

Terry O. Brown P.E.

Plaza at San Mateo
(Cutler Ave / San Mateo Blvd)

Traffic Impact Study

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DRAFT



Presented to:

City of Albuquerque
Transportation Development Section

NM Dept of Transportation
District 3

Prepared for:

South Unser, LLC
415 N. LaSalle, #200
Chicago, IL 60654



A handwritten signature in blue ink that reads "Terry O. Brown".

Terry O. Brown P.E.
P.O. Box 92051
Albuquerque, NM 87199
505 · 883 · 8807

**Plaza at San Mateo Commercial Development
(Prospect Ave / San Mateo Blvd)
Traffic Impact Study**

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**Plaza at San Mateo Commercial Development
(Prospect Ave / San Mateo Blvd)
Traffic Impact Study**

Introduction

The purpose of this study is to evaluate the transportation conditions before and after implementation of the proposed Plaza at San Mateo Commercial Development and determine the impact of the development on the adjacent transportation system. The recommendations of this study will provide guidelines for measures to mitigate the impact of the development of the site plan on critical intersections and street segments. This study is prepared to meet the requirements of the City of Albuquerque & the New Mexico Department of Transportation, District 3 (NMDOT) associated with its review of the Plaza at San Mateo Commercial Development as shown on the plan on Page A-2 in the Appendix of this report.

Study Procedures

E-mail exchanged occurred early in July, 2011 with City of Albuquerque & NMDOT personnel to determine the scope of this project.

Intersection capacity analyses were performed in accordance with the procedures for signalized and unsignalized intersections utilized in the Synchro (Version 8, Build 8.0.800.509) Transportation System analysis software program as required by the City of Albuquerque.

Intersections targeted for analysis in this study include Indian School Rd / San Mateo Blvd, Cutler Ave / San Mateo Blvd, Prospect Ave / San Mateo Blvd, Cutler Ave / Washington St, and Prospect Ave / Quincy Street. In addition, the existing driveways for the site will be analyzed.

Following is a summary of the procedures utilized in this Traffic Impact Study:

- 1) Calculate the generated trips for the proposed development consisting of the following described lane uses:
 - *An approximately 9,500 S.F. High Turnover Sit-Down Restaurant*
 - *An approximately 1,800 S.F. Coffee / Donut Shop w/Drive-Thru Window*
 - *Approximately 58,000 S.F. of retail commercial building floor space.*
- 2) Analysis included in this Traffic Impact Study will consider that 100% implementation of the proposed land uses will occur in the year 2014. Implementation year analysis will be for the year 2014.
- 3) Calculate trip distribution for the newly generated trips by the proposed development. The new commercial trips will be distributed based on year 2014 population distribution within a two (2) mile radius boundary of the proposed site as shown in Appendix of this report. (Appendix Pages A-12 thru A-21)

- 4) Determine Trip Assignments for the newly generated trips based on the results of the Trip Distribution Analysis and logical routing to and from the site (See Appendix Pages A-22 thru A-23).
- 5) Conduct new traffic counts for the intersections (Turning Movement Counts) of Indian School Rd. / San Mateo Blvd., Cutler Ave. / San Mateo Blvd., Prospect Ave. / San Mateo Blvd., Cutler Ave. / Washington St., and Prospect Ave. / Quincy St.
- 6) Calculate historic growth rates based on 2006 – 2010 Traffic Flow Data from the Mid-Region Council of Governments (MRCOG).
- 7) Determine 2014 NO BUILD Volumes by growing the existing turning movement counts to the year 2014 utilizing the appropriate annual historic growth rate for the area.
- 8) Add in data from Trip Assignments Maps and Tables to the 2014 NO BUILD Volumes to obtain 2014 BUILD Volumes for this project. The 2014 BUILD Volumes will include 100% of the traffic generated by the proposed Plaza at San Mateo retail commercial development.
- 9) Provide signalized and / or unsignalized intersection analyses for the following intersections:

INTERSECTION	TYPE CONTROL	NO BUILD	BUILD
1) Indian School Rd. / San Mateo Blvd.	Traffic Signal	2014	2014
2) Cutler Ave. / San Mateo Blvd.	Traffic Signal	2014	2014
3) Prospect Ave. / San Mateo Blvd.	Traffic Signal	2014	2014
4) Cutler Ave. / Washington St.	Traffic Signal	2014	2014
5) Cutler Ave. / Quincy St.	Stop Sign	2014	2014
6) Prospect Ave. / Driveway "A"	Stop Sign	N/A	2014
7) Driveway "B" / Quincy St.	Stop Sign	N/A	2014

Description of Proposed Development

The subject area of land discussed in this report is bound on the west by Quincy St, on the south by Cutler Ave, on the east by San Mateo Blvd, and on the north by Prospect Ave. See the Plaza at San Mateo Commercial Development site map on Pages A-2 in the Appendix of this report. The total area encompassed by this project is approximately 4 acres. The project consists of exclusively commercial uses. A vicinity map showing the location of the project is included on Page A-1 in the Appendix of this report. The property is currently zoned C-2 (SC).

The expected year of full implementation of the Plaza at San Mateo Commercial Development is 2014.

Access to this new site will be off of Prospect Ave and Quincy St.

San Mateo Blvd is classified as an Urban Principal Arterial Roadway on the Current Roadway Functional Classification System for the 2030 Metropolitan Transportation Plan. San Mateo Blvd is generally a six lane urban facility with raised medians. The posted speed limit along San Mateo Blvd in the vicinity of this project is 35 MPH.

Indian School Rd is classified as a Minor Arterial Roadway on the Current Roadway Functional Classification System for the 2030 Metropolitan Transportation Plan. Indian School Rd is generally a four lane urban facility with raised. The posted speed limit along Indian School Rd in the vicinity of this project is 35 MPH.

Washington St is classified as an Urban Collector Street on the Current Roadway Functional Classification System for the 2030 Metropolitan Transportation Plan. It is generally a two lane urban facility with raised medians & limited access. The posted speed limit along Washington St in the vicinity of this project is 30 MPH.

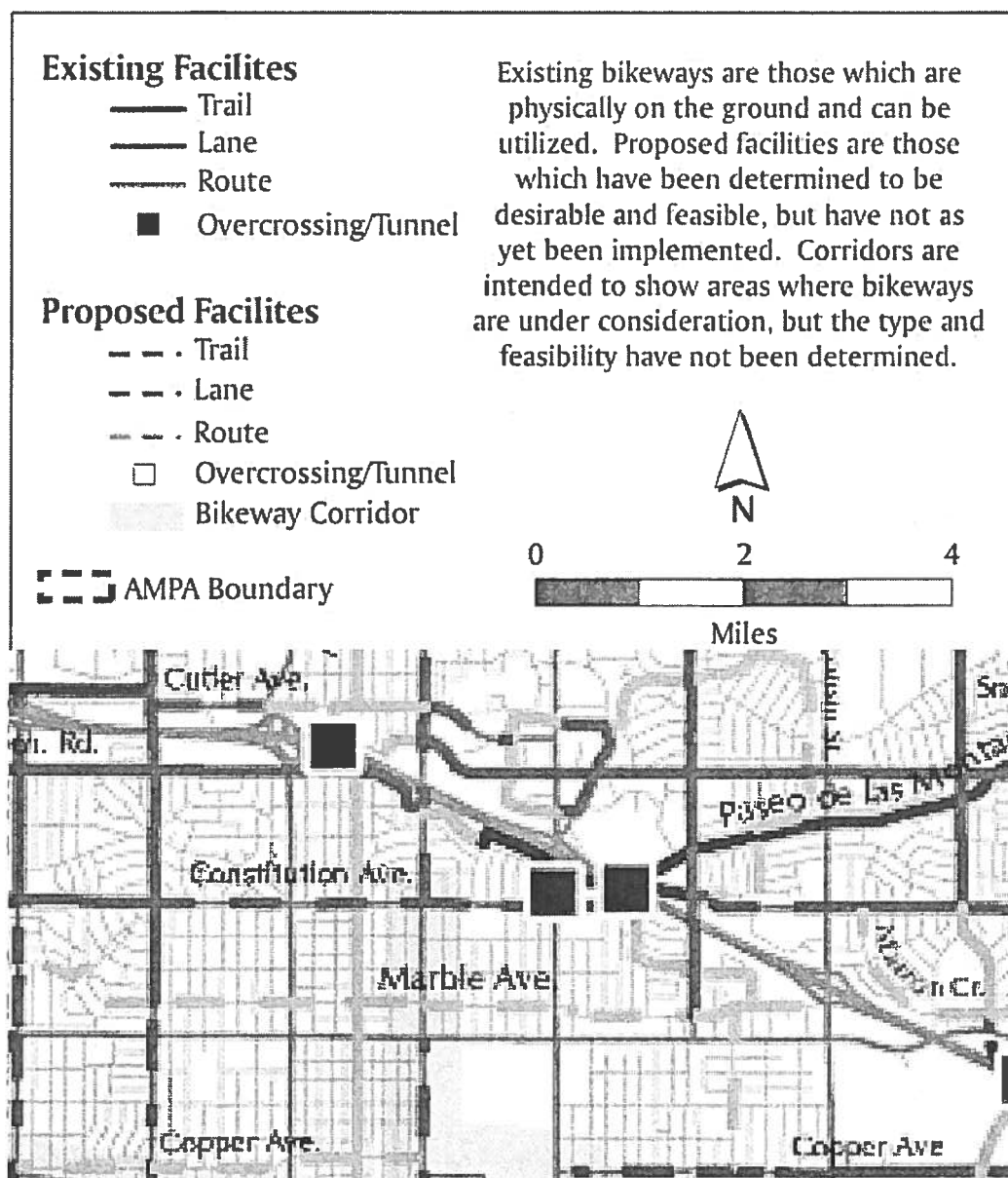
The Current Roadway Functional Classification System for the 2030 Metropolitan Transportation Plan Map is included in the report on Pages A-4 and A-5 in the Appendix.

