	39	13:45 14:00	70 85	245	<u>62</u> 39	190				132	435
02:15	1		5					6		14:15	65		49					114	
02:30 02:45	4 5	12	3 0	18				7 14	30	14:30 14:45	142 105	307	28 42	158				170	555
03:00	3	12	10	10				13	- 50	15:00	105	557	47	130				163	
03:15	8		9 12					17		15:15	80		44					124	
03:30 03:45	5 4	20	12 19	50				17 23	70	15:30 15:45	137	440	29 48	168				155	608
04:00	4		10					14		16:00	114		46					160	
04:15 04·30	7		15 29					22 35		16:15 16:30	102 140		40 43					142	
04:45	7	24	63	117				70	141	16:45	123	479	44	173				167	652
05:00	4		41 66					45 71		17:00 17:15	102		44 50					146	
05:30	5 11		00 109					120		17:30	95 130		30 36					145	
05:45	13	33	176	392				189	425	17:45	89	416	35	165				124	581
06:00 06:15	29 20		109					138 137		18:00	87 64		35 31					95	
06:30	43		118					161		18:30	48		22					70	
06:45	29 13	121	218	562				247	683	18:45 19:00	46	245	22	110				68 86	355
07:15	43 42		129					171		19:15	41		48					89	
07:30	36	4.65	159	602				195	760	19:30	40	100	18	104				58	204
07:45	44 60	165	163	603				207 198	768	20:00	36	160	 19	124				51	284
08:15	36		105					141		20:15	26		11					37	
08:30 08:45	34 27	157	79 87	409				113 114	566	20:30 20:45	27 20	109	14 21	65				41 41	174
09:00	42	157	51	-05				93	500	21:00	19	105	14	05				33	1/4
09:15	33 42		61					94 00		21:15	35		13					48	
09:30 09:45	42 36	153	48 54	214				90 90	367	21:30	36 19	109	19 10	56				29	165
10:00	46		31					77		22:00	16		6					22	
10:15 10:30	25 35		41 40					66 75		22:15 22:30	20 42		7 7					27 49	
10:45	24	130	44	156				68	286	22:45	12	90	8	28				20	118
11:00	45		51					96 02		23:00 22:15	8		2					10	
11:30	67		45 46					95 113		23:30	13		4					14	
11:45	51	213	47	187				98	400	23:45	2	33	5	15				7	48
TOTALS		1087		2729					3816	TOTALS		2949		1469				-	4418
SPLIT %		28.5%		71.5%					46.3%	SPLIT %		66.7%		33.3%					53.7%
	_D	AILYJ	ΟΤΑ	LS		NB		SB		EB		WB						Тс	otal
						4,036		4,198		0		0						8,	234
AM Peak Hour		11:30		06:45					06:45	PM Peak Hour		16:00		12:00					16:00
AM Pk Volume		250		658 0.755					808	PM Pk Volume		479 0.855		217					652
7 - 9 Volume		322		1012	0		0		1334	4 - 6 Volume		895		338		0	0		1233
7 - 9 Peak Hour		07:15		07:00					07:15	4 - 6 Peak Hour		16:00		16:30					16:00
7 - 9 Pk Volume		182		603					771	4 - 6 Pk Volume		479		181					652
PK Hr Factor		0.758		0.925					0.931	PK Hr Factor		0.855		0.905					0.891







VOLUME

Smilax Rd Bet. Mimosa Ave & Oleander Ave

Day: Tuesday Date: 10/9/2018

						NB	SB		EB		WB						Тс	otal
	U	AILY		1LS		3,476	4,290)	0		0						7,	766
AM Period	NB		SB		EB	WB	то	TAL	PM Period	NB		SB		EB	WE	}	TO	TAL
00:00	3		1				4		12:00	38		43					81	
00:15	11		3				14		12:15	32		47					79	
00:30	4	24	0	6			4	20	12:30 12:45	32 47	1/0	43 20	172				75 86	221
01:00	5	24	0	0			5	50	13:00	47	149	33	172				74	521
01:15	3		2				5		13:15	43		49					92	
01:30	3		0				3		13:30	50		42					92	
01:45	2	13	2	4			4	17	13:45	51	185	50	174				101	359
02:00	1		2						14:00 14:15	38 75		76 52					114 127	
02:30	3		0				3		14:30	78		72					150	
02:45	2	6	1	3			3	9	14:45	93	284	81	281				174	565
03:00	0		3				3		15:00	89		70					159	
03:15	1		8				9		15:15 15:20	110		88 20					198	
03:30	2	6	5 11	27			14	33	15:45	125 89	413	59 68	265				104	678
04:00	4	0	5	27			9		16:00	82	115	71	205				153	070
04:15	2		14				16		16:15	100		50					150	
04:30	2		30				32		16:30	95		50					145	
04:45	6 F	14	40	89			46	103	16:45 17:00	126	403	51	222				177	625
05:00	5 4		20 34				38		17:15	119		52 62					173	
05:30	10		90				100		17:30	104		57					161	
05:45	15	34	113	257			128	291	17:45	86	420	56	227				142	647
06:00	20		69				89		18:00	70		42					112	
06:15	10 15		99 120				109		18:15 18:20	/6 52		54 46					130	
06:45	26	71	129	415			144	486	18:45	52 63	261	40 38	180				98 101	441
07:00	26	, -	129	.20			155		19:00	42		55	100				97	
07:15	31		125				156		19:15	66		33					99	
07:30	34	420	132	527			166	666	19:30	49	100	26	405				75	224
07:45	38	129	151	537			189	666	19:45 20:00	29	186	21	135				50 47	321
08:00	38		164				244		20:00	24		23 17					47	
08:30	57		158				215		20:30	27		25					52	
08:45	46	203	82	586			128	789	20:45	24	101	15	80				39	181
09:00	29		47				76		21:00	27		15					42	
09:15 09:30	27		57 20				84		21:15 21·30	31 36		22					53 11	
09:45	22	114	56	199			73	313	21:30	14	108	12	57				26	165
10:00	30		39				69		22:00	12		9					21	
10:15	38		48				86		22:15	16		10					26	
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11:15	30		20 34				64		23:15	13		, 7					20	
11:30	36		36				72		23:30	6		5					11	
11:45	38	141	43	139			81	280	23:45	4	37	5	24				9	61
TOTALS		869		2439				3308	TOTALS		2607		1851					4458
SPLIT %		26.3%		73.7%				42.6%	SPLIT %		58.5%		41.5%					57.4%
	B		TOTA			NB	<u>SB</u>		EB		WB						Тс	otal
	D/	AILY	ΠΟΙΑ			3,476	4,290)	0		0						7,	766
AM Peak Hour		08:00		07:45				07:45	PM Peak Hour		16:45		14:30					14:45
AM Pk Volume		203		655				850	PM Pk Volume		460		311					695
Pk Hr Factor		0.819		0.900				0.871	Pk Hr Factor		0.913		0.884					0.878
7 - 9 Volume		332		1123				1455	4 - 6 Volume		823		449					1272
7 - 9 Peak Hour		08:00		07:45				07:45	4 - 6 Peak Hour		16:45		17:00					16:45
7 - 9 Pk Volume		203		655				850	4 - 6 Pk Volume		460		227					682
PK Hr Factor		0.819		0.900				0.8/1	PK Hr Factor		0.913		0.915					0.963

VOLUME

Smilax Rd Bet. Mimosa Ave & Oleander Ave

Day: Wednesday Date: 10/10/2018

$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		D					NB	S	В	EB		WB						То	tal
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04:30 3 27 30 16:30 91 51 142	04:30	3		27				3	0	16:30	91		51					142	
04:45 3 11 36 77 39 88 16:45 92 381 50 229 142 610 05:00 8 39 88 16:45 92 381 50 229 142 610	04:45	3	11	36	77			3	9 <u>88</u> c	16:45 17:00	92 105	381	50	229				142	610
05:00 8 28 30 17.00 105 05 170 170 170 170 170 170 170 170 170 170	05:00	8 6		28 37				4	0 3	17:00	116		59					170	
05:30 8 89 97 17:30 100 51 151	05:30	8		89				9	7	17:30	100		51					151	
05:45 15 37 113 267 128 304 17:45 83 404 58 233 141 637	05:45	15	37	113	267			12	.8 304	17:45	83	404	58	233				141	637
06:00 13 75 88 18:00 69 61 130	06:00	13		75				8	8	18:00	69		61					130	
06:15 21 108 129 18:15 70 42 112	06:15	21		108				12	<u>19</u>	18:15 19:20	70 E4		42 20					112	
06:45 32 85 140 454 172 539 18:45 56 249 38 179 94 428	06:45	32	85	140	454			17	2 539	18:45	54 56	249	38	179				92 94	428
07:00 27 128 155 19:00 56 37 93	07:00	27	00	128	101			15	<u>5</u> 5	19:00	56	215	37	1,5				93	120
07:15 33 158 191 19:15 38 29 67	07:15	33		158				19	91	19:15	38		29					67	
07:30 39 160 199 19:30 41 31 72	07:30	39	400	160	600			19	9	19:30	41	100	31	400				72	202
07:45 40 139 157 603 197 742 19:45 45 180 26 123 71 303 08:00 60 150 210 20:00 20 25 55	07:45	40	139	157	603			19	0/ /42	19:45 20:00	45 20	180	26	123				/1	303
08:15 46 145 191 20:15 35 17 52	08:00	46		145				19	.0)1	20:00	35		23 17					52	
08:30 50 122 172 20:30 35 19 54	08:30	50		122				17	2	20:30	35		19					54	
08:45 37 193 57 474 94 667 20:45 36 136 26 87 62 223	08:45	37	193	57	474			94	4 667	20:45	36	136	26	87				62	223
09:00 22 56 78 21:00 22 23 45	09:00	22		56				73	8	21:00	22		23					45	
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11:30 29 43 72 23:30 11 3 14	11:30	29		43				7	2	23:30	11		3					14	
11:45 36 123 30 129 66 252 23:45 8 41 5 16 13 57	11:45	36	123	30	129			6	6 252	23:45	8	41	5	16				13	57
TOTALS 831 2399 3230 TOTALS 2550 1789 4339	TOTALS		831		2399				3230	TOTALS		2550		1789					4339
SPLIT % 25.7% 74.3% 42.7% SPLIT % 58.8% 41.2% 57.3%	SPLIT %		25.7%		74.3%				42.7%	SPLIT %		58.8%		41.2%					57.3%
DALLY TOTALS NB SB EB WB Total				TOT 4			NB	S	В	EB		WB						Тс	tal
DAILY TOTALS 3,381 4,188 0 0 7,569		D/	AILY	ΤΟΤΑ			3,381	4,1	88	0		0						7,	569
AM Peak Hour 07:45 07:15 PM Peak Hour 16:45 13:30 16:45	AM Peak Hour		07:45		07:15				07:15	PM Peak Hour		16:45		13:30					16:45
AM Pk Volume 196 625 797 PM Pk Volume 413 280 638	AM Pk Volume		196		625				797	PM Pk Volume		413		280					638
Pk Hr Factor 0.817 0.977 0.949 Pk Hr Factor 0.890 0.864 0.911	Pk Hr Factor		0.817		0.977				0.949	Pk Hr Factor		0.890		0.864					0.911
7 - 9 Volume 332 1077 0 1409 4 - 6 Volume 785 462 0 1247	7 - 9 Volume		332		1077				1409	4 - 6 Volume		785		462					1247
7 - 9 Peak Hour 07:45 07:15 4 - 6 Peak Hour 16:45 16:15 16:45 7 - 9 Peak Hour 100 000 000 000 000 000 000 000 000 000 000 000 0000 000<	7 - 9 Peak Hour		07:45		07:15				07:15	4 - 6 Peak Hour		16:45		16:15					16:45
Pk Hr Factor 0 817 0 977 0 000 0 949 Pk Hr Factor 0 800 0 869 0 000 0 911	7 - 9 PK Volume Pk Hr Factor		196		625 0 977				/97	4 - 6 PK Volume Pk Hr Factor		413 0.890		233 0.860					038 0 911

