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October 23, 2018

Mr. Charles Davis
Urban West Development

LLG Reference: 3-18-2985

Subject: **Lisbon Heights Project**
San Diego, CA

Dear Mr. Davis:

Linscott, Law & Greenspan, Engineers (LLG) has prepared this transportation access analysis for the Lisbon Heights Project located at 7108-7112 Lisbon Street in the City of San Diego. The Project proposes to develop 24 single-family homes on the site. Access is proposed via one driveway directly to Lisbon Street.

Figure 1 shows the vicinity map. ***Figure 2*** shows a more detailed Project area map. ***Figure 3*** shows the proposed site plan.

EXISTING CONDITIONS

The following is a brief description of the streets in the Project area.

Lisbon Street is constructed as an undivided, 3-lane east-west roadway with a two way left turn lane (TWLTL) east of the project driveway. Lisbon is constructed as a 2-lane undivided roadway with a TWLTL west of the project driveway. Parallel on-street parking is permitted on the south side of the roadway, east of the project driveway. The posted speed limit is 35 mph in both directions on Lisbon Street. Lisbon Street is classified as a 4-lane Collector Road according to the *Skyline Paradise Hills Community Plan.*

LLG commissioned average daily traffic (ADT) and peak hour intersection counts for vehicles, bicycles and pedestrians on Tuesday, September 25th, 2018 and Wednesday September 26th, 2018 at the study area locations (study area is discussed in the following section).

Figure 4 shows the geometric existing traffic conditions and ***Figure 5*** shows the existing traffic volumes. ***Attachment A*** contains a copy of the count sheets.

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ANALYSIS APPROACH AND METHODOLOGY

Analysis Approach

This traffic letter report evaluates the effect of the Project on the existing and near-term conditions of the local street system. The following scenarios are analyzed for potential Project impacts:

- Existing
- Near-Term Without Project
- Near-Term With Project

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, and the freedom to maneuver. 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.

Unsignalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay (in seconds) and Levels of Service (LOS) were determined based upon the procedures found in the *2000 Highway Capacity Manual (HCM 2000 Edition),* with the assistance of the *Synchro* (version 10) computer software. Vehicle volumes, bicycle volumes and pedestrian crossing volumes were inputted into the *HCM* analysis. LOS for unsignalized intersections is determined by the computed or measured control delay and is defined for worst case minor street movement. The unsignalized intersections evaluated in this letter report is the following:

1. Lisbon Street / Project Driveway

Signalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay (in seconds) and Levels of Service (LOS) were determined based upon the procedures found in the *2000 Highway Capacity Manual (HCM 2000 Edition),* with the assistance of the *Synchro* (version 10) computer software. Vehicle volumes, bicycle volumes and pedestrian crossing volumes were inputted into the *HCM* analysis. LOS for signalized intersections is determined by the computed or measured control delay and is defined for worst case minor street movement. The signalized intersections evaluated in this letter report is the following:

1. Lisbon Street / Imperial Avenue / 69th Street
2. Lisbon Street / Woodrow Avenue – Cadman Street

Street segments were analyzed based upon the comparison of daily traffic volumes (ADTs) to the *City of San Diego Roadway Classifications, Levels of Service (LOS) and Average Daily Traffic (ADT)* table. This table provides segment capacities for different street classifications, based on traffic volumes and roadway characteristics.

City of San Diego Roadway Classifications, Levels of Service (LOS) and Average Daily Traffic (ADT) table is attached in ***Attachment B***. The following street segment is evaluated in this letter report:

1. Lisbon Street: Imperial Avenue to Woodrow Avenue-Cadman Street

PROJECT TRIP GENERATION, DISTRIBUTION, AND ASSIGNMENT

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

Trip Generation

The Project proposes to develop 24 single-family homes. The City of San Diego's "single-family detached" housing rate of 10 trips per dwelling units was utilized.

Table 1 shows a summary of the proposed Project trip generation. As shown in *Table 1*, the proposed project is calculated to generate 240 daily trips (ADT) with 19 trips (4 inbound/15 outbound) during the AM peak hour and 24 trips (17 inbound/7 outbound) during the PM peak hour.

All tables are provided at the end of this letter report.

Trip Distribution/Assignment

Trip distribution is the process of determining traffic percentage splits on the regional and local roadway network. Trip distribution for the Project was based upon the existing traffic patterns, the land use characteristics of the Project, the roadway network and the general location of other land uses to which Project trips would originate or terminate.

Figure 6 shows the expected Project trip distribution percentages. ***Figure 7*** shows the Project traffic volumes.

NEAR-TERM CONDITIONS

Cumulative projects are projects in the vicinity of the study area that may be built and operating in the near-term time period representing the "opening day" conditions for the Project (Year 2020 for this project). Cumulative projects may include other development projects that would add traffic to the local street system, or infrastructure or other non-development capital projects that would fundamentally alter traffic flows from those observed in the existing condition.

Research showed that six (6) cumulative projects are planned for the area. Traffic generated by these projects were added to the existing Year 2018 traffic volumes to develop the Near-Term without Project conditions. ***Attachment C*** contains a brief description of each cumulative project and shows the location of each.

TABLE A
CUMULATIVE PROJECT TRIP GENERATION

Land Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour					PM Peak Hour				
		Rate [a]	Volume	% of ADT	In:Out Split	Volume In	Volume Out	Volume Total	% of ADT	In:Out Split	Volume In	Volume Out	Volume Total
Marijuana Outlet	3.52 KSF	250 /KSF [b]	881	9%	50:50	39	40	79	16%	50:50	70	71	141
Cardosa Tentative Map	4 DU	10 /DU	40	8%	20:80	1	2	3	10%	70:30	3	1	4
Encanto Boys & Girls Club	5.16 KSF	29 /KSF [b]	150	N/A	66:34	6	3	9	N/A	47:53	6	6	12
Market Street Church	3.45 KSF	9 /KSF [b]	31	4%	80:20	1	0	1	8%	50:50	1	1	2
Skyline Hills	66 DU	6 /DU	396	8%	20:80	6	26	32	9%	70:30	25	11	36
Pepper View Canyon	10 DU	10 /DU	100	8%	20:80	2	6	8	10%	70:30	7	3	10

Footnotes:

a. Rates based on the published *City of San Diego Municipal Code Land Development Code Trip Generation Manual (May 2003)*

b. Encanto Boys & Girls Club rate obtained from *ITE Trip Generation Manual 10th Edition Volume 2 (September 2017)*

General Notes:

1. DU = Dwelling Unit
2. KSF = 1,000 square feet

Figure 8 shows the cumulative volumes. ***Figure 9*** shows the Near-Term without Project traffic volumes, and ***Figure 10*** shows the Near-Term With Project traffic volumes. Project traffic was added to the near-term traffic volumes to arrive at the Near-Term + Project conditions.

The following section provides the intersection and segment capacity analysis for the near-term scenarios.

CAPACITY ANALYSIS

Analysis of the study area intersections and street segments was completed using the methods from the HCM 6 and the previously referenced ADT capacity table.

Intersections

Table 2 summarizes the intersection analysis under existing conditions and near-term conditions, without and with the Project. As shown in *Table 2*, all intersections operate at a LOS D or better in the existing, and near-term with and without project scenarios.

Attachment D contains the peak hour calculation sheets for the intersections analyzed under all scenarios.

Street Segments

Table 3 documents the street segment operations under all scenarios analyzed. As shown in *Table 3*, Lisbon Street is calculated to operate at LOS B under existing conditions and under near-term conditions. Based on the significance criteria, no street segment significant impacts would occur as a result of the Project.

CONCLUSIONS

The analysis shows that the access driveway to the site and the signalized intersections in the project vicinity is expected to function adequately. A stop sign should be provided at the project driveway for vehicles exiting the site. No mitigation measures are required.

Please don't hesitate to call us at 858-300-8800 with any questions.

Sincerely,

Linscott, Law & Greenspan, Engineers

John Boarman, P.E.
Principal

cc: File

LINSCOTT LAW & GREENSPAN engineers

Tables: Table 1 – Trip Generation
Table 2 – Near-Term Intersection Operations
Table 3 – Near-Term Street Segment Operations

Figures: Figure 1 – Vicinity Map
Figure 2 – Project Area
Figure 3 – Site Plan
Figure 4 – Existing Traffic Conditions
Figure 5 – Existing Traffic Volumes
Figure 6 – Project Distribution
Figure 7 – Project Traffic Volumes
Figure 8 – Cumulative Traffic Volumes
Figure 9 – Near-Term Without Project Traffic Volumes
Figure 10 – Near-Term With Project Traffic Volumes

Attachments: Attachment A – AM/PM Existing Traffic Counts
Attachment B – City of San Diego Roadway Capacity Table
Attachment C – Cumulative Projects Summary and Locations
Attachment D – Intersection Calculations Sheets

TABLE 1
TRIP GENERATION

Land Use	Size	Daily Trip Ends (ADTs)		AM Peak Hour					PM Peak Hour				
		Rate [a]	Volume	% of ADT	In:Out Split	Volume In	Volume Out	Volume Total	% of ADT	In:Out Split	Volume In	Volume Out	Volume Total
Single-Family Detached	24 DU	10 /DU	240	8%	20:80	4	15	19	10%	70:30	17	7	24

Footnotes:

c. Rates based on the published *City of San Diego Municipal Code Land Development Code Trip Generation Manual.*

General Notes:

3. DU = Dwelling Unit

TABLE 2
INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Near-Term Without Project		Near-Term With Project			Sig Impact?
			Delay[a]	LOS[b]	Delay	LOS	Delay	LOS	Δ [c]	
Imperial Avenue – 69th Street / Lisbon Street	Signal	AM	36.4	D	38.4	D	40.2	D	1.8	No
		PM	30.7	C	31.9	C	32.8	C	0.9	No
Project Driveway / Lisbon Street	OWSC	AM	-	-	-	-	11.1	B	-	No
		PM	-	-	-	-	10.5	B	-	No
Woodrow Avenue – Cadman Street / Lisbon Street	Signal	AM	14.1	B	14.1	B	14.1	B	0.0	No
		PM	15.5	B	15.5	B	15.5	B	0.0	No

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. LOS = Level of Service.
c. Δ denotes the increase in delay due to Project.
d. OWSC = One Way Stop-Controlled intersection.
e. Outbound Left Turn Delay & LOS Reported at Driveway

SIGNALIZED

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

UNSIGNALIZED

DELAY/LOS THRESHOLDS

Delay	LOS
0.0 ≤ 10.0	A
10.1 to 15.0	B
15.1 to 25.0	C
25.1 to 30.0	D
35.1 to 50.0	E
≥ 50.1	F

TABLE 3
STREET SEGMENT OPERATIONS

Street Segment	Capacity (LOS E)[a]	Existing			Existing + Project			Near-Term Without Project			Near-Term With Project				Sig Impact?
		ADT[b]	LOS	V/C	ADT[b]	LOS	V/C	ADT	LOS	V/C	ADT	LOS	V/C	Δ[e]	
Lisbon Street															
Imperial Avenue to Project Driveway	15,000	8,738	B	0.583	8,882	B	0.592	8,891	B	0.593	9,035	B	0.602	0.009	No
Project Driveway to Woodrow Avenue	15,000	8,738	B	0.583	8,834	B	0.589	8,891	B	0.593	9,035	B	0.599	0.006	No

Footnotes:

a. Capacities based on the *City of San Diego Roadway Classifications, Levels of Service (LOS) and Average Daily Traffic (ADT)* table. (See *Attachment B*).
b. Average Daily Traffic
c. Level of Service
d. Volume to Capacity ratio
e. Δ denotes a Project-induced increase in the volume to capacity ratio.