Study Area Conditions

The Plaza at San Mateo Commercial Development is a proposed commercial use project. It will consist of a large anchor store and two small restaurants or small retail uses. The Plaza at San Mateo Commercial Development will replace an existing office complex. Site plans showing the layout are shown in the Appendix on Pages A-2 & A-3.

There are no proposed developments in the surrounding area that have been included in this study.

There are no programmed transportation improvements to the adjacent roadway system at this time. As shown by a portion of the Bikeway System Map below, there are some bike trails or bike lanes in this area. Also, Sun Tran has a bus route in the area. Route 140/141 runs between the VA Hospital at San Mateo Blvd / Gibson Blvd and CNM's Workforce Training Center from 5:40 AM to 10:15 PM weekdays. The weekend route runs north to Ellison Rd with more limited times as shown in the Appendix pages A-88 and A-89.



Analysis of Existing Conditions

2010 Average Weekday Traffic Volumes (AWDT) for major streets in the site plan area are shown on Page A-6 of the Appendix.

Current turning movement volumes obtained during the AM and PM Peak Hours for this project were acquired from recent field counts conducted by the consulting engineer conducting the Traffic Impact Study. Existing AM and PM Peak Hour turning movement counts for the year 2011 were provided by the consulting engineer for the following intersections:

*Indian School Rd / San Mateo Blvd
Cutler Ave / San Mateo Blvd
Prospect Ave / San Mateo Blvd
Cutler Ave / Washington St
Prospect Ave / Quincy Street*

Due to the nature of the request associated with this project, there is currently no analysis of existing conditions. Existing conditions for the adjacent transportation system are not pertinent to the application for site plan approval of this project. This study will analyze the projected 2014 NO BUILD and BUILD conditions.

Implementation Year Traffic Analysis

Classification of levels-of-service and delay for signalized and unsignalized intersections will be made based on criteria established by Synchro, Version 8 (Build 8.0.800.509) computer modeling software which approximates the 2000 Highway Capacity Manual methodology. The average control delay is calculated for each intersection and for each lane group of each leg of the intersection. The control delay then determines the level-of-service based on the following tables:

LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

<u>Average Delay</u> <u>(secs)</u>	<u>Level-of-Service</u>
≤ 10	A
> 10 and ≤ 20	B
> 20 and ≤ 35	C
> 35 and ≤ 55	D
> 55 and ≤ 80	E
> 80	F

LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

<u>Average Delay</u> <u>(secs)</u>	<u>Level-of-Service</u>
≤ 10	A
> 10 and ≤ 15	B
> 15 and ≤ 25	C
> 25 and ≤ 35	D
> 35 and ≤ 50	E
> 50	F

Generally speaking, a Level-of-Service D or better is an acceptable parameter for design purposes.

The trip generation rate for this project was calculated utilizing data from the Institute of Transportation Engineers' (ITE) *Trip Generation Manual* (8th Edition). The following table summarizes the results of that calculation:

Plaza at San Mateo (Cutler @ San Mateo)
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

COMMENT	USE (ITE CODE)	24 HR VOL	A. M. PEAK HR.		P. M. PEAK HR.		
	DESCRIPTION	GROSS	ENTER	EXIT	ENTER	EXIT	
	Summary Sheet	Units					
Proposed	Shopping Center (820)	58.00	4,766	68	44	216	225
Proposed	High Turnover (Sit-Down) Restaurant (932)	9.50	1,208	57	53	62	43
Proposed	Coffee/Donut Shop w/ Drive Thru Window (937)	1.80	1,473	102	98	39	39
	Subtotal Proposed Retail Commercial Development Plan		7,447	227	195	317	307
Existing	General Office Building (710)	60.00	900	110	15	25	121
Increase in Trip Generation Rate			6,547	117	180	292	186

No pass-by trips were allocated for the analysis.

The Trip Generation Table and the individual trip generation worksheets for each land use are also found on Pages A-7 thru A-11 in the Appendix of this report.

Besides the intersections previously listed, two access driveways are targeted for analysis in this study. They are labeled as Driveways 'A' & 'B'.

The targeted intersections for analysis in this study are:

2014 AM / PM Peak Hour NO BUILD and BUILD Conditions

1. *Indian School Rd / San Mateo Blvd (Signalized)*
2. *Cutler Ave / San Mateo Blvd (Signalized)*
3. *Prospect Ave / San Mateo Blvd (Signalized)*
4. *Cutler Ave / Washington St (Signalized)*
5. *Prospect Ave / Quincy Street (Unsignalized)*
6. *Cutler Ave / Driveway 'A' (Unsignalized)*
7. *Driveway 'B' / Quincy St (Unsignalized)*

Following is a summary of the results of the Synchro Analysis for each of the intersections targeted for evaluation in this report:

Intersection #1 - Indian School Rd / San Mateo Blvd - Pages A-44 thru A-51

The following table provides a summary of the Levels-of-Service / delays associated with each case analyzed in this study:

Intersection: #1 - Indian School Rd. / San Mateo Blvd.

2014 AM Peak Hour				2014 PM Peak Hour			
BASE GEOMETRY				BASE GEOMETRY			
NO BUILD		BUILD		NO BUILD		BUILD	
Lanes	LOS-Delay	LOS-Delay		Lanes	LOS-Delay	LOS-Delay	
Eastbound - Indian School Rd.							
L	1	C - 32.3	C - 32.2	1	D - 38.2	D - 42.2	
T	2	D - 38.1	D - 38.1	2	D - 48.1	D - 49.9	
R	>	D - 40.2	D - 40.2	>	D - 50.2	D - 52.3	
Westbound - Indian School Rd.							
L	1	C - 31.8	C - 31.8	1	C - 34.5	C - 34.2	
T	2	D - 38.5	D - 38.5	2	D - 39.6	D - 39.0	
R	1	E - 55.5	E - 57.9	1	E - 55.8	E - 55.1	
Northbound - San Mateo Blvd.							
L	1	B - 14.3	B - 14.7	1	B - 19.3	B - 19.4	
T	3	B - 14.4	B - 14.6	3	C - 26.2	C - 26.5	
R	>	B - 14.6	B - 14.7	>	C - 29.8	C - 30.3	
Southbound - San Mateo Blvd.							
L	1	A - 9.5	A - 9.4	1	C - 21.7	C - 22.3	
T	3	C - 28.3	C - 28.9	3	D - 35.4	C - 34.3	
R	1	B - 18.6	B - 19.6	1	C - 20.3	C - 20.6	
Intersection:		C - 24.6	C - 25.1			C - 33.0	C - 33.1

NOTE: > denotes a shared thru/right and / or thru/left turn lane.