VOLUME

Smilax Rd Bet. Mimosa Ave & Oleander Ave

Day: Thursday Date: 10/11/2018

DALL TUTALS 3,450 4,435 0 0 0 7 7,85 774L PM Period N8 58 CB V/3 TOTAL PM Period N3 53 CB V/3 TOTAL PM Period N3 44 44 44 44 14 44 17 7 1330 44 134 13 134 134 134 137 133 137 1321 137 133 137 1321 137 1321 137 133 134 134 134 137 133 133 133 133 133 133 133 133 133 133 133							NB	SB		EB		WB						Тс	otal
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0015 9 3	00:00	7		5				12		12:00	29		53					82	
00.130 3 23 41 12.38 43 12.4 43 12.7 43 137 43 139 01.10 1 2 1 1 13.15 33 32 35 3	00:15	9		3				12		12:15	54		47					101	
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01:15 1 2 2 3 13:15 3 32 55 01:30 2 2 4 13:30 44 53 77 78 70 02:00 4 1 3 2 13:45 23 13:45 23 13:45 23 13:45 13 30 44 53 70 70 83 02:00 4 1 1 7 14:30 60 64 53 71 77 75 75 03:00 4 4 4 15 14:36 03 24:5 27 13:3 05:0 74 86 27 75 </th <th>01:00</th> <th>4 9</th> <th>25</th> <th>4 2</th> <th>10</th> <th></th> <th></th> <th>0</th> <th>41</th> <th>12:45</th> <th>40</th> <th>172</th> <th>44</th> <th>107</th> <th></th> <th></th> <th></th> <th>89</th> <th>559</th>	01:00	4 9	25	4 2	10			0	41	12:45	40	172	44	107				89	559
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01:45 1 13 2 8 3 21 13:45 28 15 175 79 133 02:00 4 1 5 14:00 65 53 115 126 131 02:33 5 2 7 14:34 60 63 53 131 02:345 0 1 1 4 15 14:45 61 28 85 287 160 03:35 0 2 2 15:15 105 82 83 93 93 93 93 93 93 94 133 60 93 141 03:35 0 1 1 15:00 88 53 25 173 </th <th>01:30</th> <th>2</th> <th></th> <th>2</th> <th></th> <th></th> <th></th> <th>4</th> <th></th> <th>13:30</th> <th>44</th> <th></th> <th>53</th> <th></th> <th></th> <th></th> <th></th> <th>97</th> <th></th>	01:30	2		2				4		13:30	44		53					97	
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04:30 2 23 25 16:30 103 73 176 170 660 05:30 7 17 24 17:00 113 64 177 170 660 05:30 8 76 84 17:30 96 58 154 164 170 660 154 164 170 660 154 164 170 660 154 164 173 96 58 154 164 170 661 154 166 154 164 175 100 61 124 66 173 100 61 124 66 125 280 164 182 55 184 55 184 182 55 184 182 55 40 100 103 <	04:15	0		14				14		16:15	113		60					173	
04.45 1 9 46 78 37 87 110 414 60 246 170 660 05:00 7 17 24 1700 61 113 66 171 161 05:30 3 44 47 17:15 100 61 161 163 05:43 16 34 109 246 172 37 70 253 134 626 06:00 18 76 94 18:00 59 61 110 100 66 37 100 66 37 100 66 37 103 93 03 03 103 93 11 70 70 70 70 70 70 70 70 70 70 70 70 70 93 93 11 70 70 70 70 70 70 70 70 70 70 70 70 70 </th <th>04:30</th> <th>2</th> <th>-</th> <th>23</th> <th></th> <th></th> <th></th> <th>25</th> <th></th> <th>16:30</th> <th>103</th> <th></th> <th>73</th> <th></th> <th></th> <th></th> <th></th> <th>176</th> <th></th>	04:30	2	-	23				25		16:30	103		73					176	
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06:00 18 76 94 18:00 59 61 120 06:15 11 115 126 18:15 61 49 110 06:30 22 132 154 18:30 55 38 93 06:45 39 90 143 466 182 556 18:45 59 244 71 103 07:00 31 119 19 150 19:00 66 37 103 07:15 27 157 184 19:15 53 40 93 07:45 42 138 173 2118 20:00 44 32 76 08:30 50 160 210 20:15 37 24 61 61 08:43 37 188 64 532 101 72 20:45 18 99 52 25 64 09:15 22 46 68 21:15 27 17 44 69 22:00 18 12 30 20	05:45	16	34	109	246			125	280	17:45	64	373	70	253				134	626
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07:15 27 157 184 19:15 53 40 93 07:30 38 149 19:30 39 31 70 07:45 42 138 179 604 221 742 19:45 39 137 34 142 73 339 08:00 45 173 218 200 244 32 76 64 08:15 50 160 210 20:15 37 724 61 64 08:30 56 135 191 20:30 39 25 64 08:45 37 18 64 532 101 70 29 14 43 09:15 22 46 68 21:15 27 16 43 30 30 27 16 43 30 30 20 33 168 168 21:30 27 16 43 30 36 30 30 33 30 33 30 25 8 10 33 33	07:00	31		119	100			150		19:00	66	201	37	100				103	115
07:30 38 149 187 19:30 39 31 70 07:45 42 138 179 604 221 742 19:45 39 197 34 142 73 339 08:00 45 173 218 20:00 44 32 76 61 08:15 50 160 210 20:15 37 24 61 61 08:35 56 135 191 20:30 39 25 64 52 253 64 52 253 59:00 18 43 61 43 61 64 52 253 50 10:15 27 17 64 64 68 21:130 27 16 63 61 10:30 28 41 69 22:00 18 12 30 30 30 30 16 10:10 26 33 10:15 10:10 26 33 33 10:15 13 13 72 23:00 17 8 16 10:35 13	07:15	27		157				184		19:15	53		40					93	
07.45 42 138 142 142 142 142 143 339 08:00 45 173 218 20:00 44 32 76 08:15 50 160 210 20:15 37 24 61 08:30 37 188 64 532 101 720 20:45 34 154 18 99 52 253 09:00 18 43 61 21:00 29 14 43 43 09:15 22 46 68 21:15 77 17 44 43 09:30 31 45 76 21:30 27 16 43 43 44 43 43 44 43 44 44 44 44 44 44 44 44 44 44 44 43 44 44 44 44 43 44 43 44 43 44 43 44 44 44 44 44 44 44 44 44	07:30	38	400	149	604			187	740	19:30	39	407	31	4.40				70	220
08:00 43 173 210 200 44 32 70 61 08:30 56 135 191 20:30 39 25 64 08:30 56 135 191 20:30 39 25 64 08:45 37 18 64 532 101 70 20:45 34 154 18 99 52 253 09:00 18 43 53 101 70 20:45 27 16 43 09:15 22 46 68 21:30 27 16 43 30 10:00 28 41 69 22:00 18 12 30 31 45 30	07:45	42	138	1/9	604			221	742	19:45 20:00	39	197	34	142				73	339
08:30 56 135 191 20:30 39 25 64 08:45 37 188 64 532 101 720 20:45 34 154 899 52 253 09:00 18 43 61 21:00 29 14 43 09:15 22 46 68 21:15 27 17 44 09:35 23 94 38 172 61 266 21:45 28 111 10 57 38 168 09:45 23 94 38 172 61 266 21:45 28 111 10 57 38 168 10:00 28 41 69 22:00 18 12 30 <th>08:00</th> <th>43 50</th> <th></th> <th>160</th> <th></th> <th></th> <th></th> <th>218</th> <th></th> <th>20:00</th> <th>37</th> <th></th> <th>52 24</th> <th></th> <th></th> <th></th> <th></th> <th>61</th> <th></th>	08:00	43 50		160				218		20:00	37		52 24					61	
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09:00 18 43 61 21:00 29 14 43 09:15 22 46 68 21:15 7 17 44 09:30 31 45 76 21:30 27 16 43 09:45 23 94 38 172 61 266 21:45 28 111 10 57 38 168 10:00 28 41 69 22:00 18 12 30 30 30 26 33 30 26 33 30 26 33 30 26 33 33 30 30 26 33 33 33 33 39 72 23:00 17 8 26 113 21:14 14 24 113 11:30 36 46 22:30 13 5 14 11:4 14 14 14 14 14 14 11:4 14 14 14 16 16:15 14:30 16:15 14:30 16:15 14:30 16:15 <	08:45	37	188	64	532			101	720	20:45	34	154	18	99				52	253
09:30 09:30 31 09:45 22 3 4 38 23 94 38 172 45 5 43 43 61 26 61 26 61 26 61 26 61 26 61 26 61 26 61 22:00 18 12 10 10 10 10 10 10 10 10 10 10 10 10 10	09:00	18		43				61		21:00	29		14					43	
09:45 23 94 38 172 10 26 21:45 28 11 10 57 38 168 10:00 28 41 69 22:00 18 12 30 30 26 30 26 30 26 30 26 30 26 30 26 33 30 26 33 30 26 33 30 26 33 30 26 33 30 26 33 30 26 33 30 26 33 30 27 23:00 17 8 6 33 31 25 8 11:30 36 46 82 23:30 13 5 14 18 11:30 36 46 82 23:30 13 5 18 18 13 13 5 14 14 14 14 14 14 14 14 14 14 14 16 16 16 16 16 16 16 16 16 16 16 16	09:15	22		46 45				68 76		21:15 21·30	27		1/ 16					44 12	