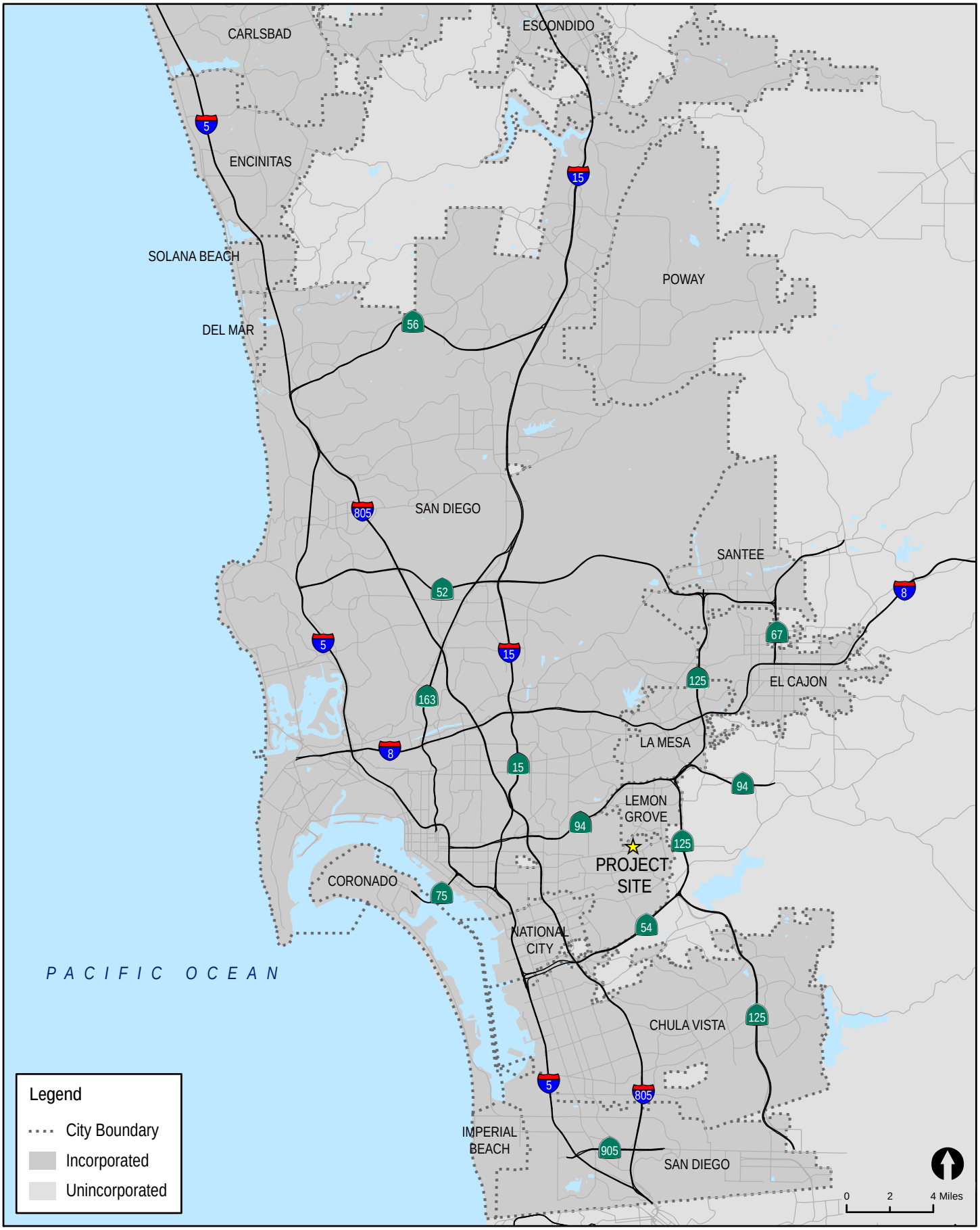

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Figure 1

Vicinity Map

LISBON HEIGHTS

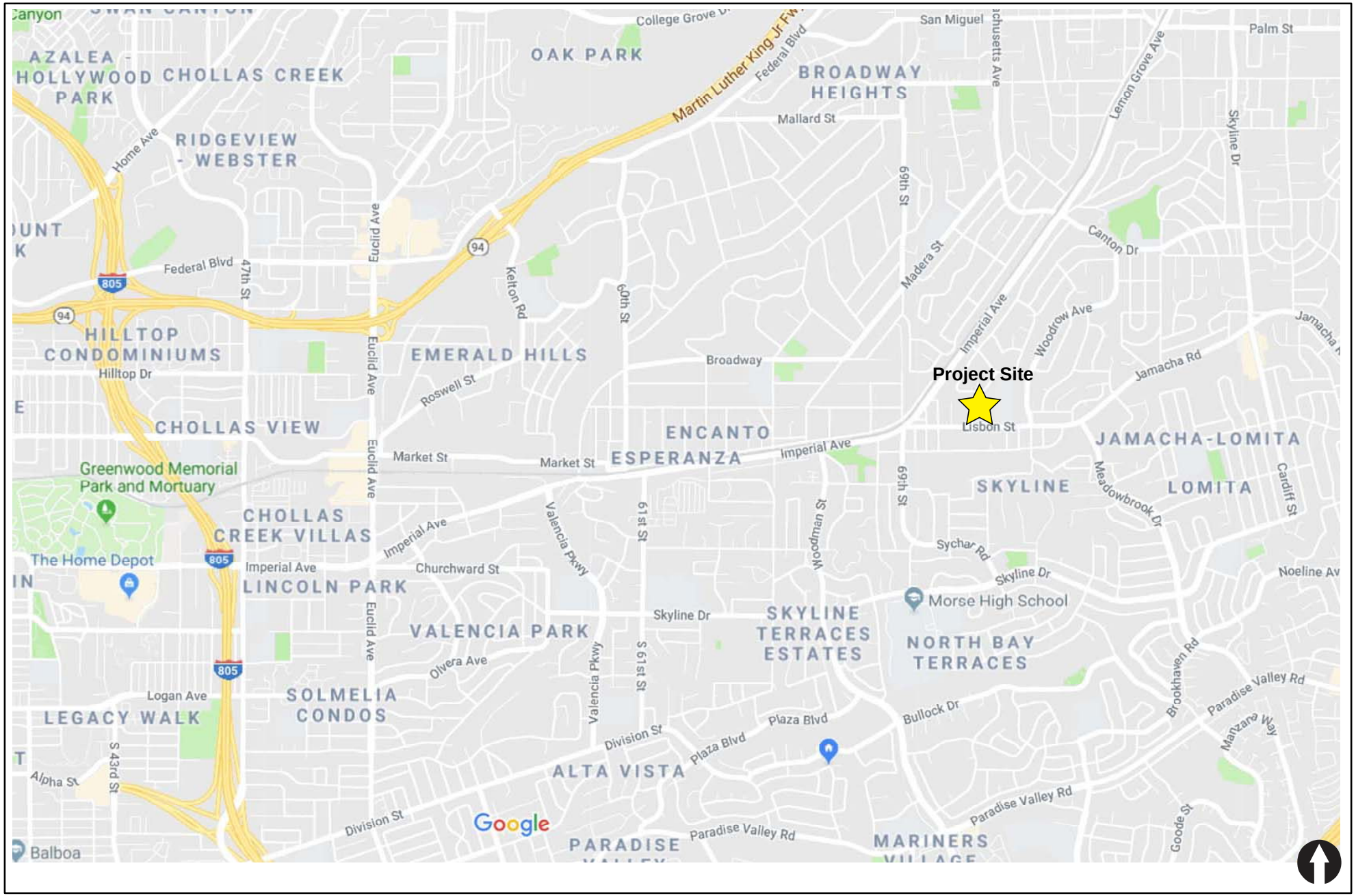

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Figure 2

Project Area Map

LISBON HEIGHTS

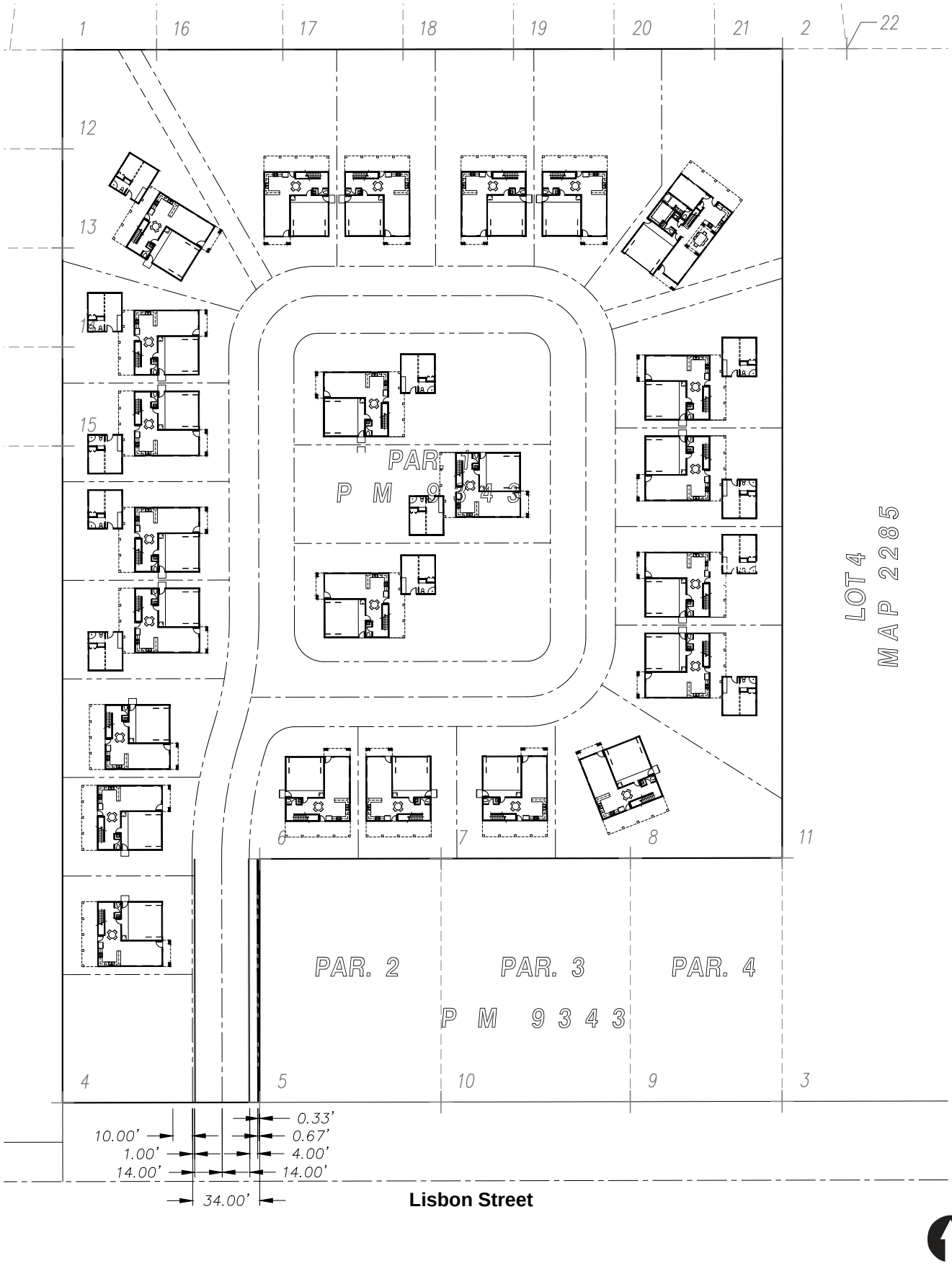

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Figure 3

Site Plan

LISBON HEIGHTS

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Figure 4

Existing Conditions Diagram

LISBON HEIGHTS

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Figure 5

Existing Traffic Volumes

LISBON HEIGHTS

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Figure 6

Project Traffic Distribution

LISBON HEIGHTS

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Figure 7

Project Traffic Volumes

LISBON HEIGHTS

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Figure 8

Cumulative Project Traffic Volumes

LISBON HEIGHTS

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Figure 9

Near-Term without Project Traffic Volumes

LISBON HEIGHTS

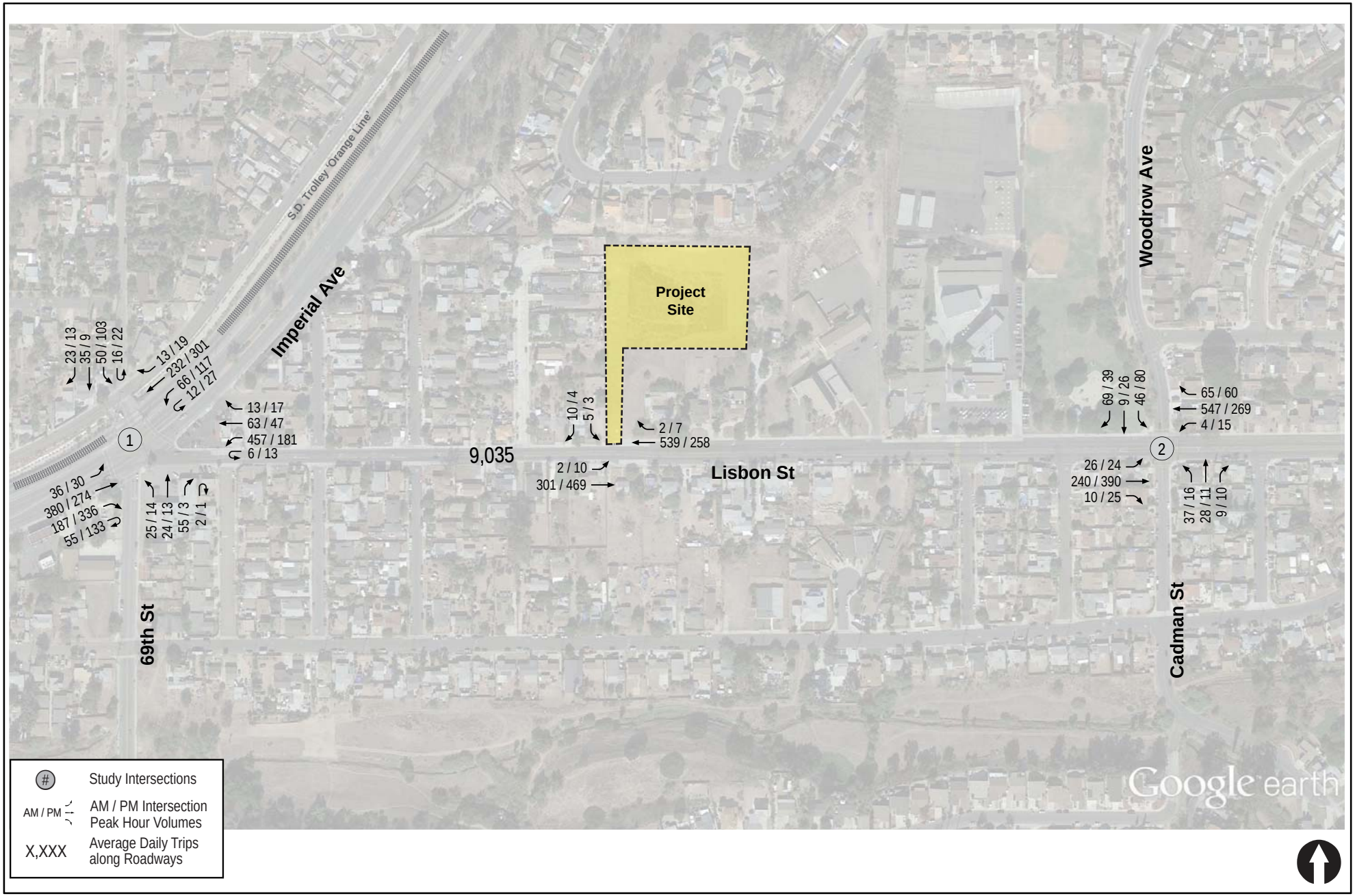

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Figure 10

Near-Term with Project Traffic Volumes

LISBON HEIGHTS

LINSCOTT LAW & GREENSPAN engineers

TECHNICAL APPENDICES

LISBON HEIGHTS

San Diego, California
10/23/2018

LLG Ref. 3-18-2985

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APPENDIX A

AM/PM EXISTING TRAFFIC COUNTS

LINSCOTT, LAW & GREENSPAN

4542 Ruffner Street #100, San Diego, California 92111

Start Date: 09-25-2018

Location: 69th Street , Imperial Avenue & Lisbon Street

File Name: 132-AM-1

	69th Street Southbound					Imperial Avenue Southwest bound					Lisbon Street Westbound					69th Street Northbound					Imperial Avenue Northeastbound					
Start Time	Left	Thru Left	Thru	Right	Ped	Left Sharp	Left	Thru	Right	Ped	Left Sharp	Thru Left	Thru	Right	Ped	Left	Thru	Right	Right Sharp	Ped	Left	Thru	Thru Right	Right Sharp	Ped	Interval Total
7:00	3	21	11	8	0	3	18	85	5	2	3	130	11	1	0	0	2	11	0	1	11	80	61	7	0	474
7:15	3	11	7	6	1	1	10	40	1	4	1	119	20	2	2	10	6	25	2	2	9	102	48	7	4	443
7:30	7	1	7	4	1	4	2	51	4	0	1	101	22	1	1	6	8	10	0	1	11	100	30	6	1	380
7:45	3	2	10	5	0	2	3	56	3	0	1	90	9	3	0	9	8	9	0	3	5	98	39	9	1	368
Total	16	35	35	23	2	10	33	232	13	6	6	440	62	7	3	25	24	55	2	7	36	380	178	29	6	1665
8:00	2	5	8	7	2	0	9	70	2	0	0	70	7	1	0	3	4	9	0	0	10	63	38	5	1	316
8:15	6	1	7	1	0	2	7	78	1	1	0	70	6	0	2	3	0	11	0	0	9	48	28	8	0	289