The analysis of the intersection of Indian School Rd. / San Mateo Blvd. in this report demonstrates that the projected levels-of-service and delays are acceptable for all conditions analyzed. Therefore, no recommendations are made with regard to measures to increase capacity at the existing signalized intersection.

The results of the queuing analysis for the intersection of Indian School Rd. / San Mateo Blvd are summarized in the following table:

Queueing Analysis Summary Sheet

Project

Plaza at San Mateo (Prospect Ave / San Mateo Blvd)

Intersection:

Indian School Rd / San Mateo Blvd

2014											
Approach		Left Turns			Thru Movements			Right Turns			
Eastbound		# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	
Existing Lane Length		1	103	90	2	88	Cont	0	88	0	
AM NO BUILD Queue		1	106	150	2	91	100	0	91	125	
AM BUILD Queue		1	106	150	2	91	100	0	91	125	
Existing Lane Length		1	209	90	2	289	Cont	0	96	0	
PM NO BUILD Queue		1	215	325	2	298	250	0	99	175	
PM BUILD Queue		1	216	325	2	298	250	0	99	175	
Westbound		# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	
Existing Lane Length		1	14	120	2	139	Cont	1	104	50	
AM NO BUILD Queue		1	14	50	2	143	125	1	107	150	
AM BUILD Queue		1	14	50	2	143	125	1	110	150	
Existing Lane Length		1	22	120	2	121	Cont	1	137	50	
PM NO BUILD Queue		1	23	75	2	125	125	1	141	225	
PM BUILD Queue		1	23	75	2	125	125	1	148	225	
Northbound		# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	
Existing Lane Length		1	79	130	3	1,029	Cont	0	8	0	
AM NO BUILD Queue		1	81	125	3	1,060	425	0	8	25	
AM BUILD Queue		1	81	125	3	1,077	425	0	8	25	
Existing Lane Length		1	90	130	3	1,930	Cont	0	33	0	
PM NO BUILD Queue		1	93	175	3	1,988	900	0	34	75	
PM BUILD Queue		1	93	175	3	2,030	1,001 *	0	34	75	
Southbound		# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	
Existing Lane Length		1	112	310	3	1,514	Cont	1	222	200	
AM NO BUILD Queue		1	115	150	3	1,559	600	1	229	275	
AM BUILD Queue		1	119	175	3	1,585	600	1	230	275	
Existing Lane Length		1	104	310	3	1,547	Cont	1	199	200	
PM NO BUILD Queue		1	107	175	3	1,593	750	1	205	300	
PM BUILD Queue		1	111	200	3	1,620	750	1	206	300	

AM **PM**
 Cycle Length: 100 130

NOTE: Queue lengths are in feet.

* - Queue Length of 1,001 indicates the calculated queue > 1,000 feet.

The preceding table indicates that the northbound left turn lane length is deficient. This report does not recommend extending it since 1) left turn volume is about only two to three vehicles per cycle, and 2) the northbound thru queue in the PM Peak is excessive.

Intersection #2 - Cutler Ave / San Mateo Blvd - Pages A-52 thru A-63

The following table provides a summary of the Levels-of-Service / delays associated with each case analyzed in this study:

Intersection: #2 - Cutler Ave. / San Mateo Blvd.

2014 AM Peak Hour					2014 PM Peak Hour					
BASE GEOMETRY				MIT. GEOM.		BASE GEOMETRY			MIT. GEOM.	
	NO BUILD		BUILD	BUILD		NO BUILD		BUILD	BUILD	
	Lanes	LOS-Delay	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay	LOS-Delay	Lanes	LOS-Delay
Eastbound - Cutler Ave.										
L	2	D - 41.0	D - 41.1	2	D - 41.0	2	D - 46.2	D - 46.2	2	D - 46.2
T	0	A - 0.0	A - 0.0	0	A - 0.0	0	A - 0.0	A - 0.0	0	A - 0.0
R	1	F - 232	F - 283	1	D - 44.1	1	F - 162	F - 202	1	E - 71.7
Westbound - Cutler Ave.										
L	1	E - 62.3	E - 62.6	1	E - 62.3	1	E - 75.4	E - 75.4	1	E - 75.4
T	1	C - 28.3	C - 27.8	1	C - 29.5	1	C - 28.8	C - 28.8	1	C - 33.9
R	>	D - 41.2	D - 39.3	>	D - 47.7	>	D - 35.7	D - 35.7	>	D - 54.7
Northbound - San Mateo Blvd.										
L	2	D - 41.4	D - 42.4	2	D - 40.7	2	E - 56.0	E - 56.0	2	D - 41.7
T	3	B - 15.5	B - 17.3	3	B - 16.6	3	B - 15.0	C - 27.0	3	C - 25.1
R	0	A - 0.0	A - 0.0	0	A - 0.0	0	A - 0.0	A - 0.0	0	A - 0.0
Southbound - San Mateo Blvd.										
L	0	A - 0.0	A - 0.0	0	A - 0.0	0	A - 0.0	A - 0.0	0	A - 0.0
T	3	C - 34.6	D - 35.5	3	C - 34.4	3	D - 38.6	D - 44.4	3	D - 42.2
R	1	C - 23.5	C - 25.5	1	C - 25.5	1	B - 13.9	C - 26.5	1	C - 26.0
Intersection:	D - 42.9	D - 48.7		C - 33.2		D - 45.9	E - 57.9		D - 41.5	

NOTE: > denotes a shared thru/right and / or thru/left turn lane.

The analysis of the intersection of Cutler Ave. / San Mateo Blvd. in this report demonstrates that the projected levels-of-service and delays are acceptable for all conditions analyzed except the 2014 PM Peak Hour condition. One or more turning movements are projected to operate at Level-of-Service "F" for both the NO BUILD and the BUILD condition. The impact of the proposed Plaza at San Mateo project results in an increase average control delay from 45.9 seconds to 57.9 seconds. Mitigation of the impact of the proposed Plaza at San Mateo can be accomplished by implementing an eastbound right turn overlap phase at the existing signalized intersection. Since the east leg of the intersection is a westbound I-40 off-ramp, then eastbound thru movements are not permitted on Cutler Ave. Therefore, all eastbound traffic must either turn left or right at the intersection. The existing signal indicator for eastbound right turn traffic is a green ball. If the green ball were replaced with a green right turn arrow, then the eastbound right turn movement could not only operate as an exclusive phase, but also as an overlap phase

concurrent with the northbound protected left turn movement, thus dramatically improving the calculated delay for the eastbound right turn movement.

The results of the queuing analysis for the intersection of Cutler Ave. / San Mateo Blvd. are summarized in the following table:

Queueing Analysis Summary Sheet

Project:

Plaza at San Mateo (Prospect Ave / San Mateo Blvd)

Intersection:

Cutler Ave / San Mateo Blvd

2014											
Approach		Left Turns			Thru Movements			Right Turns			
Eastbound		# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	
<i>Existing Lane Length</i>		2	29	340	0	0	Cont	1	184	340	
AM NO BUILD Queue		2	30	50	0	0	0	1	190	225	
AM BUILD Queue		2	30	50	0	0	0	1	221	250	
<i>Existing Lane Length</i>		2	121	340	0	0	Cont	1	396	340	
PM NO BUILD Queue		2	125	125	0	0	0	1	408	525	
PM BUILD Queue		2	125	125	0	0	0	1	440	575	
Westbound		# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	
<i>Existing Lane Length</i>		2	238	230	1	112	Cont	1	226	230	
AM NO BUILD Queue		2	245	175	1	115	150	1	233	275	
AM BUILD Queue		2	245	175	1	115	150	1	233	275	
<i>Existing Lane Length</i>		2	182	230	1	79	Cont	1	225	230	
PM NO BUILD Queue		2	187	175	1	81	150	1	232	325	
PM BUILD Queue		2	187	175	1	81	150	1	232	325	
Northbound		# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	
<i>Existing Lane Length</i>		2	182	160	3	937	Cont	0	0	0	
AM NO BUILD Queue		2	187	150	3	965	400	0	0	0	
AM BUILD Queue		2	207	150	3	965	400	0	0	0	
<i>Existing Lane Length</i>		2	215	160	3	1,472	Cont	0	0	0	
PM NO BUILD Queue		2	221	200	3	1,516	725	0	0	0	
PM BUILD Queue		2	271	225	3	1,516	725	0	0	0	
Southbound		# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	
<i>Existing Lane Length</i>		0	0	0	3	1,278	Cont	1	112	160	
AM NO BUILD Queue		0	0	0	3	1,316	500	1	115	150	
AM BUILD Queue		0	0	0	3	1,316	500	1	115	150	
<i>Existing Lane Length</i>		0	0	0	3	1,449	Cont	1	107	160	
PM NO BUILD Queue		0	0	0	3	1,492	700	1	110	175	
PM BUILD Queue		0	0	0	3	1,492	700	1	110	175	

AM **PM**
 Cycle Length: 100 130

NOTE: Queue lengths are in feet.

* - Queue Length of 1,001 indicates the calculated queue > 1,000 feet.

The intersection of Cutler Ave. / San Mateo Blvd. is a recently reconstructed intersection. It is not possible to extend the lengths of any of the existing auxiliary left or right turn lanes at the intersection.

Intersection #3 – Prospect Ave / San Mateo Blvd - Pages A-64 thru A-71

The following table provides a summary of the Levels-of-Service / delays associated with each case analyzed in this study:

Intersection: #3 - Prospect Ave. / San Mateo Blvd.

2014 AM Peak Hour				2014 PM Peak Hour			
BASE GEOMETRY				BASE GEOMETRY			
		NO BUILD		BUILD		NO BUILD	
		LOS-Delay		LOS-Delay		LOS-Delay	
		Lanes	LOS-Delay	Lanes	LOS-Delay	Lanes	LOS-Delay
Eastbound - Prospect Ave.							
L	1	C - 32.8	D - 36.9	1	C - 34.7	D - 40.4	
T	1	A - 0.0	A - 0.0	1	A - 0.0	A - 0.0	
R	>	C - 32.5	C - 32.7	>	C - 33.9	C - 33.9	
Westbound - Prospect Ave.							
L	1	D - 37.7	D - 38.3	1	D - 52.9	D - 54.2	
T	1	A - 0.0	A - 0.0	1	A - 0.0	A - 0.0	
R	>	C - 32.5	C - 32.6	>	C - 32.9	C - 33.1	
Northbound - San Mateo Blvd.							
L	1	A - 6.8	A - 7.1	1	A - 9.9	A - 9.9	
T	3	C - 23.6	C - 23.6	3	C - 34.7	C - 31.5	
R	>	C - 24.0	C - 24.1	>	D - 36.2	C - 33.0	
Southbound - San Mateo Blvd.							
L	1	A - 7.3	A - 7.3	1	B - 18.7	B - 18.1	
T	3	B - 10.8	B - 11.1	3	B - 13.3	B - 14.5	
R	>	B - 11.5	B - 12.0	>	B - 14.0	B - 15.7	
Intersection:		B - 17.3	B - 18.2		C - 27.2	C - 26.3	

NOTE: > denotes a shared thru/right and / or thru/left turn lane.

The analysis of the intersection of Prospect Ave. / San Mateo Blvd. in this report demonstrates that the projected levels-of-service and delays are acceptable for all conditions analyzed. Therefore, no recommendations are made with regard to measures to increase capacity at the existing signalized intersection.

The results of the queuing analysis for the intersection of Prospect Ave. / San Mateo Blvd. are summarized in the following table:

Queueing Analysis Summary Sheet

Project:

Plaza at San Mateo (Prospect Ave / San Mateo Blvd)

Intersection:

Prospect Ave / San Mateo Blvd

2014											
Approach		Left Turns			Thru Movements			Right Turns			
Eastbound		# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	
<i>Existing Lane Length</i>		1	1	85	1	6	Cont	0	14	0	
AM NO BUILD Queue		1	1	0	1	6	25	0	14	50	
AM BUILD Queue		1	98	150	1	14	50	0	14	50	
<i>Existing Lane Length</i>		1	21	85	1	15	Cont	0	58	0	
PM NO BUILD Queue		1	22	50	1	15	50	0	60	125	
PM BUILD Queue		1	123	200	1	23	75	0	60	125	
Westbound		# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	
<i>Existing Lane Length</i>		1	99	100	1	10	Cont	0	7	0	
AM NO BUILD Queue		1	102	150	1	10	25	0	7	25	
AM BUILD Queue		1	102	150	1	15	50	0	7	25	
<i>Existing Lane Length</i>		1	151	100	1	18	Cont	0	25	0	
PM NO BUILD Queue		1	156	250	1	19	50	0	26	75	
PM BUILD Queue		1	156	250	1	32	75	0	26	75	
Northbound		# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	
<i>Existing Lane Length</i>		1	31	110	3	861	Cont	0	71	0	
AM NO BUILD Queue		1	32	75	3	887	375	0	73	125	
AM BUILD Queue		1	32	75	3	887	375	0	73	125	
<i>Existing Lane Length</i>		1	51	110	3	1,684	Cont	0	147	0	
PM NO BUILD Queue		1	53	100	3	1,735	800	0	151	250	
PM BUILD Queue		1	53	100	3	1,735	800	0	151	250	
Southbound		# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	
<i>Existing Lane Length</i>		1	66	115	3	1,454	Cont	0	8	0	
AM NO BUILD Queue		1	68	100	3	1,498	575	0	8	25	
AM BUILD Queue		1	68	100	3	1,498	575	0	71	125	
<i>Existing Lane Length</i>		1	74	115	3	1,365	Cont	0	20	0	
PM NO BUILD Queue		1	76	150	3	1,406	675	0	21	50	
PM BUILD Queue		1	76	150	3	1,406	675	0	179	275	

Cycle Length: **AM** **PM**
 100 130

NOTE: Queue lengths are in feet.

* - Queue Length of 1,001 indicates the calculated queue > 1,000 feet.

Intersection #4 – Cutler Ave / Washington St - Pages A-72 thru A-79

The following table provides a summary of the Levels-of-Service / delays associated with each case analyzed in this study:

Intersection: #4 - Washington St. / Cutler Ave.

2014 AM Peak Hour				2014 PM Peak Hour			
BASE GEOMETRY				BASE GEOMETRY			
NO BUILD		BUILD		NO BUILD		BUILD	
Lanes	LOS-Delay	LOS-Delay		Lanes	LOS-Delay	LOS-Delay	
Eastbound - Washington St.							
L	1	B - 10.6	B - 10.5	1	B - 15.3	B - 16.7	
T	1	A - 9.1	A - 9.0	1	B - 12.8	B - 13.9	
R	1	A - 8.8	A - 8.7	1	B - 12.7	B - 13.6	
Westbound - Washington St.							
L	1	B - 10.1	B - 10.6	1	B - 15.3	B - 17.9	
T	1	A - 0.0	A - 0.0	1	A - 0.0	A - 0.0	
R	>	A - 10.0	A - 9.8	>	B - 13.3	B - 14.4	
Northbound - Cutler Ave.							
L	1	A - 8.6	A - 9.3	1	A - 8.0	A - 8.7	
T	1	A - 0.0	A - 0.0	1	A - 0.0	A - 0.0	
R	>	A - 6.2	A - 7.0	>	A - 8.3	B - 10.8	
Southbound - Cutler Ave.							
L	1	A - 7.7	A - 8.8	1	B - 12.4	B - 15.8	
T	1	A - 0.0	A - 0.0	1	A - 0.0	A - 0.0	
R	>	A - 6.9	A - 7.4	>	A - 6.4	A - 7.0	
Intersection:		A - 7.8	A - 8.3		B - 10.1	B - 11.9	

NOTE: > denotes a shared thru/right and / or thru/left turn lane.