10:00 28 41 69 22:00 18 12 30 10:15 24 34 58 22:15 16 10 26 33 10:30 25 36 61 22:30 18 12 30 26 10:30 25 36 61 22:30 13 72 11 41 24 113 11:00 33 39 72 23:00 17 8 25 14 14 24 113 11:00 36 46 82 23:00 17 8 6 14 14 14 14 14 14 14 14 14 14 14 14 14 13 13 5 14 16 13 15 14 16 14 16 16 16 16 14 12 69 14 12 69 14 12 69 112 69	09:45	23	94	38	172			61	266	21:30	27	111	10	57				38	168
10:15 24 34 58 22:15 16 10 26 33 10:30 25 36 61 22:30 25 8 33 31 24 113 10:45 22 99 34 145 56 244 22:30 25 8 33 31 24 113 11:00 33 39 72 23:00 17 8 25 14 13 11:15 29 49 78 23:15 8 6 14 15 14 14 14 14 15 14 14 15 14 14 14 14 14	10:00	28		41				69		22:00	18		12	•				30	
10:30 25 36 61 22:30 25 8 33 10:45 22 99 34 145 56 244 22:45 13 72 11 41 24 113 11:00 33 39 72 23:00 17 8 25 14 13 16 16 16 13 11 5 12 69 12 69 12 69 14 16 16 16 16 16 16 16 16 14 14 14 14 16 16 <	10:15	24		34				58		22:15	16		10					26	
10:45 22 9 34 145 56 244 22:45 13 72 11 41 24 113 11:00 33 39 72 23:00 17 8 25 14 113 14 113 14 113 14 113 14 113 14 113 14 114 14 14 113 14 113 14 113 14 113 14 113 14 113 14	10:30	25	00	36	4 4 5			61	244	22:30	25	70	8					33	112
11:15 29 49 78 23:15 8 6 14 11:30 36 46 82 23:30 13 5 14 11:45 39 137 42 176 81 313 23:45 7 45 5 24 12 69 TOTALS 846 2473 3319 TOTALS 2604 1962 4566 SPLIT % 25.5% 74.5% 42.1% SPLIT % 57.0% 43.0% 57.9% M Peak Hour 07:45 07:30 07:45 PM Peak Hour 16:15 14:30 14:45 AM Peak Hour 07:45 07:30 07:45 PM Peak Hour 16:15 14:30 14:45 AM Peak Hour 07:45 07:30 07:45 PM Peak Hour 16:15 14:30 14:45 AM Peak Hour 07:45 07:30 07:45 PM Peak Hour 16:15 14:30 14:45 AM Peak Hour 07:45 07:30 0.950 PM Peak Hour 16:15 16:30 14:45 AM Peak Hour <	10:45 11·00	22	99	34 २०	145			56	244	22:45 22:00	13	12	11 8	41				24	113
11:30 36 46 82 23:30 13 5 18 11:45 39 137 42 176 81 313 23:45 7 45 5 24 12 69 TOTALS 846 2473 3319 TOTALS 2604 1962 4566 SPLIT % 25.5% 74.5% 42.1% SPLIT % 57.0% 43.0% 57.9% DAILY TOTALS NB SB EB WB VB Total 7,885 AM Peak Hour 07.45 07.30 07.435 0.90 0 0 14:45 AM Pk Volume 193 661 840 PM Pk Volume 16:15 14:30 14:45 Ph H Factor 0.862 0.923 0.950 Pk Hr Factor 0.971 0.969 0.933 7 - 9 Volume 326 1136 0 1462 4 - 6 Volume 787 499 1286 7 - 9 Peak Hour 07:45 07:30 07:45 46 Volume 787 499 1286 7 - 9 Peak Hour	11:15	29		49				78		23:15	8		6					14	
11:45 39 137 42 176 81 313 23:45 7 45 5 24 12 69 TOTALS 846 2473 3319 TOTALS 2604 1962 4566 SPLIT % 25.5% 74.5% 42.1% SPLIT % 57.0% 43.0% 57.9% DAILY TOTALS NB SB EB WB VB Total 3,450 4,435 0 0 0 0 7,885 AM Peak Hour 07:45 07:30 07:45 PM Peak Hour 16:15 14:30 14:45 PM Pk Volume 193 661 840 PM Pk Volume 439 341 698 Pk Hr Factor 0.862 0.923 0.950 Pk Hr Factor 0.971 0.969 0.933 7 - 9 Volume 326 1136 1462 4 - 6 Volume 787 499 1286 7 - 9 Peak Hour 07:45 07:30 07:45 4 - 6 Peak Hour 16:15 16:15 16:15 093 661	11:30	36		46				82		23:30	13		5					18	
TOTALS 846 2473 3319 TOTALS 2604 1962 4566 SPLIT % 25.5% 74.5% 42.1% SPLIT % 57.0% 43.0% 57.9% DAILY TOTALS NB SB EB WB Total 7,885 AM Peak Hour 07:45 07:30 07:45 PM Peak Hour 16:15 14:30 14:45 AM Pk Volume 193 661 840 PM Pk Volume 439 341 698 Pk Hr Factor 0.862 0.923 0.950 Pk Hr Factor 0.971 0.969 0.933 7 - 9 Peak Hour 07:45 07:30 07:45 4-6 Poulme 787 499 1286 7 - 9 Peak Hour 07:45 07:30 07:45 4-6 Peak Hour 16:15 16:30 16:15 7 - 9 Peak Hour 07:45 07:30 07:45 4-6 Peak Hour 16:15 16:30 16:15 7 - 9 Peak Hour 07:45 07:30 07:45 07:45	11:45	39	137	42	176			81	313	23:45	7	45	5	24				12	69
SPLIT % 25.5% 74.5% 42.1% SPLIT % 57.0% 43.0% 57.9% DAILY TOTALS NB SB EB WB SB EB WB Total 3,450 4,435 0 0 0 14:45 7,885 AM Peak Hour 07:45 07:30 07:45 PM Peak Hour 16:15 14:30 14:45 AM Pk Volume 193 661 840 PM Pk Volume 439 341 698 Pk Hr Factor 0.862 0.923 0.950 Pk Hr Factor 0.971 0.969 0.933 7 - 9 Volume 326 1136 0 1462 4 - 6 Volume 787 499 0 1286 7 - 9 Peak Hour 07:45 07:30 07:45 4 - 6 Volume 787 499 0 1286 7 - 9 Pk Volume 193 661 0 0 840 4 - 6 Pk Volume 16:15 16:30 16:15 7 - 9 Pk Volume 193 661	TOTALS		846		2473				3319	TOTALS		2604		1962					4566
NB SB EB WB Total 3,450 4,435 0 0 0 7,885 AM Peak Hour 07:45 07:30 07:45 PM Peak Hour 16:15 14:30 14:45 AM Pk Volume 193 661 840 PM Pk Volume 439 341 698 Pk Hr Factor 0.862 0.923 0.950 Pk Hr Factor 0.971 0.969 0.933 7 - 9 Volume 326 1136 0 1462 4 - 6 Volume 787 499 0 0 1286 7 - 9 Peak Hour 07:45 07:45 4 - 6 Poak Hour 16:15 16:30 16:15 7 - 9 Peak Hour 07:45 07:45 4 - 6 Peak Hour 16:15 16:30 16:15 7 - 9 Pk Volume 193 661 0 840 4 - 6 Pk Volume 439 258 0 696 Pk Hr Eartor 0.862 0.923 0.900 0.900 0.921 0.924 0.924 0.924	SPLIT %		25.5%		74.5%				42.1%	SPLIT %		57.0%		43.0%					57.9%
JAILY TOTALS 3,450 4,435 0 0 7,885 AM Peak Hour 07:45 07:30 07:45 PM Peak Hour 16:15 14:30 14:45 AM Pk Volume 193 661 840 PM Pk Volume 439 341 698 Pk Hr Factor 0.862 0.923 0.950 Pk Hr Factor 0.971 0.969 0.933 7 - 9 Volume 326 1136 0 1462 4 - 6 Volume 787 499 0 1286 7 - 9 Peak Hour 07:45 07:30 07:45 4 - 6 Peak Hour 16:15 16:30 16:15 7 - 9 Pk Volume 193 661 0 840 4 - 6 Pk Volume 439 258 0 696 Pk Hr Factor 0.862 0.923 0.000 0.950 Pk Hr Factor 0.971 0.884 0.000 0.002				TOT 4			NB	SB		EB		WB						Тс	otal
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AM Pk Volume 193 661 840 PM Pk Volume 439 341 698 Pk Hr Factor 0.862 0.923 0.950 Pk Hr Factor 0.971 0.969 0.933 7 - 9 Volume 326 1136 0 0 1462 4 - 6 Volume 787 499 0 0 1286 7 - 9 Peak Hour 07:45 07:30 07:45 4 - 6 Peak Hour 16:15 16:30 16:15 7 - 9 Pk Volume 193 661 0 840 4 - 6 Pk Volume 439 258 0 0 698 Pk Hr Factor 0.862 0.923 0.000 0.000 0.950 Pk Hr Factor 0.971 0.884 0.000 0.002 0.002	AM Peak Hour		07:45		07:30				07:45	PM Peak Hour		16:15		14:30					14:45
Pk Hr Factor 0.862 0.923 0.950 Pk Hr Factor 0.971 0.969 0.933 7 - 9 Volume 326 1136 0 0 1462 4 - 6 Volume 787 499 0 0 1286 7 - 9 Peak Hour 07:45 07:30 07:45 4 - 6 Peak Hour 16:15 16:30 16:15 7 - 9 Pk Volume 193 661 0 0 840 4 - 6 Pk Volume 439 258 0 0 696 Pk Hr Factor 0.862 0.923 0.000 0.000 0.950 Pk Hr Factor 0.971 0.884 0.000 0.000 0.923	AM Pk Volume		193		661				840	PM Pk Volume		439		341					698
7 - 9 Volume 326 1136 0 0 1462 4 - 6 Volume 787 499 0 0 1286 7 - 9 Peak Hour 07:45 07:30 07:45 4 - 6 Peak Hour 16:15 16:30 16:15 7 - 9 Pk Volume 193 661 0 840 4 - 6 Pk Volume 439 258 0 0 696 Pk Hr Factor 0.862 0.923 0.000 0.000 0.950 Pk Hr Factor 0.971 0.884 0.000 0.002 0.983	Pk Hr Factor		0.862		0.923				0.950	Pk Hr Factor		0.971		0.969					0.933
7 - 9 Peak Hour 07:45 07:30 07:45 4 - 6 Peak Hour 16:15 16:30 16:15 7 - 9 Pk Volume 193 661 0 840 4 - 6 Pk Volume 439 258 0 0 696 Pk Hr Factor 0.862 0.923 0.000 0.950 Pk Hr Factor 0.971 0.884 0.000 0.992	7 - 9 Volume		326		1136				1462	4 - 6 Volume		787		499					1286
7 - 9 PK volume 193 061 0 840 4 - 6 PK volume 439 258 0 0 696 Pk Hr Factor 0.862 0.923 0.000 0.950 Pk Hr Factor 0.971 0.884 0.000 0.992	7 - 9 Peak Hour		07:45		07:30				07:45	4 - 6 Peak Hour		16:15		16:30					16:15
	7 - 9 PK Volume Pk Hr Factor		193		0 0 0 2 2				840 0.950	Pk Hr Factor		439 0 971		258 0.884					0.065







Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: Oleander Avenue, West of Poinsettia Avenue

Date:	Tuesda	y, Mar	rch 5, 2	019		r	Total D	aily Vo	lume:	5685								Descri	ption:	Total V	Volume	•	
0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
18	17	16	15	39	121	238	381	538	183	163	242	290	265	467	598	667	630	323	163	123	98	51	39
8	6	5	3	4	14	52	96	153	63	43	61	70	69	91	149	168	171	108	47	46	31	19	13
4	2	3	2	8	12	52	85	138	51	45	50	72	61	119	193	142	173	89	51	35	32	8	8
2	4	4	6	11	34	49	102	178	37	32	56	81	72	113	134	179	149	67	35	19	22	7	12
4	5	4	4	16	61	85	98	69	32	43	75	67	63	144	122	178	137	59	30	23	13	17	6

Date:	Tuesda	y, Mar	rch 5, 2	019		,	Total D	aily Vo	lume:	2945								Descri	ption:	Eastbo	ound V	olume	
0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
9	3	4	4	20	93	167	261	385	82	90	128	143	119	236	346	285	239	126	72	47	40	28	18
3	0	0	1	1	13	35	61	114	30	19	35	29	25	53	86	69	53	35	24	12	13	13	9
1	0	0	1	2	9	34	66	84	23	30	26	46	26	77	154	75	73	32	22	17	16	6	1
2	1	2	1	6	25	40	64	136	12	19	25	30	35	41	52	71	54	36	13	8	5	3	4
3	2	2	1	11	46	58	70	51	17	22	42	38	33	65	54	70	59	23	13	10	6	6	4

Date:	Tuesda	y, Mar	rch 5, 20	019		r	Fotal D	aily Vo	lume:	2740								Descri	ption:	Westb	ound V	olume	
0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
9	14	12	11	19	28	71	120	153	101	73	114	147	146	231	252	382	391	197	91	76	58	23	21
5	6	5	2	3	1	17	35	39	33	24	26	41	44	38	63	99	118	73	23	34	18	6	4
3	2	3	1	6	3	18	19	54	28	15	24	26	35	42	39	67	100	57	29	18	16	2	7
0	3	2	5	5	9	9	38	42	25	13	31	51	37	72	82	108	95	31	22	11	17	4	8
1	3	2	3	5	15	27	28	18	15	21	33	29	30	79	68	108	78	36	17	13	7	11	2

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VOLUME

Oleander Ave Bet. Poinsettia Ave & Smilax Rd

Day: Tuesday Date: 10/9/2018

				NB		SB		EB	WB						Тс	otal
	DAILY TOTA	ALS				4,416	4,835						9,	251		
AM Period	NB SB	EB		WB		TC	TAL	PM Period	NB	SB	EB		WB		ТО	TAL
00:00		5		1		6		12:00			50		50		100	
00:15		9		6		15		12:15			53		53		106	
00:30 00:45		5	25	3 2	13	8 9	38	12:30			48 60	211	38 62	203	86 122	<i>4</i> 1 <i>4</i>
01:00		11	25	2	15	13		13:00			54	211	40	205	94	717
01:15		3		2		5		13:15			43		49		92	
01:30		2	10	1	10	3	20	13:30 12:45			83 65	245	56	200	139	452
01:45		<u> </u>	18	<u>5</u> 0	10	/	28	13:45			<u> </u>	245	86	208	128	453
02:15		1		2		3		14:15			109		69		178	
02:30		3	_	3		6		14:30			132		87		219	
02:45		0	5	4	9	4	14	14:45 15:00			124	454	101	343	225	797
03:15		2		5 15		16		15:15			70		132		202	
03:30		2		8		10		15:30			123		77		200	
03:45		3	8	12	38	15	46	15:45			105	398	63	348	168	746
04:00 04:15		5 1		4 24		9 28		16:00 16:15			112		67 69		179 105	
04:30		4		24 34		36		16:30			142		55		195	
04:45		7	18	49	111	56	129	16:45			143	523	73	264	216	787
05:00		6		32		38		17:00			146		70		216	
05:15 05:30		4		47 96		51		17:15 17:30			132		62 66		194 100	
05:45		25	50	155	330	180	380	17:45			92	494	58	256	150	750
06:00		45		84		129		18:00			80		43		123	
06:15		38		92		130		18:15			60		54		114	
06:30 06:45		47 54	10/	123	122	170	606	18:30 18:45			52 58	250	50 48	105	102	115
07:00		77	104	134	422	211	000	19:00			35	230	52	195	87	445
07:15		61		131		192		19:15			58		31		89	
07:30		67	254	146	F07	213	0.4.4	19:30			32	4 - 4	21	120	53	202
07:45		49	254	1/6	587	225	841	19:45			<u>29</u> 25	154	 	128	53 44	282
08:15		87		136		223		20:15			17		16		33	
08:30		86		199		285		20:30			28		14		42	
08:45		88	356	105	609	193	965	20:45			20	90	13	62	33	152
09:00		35 29		70 63		92		21:00			23 26		13 20		36 46	
09:30		42		45		87		21:30			34		11		45	
09:45		37	143	58	236	95	379	21:45			15	98	15	59	30	157
10:00		31		34 41		65 76		22:00 22:15			11		7		18	
10:15		39		41 57		96		22:15			26		。 10		36	
10:45		40	145	49	181	89	326	22:45			10	58	5	30	15	88
11:00		63		31		94		23:00			14		6		20	
11:15 11·30		41 45		46 40		87 85		23:15 23:30			12 3		3		15 9	
11:45		49 54	203	40 59	176	113	379	23:45			3	32	2	17	5	49
TOTALS			1409		2722		4131	TOTALS				3007		2113		5120
SPLIT %			34.1%		65.9%		44.7%	SPLIT %				58.7%		41.3%		55.3%
	ΠΔΙΙ Υ ΤΟΤΛ			NB		SB		EB	WB						Тс	otal
				0		0		4,416	4,835						9,3	251
AM Peak Hour			08:00		07:45		07:45	PM Peak Hour				16:30		14:30		16:15
AM Pk Volume			356		680		997	PM Pk Volume				563		396		824
PK Hr Factor	0	0	610		1106		0.875	PK Hr Factor	0	0		0.964		520		0.954
7 - 9 Peak Hour			08:00		07:45		07:45	4 - 6 Peak Hour				16:30		16:45		16:15
7 - 9 Pk Volume			356		680		997	4 - 6 Pk Volume				563		271		824
Pk Hr Factor			0.937		0.854		0.875	Pk Hr Factor				0.964		0.928		0.954

VOLUME

Oleander Ave Bet. Poinsettia Ave & Smilax Rd

Day: Wednesday Date: 10/10/2018

				NB		SB		EB	WB						Тс	otal
	DAILY TOT	ALS		0		0		4,356	4,760						9,3	116
AM Period	NB SB	EB	1	WB		TC	TAL	PM Period	NB	SB	EB		WB		ТО	TAL
00:00		10		3		13		12:00			80		64		144	
00:15		5		4		9		12:15 12:20			48		41		89 05	
00:30		4 10	29	2	11	6 12	40	12:30			38 47	213	57 59	221	95 106	434
01:00		9	25	2		11	10	13:00			51	215	53		100	151
01:15		5		6		11		13:15			43		64		107	
01:30		4	10	2	11	6	20	13:30 12:45			73 62	220	92 97	206	165	525
02:00		2	19	1	11	3	50	13:45			72	229	89	290	161	525
02:15		5		2		7		14:15			97		94		191	
02:30		1		3		4	~ ~	14:30			135	225	56		191	
02:45		2	10	2	14	10	24	14:45 15:00			92	396	<u>57</u> 51	296	149	692
03:15		7		7		14		15:15			95 91		62		153	
03:30		3		8		11		15:30			116		55		171	
03:45		3	14	18	36	21	50	15:45			104	406	60	228	164	634
04:00 04:15		2		6 18		8		16:00 16:15			123		57 66		180 199	
04:30		3		25		22		16:30			149		59		208	
04:45		3	12	49	98	52	110	16:45			156	561	64	246	220	807
05:00		8		31		39		17:00			135		86		221	
05:15		11		54		65		17:15 17:20			150		66 52		216	
05:45		15	51	102	333	163	384	17:45			144 95	524	55 68	273	163	797
06:00		20	51	84	333	104	501	18:00			72	521	74	275	146	131
06:15		18		95		113		18:15			77		54		131	
06:30		42	122	122	110	164	560	18:30			48	242	35	200	83	454
06:45		<u> </u>	122	145	446	187	508	18:45			46	243	45 36	208	<u>91</u> 81	451
07:15		45		141		186		19:15			49		25		74	
07:30		58		152		210		19:30			43		24		67	
07:45		53	211	174	591	227	802	19:45			40	177	28	113	68	290
08:00 08:15		85 107		154 170		239		20:00 20:15			43 29		14 24		57 53	
08:30		92		152		244		20:30			29		24		50	
08:45		65	349	86	562	151	911	20:45			27	128	14	73	41	201
09:00		32		63		95		21:00			31		18		49	
09:15		38 43		58 51		96 94		21:15 21:30			26 20		19 17		45 37	
09:45		35	148	51	223	86	371	21:45			13	90	12	66	25	156
10:00		41		44		85		22:00			13		12		25	
10:15		33		50		83		22:15			9		9		18	
10:30 10:45		28	133	40 65	199	68 96	332	22:30 22:45			26 9	57	/ 10	38	33 19	95
11:00		57	155	33	155	90	552	23:00			12	57	8	50	20	
11:15		33		39		72		23:15			8		3		11	
11:30		53	402	47	100	100	252	23:30			13	40	4	10	17	60
11:45		49	192	41	160	90	352	23:45			9	42	3	18	12	60
			1290		2684		3974					3066		2076		5142
SPLIT %			32.5%		67.5%		43.6%	SPLIT %				59.6%		40.4%		56.4%
		ΔΙς		NB		SB		EB	WB						Тс	otal
				0		0		4,356	4,760						9,3	116
AM Peak Hour			08:00		07:30		07:45	PM Peak Hour				16:30		13:30		16:30
AM Pk Volume			349		650		987	PM Pk Volume				590		362		865
Pk Hr Factor		0	0.815		0.934		0.891	Pk Hr Factor				0.946		0.963		0.979
7 - 9 volume			56U 08:00		1153		1/13	4 - 6 Volume				1085		519 16:15		16.20
7 - 9 Pk Volume			349		650		987	4 - 6 Pk Volume				590		275		865
Pk Hr Factor			0.815		0.934		0.891	Pk Hr Factor				0.946		0.799		0.979