8:30	3	3	0	5	0	1	8	47	1	0	0	60	7	1	0	2	2	16	0	0	6	38	27	7	1	235
8:45	3	6	1	1	0	2	9	53	2	1	2	47	9	3	2	2	1	6	0	0	8	46	23	6	0	233
Total	14	15	16	14	2	5	33	248	6	2	2	247	29	5	4	10	7	42	0	0	33	195	116	26	2	1073
Grand Total	30	50	51	37	4	15	66	480	19	8	8	687	91	12	7	35	31	97	2	7	69	575	294	55	8	2738
Approach%	17.4	29.8	29.7	21.5	2.3	2.6	11.5	81.6	3.2	1.4	1.0	86.1	11.3	1.5	0.9	20.3	18.0	56.4	1.5	4.1	6.9	57.4	31.5	5.5	0.8	
Total%	1.1	1.8	1.9	1.4	0.1	0.5	2.4	17.5	0.7	0.3	0.3	25.1	3.3	0.4	0.3	1.3	1.1	3.5	0.1	0.3	2.5	21.0	10.7	2.0	0.3	

Peak hour analysis for the period 07:00 to 07:45

Volume	16	50	35	23	2	10	66	232	13	6	6	440	62	7	3	25	24	55	2	7	36	380	178	55	6	1,221
Approach%	12.7	40.3	27.8	18.3	1.6	3.1	20.8	70.9	4.0	1.8	1.2	85.4	12.0	1.4	0.6	22.1	21.2	48.7	2.3	6.2	5.5	58.0	28.8	8.4	0.9	
Total%	1.3	4.1	2.9	1.9	0.2	0.8	5.4	19.0	1.1	0.5	0.5	36.0	5.1	0.6	0.2	2.0	2.0	4.5	0.2	0.6	2.9	31.1	14.6	4.5	0.5	
PHF					0.65					0.65					0.89					0.63					0.93	

LINSCOTT, LAW & GREENSPAN

4542 Ruffner Street #100, San Diego, California 92111

Start Date: 09/25/2018

Location: 69th Street , Imperial Avenue & Lisbon Street

File Name: 132-PM-2

	69th Street Southbound					Imperial Avenue Southwest bound					Lisbon Street Westbound					69th Street Northbound					Imperial Avenue Northeastbound					
Start Time	Left	Thru	Right	Sharp Right	Ped	Sharp Left	Left	Thru	Right	Ped	Sharp Left	Thru Left	Thru Right	Right	Ped	Left	Thru	Right	Sharp Right	Ped	Left	Thru	Right	Sharp Right	Ped	Interval Total
16:00	4	8	2	2	0	6	6	69	3	0	1	38	13	2	1	5	2	0	0	0	10	76	83	13	2	346
16:15	9	14	1	4	0	6	14	73	8	0	3	53	11	3	1	2	4	0	0	0	7	72	76	12	0	373
16:30	6	20	3	3	0	6	7	73	3	1	2	34	13	5	0	3	4	1	0	0	3	50	67	13	3	320
16:45	3	19	3	4	0	2	24	86	5	0	2	39	9	4	3	4	3	2	0	0	10	73	89	21	5	410
Total	22	61	9	13	0	20	51	301	19	1	8	164	46	14	5	14	13	3	0	0	30	271	315	59	10	1449
17:00	5	13	1	3	0	3	8	74	3	1	1	36	11	1	1	10	3	0	0	0	5	60	67	15	1	322
17:15	4	9	4	6	0	5	18	86	6	0	1	50	12	3	0	2	1	0	0	0	7	71	85	27	0	397
17:30	7	5	2	1	0	5	18	82	2	0	3	54	9	5	0	0	2	1	0	0	10	72	83	15	4	380
17:45	5	13	6	3	0	9	22	62	6	1	0	36	6	2	0	7	5	0	0	0	6	72	83	17	2	363
Total	21	40	13	13	0	22	66	304	17	2	5	176	38	11	1	19	11	1	0	0	28	275	318	74	7	1462
Grand Total	43	101	22	26	0	42	117	605	36	3	13	340	84	25	6	33	24	4	0	0	58	546	633	133	17	2911
Approach%	22.4	52.6	11.5	13.5	-	5.2	15.4	75.3	4.5	0.4	2.8	73.6	17.9	5.3	1.3	54.1	39.3	6.6	-	-	4.2	39.4	47.6	9.6	1.2	
Total%	1.5	3.5	0.8	0.9	-	1.4	4.0	20.8	1.2	0.1	0.4	11.7	2.9	0.9	0.2	1.1	0.8	0.1	-	-	2.0	18.8	21.7	4.6	0.6	