The analysis of the intersection of Washington St. / Cutler Ave. in this report demonstrates that the projected levels-of-service and delays are acceptable for all conditions analyzed. Therefore, no recommendations are made with regard to measures to increase capacity at the existing signalized intersection.

The results of the queuing analysis for the intersection of Cutler Ave / Washington St are summarized in the following table:

Queueing Analysis Summary Sheet

Project

Plaza at San Mateo (Prospect Ave / San Mateo Blvd)

Intersection:

Cutler Ave / Washington St

2014

Approach	Left Turns			Thru Movements			Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	18	70	1	70	Cont	1	36	70
AM NO BUILD Queue	1	19	50	1	72	125	1	37	75
AM BUILD Queue	1	19	50	1	72	125	1	37	75
Existing Lane Length	1	55	70	1	107	Cont	1	81	70
PM NO BUILD Queue	1	57	125	1	110	175	1	83	150
PM BUILD Queue	1	57	125	1	110	175	1	83	150
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	60	130	1	81	Cont	0	44	0
AM NO BUILD Queue	1	62	100	1	83	125	0	45	75
AM BUILD Queue	1	101	150	1	83	125	0	45	75
Existing Lane Length	1	87	130	1	41	Cont	0	80	0
PM NO BUILD Queue	1	90	150	1	42	100	0	82	150
PM BUILD Queue	1	131	225	1	42	100	0	82	150
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	32	100	1	197	Cont	0	45	0
AM NO BUILD Queue	1	33	75	1	203	250	0	46	75
AM BUILD Queue	1	33	75	1	203	250	0	72	125
Existing Lane Length	1	37	100	1	435	Cont	0	73	0
PM NO BUILD Queue	1	38	100	1	448	575	0	75	150
PM BUILD Queue	1	38	100	1	448	575	0	139	225
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	53	160	1	287	Cont	0	39	0
AM NO BUILD Queue	1	55	100	1	296	325	0	40	75
AM BUILD Queue	1	55	100	1	296	325	0	40	75
Existing Lane Length	1	58	160	1	289	Cont	0	8	0
PM NO BUILD Queue	1	60	125	1	298	400	0	8	25
PM BUILD Queue	1	60	125	1	298	400	0	8	25

Cycle Length: AM 100 PM 130

NOTE: Queue lengths are in feet.

* - Queue Length of 1,001 indicates the calculated queue > 1,000 feet.

Intersection #5 - Prospect Ave / Quincy St - Pages A-80 thru A-83

The following table provides a summary of the Levels-of-Service / delays associated with each case analyzed in this study:

Intersection: #5 - Prospect Ave. / Quincy St.

2014 AM Peak Hour				2014 PM Peak Hour			
BASE GEOMETRY				BASE GEOMETRY			
NO BUILD		BUILD		NO BUILD		BUILD	
Lanes	LOS-Delay	LOS-Delay		Lanes	LOS-Delay	LOS-Delay	
Eastbound - Prospect Ave.							
L	>	A - 9.6	A - 9.7	>	A - 9.9	B - 10.1	
T	1	A - 9.6	A - 9.7	1	A - 9.9	B - 10.1	
R	>	A - 9.6	A - 9.7	>	A - 9.9	B - 10.1	
Westbound - Prospect Ave.							
L	>	A - 9.7	A - 9.7	>	A - 9.7	A - 9.7	
T	1	A - 9.7	A - 9.7	1	A - 9.7	A - 9.7	
R	>	A - 9.7	A - 9.7	>	A - 9.7	A - 9.7	
Northbound - Quincy St.							
L	>	A - 1.0	A - 1.0	>	A - 1.0	A - 1.0	
Southbound - Quincy St.							
L	>	A - 2.1	A - 2.2	>	A - 2.0	A - 2.3	

NOTE: > denotes a shared thru/right and / or thru/left turn lane.

The intersection of Prospect Ave / Quincy St is an existing unsignalized full access intersection with the stop sign controlling east & westbound traffic. The preceding summary analysis table demonstrates that the projected operation of the unsignalized intersection of Prospect Ave. / Quincy St. will be acceptable for all conditions considered in this report. No recommendations are made for this intersection.

Intersection #6 - Prospect Ave / Driveway 'A' - Pages A-84 thru A-85

The following table provides a summary of the Levels-of-Service / delays associated with each case analyzed in this study:

Intersection: **#6 - Prospect Ave. / Driveway "A"**

2014 AM Peak Hour				2014 PM Peak Hour			
BASE GEOMETRY				BASE GEOMETRY			
NO BUILD		BUILD		NO BUILD		BUILD	
Lanes	LOS-Delay	LOS-Delay		Lanes	LOS-Delay	LOS-Delay	
Westbound - Prospect Ave.							
L	>	A - 0.0	A - 5.1	>	A - 0.0	A - 6.5	
T	1	A - 0.0	A - 0.0	1	A - 0.0	A - 0.0	
Northbound - Driveway "A"							
L	>	A - 0.0	A - 9.1	>	A - 0.0	A - 9.5	
R	>	A - 0.0	A - 9.1	>	A - 0.0	A - 9.5	

NOTE: > denotes a shared thru/right and / or thru/left turn lane.

The intersection of Prospect Ave. / Driveway 'A' is a proposed unsignalized tee private driveway with the stop sign controlling northbound traffic. Analysis of the unsignalized Prospect Ave. / Driveway 'A' intersection indicates that the operation of the intersection will be acceptable for all conditions considered in this report. The proposed driveway should be constructed with a minimum of one entering lane and one exiting lane.

Intersection #7 - Driveway 'B' / Quincy St - Pages A-86 thru A-87

The following table provides a summary of the Levels-of-Service / delays associated with each case analyzed in this study:

Intersection: #7 - Driveway "B" / Quincy St.

2014 AM Peak Hour				2014 PM Peak Hour			
BASE GEOMETRY				BASE GEOMETRY			
NO BUILD		BUILD		NO BUILD		BUILD	
Lanes	LOS-Delay	LOS-Delay		Lanes	LOS-Delay	LOS-Delay	
Westbound - Driveway "B"							
L	>	A - 0.0	A - 9.5	>	A - 0.0	A - 9.8	
R	>	A - 0.0	A - 9.5	>	A - 0.0	A - 9.8	
Southbound - Quincy St.							
L	>	A - 0.0	A - 1.0	>	A - 0.0	A - 1.0	
T	1	A - 0.0	A - 0.0	1	A - 0.0	A - 0.0	

NOTE: > denotes a shared thru/right and / or thru/left turn lane.

The intersection of Driveway 'B' / Quincy St. is an existing unsignalized tee private driveway with the stop sign controlling westbound traffic. Analysis of the unsignalized Driveway 'B' / Quincy St. intersection indicates that the operation of the intersection will be acceptable for all conditions considered in this report. The proposed driveway should be constructed with a minimum of one entering lane and one exiting lane.

Summary of Deficiencies, Anticipated Impacts, and Recommendations

The implementation of the proposed Plaza at San Mateo Commercial Development will generate a significant volume of new traffic on the adjacent transportation system and thus, will have a moderate impact at the intersections and roadways analyzed in this study, especially those intersections and roadway closer to the project.

Recommendations for improvements to the adjacent transportation system include:

- All design and construction related to this project will take into consideration that adequate sight distance on roadway facilities should be maintained to the extent possible.
- **Cutler Ave. / San Mateo Blvd.** – Modify the existing traffic signal for the eastbound approach to replace the green ball indications with a right turn green arrow. In addition

to the eastbound right turn exclusive phase, implement a new right turn overlap phase to move concurrently with the northbound protected left phase at the intersection.