VOLUME

Oleander Ave Bet. Poinsettia Ave & Smilax Rd

Day: Thursday Date: 10/11/2018

				NB		SB		EB	WB						Тс	otal
	DAILY TOTALS			0		0		4,398	4,850						9,	248
AM Period	NB SB	EB		WB		TC	TAL	PM Period	NB	SB	EB		WB		TO	TAL
00:00		9		6		15		12:00			58		53		111	
00:15		7		3		10		12:15 12:20			74 60		51		125	
00:30		6 4	26	2	18	6	44	12:45			69 48	249	49 64	217	118	466
01:00		11		3		14		13:00			62		53		115	
01:15		5 1		4		9		13:15 12:20			44 66		50 61		94 127	
01:30		1	18	5 5	15	4 6	33	13:45			66 49	221	70	234	127	455
02:00		3		4		7		14:00			79		68		147	
02:15		4		1		5		14:15			91		68		159	
02:30		3 0	10	4 5	14	5	24	14:30 14:45			126	421	86 89	311	212 214	732
03:00		5	10	5		10		15:00			95		59		154	/32
03:15		1		12		13		15:15			89		120		209	
03:30 03:45		2	11	10 16	/13	12 19	5/	15:30 15:45			137	/137	58 62	200	195 178	736
04:00		8		9	чJ	17	54	16:00			136	437	60	255	196	730
04:15		1		22		23		16:15			143		56		199	
04:30		3	12	28 E1	110	31 52	172	16:30 16:45			131	661	91 70	דדנ	222	010
04:43		12	15	26	110	38	125	17:00			137	221	70	277	207	020
05:15		8		49		57		17:15			126		70		196	
05:30		14	50	98 150		112	205	17:30			103	447	74	202	177	720
05:45		27	53	76	332	1/8	385	17:45 18:00			63	447	<u>68</u> 74	282	149	729
06:15		21		112		133		18:15			72		53		125	
06:30		35		111		146		18:30			77		39		116	
06:45		<u> </u>	137	<u>126</u> 111	425	180 156	562	18:45			<u>//</u> 	289	<u>38</u> 51	204	115 94	493
07:15		47		136		183		19:15			50		36		86	
07:30		55		135		190		19:30			44	. – .	35		79	
07:45		52 93	199	162	544	214	743	19:45 20:00			34	171	25	147	59 60	318
08:15		83		179		262		20:15			29		29		58	
08:30		88		158		246		20:30			30		22		52	
08:45		<u>53</u>	317	82	597	135 84	914	20:45 21:00			24	120	19	93	43	213
09:15		33		40 65		98		21:00			25		18		58 44	
09:30		40		46		86		21:30			31		17		48	
09:45		30	139	47	206	77	345	21:45			30	110	17	67	47	177
10:00		34 28		25 34		59 62		22:00			20 8		13		55 19	
10:30		41		35		76		22:30			31		13		44	
10:45		48	151	44	138	92	289	22:45			14	73	9	46	23	119
11:00		51 41		51 47		88		23:00			7		4		19 11	
11:30		61		50		111		23:30			10		4		14	
11:45		48	201	57	205	105	406	23:45			10	34	6	26	16	60
TOTALS			1275		2647		3922	TOTALS				3123		2203		5326
SPLIT %			32.5%		67.5%		42.4%	SPLIT %				58.6%		41.4%		57.6%
	DAILY TOTALS			NB		SB		EB	WB						Тс	otal
				0		0		4,398	4,850						9,3	248
AM Peak Hour			08:00		07:45		07:45	PM Peak Hour				16:15		14:30		16:15
AM Pk Volume			317		677		993	PM Pk Volume				552		354		839
7 - 9 Volume	0		516		0.946		0.916	4 - 6 Volume	0	0		0.965		550		0.945
7 - 9 Peak Hour			08:00		07:45		07:45	4 - 6 Peak Hour				16:15		16:30		16:15
7 - 9 Pk Volume			317		677		993	4 - 6 Pk Volume				552		301		839
Pk Hr Factor			0.852		0.946		0.916	Pk Hr Factor				0.965		0.827		0.945







Linscott, Law & Greenspan, Engineers

4542 Ruffner Street, Suite 100, San Diego, CA 92111

Average Daily Traffic

Location: Oleander Avenue, East of Smilax Road

Date:	Tuesda	y, Mar	rch 5, 2	019		,	Total D	aily Vo	lume:	7615								Descri	ption:	Total '	Volume	9	
0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
30	18	25	33	67	275	505	663	575	283	301	317	384	362	569	692	674	654	426	266	195	147	113	41
13	7	4	2	5	22	87	142	157	95	69	72	93	82	104	138	168	181	123	88	55	37	25	22
9	2	4	9	14	48	127	164	157	67	79	69	87	84	133	198	135	172	132	76	55	36	33	7
4	4	5	11	26	84	130	177	159	62	53	84	109	99	169	190	209	136	88	56	40	48	29	7
4	5	12	11	22	121	161	180	102	59	100	92	95	97	163	166	162	165	83	46	45	26	26	5

Date:	Tuesda	y, Mar	rch 5, 2	019		-	Total D	aily Vo	lume:	4077								Descri	ption:	Eastbo	ound V	olume	
0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
16	11	13	13	33	113	279	366	302	153	150	186	205	192	351	395	393	327	210	140	85	62	59	23
7	6	2	0	1	8	51	79	78	55	37	45	50	44	60	75	101	94	66	53	16	17	13	13
5	1	3	3	9	22	68	98	79	34	39	43	44	43	81	109	82	92	61	34	29	12	13	3
1	2	2	6	13	32	83	103	93	27	27	51	61	58	115	117	120	70	40	30	16	21	20	4
3	2	6	4	10	51	77	86	52	37	47	47	50	47	95	94	90	71	43	23	24	12	13	3

Date:	Tuesda	y, Mar	rch 5, 2	019		r	Fotal D	aily Vo	lume:	3538								Descri	ption:	Westb	ound V	olume	
0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
14	7	12	20	34	162	226	297	273	130	151	131	179	170	218	297	281	327	216	126	110	85	54	18
6	1	2	2	4	14	36	63	79	40	32	27	43	38	44	63	67	87	57	35	39	20	12	9
4	1	1	6	5	26	59	66	78	33	40	26	43	41	52	89	53	80	71	42	26	24	20	4
3	2	3	5	13	52	47	74	66	35	26	33	48	41	54	73	89	66	48	26	24	27	9	3
1	3	6	7	12	70	84	94	50	22	53	45	45	50	68	72	72	94	40	23	21	14	13	2

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APPENDIX B

HCM INTERSECTION METHODOLOGY

HIGHWAY CAPACITY 6th EDITION MANUAL LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

In the Highway Capacity Manual 6th Edition (HCM 6), Level of Service for unsignalized intersections is determined by the computed or measured control delay and is defined for each minor movement. Level of Service is not defined for the intersection as a whole. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. The criteria are given in the following the table, and are based on the average control delay for any particular minor movement.

LEVEL OF	AVERA	GE CO	NTROL DELAY	EXPECTED DELAY TO MINOR
SERVICE		SEC	/VEH	STREET TRAFFIC
А	0.0	<u><</u>	10.0	Little or no delay
В	10.1	to	15.0	Short traffic delays
С	15.1	to	25.0	Average traffic delays
D	25.1	to	35.0	Long traffic delays
E	35.1	to	50.0	Very long traffic delays
F		>	50.0	Severe congestion

Level of Service F exists when there are insufficient gaps of suitable size to allow a side street demand to safely cross through a major street traffic stream. This Level of Service is generally evident from extremely long control delays experienced by side-street traffic and by queuing on the minor-street approaches. The method, however, is based on a constant critical gap size; that is, the critical gap remains constant no matter how long the side-street motorist waits. LOS F may also appear in the form on side-street vehicles selecting smaller-than-usual gaps. In such cases, safety may be a problem, and some disruption to the major traffic stream may result. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal gap acceptance behavior, which are more difficult to observe in the field than queuing.

In most cases at Two-Way Stop Controlled (TWSC) intersections, the critical movement is the minor-street left-turn movement. As such, the minor-street left-turn movement can generally be considered the primary factor affecting overall intersection performance. The lower threshold for LOS F is set at 50 seconds of delay per vehicle. There are many instances, particularly in urban areas, in which the delay equations will predict delays of 50 seconds (LOS F) or more for minor-street movements under very low volume conditions on the minor street (less than 25 vehicle/hour). Since the first term of the equation is a function only of the capacity, the LOS F threshold of 50 sec/vehicle is reached with a movement capacity of approximately 85 vehicle/hour or less.

This procedure assumes random arrivals on the major street. For a typical four-lane arterial with average daily traffic volumes in the range of 15,000 to 20,000 vehicles per day (peak hour, 1,500 to 2,000 vehicle/hour), the delay equation used in the TWSC capacity analysis procedure will predict 50 seconds of delay or more (LOS F) for many urban TWSC intersections that allow minor-street left-turn movements. **The LOS F threshold will be reached regardless of the volume of minor-street left-turn traffic.** Not-withstanding this fact, most low-volume minor-street approaches would not meet any of the volume or delay warrants for signalization of the *Manual on Uniform Traffic Control Devices* (MUTCD) since the warrants define an asymptote at 100 vehicle/hour on the minor approach. As a result, many public agencies that use the HCM 6 Level of Service thresholds to determine the design adequacy of TWSC intersections may be forced to eliminate the minor-street left-turn movement, even when the movement may not present any operational problem, such as the formation of long queues on the minor street or driveway approach.

APPENDIX C

COUNTY OF SAN DIEGO AND CITY OF SAN MARCOS' ROADWAY CLASSIFICATION TABLES

			Vehicu	lar Level of	Service	
Street Typology	Typical Lane Configuration	LOS A	LOS B	LOS C	LOS D	LOS E
Existing Roadway Classif	ications / Standards					
Prime Arterial	7 to 8 lanes	29,200	40,800	58,300	64,200	70,000
Prime Arterial	6 lanes	25,000	35,000	50,000	55,000	60,000
Major Arterial	5 lanes	18,000	25,000	35,000	40,000	45,000
Major Arterial	4 lanes	15,000	21,000	30,000	35,000	40,000
Secondary Arterial	5 lanes	12,500	17,500	25,000	31,300	37,500
Secondary Arterial	4 lanes	10,000	14,000	20,000	25,000	30,000
Secondary Arterial	3 lanes	7,500	10,500	15,000	18,000	22,500
Collector	2 lanes plus TWLTL	5,000	7,000	10,000	13,000	15,000
Collector	2 lanes	2,500	3,500	5,000	6,500	8,000
General Plan Complete Si	treet Typology Standards		-			
Arterial	8 lanes	29,200	40,800	58,300	64,200	70,000
Arterial	6 lanes	25,000	35,000	50,000	55,000	60,000
Arterial with Class II or Class III Bike Lanes	4 lanes	15,000	21,000	30,000	35,000	40,000
Arterial with enhanced Bike facilities	4 lanes	15,000	21,000	30,000	35,000	40,000
Multi-Way Boulevard	4 lanes for through trips, two lanes for local serving trips ¹	16,800	25,200	31,500	37,800	42,000
Industrial Collector	4 lanes	10,000	14,000	20,000	25,000	30,000
Collector & Main Street	2 lanes plus TWLTL	5,000	7,000	10,000	13,000	15,000
Collector & Main Street	2 lanes ²	2,500	3,000	5,000	6,500	8,000
Freeway	Mixed-Flow Lane ³	-	-	1,760	1,980	2,200
Freeway	HOV Lanes ³	-	-	1,440	1,620	1,800

Table 3.16-2Daily Roadway Segment Capacity

Note: These are general capacities for planning purposes. Specific operational characteristics, such as signal coordination, can enhance operations significantly.

1. LOS thresholds were calculated based on V/C ratios of the daily threshold volumes for the corresponding roadway classification. Multi-way boulevard capacity assumes a similar capacity as a 4-lane arterial plus an additional 1,000 ADT capacity per lane for the local service roadway.

2. With fronting commercial or residential property

3. Per lane capacities presented.

Source: SANTEC/ITE Guidelines for Traffic Impact Studies in the San Diego Region, 2000.