Peak hour analysis for the period 16:00 to 16:45

Volume	22	101	9	13	-	20	117	301	19	1	13	164	46	14	5	14	13	3	-	-	30	271	315	133	10	1,392
Approach%	15.2	69.7	6.2	9.0	-	4.4	26.7	65.7	4.1	0.2	5.4	69.2	19.0	5.8	2.1	46.7	43.3	10.0	-	-	4.0	35.7	43.2	17.5	1.3	
Total%	1.6	7.3	0.6	0.9	-	1.4	8.4	21.6	1.4	0.1	0.9	11.8	3.3	1.0	0.4	1.0	0.9	0.2	-	-	2.2	19.5	22.6	9.6	0.7	
PHF					0.82					0.84					0.83					0.83					0.86	

Intersection Turning Movement - Peak Hour Vehicle Count

LINSCOTT LAW & GREENSPAN engineers

Location:	#02	File Name:	ITM-18-132-02
Intersection:	Woodrow Avenue & Cadman Street & Lisbon Street	Project:	LLG Ref. 3-18-2985
Date of Count:	Tuesday, September 25, 2018		Lemon Grove

AM	Woodrow Avenue Southbound			Lisbon Street Westbound			Cadman Street Northbound			69th Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
7:00	10	7	25	2	139	15	12	7	3	6	34	1	261
7:15	7	1	29	0	165	18	19	8	1	9	55	2	314
7:30	15	0	5	2	126	14	5	6	2	5	78	4	262
7:45	8	1	10	0	102	12	1	7	3	6	59	3	212
8:00	9	3	7	1	82	10	0	5	1	2	40	1	161
8:15	11	4	4	0	68	13	1	1	1	4	39	0	146
8:30	6	6	4	0	65	10	1	4	2	4	23	2	127
8:45	6	3	6	0	50	7	2	2	1	1	34	1	113
Total	72	25	90	5	797	99	41	40	14	37	362	14	1596
Approach%	38.5	13.4	48.1	0.6	88.5	11.0	43.2	42.1	14.7	9.0	87.7	3.4	
Total%	4.5	1.6	5.6	0.3	49.9	6.2	2.6	2.5	0.9	2.3	22.7	0.9	

AM Intersection Peak Hour: **07:00 to 08:00**

Volume	40	9	69	4	532	59	37	28	9	26	226	10	1,049
Approach%	33.9	7.6	58.5	0.7	89.4	9.9	50.0	37.8	12.2	9.9	86.3	3.8	
Total%	3.8	0.9	6.6	0.4	50.7	5.6	3.5	2.7	0.9	2.5	21.5	1.0	
PHF			0.70			0.81			0.66			0.75	0.84

PM	Woodrow Avenue Southbound			Lisbon Street Westbound			Cadman Street Northbound			69th Street Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
16:00	15	2	6	1	50	14	0	2	0	9	70	5	174
16:15	17	2	5	2	59	14	6	6	3	8	85	5	212
16:30	17	4	9	0	54	13	1	2	4	6	87	6	203
16:45	12	6	6	2	65	11	7	4	2	6	90	9	220
17:00	15	6	7	2	51	14	4	1	1	5	86	0	192
17:15	21	6	11	6	73	13	3	2	4	7	98	9	253
17:30	21	8	14	5	58	11	2	4	3	6	93	7	232
17:45	14	5	7	2	71	5	3	3	4	7	78	4	203
Total	132	39	65	20	481	95	26	24	21	54	687	45	1689
Approach%	55.9	16.5	27.5	3.4	80.7	15.9	36.6	33.8	29.6	6.9	87.4	5.7	
Total%	7.8	2.3	3.8	1.2	28.5	5.6	1.5	1.4	1.2	3.2	40.7	2.7	

PM Intersection Peak Hour: **16:45 to 17:45**

Volume	69	26	38	15	247	49	16	11	10	24	367	25	897
Approach%	51.9	19.5	28.6	4.8	79.4	15.8	43.2	29.7	27.0	5.8	88.2	6.0	
Total%	7.7	2.9	4.2	1.7	27.5	5.5	1.8	1.2	1.1	2.7	40.9	2.8	
PHF			0.77			0.85			0.71			0.91	0.89

Intersection Turning Movement - Bicycle & Pedestrian Count

LINSCOTT LAW & GREENSPAN engineers

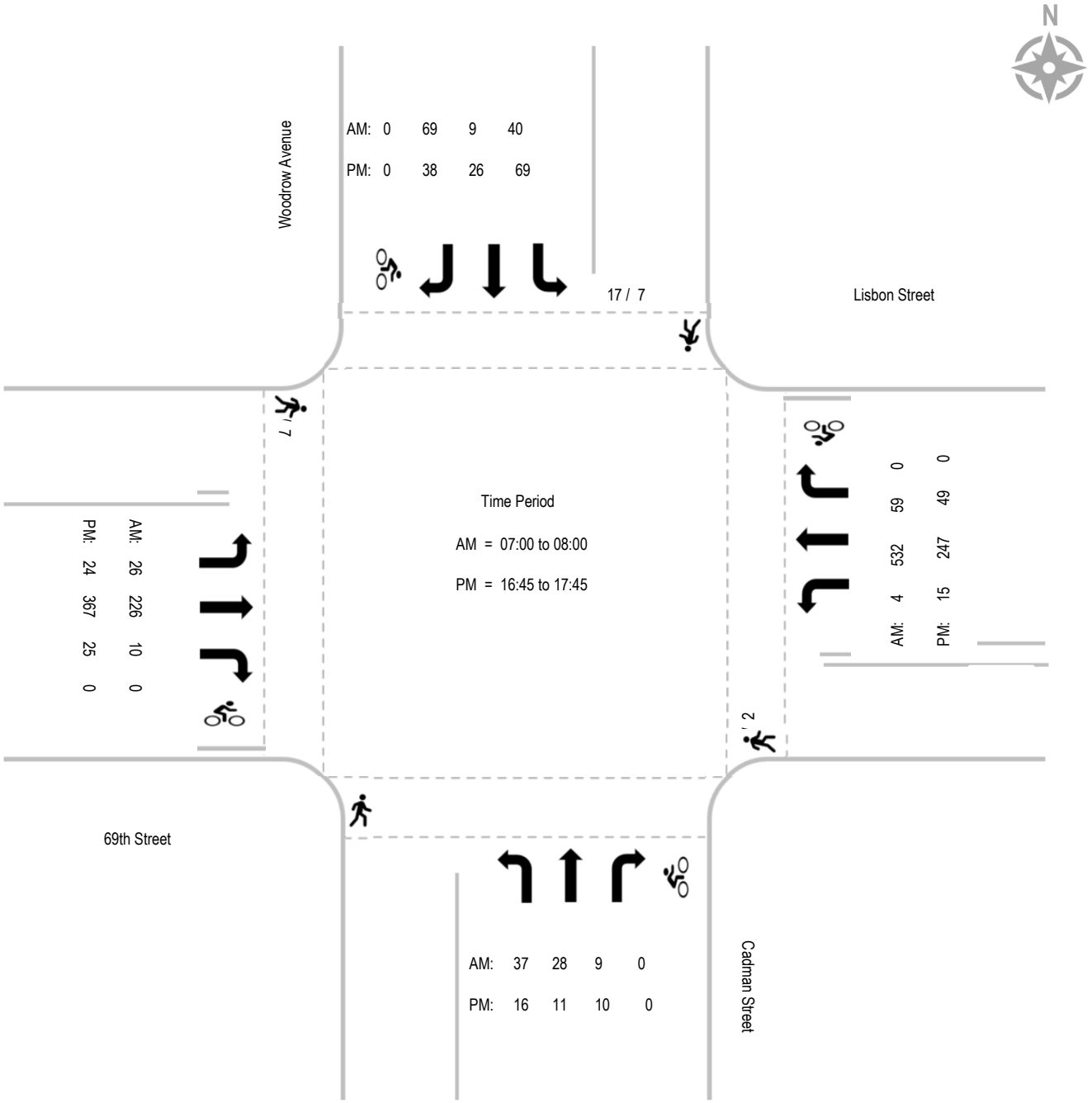
Location:	#02	File Name:	ITM-18-132-02
Intersection:	Woodrow Avenue & Cadman Street & Lisbon	Project:	LLG Ref. 3-18-2985
Date of Count:	Street Tuesday, September 25, 2018		Lemon Grove

AM	Woodrow Avenue Southbound				Lisbon Street Westbound				Cadman Street Northbound				69th Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
7:00	6	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	10	0
7:15	8	0	0	0	4	0	0	0	5	0	0	0	6	0	0	0	23	0
7:30	2	0	0	0	0	0	0	0	2	0	0	0	3	0	0	0	7	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Total	17				4				10				13				44	
Bike Total		0	0	0		0	0	0		0	0	0		0	0	0		0

PM	Woodrow Avenue Southbound				Lisbon Street Westbound				Cadman Street Northbound				69th Street Eastbound				Totals	
	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	B-Left	B-Thru	B-Right	Ped	Bicycle
16:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	1	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	5	0
16:45	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0
17:00	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2	0
17:15	1	0	0	0	0	0	0	0	2	0	0	0	3	0	0	0	6	0
17:30	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	4	0
17:45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Ped Total	7				2				5				7				21	
Bike Total		0	0	0		0	0	0		0	0	0		0	0	0		0

Intersection Turning Movement - Peak Hour Summary

LINSCOTT LAW & GREENSPAN engineers	Location:	#02	File Name: ITM-18-132-02
	Intersection:	Woodrow Avenue & Cadman Street & Lisbon	Project: LLG Ref. 3-18-2985
	Date of Count:	Street Tuesday, September 25, 2018	Lemon Grove



Linscott, Law & Greenspan, Engineers

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

Average Daily Traffic

Location: **A. Lisbon Street, between Imperial Avenue & Woodrow Avenue**

Date: **Wednesday, September 26, 2018** Total Daily Volume: **8738** Description: **Total 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
48	44	48	44	72	207	512	925	451	320	326	390	606	418	515	631	604	624	569	503	310	273	194	104
14	9	14	9	8	42	78	250	129	107	70	73	232	112	119	146	176	171	156	131	97	78	50	30
16	12	12	11	16	45	109	291	115	77	95	103	153	105	132	167	135	159	155	134	84	69	41	33
10	10	7	17	20	45	136	201	113	62	92	97	107	100	115	160	151	150	141	130	70	68	49	27
8	13	15	7	28	75	189	183	94	74	69	117	114	101	149	158	142	144	117	108	59	58	54	14

Date: **Wednesday, September 26, 2018** Total Daily Volume: **4038** Description: **Eastbound 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
21	19	24	15	13	43	120	269	151	150	140	224	248	222	279	330	341	364	300	261	172	163	100	69
6	3	11	4	3	9	18	80	43	51	29	41	81	52	63	80	96	92	81	68	50	51	29	19
7	5	5	3	1	9	18	75	33	40	47	57	68	51	61	84	61	87	80	74	44	47	25	21
5	4	5	5	3	7	34	53	38	27	33	52	42	59	62	85	88	90	82	71	49	42	23	19
3	7	3	3	6	18	50	61	37	32	31	74	57	60	93	81	96	95	57	48	29	23	23	10

Date: **Wednesday, September 26, 2018** Total Daily Volume: **4700** Description: **Westbound 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
27	25	24	29	59	164	392	656	300	170	186	166	358	196	236	301	263	260	269	242	138	110	94	35
8	6	3	5	5	33	60	170	86	56	41	32	151	60	56	66	80	79	75	63	47	27	21	11
9	7	7	8	15	36	91	216	82	37	48	46	85	54	71	83	74	72	75	60	40	22	16	12
5	6	2	12	17	38	102	148	75	35	59	45	65	41	53	75	63	60	59	59	21	26	26	8
5	6	12	4	22	57	139	122	57	42	38	43	57	41	56	77	46	49	60	60	30	35	31	4