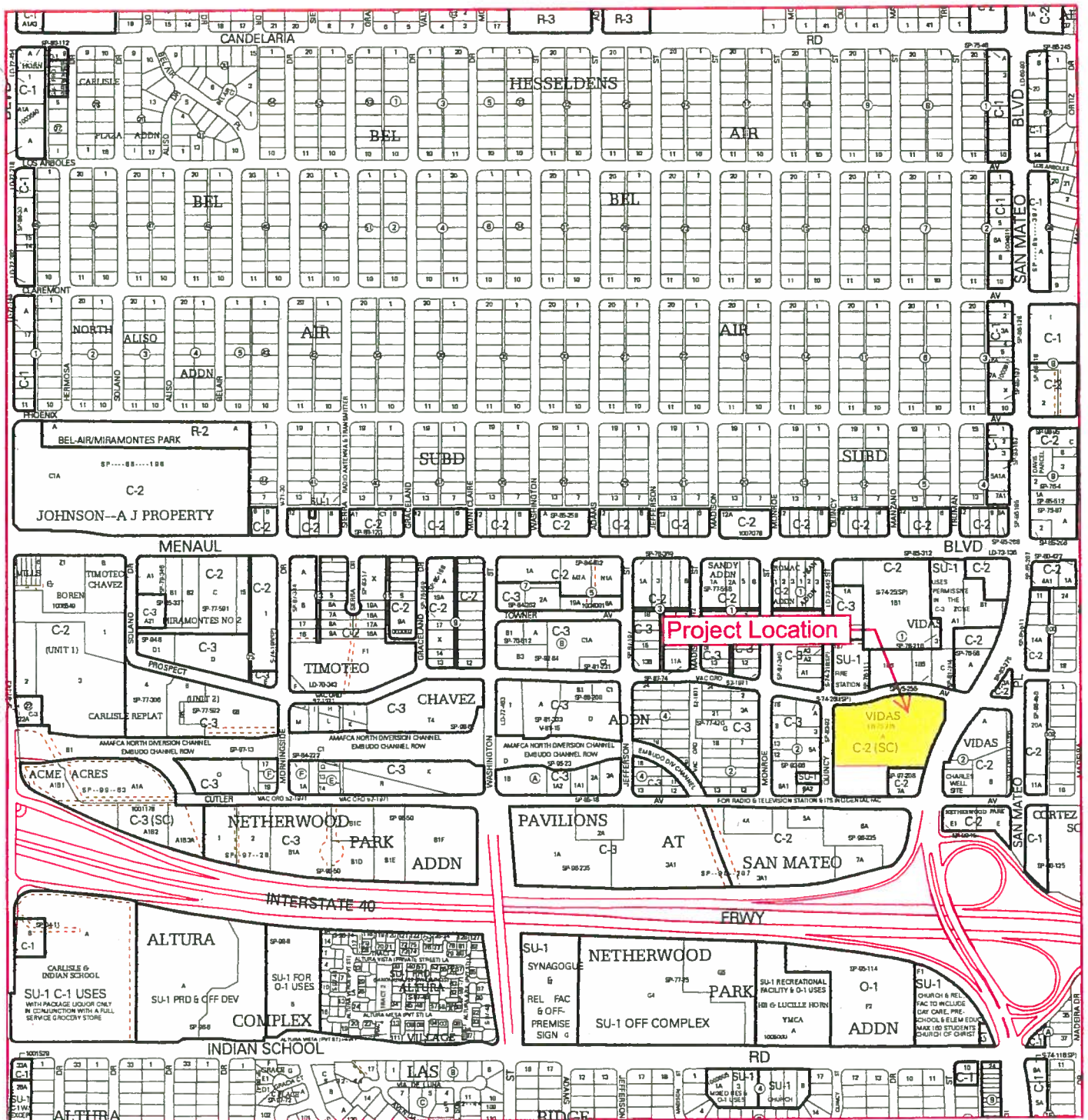
- This study recommends that access to the new project may be accomplished as shown on the proposed site plan (See Appendix Page A-2) implementing two full access unsignalized driveways. Driveway "A" should be a full access unsignalized tee driveway on Cutler Ave. approximately 400 feet west of San Mateo Blvd. (centerline to centerline). Driveway "B" should be a full access unsignalized tee driveway on Quincy St. approximately 200 feet north of Cutler Ave. (centerline to centerline). Both Driveway "A" and Driveway "B" should be designed and constructed with a minimum of one entering lane and one exiting lane. Curb return radii should be incorporated into the design and construction of Driveway "A" and Driveway "B". Curb return radii should be a minimum of 25 feet or larger if needed to accommodate large delivery vehicles.

Improvements on City of Albuquerque streets and intersections should comply with requirements of the City of Albuquerque's *Development Process Manual*. Any improvements on NM state highways or state facilities should comply with New Mexico Department of Transportation standards.

Appendix

<u>SITE INFORMATION</u>	
Vicinity Map	A – 1
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5 – Unsignalized Intersection Analyses (Prospect Ave / Quincy St)	A-80 thru A-83
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Bus Schedule for Route 140/141	A-88 thru A-89
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APPENDIX



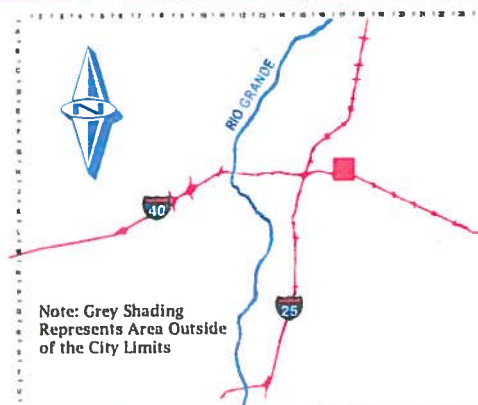
For more current information and more details visit: <http://www.cabq.gov/gis>

Zone Atlas Page:

H-17-Z

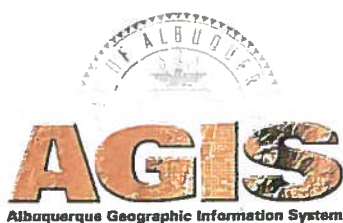
Selected Symbols

- SECTOR PLANS
- Design Overlay Zones
- City Historic Zones
- H-1 Buffer Zone
- Petroglyph Mon.
- Escarpment
- 2 Mile Airport Zone
- Airport Noise Contours
- Wall Overlay Zone



Note: Grey Shading Represents Area Outside of the City Limits

0 750 1,500 Feet



Map amended through: 1/24/2011

QUINCY ST. N.E
60' Right-of-Way

Driveway "B" XST. ACCESS ROAD

EXISTING
OFFICE-DEPOT

BED BATH/BUY BABY
COMBO STORE
58,000 SF

228.0'

LANDSCAPE AREA

189.5'

144.70'

130.30'

Driveway
"A"

PROSPECT AVE. N.E
60' Right-of-Way

TOTAL PARKING THIS AREA FOR 206 CARS

OUTLOT B
6,000 SF
50.0'

EXISTING
GAS-STATION

TV RETAIL
(100-150)