APPENDIX D

EXISTING INTERSECTION ANALYSIS WORKSHEETS

Intersection

Intersection Delay, s/veh Intersection LOS

reh 34.5 D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			र्भ	1		4			र्च	1
Traffic Vol, veh/h	104	124	124	369	38	281	72	20	84	113	42	53
Future Vol, veh/h	104	124	124	369	38	281	72	20	84	113	42	53
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	116	138	138	410	42	312	80	22	93	126	47	59
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	2			1			2			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	2			1			1			2		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			2			2			1		
HCM Control Delay	35.8			43.5			18.5			16.4		
HCM LOS	E			E			С			С		

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	
Vol Left, %	41%	30%	91%	0%	73%	0%	
Vol Thru, %	11%	35%	9%	0%	27%	0%	
Vol Right, %	48%	35%	0%	100%	0%	100%	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	176	352	407	281	155	53	
LT Vol	72	104	369	0	113	0	
Through Vol	20	124	38	0	42	0	
RT Vol	84	124	0	281	0	53	
Lane Flow Rate	196	391	452	312	172	59	
Geometry Grp	6	6	7	7	7	7	
Degree of Util (X)	0.458	0.813	0.966	0.565	0.423	0.127	
Departure Headway (Hd)	8.428	7.486	7.693	6.509	8.838	7.735	
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	
Сар	426	481	470	553	406	462	
Service Time	6.517	5.561	5.472	4.288	6.617	5.513	
HCM Lane V/C Ratio	0.46	0.813	0.962	0.564	0.424	0.128	
HCM Control Delay	18.5	35.8	61.4	17.5	18	11.6	
HCM Lane LOS	С	E	F	С	С	В	
HCM 95th-tile Q	2.3	7.7	12	3.5	2.1	0.4	

Intersection	
Intersection Delay, s/veh	21.1
Intersection LOS	С

Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		ŧ	1	1	1	1	
Traffic Vol, veh/h	124	186	227	88	200	457	
Future Vol, veh/h	124	186	227	88	200	457	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	133	200	244	95	215	491	
Number of Lanes	0	1	1	1	1	1	
Approach	EB		WB		SB		
Opposing Approach	WB		EB				
Opposing Lanes	2		1		0		
Conflicting Approach Left	SB				WB		
Conflicting Lanes Left	2		0		2		
Conflicting Approach Right			SB		EB		
Conflicting Lanes Right	0		2		1		
HCM Control Delay	20.8		14.7		24.4		
HCM LOS	С		В		С		

Lane	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	
Vol Left, %	40%	0%	0%	100%	0%	
Vol Thru, %	60%	100%	0%	0%	0%	
Vol Right, %	0%	0%	100%	0%	100%	
Sign Control	Stop	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	310	227	88	200	457	
LT Vol	124	0	0	200	0	
Through Vol	186	227	0	0	0	
RT Vol	0	0	88	0	457	
Lane Flow Rate	333	244	95	215	491	
Geometry Grp	4	7	7	7	7	
Degree of Util (X)	0.629	0.481	0.168	0.424	0.803	
Departure Headway (Hd)	6.795	7.092	6.376	7.099	5.88	
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	
Сар	530	505	559	505	614	
Service Time	4.865	4.874	4.157	4.869	3.649	
HCM Lane V/C Ratio	0.628	0.483	0.17	0.426	0.8	
HCM Control Delay	20.8	16.3	10.5	15	28.5	
HCM Lane LOS	С	С	В	В	D	
HCM 95th-tile Q	4.3	2.6	0.6	2.1	8	

Intersection

Intersection Delay, s/veh Intersection LOS

76.2

F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			र्भ	1		\$			र्भ	1
Traffic Vol, veh/h	18	138	65	108	135	34	257	9	398	33	5	18
Future Vol, veh/h	18	138	65	108	135	34	257	9	398	33	5	18
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	144	68	113	141	35	268	9	415	34	5	19
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	2			1			2			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	2			1			1			2		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			2			2			1		
HCM Control Delay	17			17.7			125.7			11.4		
HCM LOS	С			С			F			В		

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	
Vol Left, %	39%	8%	44%	0%	87%	0%	
Vol Thru, %	1%	62%	56%	0%	13%	0%	
Vol Right, %	60%	29%	0%	100%	0%	100%	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	664	221	243	34	38	18	
LT Vol	257	18	108	0	33	0	
Through Vol	9	138	135	0	5	0	
RT Vol	398	65	0	34	0	18	
Lane Flow Rate	692	230	253	35	40	19	
Geometry Grp	6	6	7	7	7	7	
Degree of Util (X)	1.195	0.454	0.516	0.063	0.087	0.036	
Departure Headway (Hd)	6.219	7.712	7.934	6.986	8.364	7.191	
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	
Сар	588	470	458	516	431	501	
Service Time	4.225	5.712	5.634	4.686	6.064	4.891	
HCM Lane V/C Ratio	1.177	0.489	0.552	0.068	0.093	0.038	
HCM Control Delay	125.7	17	18.8	10.2	11.9	10.2	
HCM Lane LOS	F	С	С	В	В	В	
HCM 95th-tile Q	24.6	2.3	2.9	0.2	0.3	0.1	

ntersection	
ntersection Delay, s/veh	29.7
ntersection LOS	D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		र्स	1	1	٦	1
Traffic Vol, veh/h	326	229	159	146	112	122
Future Vol, veh/h	326	229	159	146	112	122
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	351	246	171	157	120	131
Number of Lanes	0	1	1	1	1	1
Approach	EB		WB		SB	
Opposing Approach	WB		EB			
Opposing Lanes	2		1		0	
Conflicting Approach Left	SB				WB	
Conflicting Lanes Left	2		0		2	
Conflicting Approach Right			SB		EB	
Conflicting Lanes Right	0		2		1	
HCM Control Delay	47.7		10.6		11.7	
HCM LOS	E		В		В	

Lane	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	
Vol Left, %	59%	0%	0%	100%	0%	
Vol Thru, %	41%	100%	0%	0%	0%	
Vol Right, %	0%	0%	100%	0%	100%	
Sign Control	Stop	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	555	159	146	112	122	
LT Vol	326	0	0	112	0	
Through Vol	229	159	0	0	0	
RT Vol	0	0	146	0	122	
Lane Flow Rate	597	171	157	120	131	
Geometry Grp	4	7	7	7	7	
Degree of Util (X)	0.947	0.291	0.236	0.249	0.227	
Departure Headway (Hd)	5.713	6.134	5.422	7.456	6.233	
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	
Сар	633	585	661	482	575	
Service Time	3.746	3.88	3.167	5.207	3.984	
HCM Lane V/C Ratio	0.943	0.292	0.238	0.249	0.228	
HCM Control Delay	47.7	11.4	9.8	12.7	10.8	
HCM Lane LOS	E	В	А	В	В	
HCM 95th-tile Q	13	1.2	0.9	1	0.9	

APPENDIX E

EXISTING + PROJECT INTERSECTION ANALYSIS WORKSHEETS

Intersection

Intersection Delay, s/veh Intersection LOS

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35.7
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Е

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			र्भ	1		4			र्च	1
Traffic Vol, veh/h	104	124	124	372	40	281	72	20	85	113	42	53
Future Vol, veh/h	104	124	124	372	40	281	72	20	85	113	42	53
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	116	138	138	413	44	312	80	22	94	126	47	59
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	2			1			2			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	2			1			1			2		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			2			2			1		
HCM Control Delay	36.1			45.6			18.6			16.5		
HCM LOS	E			E			С			С		

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	
Vol Left, %	41%	30%	90%	0%	73%	0%	
Vol Thru, %	11%	35%	10%	0%	27%	0%	
Vol Right, %	48%	35%	0%	100%	0%	100%	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	177	352	412	281	155	53	
LT Vol	72	104	372	0	113	0	
Through Vol	20	124	40	0	42	0	
RT Vol	85	124	0	281	0	53	
Lane Flow Rate	197	391	458	312	172	59	
Geometry Grp	6	6	7	7	7	7	
Degree of Util (X)	0.461	0.815	0.98	0.566	0.424	0.127	
Departure Headway (Hd)	8.442	7.505	7.703	6.521	8.856	7.753	
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	
Сар	425	481	472	550	405	461	
Service Time	6.534	5.58	5.482	4.299	6.638	5.534	
HCM Lane V/C Ratio	0.464	0.813	0.97	0.567	0.425	0.128	
HCM Control Delay	18.6	36.1	64.7	17.6	18.1	11.7	
HCM Lane LOS	С	E	F	С	С	В	
HCM 95th-tile Q	2.4	7.7	12.5	3.5	2.1	0.4	

Intersection	
Intersection Delay, s/veh	21.7
Intersection LOS	С

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		ŧ	1	1	1	1
Traffic Vol, veh/h	125	186	227	90	210	462
Future Vol, veh/h	125	186	227	90	210	462
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	134	200	244	97	226	497
Number of Lanes	0	1	1	1	1	1
Approach	EB		WB		SB	
Opposing Approach	WB		EB			
Opposing Lanes	2		1		0	
Conflicting Approach Left	SB				WB	
Conflicting Lanes Left	2		0		2	
Conflicting Approach Right			SB		EB	
Conflicting Lanes Right	0		2		1	
HCM Control Delay	21.1		14.8		25.2	
HCM LOS	С		В		D	

Lane	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	
Vol Left, %	40%	0%	0%	100%	0%	
Vol Thru, %	60%	100%	0%	0%	0%	
Vol Right, %	0%	0%	100%	0%	100%	
Sign Control	Stop	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	311	227	90	210	462	
LT Vol	125	0	0	210	0	
Through Vol	186	227	0	0	0	
RT Vol	0	0	90	0	462	
Lane Flow Rate	334	244	97	226	497	
Geometry Grp	4	7	7	7	7	
Degree of Util (X)	0.634	0.484	0.172	0.446	0.814	
Departure Headway (Hd)	6.824	7.132	6.415	7.115	5.896	
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	
Сар	528	503	555	504	611	
Service Time	4.894	4.914	4.197	4.885	3.665	
HCM Lane V/C Ratio	0.633	0.485	0.175	0.448	0.813	
HCM Control Delay	21.1	16.5	10.5	15.5	29.6	
HCM Lane LOS	С	С	В	С	D	
HCM 95th-tile Q	4.4	2.6	0.6	2.3	8.3	
Intersection

Intersection Delay, s/veh Intersection LOS

78.5

F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			र्च	1		4			र्च	1
Traffic Vol, veh/h	18	140	65	110	136	34	257	9	402	33	5	18
Future Vol, veh/h	18	140	65	110	136	34	257	9	402	33	5	18
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	146	68	115	142	35	268	9	419	34	5	19
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	2			1			2			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	2			1			1			2		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			2			2			1		
HCM Control Delay	17.2			18			130			11.4		
HCM LOS	С			С			F			В		

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	
Vol Left, %	38%	8%	45%	0%	87%	0%	
Vol Thru, %	1%	63%	55%	0%	13%	0%	
Vol Right, %	60%	29%	0%	100%	0%	100%	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	668	223	246	34	38	18	
LT Vol	257	18	110	0	33	0	
Through Vol	9	140	136	0	5	0	
RT Vol	402	65	0	34	0	18	
Lane Flow Rate	696	232	256	35	40	19	
Geometry Grp	6	6	7	7	7	7	
Degree of Util (X)	1.206	0.46	0.524	0.063	0.088	0.036	
Departure Headway (Hd)	6.24	7.751	7.971	7.021	8.414	7.24	
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	
Сар	584	467	456	513	428	497	
Service Time	4.248	5.751	5.671	4.721	6.114	4.94	
HCM Lane V/C Ratio	1.192	0.497	0.561	0.068	0.093	0.038	
HCM Control Delay	130	17.2	19.1	10.2	11.9	10.2	
HCM Lane LOS	F	С	С	В	В	В	
HCM 95th-tile Q	25.2	2.4	3	0.2	0.3	0.1	