APPENDIX B

CITY OF SAN DIEGO ROADWAY CAPACITY TABLE

TABLE 2
Roadway Classifications, Levels of Service (LOS)
and Average Daily Traffic (ADT)

			LEVEL OF SERVICE				
STREET CLASSIFICATION	LANES	CROSS SECTIONS	A	B	C	D	E
Freeway	8 lanes		60,000	84,000	120,000	140,000	150,000
Freeway	6 lanes		45,000	63,000	90,000	110,000	120,000
Freeway	4 lanes		30,000	42,000	60,000	70,000	80,000
Expressway	6 lanes	102/122	30,000	42,000	60,000	70,000	80,000
Primary Arterial	6 lanes	102/122	25,000	35,000	50,000	55,000	60,000
Major Arterial	6 lanes	102/122	20,000	28,000	40,000	45,000	50,000
Major Arterial	4 lanes	78/98	15,000	21,000	30,000	35,000	40,000
Collector	4 lanes	72/92	10,000	14,000	20,000	25,000	30,000
Collector (no center lane) continuous left-turn lane)	4 lanes 2 lanes	64/84 50/70	5,000	7,000	10,000	13,000	15,000
Collector (no fronting property)	2 lanes	40/60	4,000	5,500	7,500	9,000	10,000
Collector (commercial-industrial fronting)	2 lanes	50/70	2,500	3,500	5,000	6,500	8,000
Collector (multifamily)	2 lanes	40/60	2,500	3,500	5,000	6,500	8,000
Sub-Collector (single-family)	2 lanes	36/56	—	—	2,200	—	—

LEGEND:

XXX/XXX = Curb to curb width (feet)/right-of-way width (feet): based on the City of San Diego Street Design. Manual

XX/XXX= Approximate recommended ADT based on the City of San Diego Street Design Manual.

NOTES:

1. The volumes and the average daily level of service listed above are only intended as a general planning guideline.

2. Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

APPENDIX C

CUMULATIVE PROJECTS SUMMARY

The following are brief descriptions of each cumulative project:

1. Marijuana Outlet (909 Cardiff Street)

The marijuana outlet proposes to enter into an existing 3,522 square foot building. The project is calculated to generate approximately 881 net ADT with 39 inbound and 40 outbound net trips in the AM peak hour, and 70 inbound and 71 outbound net trips in the PM peak hour.

2. Cardosa Tentative Map (744 Beacon Drive)

The Cardosa Tentative Map proposes to develop 4 new single-family homes on an existing parcel of land. The project is calculated to generate approximately 40 net ADT with 1 inbound and 2 outbound net trips in the AM peak hour and 3 inbound and 1 outbound net trips in the PM peak hour.

3. Encanto Boys & Girls Club (6785 Imperial Avenue)

The Encanto Boys & Girls Club proposes to expand an existing 15,450 square foot charter school into a vacant 5,165 square foot child care facility. The project is calculated to generate approximately 150 net ADT with 6 inbound and 3 outbound net trips in the AM peak hour and 6 inbound and 6 outbound net trips during the PM peak hour.

4. Market Street Church (5863-5869 Market Street)

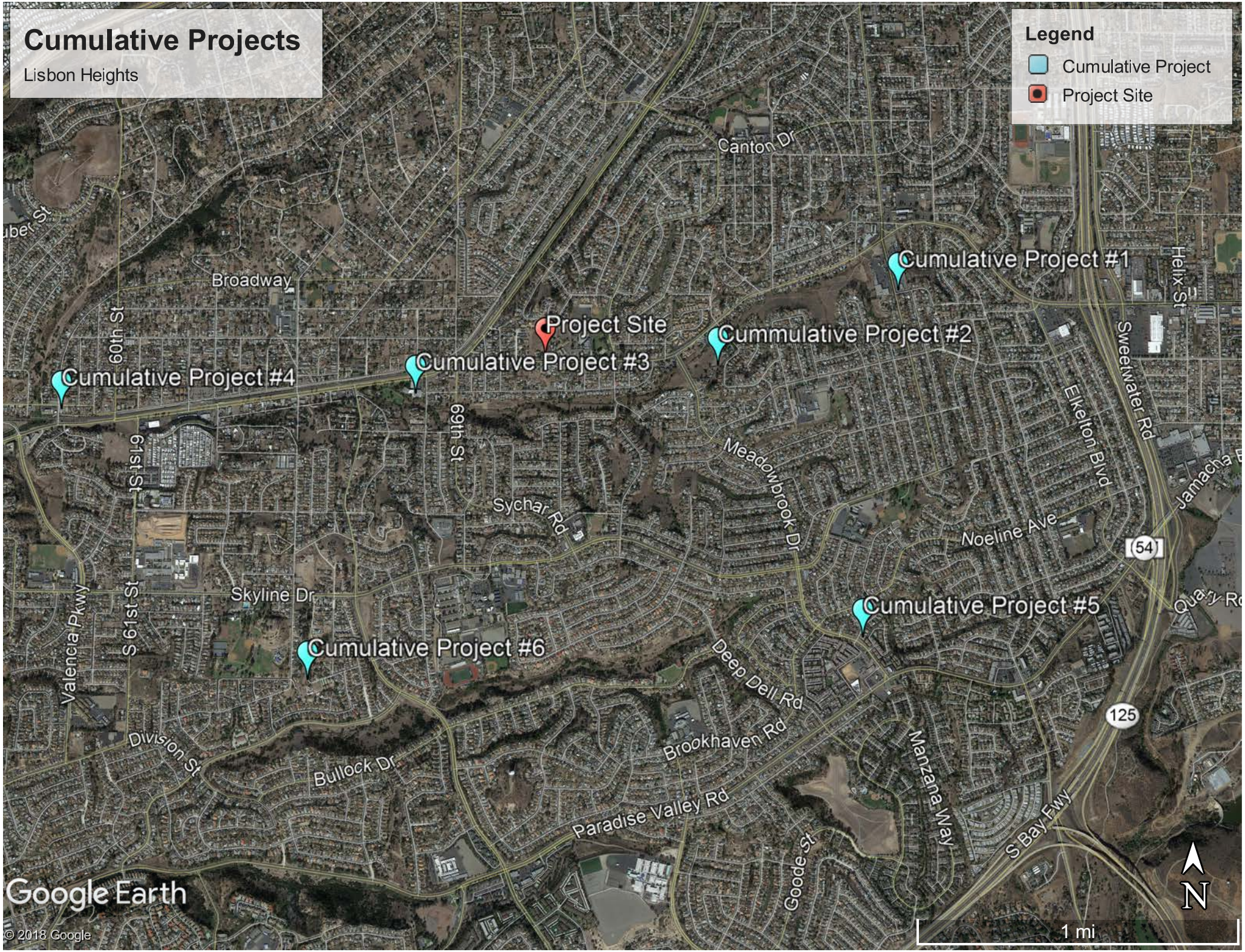
The Market Street Church proposes to construct a 3,456 square foot church within the existing building. The project is calculated to generate approximately 31 net ADT with 1 inbound and 0 outbound net trips in the AM peak hour and 1 inbound and 1 outbound net trips in the PM hour.

5. Skyline Hills (393 Royal Oak Drive)

The Skyline Hills Project proposes to construct 66 condos on vacant 5.2 acre site. The project is calculated to generate approximately 396 net ADT with 6 inbound and 26 outbound net trips in the AM peak hour and 25 inbound and 11 outbound net trips during the PM peak hour.

6. Pepper View Canyon (704 S 66th Street)

The Pepper View Canyon Project proposes to construct 10 new 2,750 square foot single-family homes on an existing parcel. The project is calculated to generate approximately 100 net ADT with 2 inbound and 6 outbound net trips in the AM peak hour and 7 inbound and 3 outbound net trips during the PM peak hour.


Cumulative Projects
Lisbon Heights
Legend
Cumulative Project
Project Site
Cumulative Project #1
Cummulative Project #2
Project Site
Cumulative Project #3
Cumulative Project #4
Cumulative Project #5
Cumulative Project #6
Canton Dr
Broadway
60th St
61st St
69th St
Sychar Rd
Meadowbrook Dr
Elkelton Blvd
Sweetwater Rd
Helix St
Noeline Ave
54
Skyline Dr
Valencia Pkwy
S 61st St
Division St
Bullock Dr
Deep Dell Rd
Brookhaven Rd
Paradise Valley Rd
Manzana Way
Goode St
S Bay Fwy
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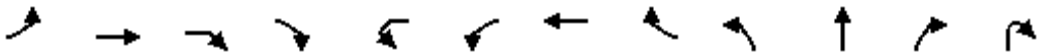
APPENDIX D

INTERSECTION CALCULATIONS SHEETS



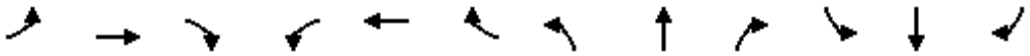
Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	36	380	178	55	10	66	232	13	25	24	55	2
Future Volume (vph)	36	380	178	55	10	66	232	13	25	24	55	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0			5.0	5.0		5.0	5.0		
Lane Util. Factor	1.00	0.95	1.00			1.00	0.95		1.00	1.00		
Frt	1.00	1.00	0.85			1.00	0.99		1.00	0.89		
Flt Protected	0.95	1.00	1.00			0.95	1.00		0.95	1.00		
Satd. Flow (prot)	1770	3539	1583			1770	3511		1770	1665		
Flt Permitted	0.95	1.00	1.00			0.95	1.00		0.95	1.00		
Satd. Flow (perm)	1770	3539	1583			1770	3511		1770	1665		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	41	432	202	62	11	75	264	15	28	27	62	2
RTOR Reduction (vph)	0	0	191	0	0	0	4	0	0	1	0	0
Lane Group Flow (vph)	41	432	74	0	0	86	275	0	28	91	0	0
Turn Type	Prot	NA	Perm		Prot	Prot	NA		Split	NA		
Protected Phases	5	2			1	1	6		8	8		
Permitted Phases			2									
Actuated Green, G (s)	3.2	15.9	15.9			10.1	22.8		8.2	8.2		
Effective Green, g (s)	3.2	15.9	15.9			10.1	22.8		8.2	8.2		
Actuated g/C Ratio	0.04	0.20	0.20			0.13	0.29		0.10	0.10		
Clearance Time (s)	5.0	5.0	5.0			5.0	5.0		5.0	5.0		
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)	72	720	322			228	1024		185	174		
v/s Ratio Prot	0.02	c0.12				c0.05	0.08		0.02	c0.05		
v/s Ratio Perm			0.05									
v/c Ratio	0.57	0.60	0.23			0.38	0.27		0.15	0.52		
Uniform Delay, d1	36.8	28.2	26.0			31.1	21.2		31.8	33.1		
Progression Factor	1.00	1.00	1.00			1.00	1.00		1.00	1.00		
Incremental Delay, d2	9.9	1.4	0.4			1.0	0.1		0.4	2.8		
Delay (s)	46.7	29.6	26.3			32.2	21.4		32.2	35.9		
Level of Service	D	C	C			C	C		C	D		
Approach Delay (s)		29.4					23.9			35.1		
Approach LOS		C					C			D		