COFFEE
1,779 SF
RETAIL
1,060 SF
RETAIL
1,060 SF
RETAIL
1,396 SF

OUTLOT A
5,285 SF

SAN MATEO BLVD. N.E

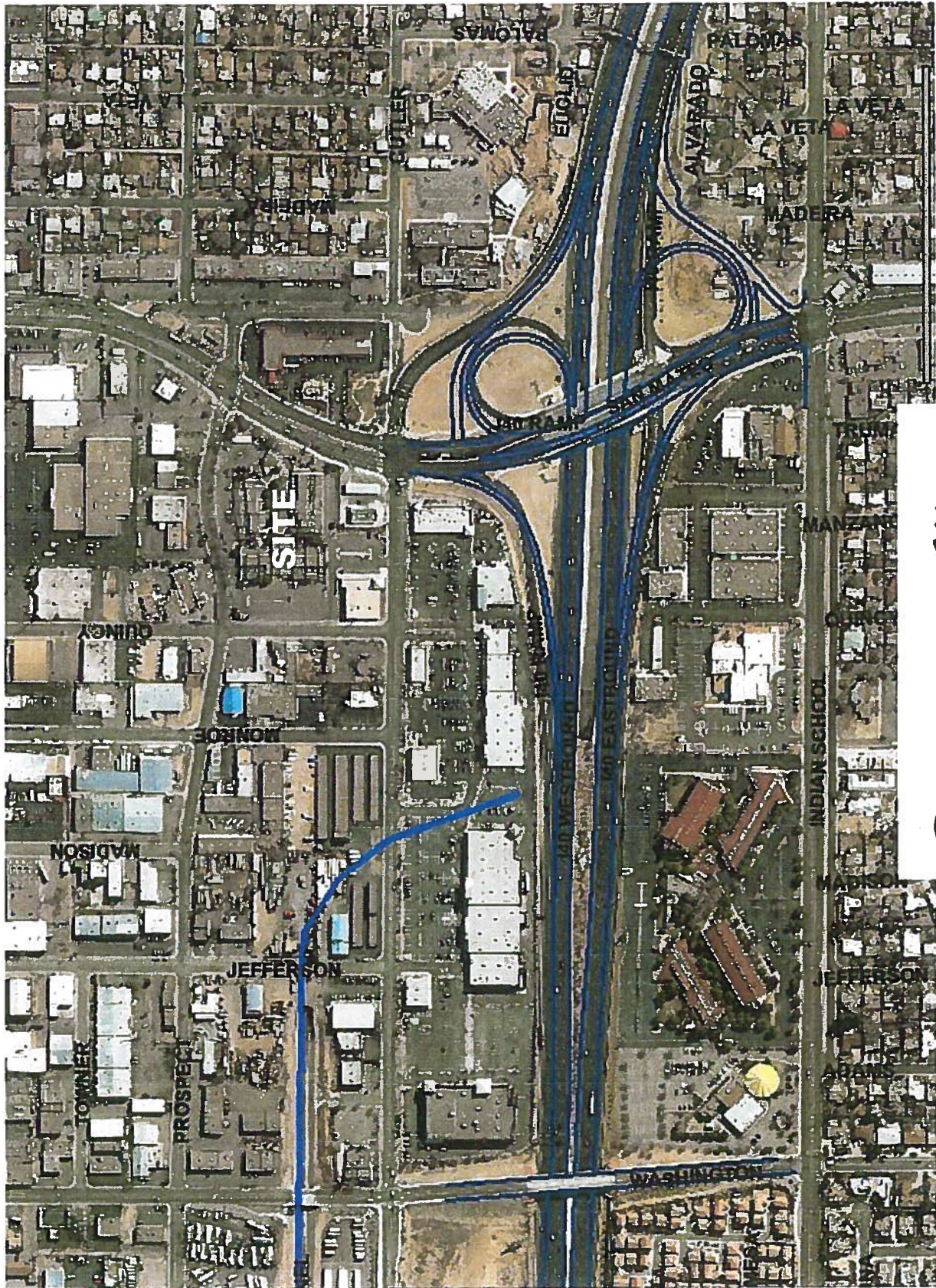
NORTH

EXISTING
TRAFFIC
SIGNAL

CUTLER AVE. N.E
50' Right-of-Way

EXISTING
TRAFFIC
SIGNAL

INTERSTATE 40
EXIT RAMP



Plaza at San Mateo
(San Mateo Blvd / Cutler Ave)
Aerial Photo

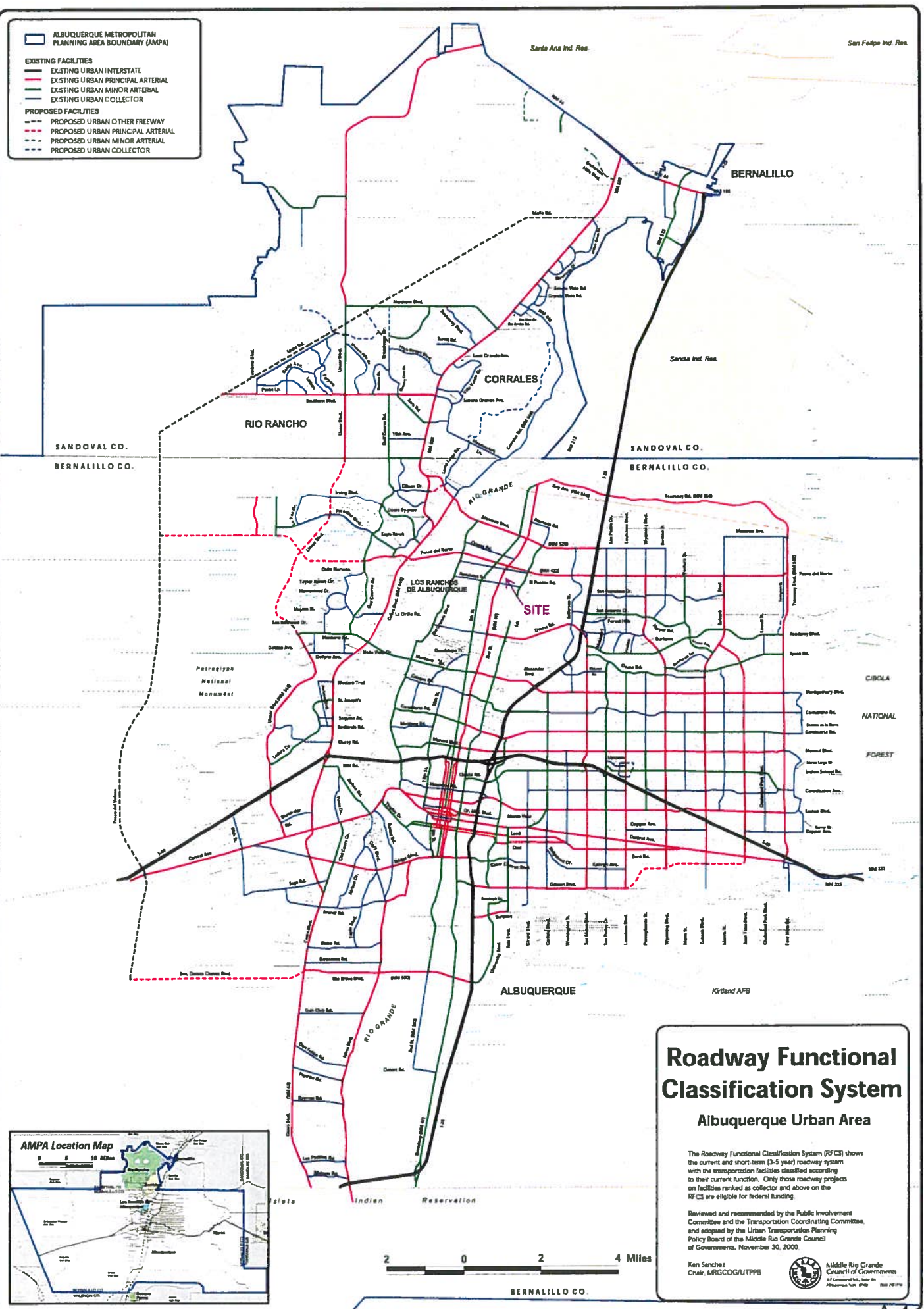
ALBUQUERQUE METROPOLITAN
PLANNING AREA BOUNDARY (AMPA)

EXISTING FACILITIES

- EXISTING URBAN INTERSTATE
- EXISTING URBAN PRINCIPAL ARTERIAL
- EXISTING URBAN MINOR ARTERIAL
- EXISTING URBAN COLLECTOR

PROPOSED FACILITIES

- PROPOSED URBAN OTHER FREEWAY
- PROPOSED URBAN PRINCIPAL ARTERIAL
- PROPOSED URBAN MINOR ARTERIAL
- PROPOSED URBAN COLLECTOR



Roadway Functional Classification System

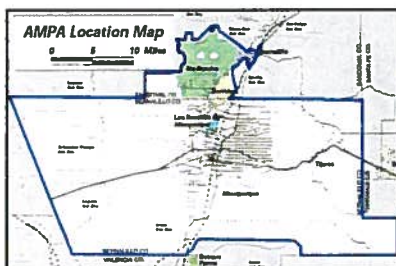
Albuquerque Urban Area

The Roadway Functional Classification System (RFCS) shows the current and short-term (3-5 year) roadway system with the transportation facilities classified according to their current function. Only those roadway projects on facilities ranked as collector and above on the RFCS are eligible for federal funding.