Intersection	
Intersection Delay, s/veh	31.5
Intersection LOS	D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		ર્સ	•	1	٦	1
Traffic Vol, veh/h	332	229	159	157	117	125
Future Vol, veh/h	332	229	159	157	117	125
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	357	246	171	169	126	134
Number of Lanes	0	1	1	1	1	1
Approach	EB		WB		SB	
Opposing Approach	WB		EB			
Opposing Lanes	2		1		0	
Conflicting Approach Left	SB				WB	
Conflicting Lanes Left	2		0		2	
Conflicting Approach Right			SB		EB	
Conflicting Lanes Right	0		2		1	
HCM Control Delay	51.7		10.8		11.9	
HCM LOS	F		В		В	

Lane	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	59%	0%	0%	100%	0%
Vol Thru, %	41%	100%	0%	0%	0%
Vol Right, %	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	561	159	157	117	125
LT Vol	332	0	0	117	0
Through Vol	229	159	0	0	0
RT Vol	0	0	157	0	125
Lane Flow Rate	603	171	169	126	134
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.965	0.294	0.257	0.262	0.235
Departure Headway (Hd)	5.761	6.188	5.475	7.505	6.281
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Сар	627	580	653	478	570
Service Time	3.799	3.938	3.225	5.261	4.036
HCM Lane V/C Ratio	0.962	0.295	0.259	0.264	0.235
HCM Control Delay	51.7	11.5	10.1	12.9	11
HCM Lane LOS	F	В	В	В	В
HCM 95th-tile Q	13.7	1.2	1	1	0.9

APPENDIX F

EXISTING + PROJECT + CUMULATIVE INTERSECTION ANALYSIS WORKSHEETS

Intersection

Intersection Delay, s/veh Intersection LOS

38.8 Е

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			र्च	1		4			र्च	1
Traffic Vol, veh/h	106	126	126	379	41	287	73	20	87	115	43	54
Future Vol, veh/h	106	126	126	379	41	287	73	20	87	115	43	54
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	118	140	140	421	46	319	81	22	97	128	48	60
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	2			1			2			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	2			1			1			2		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			2			2			1		
HCM Control Delay	39.1			50.4			19			16.7		
HCM LOS	E			F			С			С		

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	
Vol Left, %	41%	30%	90%	0%	73%	0%	
Vol Thru, %	11%	35%	10%	0%	27%	0%	
Vol Right, %	48%	35%	0%	100%	0%	100%	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	180	358	420	287	158	54	
LT Vol	73	106	379	0	115	0	
Through Vol	20	126	41	0	43	0	
RT Vol	87	126	0	287	0	54	
Lane Flow Rate	200	398	467	319	176	60	
Geometry Grp	6	6	7	7	7	7	
Degree of Util (X)	0.469	0.838	1.009	0.585	0.431	0.131	
Departure Headway (Hd)	8.623	7.587	7.787	6.604	9.016	7.838	
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	
Сар	420	477	467	545	402	456	
Service Time	6.623	5.641	5.55	4.366	6.716	5.612	
HCM Lane V/C Ratio	0.476	0.834	1	0.585	0.438	0.132	
HCM Control Delay	19	39.1	72.3	18.3	18.4	11.8	
HCM Lane LOS	С	E	F	С	С	В	
HCM 95th-tile Q	2.4	8.3	13.4	3.7	2.1	0.4	

Intersection				
Intersection Delay, s/veh	22.9			
Intersection LOS	С			

Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		र्स	1	1	۲	1	
Traffic Vol, veh/h	127	190	232	92	214	471	
Future Vol, veh/h	127	190	232	92	214	471	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	137	204	249	99	230	506	
Number of Lanes	0	1	1	1	1	1	
Approach	EB		WB		SB		
Opposing Approach	WB		EB				
Opposing Lanes	2		1		0		
Conflicting Approach Left	SB				WB		
Conflicting Lanes Left	2		0		2		
Conflicting Approach Right			SB		EB		
Conflicting Lanes Right	0		2		1		
HCM Control Delay	22		15.2		27		
HCM LOS	С		С		D		

Lane	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	40%	0%	0%	100%	0%
Vol Thru, %	60%	100%	0%	0%	0%
Vol Right, %	0%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	317	232	92	214	471
LT Vol	127	0	0	214	0
Through Vol	190	232	0	0	0
RT Vol	0	0	92	0	471
Lane Flow Rate	341	249	99	230	506
Geometry Grp	4	7	7	7	7
Degree of Util (X)	0.651	0.498	0.178	0.458	0.836
Departure Headway (Hd)	6.873	7.19	6.472	7.164	5.944
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Сар	525	499	550	502	608
Service Time	4.944	4.974	4.257	4.936	3.715
HCM Lane V/C Ratio	0.65	0.499	0.18	0.458	0.832
HCM Control Delay	22	17	10.7	15.9	32
HCM Lane LOS	С	С	В	С	D
HCM 95th-tile Q	4.6	2.7	0.6	2.4	8.9

Intersection

Intersection Delay, s/veh Intersection LOS

84.3

F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		\$			र्च	1		\$			ا	1
Traffic Vol, veh/h	18	143	66	112	139	35	262	9	410	34	5	18
Future Vol, veh/h	18	143	66	112	139	35	262	9	410	34	5	18
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	149	69	117	145	36	273	9	427	35	5	19
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	2			1			2			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	2			1			1			2		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			2			2			1		
HCM Control Delay	17.6			18.5			140.3			11.5		
HCM LOS	С			С			F			В		

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	
Vol Left, %	38%	8%	45%	0%	87%	0%	
Vol Thru, %	1%	63%	55%	0%	13%	0%	
Vol Right, %	60%	29%	0%	100%	0%	100%	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	681	227	251	35	39	18	
LT Vol	262	18	112	0	34	0	
Through Vol	9	143	139	0	5	0	
RT Vol	410	66	0	35	0	18	
Lane Flow Rate	709	236	261	36	41	19	
Geometry Grp	6	6	7	7	7	7	
Degree of Util (X)	1.232	0.471	0.537	0.066	0.09	0.036	
Departure Headway (Hd)	6.254	7.834	8.049	7.099	8.515	7.339	
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	
Сар	582	463	452	507	423	491	
Service Time	4.293	5.834	5.749	4.799	6.215	5.039	
HCM Lane V/C Ratio	1.218	0.51	0.577	0.071	0.097	0.039	
HCM Control Delay	140.3	17.6	19.7	10.3	12.1	10.3	
HCM Lane LOS	F	С	С	В	В	В	
HCM 95th-tile Q	26.5	2.5	3.1	0.2	0.3	0.1	

Intersection		
Intersection Delay, s/veh	34.7	
Intersection LOS	D	

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		ર્સ	•	1	ľ	1
Traffic Vol, veh/h	339	234	162	160	119	127
Future Vol, veh/h	339	234	162	160	119	127
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	365	252	174	172	128	137
Number of Lanes	0	1	1	1	1	1
Approach	EB		WB		SB	
Opposing Approach	WB		EB			
Opposing Lanes	2		1		0	
Conflicting Approach Left	SB				WB	
Conflicting Lanes Left	2		0		2	
Conflicting Approach Right			SB		EB	
Conflicting Lanes Right	0		2		1	
HCM Control Delay	57.8		11		12.1	
HCM LOS	F		В		В	

Lane	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	
Vol Left, %	59%	0%	0%	100%	0%	
Vol Thru, %	41%	100%	0%	0%	0%	
Vol Right, %	0%	0%	100%	0%	100%	
Sign Control	Stop	Stop	Stop	Stop	Stop	
Traffic Vol by Lane	573	162	160	119	127	
LT Vol	339	0	0	119	0	
Through Vol	234	162	0	0	0	
RT Vol	0	0	160	0	127	
Lane Flow Rate	616	174	172	128	137	
Geometry Grp	4	7	7	7	7	
Degree of Util (X)	0.991	0.301	0.264	0.269	0.24	
Departure Headway (Hd)	5.789	6.231	5.518	7.559	6.334	
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	
Сар	628	575	649	475	565	
Service Time	3.829	3.985	3.271	5.317	4.092	
HCM Lane V/C Ratio	0.981	0.303	0.265	0.269	0.242	
HCM Control Delay	57.8	11.7	10.3	13.1	11.1	
HCM Lane LOS	F	В	В	В	В	
HCM 95th-tile Q	14.8	1.3	1.1	1.1	0.9	

APPENDIX G

SMILAX ROAD MOBILITY ELEMENT REMOVAL TRAFFIC STUDY

LINSCOTT LAW & GREENSPAN engineers

TRANSPORTATION IMPACT ANALYSIS

SMILAX ROAD

County of San Diego, California November 5, 2018

LLG Ref. 3-18-2994



Prepared by: Narasimha Prasad Senior Transportation Engineer

S.

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TRANSPORTATION IMPACT ANALYSIS

SMILAX ROAD

County of San Diego, California November 5, 2018

1.0 INTRODUCTION / PURPOSE OF REPORT

Linscott, Law & Greenspan (LLG) has prepared this traffic study to determine and evaluate the traffic impacts of removing a small portion (approximately 900 feet long) of Smilax Road from the County Mobility Element.

Figure 1-1 depicts the Project Vicinity, while *Figure 1-2* depicts the Existing roadway roadwork and also the portion of the future Mobility realignment of Smilax Road which is proposed to be removed from the Mobility Element.

Appendix A contains an excerpt from the County Mobility Element showing the subject portion of Smilax Road.

A long-term analysis was conducted to determine if the planned roadway network in the area could accommodate the forecast volumes without the realignment of Smilax Road. Included in this traffic study are:

- Existing Condition Description
- Existing Capacity Analysis
- Year 2035 Forecast Volumes
- Horizon Year (2035) Capacity Analysis without the realigned Smilax Road
- Conclusions





GREENSPAN engineers

Project Area Map

Smilax Road

2.0 EXISTING CONDITIONS

Effective evaluation of the traffic impacts associated with the proposed Project requires an understanding of the existing transportation system within the project area. *Figure 2–1* depicts the existing conditions diagram, including signalized intersections and lane configurations.

2.1 Existing Street Network

The following is a description of the existing street network in the study area.

Smilax Road is classified in the City of San Marcos Mobility Element as a 4-lane arterial. It is currently constructed as a 2-lane undivided roadway. It has a posted speed limit of 35 MPH and parking is permitted along the east curb. Curb and gutter are provided. Sidewalk is provided only along the west curb.

Poinsettia Road is classified in the San Diego County Mobility Element as a 4-lane arterial. It is currently constructed as a 2-lane undivided roadway. It has a posted speed limit of 40 MPH. Curb, gutter and sidewalks are not provided.

Oleander Avenue is classified in the City of San Marcos Mobility Element as a 4-lane arterial. It is currently constructed as a 2-lane undivided roadway. It has a posted speed limit of 25 MPH and parking is generally provided. Curb, gutter and sidewalk are provided only along the north curb.

are included in Appendix A.

2.2 Existing Bicycle Network

There are no bicycle facilities provided along the street segments within the study area.

2.3 Existing Pedestrian Conditions

Sidewalks are provided along the north side of Oleander Avenue and the west side of Smilax Road, but not on the southside of Oleander Avenue and the west side of Smilax Road in the study area. Sidewalks are not provided along Poinsettia Avenue in the study area.

2.4 Existing Traffic Volumes

Table 2–1 is a summary of the most recent available average daily traffic volumes (ADTs) from LLG counts conducted in October 2018. Manual hand counts at the study area intersections, including bicycle and pedestrian counts, were also conducted in October 2018.

Figure 2–2 depicts the Existing Traffic Volumes. Appendix A contains the manual count sheets.