Intersection Summary			
HCM 2000 Control Delay	36.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	78.1	Sum of lost time (s)	25.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL2	SBL	SBT	SBR	NWL2	NWL	NWR	NWR2
Lane Configurations								
Traffic Volume (vph)	16	50	35	23	6	440	62	7
Future Volume (vph)	16	50	35	23	6	440	62	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0			5.0		
Lane Util. Factor			1.00			0.97		
Frt			0.98			0.98		
Flt Protected			0.97			0.96		
Satd. Flow (prot)			1769			3394		
Flt Permitted			0.97			0.96		
Satd. Flow (perm)			1769			3394		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	18	57	40	26	7	500	70	8
RTOR Reduction (vph)	0	0	9	0	0	210	0	0
Lane Group Flow (vph)	0	0	132	0	0	375	0	0
Turn Type	Split	Split	NA		Prot	Prot		
Protected Phases	4	4	4		9	9		
Permitted Phases								
Actuated Green, G (s)			9.1			9.8		
Effective Green, g (s)			9.1			9.8		
Actuated g/C Ratio			0.12			0.13		
Clearance Time (s)			5.0			5.0		
Vehicle Extension (s)			3.0			3.0		
Lane Grp Cap (vph)			206			425		
v/s Ratio Prot			c0.07			c0.11		
v/s Ratio Perm								
v/c Ratio			0.64			0.88		
Uniform Delay, d1			32.9			33.6		
Progression Factor			1.00			1.00		
Incremental Delay, d2			6.7			18.9		
Delay (s)			39.6			52.5		
Level of Service			D			D		
Approach Delay (s)			39.6			52.5		
Approach LOS			D			D		

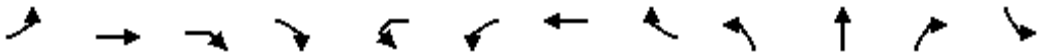
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	226	10	4	532	59	37	28	9	40	9	69
Future Volume (vph)	26	226	10	4	532	59	37	28	9	40	9	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5			4.5			4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95			1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.99			0.98			0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1770	1863	1583	1770	3486			1787			1688	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.82			0.87	
Satd. Flow (perm)	1770	1863	1583	1770	3486			1508			1489	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	31	269	12	5	633	70	44	33	11	48	11	82
RTOR Reduction (vph)	0	0	5	0	10	0	0	9	0	0	69	0
Lane Group Flow (vph)	31	269	7	5	693	0	0	79	0	0	72	0
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	0.8	26.8	26.8	0.8	26.8			7.7			7.7	
Effective Green, g (s)	0.8	26.8	26.8	0.8	26.8			7.7			7.7	
Actuated g/C Ratio	0.02	0.55	0.55	0.02	0.55			0.16			0.16	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	29	1023	869	29	1914			237			234	
v/s Ratio Prot	c0.02	0.14		0.00	c0.20							
v/s Ratio Perm			0.00					c0.05			0.05	
v/c Ratio	1.07	0.26	0.01	0.17	0.36			0.33			0.31	
Uniform Delay, d1	24.0	5.8	5.0	23.7	6.2			18.3			18.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Incremental Delay, d2	189.0	0.6	0.0	2.8	0.5			0.8			0.7	
Delay (s)	213.0	6.4	5.0	26.5	6.7			19.1			18.9	
Level of Service	F	A	A	C	A			B			B	
Approach Delay (s)		26.9			6.9			19.1			18.9	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	48.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



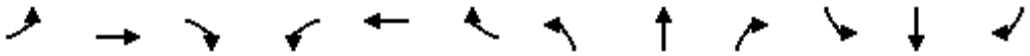
Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL	NBT	NBR	SBL2
Lane Configurations												
Traffic Volume (vph)	30	271	315	133	20	117	301	19	14	13	3	22
Future Volume (vph)	30	271	315	133	20	117	301	19	14	13	3	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0			5.0	5.0		5.0	5.0		
Lane Util. Factor	1.00	0.95	1.00			1.00	0.95		1.00	1.00		
Frt	1.00	1.00	0.85			1.00	0.99		1.00	0.97		
Flt Protected	0.95	1.00	1.00			0.95	1.00		0.95	1.00		
Satd. Flow (prot)	1770	3539	1583			1770	3507		1770	1813		
Flt Permitted	0.95	1.00	1.00			0.95	1.00		0.95	1.00		
Satd. Flow (perm)	1770	3539	1583			1770	3507		1770	1813		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	295	342	145	22	127	327	21	15	14	3	24
RTOR Reduction (vph)	0	0	178	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	33	295	309	0	0	149	348	0	15	17	0	0
Turn Type	Prot	NA	Perm		Prot	Prot	NA		Split	NA		Split
Protected Phases	5	2			1	1	6		8	8		4
Permitted Phases			2									
Actuated Green, G (s)	2.0	20.3	20.3			11.7	30.0		5.1	5.1		
Effective Green, g (s)	2.0	20.3	20.3			11.7	30.0		5.1	5.1		
Actuated g/C Ratio	0.03	0.26	0.26			0.15	0.38		0.06	0.06		
Clearance Time (s)	5.0	5.0	5.0			5.0	5.0		5.0	5.0		
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)	44	907	405			261	1328		113	116		
v/s Ratio Prot	0.02	0.08				c0.08	0.10		0.01	c0.01		
v/s Ratio Perm			c0.19									
v/c Ratio	0.75	0.33	0.76			0.57	0.26		0.13	0.15		
Uniform Delay, d1	38.4	23.9	27.2			31.4	17.0		35.0	35.0		
Progression Factor	1.00	1.00	1.00			1.00	1.00		1.00	1.00		
Incremental Delay, d2	51.4	0.2	8.2			3.0	0.1		0.5	0.6		
Delay (s)	89.7	24.1	35.5			34.4	17.1		35.5	35.6		
Level of Service	F	C	D			C	B		D	D		
Approach Delay (s)		33.5					22.3			35.5		
Approach LOS		C					C			D		

Intersection Summary			
HCM 2000 Control Delay	30.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	79.2	Sum of lost time (s)	25.0
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL	SBT	SBR	NWL2	NWL	NWR	NWR2
Lane Configurations							
Traffic Volume (vph)	101	9	13	13	164	46	14
Future Volume (vph)	101	9	13	13	164	46	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		
Lane Util. Factor		1.00			0.97		
Frt		0.99			0.96		
Flt Protected		0.96			0.96		
Satd. Flow (prot)		1766			3351		
Flt Permitted		0.96			0.96		
Satd. Flow (perm)		1766			3351		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	10	14	14	178	50	15
RTOR Reduction (vph)	0	3	0	0	224	0	0
Lane Group Flow (vph)	0	155	0	0	33	0	0
Turn Type	Split	NA		Prot	Prot		
Protected Phases	4	4		9	9		
Permitted Phases							
Actuated Green, G (s)		11.9			5.2		
Effective Green, g (s)		11.9			5.2		
Actuated g/C Ratio		0.15			0.07		
Clearance Time (s)		5.0			5.0		
Vehicle Extension (s)		3.0			3.0		
Lane Grp Cap (vph)		265			220		
v/s Ratio Prot		c0.09			c0.01		
v/s Ratio Perm							
v/c Ratio		0.58			0.15		
Uniform Delay, d1		31.3			34.9		
Progression Factor		1.00			1.00		
Incremental Delay, d2		3.3			0.3		
Delay (s)		34.6			35.2		
Level of Service		C			D		
Approach Delay (s)		34.6			35.2		
Approach LOS		C			D		

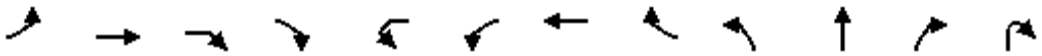
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	367	25	15	247	49	16	11	10	69	26	38
Future Volume (vph)	24	367	25	15	247	49	16	11	10	69	26	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5			4.5			4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95			1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.98			0.96			0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1770	1863	1583	1770	3452			1757			1745	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.88			0.81	
Satd. Flow (perm)	1770	1863	1583	1770	3452			1574			1459	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	27	412	28	17	278	55	18	12	11	78	29	43
RTOR Reduction (vph)	0	0	12	0	20	0	0	9	0	0	28	0
Lane Group Flow (vph)	27	412	16	17	313	0	0	32	0	0	122	0
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	0.8	28.6	28.6	0.8	28.6			8.6			8.6	
Effective Green, g (s)	0.8	28.6	28.6	0.8	28.6			8.6			8.6	
Actuated g/C Ratio	0.02	0.56	0.56	0.02	0.56			0.17			0.17	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	27	1034	879	27	1917			262			243	
v/s Ratio Prot	c0.02	c0.22		0.01	0.09							
v/s Ratio Perm			0.01					0.02			c0.08	
v/c Ratio	1.00	0.40	0.02	0.63	0.16			0.12			0.50	
Uniform Delay, d1	25.4	6.5	5.1	25.2	5.6			18.2			19.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Incremental Delay, d2	173.2	1.1	0.0	38.0	0.2			0.2			1.6	
Delay (s)	198.6	7.7	5.2	63.2	5.8			18.4			21.1	
Level of Service	F	A	A	E	A			B			C	
Approach Delay (s)		18.6			8.6			18.4			21.1	
Approach LOS		B			A			B			C	

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	51.5	Sum of lost time (s)	13.5
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



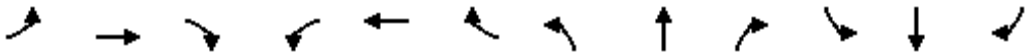
Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	36	380	186	55	11	66	232	13	25	24	55	2
Future Volume (vph)	36	380	186	55	11	66	232	13	25	24	55	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0			5.0	5.0		5.0	5.0		
Lane Util. Factor	1.00	0.95	1.00			1.00	0.95		1.00	1.00		
Frt	1.00	1.00	0.85			1.00	0.99		1.00	0.89		
Flt Protected	0.95	1.00	1.00			0.95	1.00		0.95	1.00		
Satd. Flow (prot)	1770	3539	1583			1770	3511		1770	1665		
Flt Permitted	0.95	1.00	1.00			0.95	1.00		0.95	1.00		
Satd. Flow (perm)	1770	3539	1583			1770	3511		1770	1665		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	41	432	211	62	12	75	264	15	28	27	62	2
RTOR Reduction (vph)	0	0	191	0	0	0	4	0	0	1	0	0
Lane Group Flow (vph)	41	432	83	0	0	88	275	0	28	91	0	0
Turn Type	Prot	NA	Perm		Prot	Prot	NA		Split	NA		
Protected Phases	5	2			1	1	6		8	8		
Permitted Phases			2									
Actuated Green, G (s)	3.2	15.9	15.9			10.1	22.8		8.2	8.2		
Effective Green, g (s)	3.2	15.9	15.9			10.1	22.8		8.2	8.2		
Actuated g/C Ratio	0.04	0.20	0.20			0.13	0.29		0.10	0.10		
Clearance Time (s)	5.0	5.0	5.0			5.0	5.0		5.0	5.0		
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)	72	720	322			228	1024		185	174		
v/s Ratio Prot	0.02	c0.12				c0.05	0.08		0.02	c0.05		
v/s Ratio Perm			0.05									
v/c Ratio	0.57	0.60	0.26			0.39	0.27		0.15	0.52		
Uniform Delay, d1	36.8	28.2	26.1			31.2	21.2		31.8	33.1		
Progression Factor	1.00	1.00	1.00			1.00	1.00		1.00	1.00		
Incremental Delay, d2	9.9	1.4	0.4			1.1	0.1		0.4	2.8		
Delay (s)	46.7	29.6	26.6			32.2	21.4		32.2	35.9		
Level of Service	D	C	C			C	C		C	D		
Approach Delay (s)		29.4					24.0			35.1		
Approach LOS		C					C			D		