Street Segment	ADT ^a
Poinsettia Avenue Mimosa Avenue to Oleander Avenue Oleander Avenue to Roadrunner Road	1,470 8,170
Smilax Road Mimosa Avenue to Oleander Avenue	7,740
Oleander Avenue Poinsettia Avenue to Smilax Road	9,210

TABLE 2–1 EXISTING TRAFFIC VOLUMES

Footnotes:

a. Average Daily Traffic Volume counts conducted in October 2018.



Existing Conditions Diagram

engineers





Existing Traffic Volumes

engineers

3.0 ANALYSIS OF EXISTING CONDITIONS

3.1 Peak Hour Intersection Levels of Service

Table 3-1 summarizes the Existing intersection operations. As seen in *Table 3-1*, all intersections are calculated to currently operate at LOS D or better except the Oleander Avenue / Poinsettia Avenue intersection, which is calculated to operate at LOS E during the PM peak hour.

Appendix B contains the Existing AM and PM peak hour intersection analysis worksheets.

3.2 Daily Street Segment Levels of Service

Table 3-2 summarizes the Existing segment operations. As seen in *Table 3-2*, The following segments are calculated to operate at LOS E or F:

- Smilax Road: Mimosa Avenue to Oleander Avenue (LOS E)
- Oleander Avenue: Poinsettia Avenue to Smilax Road (LOS F)

Intersection	Control Type	Peak Hour	Delay ^a	LOS ^b
1. Oleander Ave / Poinsettia Ave	AWSC ^d	AM PM	31.3 90.7	D F
2. Oleander Ave / Smilax Rd	AWSC	AM PM	21.8 31.1	C D

Table 3–1
EXISTING INTERSECTION OPERATIONS

Footnotes:a. Average delay expressed in seconds per vehicle.b. Level of Service.		UNSIGNALIZED	
		LOS	
c. TWSC - Two-Way Stop Controlled intersection. Worst-case movement approach delay and LOS is reported.		А	
d. AWSC – All-Way-Stop-Controlled intersection. Overall delay and level of service reported.	10.1 to 15.0	В	
	15.1 to 25.0	С	
	25.1 to 35.0	D	
	35.1 to 50.0	Е	
	≥ 50.1	F	

Street Segment	Jurisdiction	Classification	Capacity (LOS E) ^a	ADT b	LOS ^c	V/C ^d
Poinsettia Ave						
Mimosa Ave to Oleander Ave	San Diego County	2.1E Com Collector	16,200	1,470	А	0.091
Oleander Ave to Roadrunner Rd	San Diego County	2.1E Com Collector	16,200	8,170	D	0.504
Smilax Rd Mimosa Ave to Oleander Ave	City of San Marcos	2-Lane Collector	8,000	7,740	Е	0.968
Oleander Ave Poinsettia Ave to Smilax Rd	City of San Marcos	2-Lane Collector	8,000	9,210	F	1.151

TABLE 3–2 EXISTING STREET SEGMENT OPERATIONS

Footnotes:

a. Capacities based on San Diego County Roadway Classification Table.

b. Average Daily Traffic Volumes.

c. Level of Service.

d. Volume to Capacity.

4.0 HORIZON YEAR FORECAST

Using the Horizon Year model volumes from the San Diego County Adopted General Plan was considered. However, that model has the Mobility Element alignment for Smilax Road and that model has been archived and cannot be rerun any longer with changes made to the alignment. SANDAG Series 13 model is the most recent model and also does <u>not</u> include the Mobility Element alignment for Smilax Road. As described above, since the Horizon Year analysis is to be conducted without the Mobility Element alignment for Smilax Road, this model was used for the Horizon Year analysis.

It may be noted that the Series 13 model also includes the planned but unfunded interchange at Smilax Road / SR 78. The study area traffic volumes reflect this new interchange and the increased volumes along Smilax Road, as a result.

The SANDAG Model outputs daily segment and peak hour volumes. However, the SANDAG Model output is not as accurate in determining peak hour intersection turn movements. Therefore, Year 2035 peak hour turning movement volumes were estimated using a template in Excel developed by LLG to determine peak hour traffic at an intersection from future (Year 2035) ADT volumes using the relationship between existing peak hour turn movements and the Existing ADT volumes. This same relationship can be assumed to generally continue in the future. For example, if the segment ADT on the roadway is forecast to double by the Year 2035, it is reasonable to assume that the peak hour intersection turning movement volumes will generally double.

Figure 4–1 depicts the assumed Year 2035 Without the Mobility Element Smilax Road Alignment Conditions Diagram based on the County of San Diego and City of San Marcos Mobility Elements, while *Figure 4–2* depicts the Year 2035 Without the Mobility Element Smilax Road Alignment Forecasted traffic volumes.



Year 2035 with Future Road Configuration Conditions Diagram

GREENSPAN engineers



N:\2994\Figures Date: 11/05/18

GREENSPAN engineers Year 2035 with Future Road Configuration Traffic Volumes

5.0 HORIZON YEAR ANALYSIS

5.1 Year 2035 Without the Mobility Element Smilax Road Alignment and With Existing Road Conditions

5.1.1 Daily Street Segment Levels of Service

Table 5-1 summarizes the Year 2035 segment operations Without the Mobility Element Smilax Road Alignment and with the Existing Road conditions. As seen in *Table 5-1*, the following segments are calculated to operate at LOS E or F:

- **Poinsettia Avenue:** Oleander Avenue to Roadrunner Road (LOS E)
- Smilax Road: Mimosa Avenue to Oleander Avenue (LOS F)
- **Oleander Avenue:** Poinsettia Avenue to Smilax Road (LOS F)
- 5.2 Year 2035 Without the Mobility Element Smilax Road Alignment and With Future Road Conditions
- 5.2.1 Intersection Analysis

Table 5-2 summarizes the Without the Mobility Element Smilax Road Alignment and with Future Road conditions intersection operations. As seen in *Table 5-2*, all intersections are calculated to operate at an acceptable LOS D or better.

5.2.2 Daily Street Segment Levels of Service

Table 5-1 summarizes the Year 2035 Without the Mobility Element Smilax Road Alignment and with Future Road conditions segment operations. As seen in *Table 5-1*, all subject segments are calculated to operate at an acceptable LOS C or better.

Appendix C contains the Year 2035 Without the Mobility Element Smilax Road Alignment and with Future Road conditions AM and PM peak hour intersection analysis worksheets.

Segment	With Existing Road Conditions				With Future Road Conditions			
	Functional Classification ^a	LOS E ^b Capacity	Vol ^c	LOS ^e	Mobility Element Classification ^a	LOS E ^b Capacity	Volume	LOS
Poinsettia Ave								
Mimosa Ave to Oleander Ave	2.1E Com Coll	16,200	1,500	А	2.1E Com Coll	16,200	1,500	А
Oleander Ave to Roadrunner Rd	2.1E Com Coll	16,200	15,300	Е	4.1B Major Rd	34,200	15,300	В
Smilax Rd								
Mimosa Ave to Oleander Ave	2-Ln Collector	8,000	15,700	F	4-Ln Rural Rd	30,000	15,700	С
Oleander Ave								
Poinsettia Ave to Smilax Rd	2-Ln Collector	8,000	16,100	F	4-Ln Rural Rd	30,000	16,100	С

 Table 5–1

 Year 2035 Street Segment Operations Without the Mobility Element Smilax Road Alignment

Footnotes:

a. Capacity based on San Diego County / City of San Marcos roadway classifications.

b. Average Daily Traffic.

c. Level of Service.

d. Volume to Capacity.

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TABLE 5–2YEAR 2035 INTERSECTION OPERATIONS WITHOUT THE MOBILITY ELEMENT SMILAX ROAD ALIGNMENT
WITH FUTURE ROAD CONDITIONS

Intersection	Peak Hour	Traffic Control	Delay ^a	LOS ^b
1. Oleander Ave / Poinsettia Ave	AM	Signal	33.1	D
	PM		35.0	D
2. Oleander Ave / Smilax Rd	AM PM	Signal	20.1 26.1	C D

Footnotes:

a. Average delay expressed in seconds per vehicle.

b. Level of Service.

SIGNALIZED							
Delay	LOS						
$0.0 \le 10.0$	А						
10.1 to 20.0	В						
20.1 to 35.0	С						
35.1 to 55.0	D						
55.1 to 80.0	Е						
≥ 80.1	F						

LINSCOTT, LAW & GREENSPAN, engineers

6.0 CONCLUSIONS

A Long-Term analysis without the Mobility Element Realignment of an approximately 900-foot portion of Smilax Road was conducted. *Tables 5-1 & 5-2* show that adequate levels of service are calculated at the subject segments and intersections in the Year 2035 timeframe without the realignment of Smilax Road and with area roadways built to their Mobility Element Classifications.

Since all area roadways and intersections that would be affected by the deletion of this portion of Smilax Road from the County Mobility Element would operate at adequate LOS, the deletion of the subject portion of Smilax Road can be supported.

APPENDIX H SANDAG VMT RESULTS

Vehicle Miles of Travel Report

Smilax Project - 2012 Base Year - Project Site (TAZ 850)

Scenario ID 989

VMT per Resident								
		Scenario ID	Residents	Total Trips	Person Miles of Travel	Vehicle Miles of Travel	VMT per Resident	
Regionwide		989	3,129,417	11,211,651	73,624,387	54,858,289	17.5	
Jurisdiction	Unincorporated	989	487,870	1,769,098	17,178,225	12,970,063	26.6	
CPA	North County Metro	989	44,001	162,986	1,264,824	963,610	21.9	
Site	Project Site (TAZ 850)	989	105	439	2,155	1,655	15.8	

	VMT per Employee							
		Scenario ID	Employees	Total Trips	Person Miles of Travel	Vehicle Miles of Travel	VMT per Employee	
Regionwide		989	1,491,487	5,238,830	43,831,152	38,461,147	25.8	
Jurisdiction	Unincorporated	989	804,333	2,767,646	22,941,664	20,293,816	25.2	
СРА	North County Metro	989	6,025	22,789	201,444	170,741	28.3	
Site	Project Site (TAZ 850)	989	82	314	2,362	2,034	24.8	

Report Generated:

10/15/19



Vehicle Miles of Travel Report

Scenario ID 993

VMT per Resident Scenario ID Residents **Total Trips** Person Miles of Travel Vehicle Miles of Travel VMT per Resident 3,853,694 13,766,860 84,001,916 15.5 Regionwide 993 59,914,899 Jurisdiction 24.3 Unincorporated 993 617,676 2,210,501 20,270,660 14,999,572 СРА North County Metro 993 62,074 225,122 1,582,512 1,163,183 18.7 Site Project Site (TAZ 850) 993 352 1,061 5,165 3,480 9.9

	VMT per Employee							
		Scenario ID	Employees	Total Trips	Person Miles of Travel	Vehicle Miles of Travel	VMT per Employee	
Regionwide		993	1,617,049	5,485,985	43,504,522	37,656,100	23.3	
Jurisdiction	Unincorporated	993	857,953	2,819,663	21,838,123	19,096,372	22.3	
СРА	North County Metro	993	9,152	33,928	286,516	237,676	26.0	
Site	Project Site (TAZ 850)	993	58	184	1,546	1,242	21.4	

Report Generated:

10/15/19



Smilax Project - 2035 Revenue Constrained - Project Site (TAZ 850)