Intersection Summary			
HCM 2000 Control Delay	38.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	78.1	Sum of lost time (s)	25.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL2	SBL	SBT	SBR	NWL2	NWL	NWR	NWR2
Lane Configurations								
Traffic Volume (vph)	16	50	35	23	6	452	62	9
Future Volume (vph)	16	50	35	23	6	452	62	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0			5.0		
Lane Util. Factor			1.00			0.97		
Frt			0.98			0.98		
Flt Protected			0.97			0.96		
Satd. Flow (prot)			1769			3394		
Flt Permitted			0.97			0.96		
Satd. Flow (perm)			1769			3394		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	18	57	40	26	7	514	70	10
RTOR Reduction (vph)	0	0	9	0	0	210	0	0
Lane Group Flow (vph)	0	0	132	0	0	391	0	0
Turn Type	Split	Split	NA		Prot	Prot		
Protected Phases	4	4	4		9	9		
Permitted Phases								
Actuated Green, G (s)			9.1			9.8		
Effective Green, g (s)			9.1			9.8		
Actuated g/C Ratio			0.12			0.13		
Clearance Time (s)			5.0			5.0		
Vehicle Extension (s)			3.0			3.0		
Lane Grp Cap (vph)			206			425		
v/s Ratio Prot			c0.07			c0.12		
v/s Ratio Perm								
v/c Ratio			0.64			0.92		
Uniform Delay, d1			32.9			33.8		
Progression Factor			1.00			1.00		
Incremental Delay, d2			6.7			25.1		
Delay (s)			39.6			58.9		
Level of Service			D			E		
Approach Delay (s)			39.6			58.9		
Approach LOS			D			E		

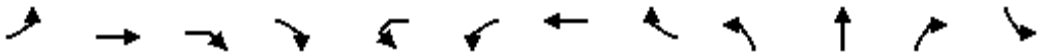
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	235	10	4	546	65	37	28	9	46	9	69
Future Volume (vph)	26	235	10	4	546	65	37	28	9	46	9	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5			4.5			4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95			1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.98			0.98			0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1770	1863	1583	1770	3483			1787			1692	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.81			0.86	
Satd. Flow (perm)	1770	1863	1583	1770	3483			1492			1477	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	31	280	12	5	650	77	44	33	11	55	11	82
RTOR Reduction (vph)	0	0	5	0	11	0	0	9	0	0	69	0
Lane Group Flow (vph)	31	280	7	5	716	0	0	79	0	0	79	0
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	0.8	26.7	26.7	0.8	26.7			7.8			7.8	
Effective Green, g (s)	0.8	26.7	26.7	0.8	26.7			7.8			7.8	
Actuated g/C Ratio	0.02	0.55	0.55	0.02	0.55			0.16			0.16	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	29	1019	866	29	1905			238			236	
v/s Ratio Prot	c0.02	0.15		0.00	c0.21							
v/s Ratio Perm			0.00					0.05			c0.05	
v/c Ratio	1.07	0.27	0.01	0.17	0.38			0.33			0.34	
Uniform Delay, d1	24.0	5.9	5.0	23.7	6.3			18.2			18.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Incremental Delay, d2	189.0	0.7	0.0	2.8	0.6			0.8			0.8	
Delay (s)	213.0	6.6	5.0	26.5	6.9			19.0			19.0	
Level of Service	F	A	A	C	A			B			B	
Approach Delay (s)		26.3			7.0			19.0			19.0	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	48.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



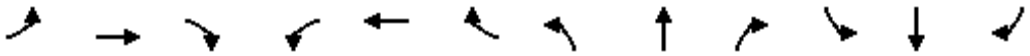
Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL	NBT	NBR	SBL2
Lane Configurations												
Traffic Volume (vph)	30	274	332	133	23	117	301	19	14	13	3	22
Future Volume (vph)	30	274	332	133	23	117	301	19	14	13	3	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0			5.0	5.0		5.0	5.0		
Lane Util. Factor	1.00	0.95	1.00			1.00	0.95		1.00	1.00		
Frt	1.00	1.00	0.85			1.00	0.99		1.00	0.97		
Flt Protected	0.95	1.00	1.00			0.95	1.00		0.95	1.00		
Satd. Flow (prot)	1770	3539	1583			1770	3507		1770	1813		
Flt Permitted	0.95	1.00	1.00			0.95	1.00		0.95	1.00		
Satd. Flow (perm)	1770	3539	1583			1770	3507		1770	1813		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	298	361	145	25	127	327	21	15	14	3	24
RTOR Reduction (vph)	0	0	178	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	33	298	328	0	0	152	348	0	15	17	0	0
Turn Type	Prot	NA	Perm		Prot	Prot	NA		Split	NA		Split
Protected Phases	5	2			1	1	6		8	8		4
Permitted Phases			2									
Actuated Green, G (s)	2.0	20.4	20.4			11.8	30.2		5.1	5.1		
Effective Green, g (s)	2.0	20.4	20.4			11.8	30.2		5.1	5.1		
Actuated g/C Ratio	0.03	0.26	0.26			0.15	0.38		0.06	0.06		
Clearance Time (s)	5.0	5.0	5.0			5.0	5.0		5.0	5.0		
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)	44	909	406			263	1333		113	116		
v/s Ratio Prot	0.02	0.08				c0.09	0.10		0.01	c0.01		
v/s Ratio Perm			c0.21									
v/c Ratio	0.75	0.33	0.81			0.58	0.26		0.13	0.15		
Uniform Delay, d1	38.5	23.9	27.7			31.5	16.9		35.1	35.1		
Progression Factor	1.00	1.00	1.00			1.00	1.00		1.00	1.00		
Incremental Delay, d2	51.4	0.2	11.2			3.1	0.1		0.5	0.6		
Delay (s)	89.8	24.1	38.8			34.5	17.0		35.6	35.7		
Level of Service	F	C	D			C	B		D	D		
Approach Delay (s)		35.6					22.4			35.6		
Approach LOS		D					C			D		

Intersection Summary			
HCM 2000 Control Delay	31.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	79.4	Sum of lost time (s)	25.0
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL	SBT	SBR	NWL2	NWL	NWR	NWR2
Lane Configurations							
Traffic Volume (vph)	102	9	13	13	179	47	15
Future Volume (vph)	102	9	13	13	179	47	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		
Lane Util. Factor		1.00			0.97		
Frt		0.99			0.96		
Flt Protected		0.96			0.96		
Satd. Flow (prot)		1766			3355		
Flt Permitted		0.96			0.96		
Satd. Flow (perm)		1766			3355		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	10	14	14	195	51	16
RTOR Reduction (vph)	0	3	0	0	224	0	0
Lane Group Flow (vph)	0	156	0	0	52	0	0
Turn Type	Split	NA		Prot	Prot		
Protected Phases	4	4		9	9		
Permitted Phases							
Actuated Green, G (s)		11.9			5.2		
Effective Green, g (s)		11.9			5.2		
Actuated g/C Ratio		0.15			0.07		
Clearance Time (s)		5.0			5.0		
Vehicle Extension (s)		3.0			3.0		
Lane Grp Cap (vph)		264			219		
v/s Ratio Prot		c0.09			c0.02		
v/s Ratio Perm							
v/c Ratio		0.59			0.24		
Uniform Delay, d1		31.5			35.2		
Progression Factor		1.00			1.00		
Incremental Delay, d2		3.3			0.6		
Delay (s)		34.8			35.8		
Level of Service		C			D		
Approach Delay (s)		34.8			35.8		
Approach LOS		C			D		

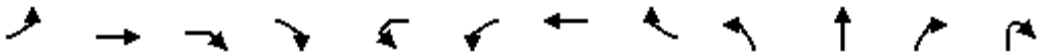
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	387	25	15	263	60	16	11	10	80	26	38
Future Volume (vph)	24	387	25	15	263	60	16	11	10	80	26	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5			4.5			4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95			1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.97			0.96			0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1770	1863	1583	1770	3441			1757			1747	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.88			0.80	
Satd. Flow (perm)	1770	1863	1583	1770	3441			1571			1445	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	27	435	28	17	296	67	18	12	11	90	29	43
RTOR Reduction (vph)	0	0	13	0	24	0	0	9	0	0	26	0
Lane Group Flow (vph)	27	435	15	17	339	0	0	32	0	0	136	0
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	0.8	28.3	28.3	0.8	28.3			9.0			9.0	
Effective Green, g (s)	0.8	28.3	28.3	0.8	28.3			9.0			9.0	
Actuated g/C Ratio	0.02	0.55	0.55	0.02	0.55			0.17			0.17	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	27	1021	868	27	1887			274			252	
v/s Ratio Prot	c0.02	c0.23		0.01	0.10							
v/s Ratio Perm			0.01					0.02			c0.09	
v/c Ratio	1.00	0.43	0.02	0.63	0.18			0.12			0.54	
Uniform Delay, d1	25.4	6.9	5.3	25.3	5.8			17.9			19.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Incremental Delay, d2	173.2	1.3	0.0	38.0	0.2			0.2			2.4	
Delay (s)	198.6	8.2	5.3	63.3	6.0			18.1			21.8	
Level of Service	F	A	A	E	A			B			C	
Approach Delay (s)		18.5			8.6			18.1			21.8	
Approach LOS		B			A			B			C	

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	51.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



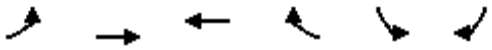
Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	36	380	187	55	11	66	232	13	25	24	55	2
Future Volume (vph)	36	380	187	55	11	66	232	13	25	24	55	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0			5.0	5.0		5.0	5.0		
Lane Util. Factor	1.00	0.95	1.00			1.00	0.95		1.00	1.00		
Frt	1.00	1.00	0.85			1.00	0.99		1.00	0.89		
Flt Protected	0.95	1.00	1.00			0.95	1.00		0.95	1.00		
Satd. Flow (prot)	1770	3539	1583			1770	3511		1770	1665		
Flt Permitted	0.95	1.00	1.00			0.95	1.00		0.95	1.00		
Satd. Flow (perm)	1770	3539	1583			1770	3511		1770	1665		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	41	432	212	62	12	75	264	15	28	27	62	2
RTOR Reduction (vph)	0	0	191	0	0	0	4	0	0	1	0	0
Lane Group Flow (vph)	41	432	85	0	0	88	275	0	28	91	0	0
Turn Type	Prot	NA	Perm		Prot	Prot	NA		Split	NA		
Protected Phases	5	2			1	1	6		8	8		
Permitted Phases			2									
Actuated Green, G (s)	3.2	15.9	15.9			10.1	22.8		8.2	8.2		
Effective Green, g (s)	3.2	15.9	15.9			10.1	22.8		8.2	8.2		
Actuated g/C Ratio	0.04	0.20	0.20			0.13	0.29		0.10	0.10		
Clearance Time (s)	5.0	5.0	5.0			5.0	5.0		5.0	5.0		
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)	72	720	322			228	1024		185	174		
v/s Ratio Prot	0.02	c0.12				c0.05	0.08		0.02	c0.05		
v/s Ratio Perm			0.05									
v/c Ratio	0.57	0.60	0.26			0.39	0.27		0.15	0.52		
Uniform Delay, d1	36.8	28.2	26.2			31.2	21.2		31.8	33.1		
Progression Factor	1.00	1.00	1.00			1.00	1.00		1.00	1.00		
Incremental Delay, d2	9.9	1.4	0.4			1.1	0.1		0.4	2.8		
Delay (s)	46.7	29.6	26.6			32.2	21.4		32.2	35.9		
Level of Service	D	C	C			C	C		C	D		
Approach Delay (s)		29.4					24.0			35.1		
Approach LOS		C					C			D		

Intersection Summary			
HCM 2000 Control Delay	40.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	78.1	Sum of lost time (s)	25.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL2	SBL	SBT	SBR	NWL2	NWL	NWR	NWR2
Lane Configurations								
Traffic Volume (vph)	16	50	35	23	6	457	63	13
Future Volume (vph)	16	50	35	23	6	457	63	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0			5.0		
Lane Util. Factor			1.00			0.97		
Frt			0.98			0.98		
Flt Protected			0.97			0.96		
Satd. Flow (prot)			1769			3391		
Flt Permitted			0.97			0.96		
Satd. Flow (perm)			1769			3391		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	18	57	40	26	7	519	72	15
RTOR Reduction (vph)	0	0	9	0	0	210	0	0
Lane Group Flow (vph)	0	0	132	0	0	403	0	0
Turn Type	Split	Split	NA		Prot	Prot		
Protected Phases	4	4	4		9	9		
Permitted Phases								
Actuated Green, G (s)			9.1			9.8		
Effective Green, g (s)			9.1			9.8		
Actuated g/C Ratio			0.12			0.13		
Clearance Time (s)			5.0			5.0		
Vehicle Extension (s)			3.0			3.0		
Lane Grp Cap (vph)			206			425		
v/s Ratio Prot			c0.07			c0.12		
v/s Ratio Perm								
v/c Ratio			0.64			0.95		
Uniform Delay, d1			32.9			33.9		
Progression Factor			1.00			1.00		
Incremental Delay, d2			6.7			30.5		
Delay (s)			39.6			64.4		
Level of Service			D			E		
Approach Delay (s)			39.6			64.4		
Approach LOS			D			E		

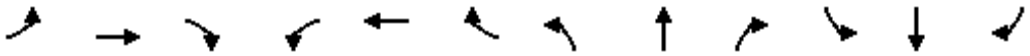
Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	301	539	2	5	10
Future Volume (Veh/h)	2	301	539	2	5	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	327	586	2	5	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)		1230				
pX, platoon unblocked					0.90	
vC, conflicting volume	588				918	294
vC1, stage 1 conf vol					587	
vC2, stage 2 conf vol					331	
vCu, unblocked vol	588				853	294
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	98
cM capacity (veh/h)	983				467	702

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	2	327	391	197	16
Volume Left	2	0	0	0	5
Volume Right	0	0	0	2	11
cSH	983	1700	1700	1700	607
Volume to Capacity	0.00	0.19	0.23	0.12	0.03
Queue Length 95th (ft)	0	0	0	0	2
Control Delay (s)	8.7	0.0	0.0	0.0	11.1
Lane LOS	A				B
Approach Delay (s)	0.1		0.0		11.1
Approach LOS					B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	25.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	240	10	4	547	65	37	28	9	46	9	69
Future Volume (vph)	26	240	10	4	547	65	37	28	9	46	9	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5			4.5			4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95			1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.98			0.98			0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.98			0.98	
Satd. Flow (prot)	1770	1863	1583	1770	3483			1787			1692	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.81			0.86	
Satd. Flow (perm)	1770	1863	1583	1770	3483			1492			1477	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	31	286	12	5	651	77	44	33	11	55	11	82
RTOR Reduction (vph)	0	0	5	0	11	0	0	9	0	0	69	0
Lane Group Flow (vph)	31	286	7	5	717	0	0	79	0	0	79	0
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	0.8	26.7	26.7	0.8	26.7			7.8			7.8	
Effective Green, g (s)	0.8	26.7	26.7	0.8	26.7			7.8			7.8	
Actuated g/C Ratio	0.02	0.55	0.55	0.02	0.55			0.16			0.16	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	29	1019	866	29	1905			238			236	
v/s Ratio Prot	c0.02	0.15		0.00	c0.21							
v/s Ratio Perm			0.00					0.05			c0.05	
v/c Ratio	1.07	0.28	0.01	0.17	0.38			0.33			0.34	
Uniform Delay, d1	24.0	5.9	5.0	23.7	6.3			18.2			18.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Incremental Delay, d2	189.0	0.7	0.0	2.8	0.6			0.8			0.8	
Delay (s)	213.0	6.6	5.0	26.5	6.9			19.0			19.0	
Level of Service	F	A	A	C	A			B			B	
Approach Delay (s)		26.0			7.0			19.0			19.0	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	48.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

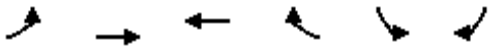
Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL	NBT	NBR	NBR2
Lane Configurations												
Traffic Volume (vph)	30	274	336	133	27	117	301	19	14	13	13	1
Future Volume (vph)	30	274	336	133	27	117	301	19	14	13	13	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0			5.0	5.0		5.0	5.0		
Lane Util. Factor	1.00	0.95	1.00			1.00	0.95		1.00	1.00		
Frt	1.00	1.00	0.85			1.00	0.99		1.00	0.92		
Flt Protected	0.95	1.00	1.00			0.95	1.00		0.95	1.00		
Satd. Flow (prot)	1770	3539	1583			1770	3507		1770	1718		
Flt Permitted	0.95	1.00	1.00			0.95	1.00		0.95	1.00		
Satd. Flow (perm)	1770	3539	1583			1770	3507		1770	1718		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	298	365	145	29	127	327	21	15	14	14	1
RTOR Reduction (vph)	0	0	179	0	0	0	0	0	0	1	0	0
Lane Group Flow (vph)	33	298	331	0	0	156	348	0	15	28	0	0
Turn Type	Prot	NA	Perm		Prot	Prot	NA		Split	NA		
Protected Phases	5	2			1	1	6		8	8		
Permitted Phases			2									
Actuated Green, G (s)	2.0	20.3	20.3			12.0	30.3		5.4	5.4		
Effective Green, g (s)	2.0	20.3	20.3			12.0	30.3		5.4	5.4		
Actuated g/C Ratio	0.03	0.25	0.25			0.15	0.38		0.07	0.07		
Clearance Time (s)	5.0	5.0	5.0			5.0	5.0		5.0	5.0		
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)	44	899	402			265	1329		119	116		
v/s Ratio Prot	0.02	0.08				c0.09	0.10		0.01	c0.02		
v/s Ratio Perm			c0.21									
v/c Ratio	0.75	0.33	0.82			0.59	0.26		0.13	0.24		
Uniform Delay, d1	38.7	24.3	28.1			31.6	17.1		35.0	35.3		
Progression Factor	1.00	1.00	1.00			1.00	1.00		1.00	1.00		
Incremental Delay, d2	51.4	0.2	12.8			3.3	0.1		0.5	1.1		
Delay (s)	90.1	24.5	40.9			35.0	17.2		35.5	36.4		
Level of Service	F	C	D			C	B		D	D		
Approach Delay (s)		37.0					22.7			36.1		
Approach LOS		D					C			D		

Intersection Summary			
HCM 2000 Control Delay	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	79.9	Sum of lost time (s)	25.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBL2	SBL	SBT	SBR	NWL2	NWL	NWR	NWR2
Lane Configurations								
Traffic Volume (vph)	22	103	9	13	13	181	47	17
Future Volume (vph)	22	103	9	13	13	181	47	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0			5.0		
Lane Util. Factor			1.00			0.97		
Frt			0.99			0.96		
Flt Protected			0.96			0.96		
Satd. Flow (prot)			1766			3354		
Flt Permitted			0.96			0.96		
Satd. Flow (perm)			1766			3354		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	112	10	14	14	197	51	18
RTOR Reduction (vph)	0	0	3	0	0	224	0	0
Lane Group Flow (vph)	0	0	157	0	0	56	0	0
Turn Type	Split	Split	NA		Prot	Prot		
Protected Phases	4	4	4		9	9		
Permitted Phases								
Actuated Green, G (s)			12.0			5.2		
Effective Green, g (s)			12.0			5.2		
Actuated g/C Ratio			0.15			0.07		
Clearance Time (s)			5.0			5.0		
Vehicle Extension (s)			3.0			3.0		
Lane Grp Cap (vph)			265			218		
v/s Ratio Prot			c0.09			c0.02		
v/s Ratio Perm								
v/c Ratio			0.59			0.26		
Uniform Delay, d1			31.7			35.5		
Progression Factor			1.00			1.00		
Incremental Delay, d2			3.5			0.6		
Delay (s)			35.2			36.1		
Level of Service			D			D		
Approach Delay (s)			35.2			36.1		
Approach LOS			D			D		

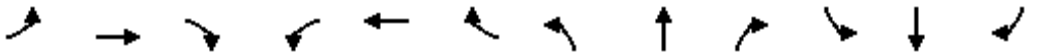
Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	469	258	7	3	4
Future Volume (Veh/h)	10	469	258	7	3	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	510	280	8	3	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)		1290	1310			
pX, platoon unblocked					0.90	
vC, conflicting volume	288				816	144
vC1, stage 1 conf vol					284	
vC2, stage 2 conf vol					532	
vCu, unblocked vol	288				737	144
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	100
cM capacity (veh/h)	1271				505	877

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	11	510	187	101	7
Volume Left	11	0	0	0	3
Volume Right	0	0	0	8	4
cSH	1271	1700	1700	1700	667
Volume to Capacity	0.01	0.30	0.11	0.06	0.01
Queue Length 95th (ft)	1	0	0	0	1
Control Delay (s)	7.9	0.0	0.0	0.0	10.5
Lane LOS	A				B
Approach Delay (s)	0.2		0.0		10.5
Approach LOS					B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	390	25	15	269	60	16	11	10	80	26	39
Future Volume (vph)	24	390	25	15	269	60	16	11	10	80	26	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5			4.5			4.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95			1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.97			0.96			0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1770	1863	1583	1770	3443			1757			1747	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.87			0.81	
Satd. Flow (perm)	1770	1863	1583	1770	3443			1570			1446	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	27	438	28	17	302	67	18	12	11	90	29	44
RTOR Reduction (vph)	0	0	13	0	23	0	0	9	0	0	26	0
Lane Group Flow (vph)	27	438	15	17	346	0	0	32	0	0	137	0
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	0.8	28.3	28.3	0.8	28.3			8.9			8.9	
Effective Green, g (s)	0.8	28.3	28.3	0.8	28.3			8.9			8.9	
Actuated g/C Ratio	0.02	0.55	0.55	0.02	0.55			0.17			0.17	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	27	1023	869	27	1891			271			249	
v/s Ratio Prot	c0.02	c0.24		0.01	0.10							
v/s Ratio Perm			0.01					0.02			c0.09	
v/c Ratio	1.00	0.43	0.02	0.63	0.18			0.12			0.55	
Uniform Delay, d1	25.4	6.8	5.3	25.2	5.8			18.0			19.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Incremental Delay, d2	173.2	1.3	0.0	38.0	0.2			0.2			2.5	
Delay (s)	198.6	8.1	5.3	63.2	6.0			18.2			21.9	
Level of Service	F	A	A	E	A			B			C	
Approach Delay (s)		18.4			8.5			18.2			21.9	
Approach LOS		B			A			B			C	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	51.5	Sum of lost time (s)	13.5
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group