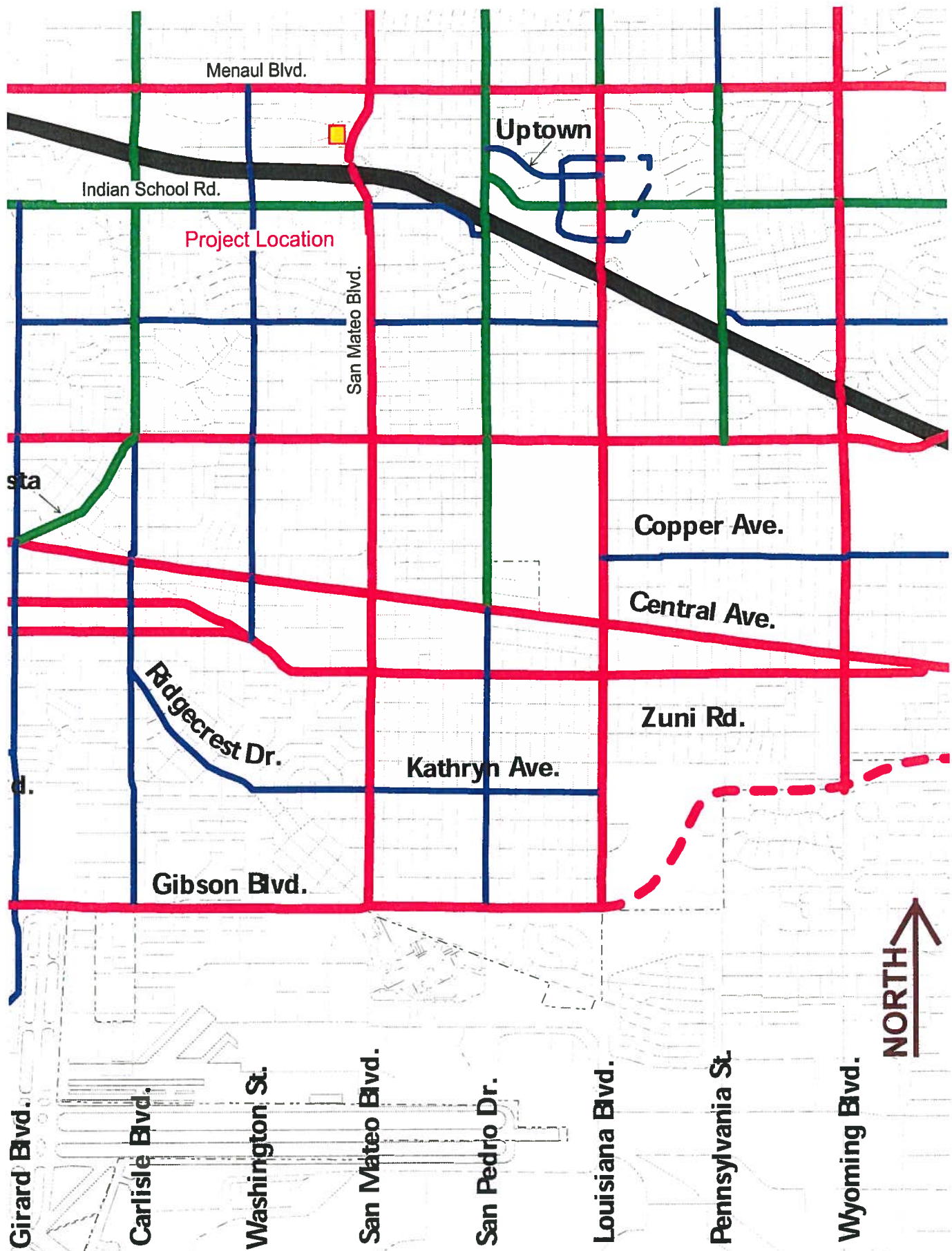
Reviewed and recommended by the Public Involvement Committee and the Transportation Coordinating Committee, and adopted by the Urban Transportation Planning Policy Board of the Middle Rio Grande Council of Governments, November 30, 2000.

Ken Sanchez
Chair, MRGCOG/UTPPB

Middle Rio Grande
Council of Governments
311 East 1st Street, Suite 100
Albuquerque, N.M. 87102



Portion of Current Functional Classification System Map



Plaza at San Mateo (Cutler @ San Mateo)
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

COMMENT	USE (ITE CODE)	DESCRIPTION	24 HR VOL		A. M. PEAK HR.		P. M. PEAK HR.	
			GROSS	ENTER	EXIT	ENTER	EXIT	
Summary Sheet								
		Units						
Proposed		Shopping Center (820)	58.00	4,766	68	44	216	225
Proposed		High Turnover (Sit-Down) Restaurant (932)	9.50	1,208	57	53	62	43
Proposed		Coffee/Donut Shop w/ Drive Thru Window (937)	1.80	1,473	102	98	39	39
		Subtotal Proposed Retail Commercial Development Plan		7,447	227	195	317	307
Existing		General Office Building (710)	60.00	900	110	15	25	121
Increase in Trip Generation Rate				6,547	117	180	292	186

Plaza at San Mateo (Cutler @ San Mateo)
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR		
		ENTER	EXIT	ENTER	EXIT	
Units						
Shopping Center (820)	58.00	4,766	68	44	216	225
	1,000 S.F.					

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$\ln(T) = 0.65 \ln(X) + 5.83$$

50% Enter, 50% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR)

$$\ln(T) = 0.59 \ln(X) + 2.32$$

61% Enter, 39% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

$$\ln(T) = 0.67 \ln(X) + 3.37$$

49% Enter, 51% Exit

Comments:
Proposed

Based on ITE Trip Generation Manual - 8th Edition

Plaza at San Mateo (Cutler @ San Mateo)
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A.M. PEAK HOUR		P.M. PEAK HOUR	
		ENTER	EXIT	ENTER	EXIT
Units					
		57	53	62	43
High Turnover (Sit-Down) Restaurant (932)					
		1,208	9.50		

High Turnover (Sit-Down) Restaurant (932)

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$T = \begin{matrix} 127.15 & (X) & + & 0 \\ 50\% & \text{Enter,} & & 50\% \text{ Exit} \end{matrix}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR)

$$T = \begin{matrix} 11.52 & (X) & + & 0 \\ 52\% & \text{Enter,} & & 48\% \text{ Exit} \end{matrix}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

$$T = \begin{matrix} 11.15 & (X) & + & 0 \\ 59\% & \text{Enter,} & & 41\% \text{ Exit} \end{matrix}$$

Comments:

Proposed

Based on ITE Trip Generation Manual - 8th Edition

Plaza at San Mateo (Cutler @ San Mateo)
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR		
		ENTER	EXIT	ENTER	EXIT	
Coffee/Donut Shop w/ Drive Thru Window (937)						
Units						
1.80						
1,000 S.F.						
		1,473	102	98	39	39

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$T = \begin{matrix} 818.58 & (X) + & 0 \\ 50\% & \text{Enter,} & 50\% \text{ Exit} \end{matrix}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR)

$$T = \begin{matrix} 110.75 & (X) + & 0 \\ 51\% & \text{Enter,} & 49\% \text{ Exit} \end{matrix}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

$$T = \begin{matrix} 42.93 & (X) + & 0 \\ 50\% & \text{Enter,} & 50\% \text{ Exit} \end{matrix}$$

Comments:
Proposed

Based on ITE Trip Generation Manual - 8th Edition

Plaza at San Mateo (Cutler @ San Mateo)
Trip Generation Data (ITE Trip Generation Manual - 8th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME		A. M. PEAK HOUR		P. M. PEAK HOUR
	GROSS	ENTER	EXIT	ENTER	EXIT

Units

General Office Building (710)

900	110	15	25	121
-----	-----	----	----	-----

1,000 S.F.

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$\ln(T) = \begin{matrix} 0.77 & \ln(X) + & 3.65 \\ 50\% & \text{Enter,} & 50\% \text{ Exit} \end{matrix}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR)

$$\ln(T) = \begin{matrix} 0.8 & \ln(X) + & 1.55 \\ 88\% & \text{Enter,} & 12\% \text{ Exit} \end{matrix}$$

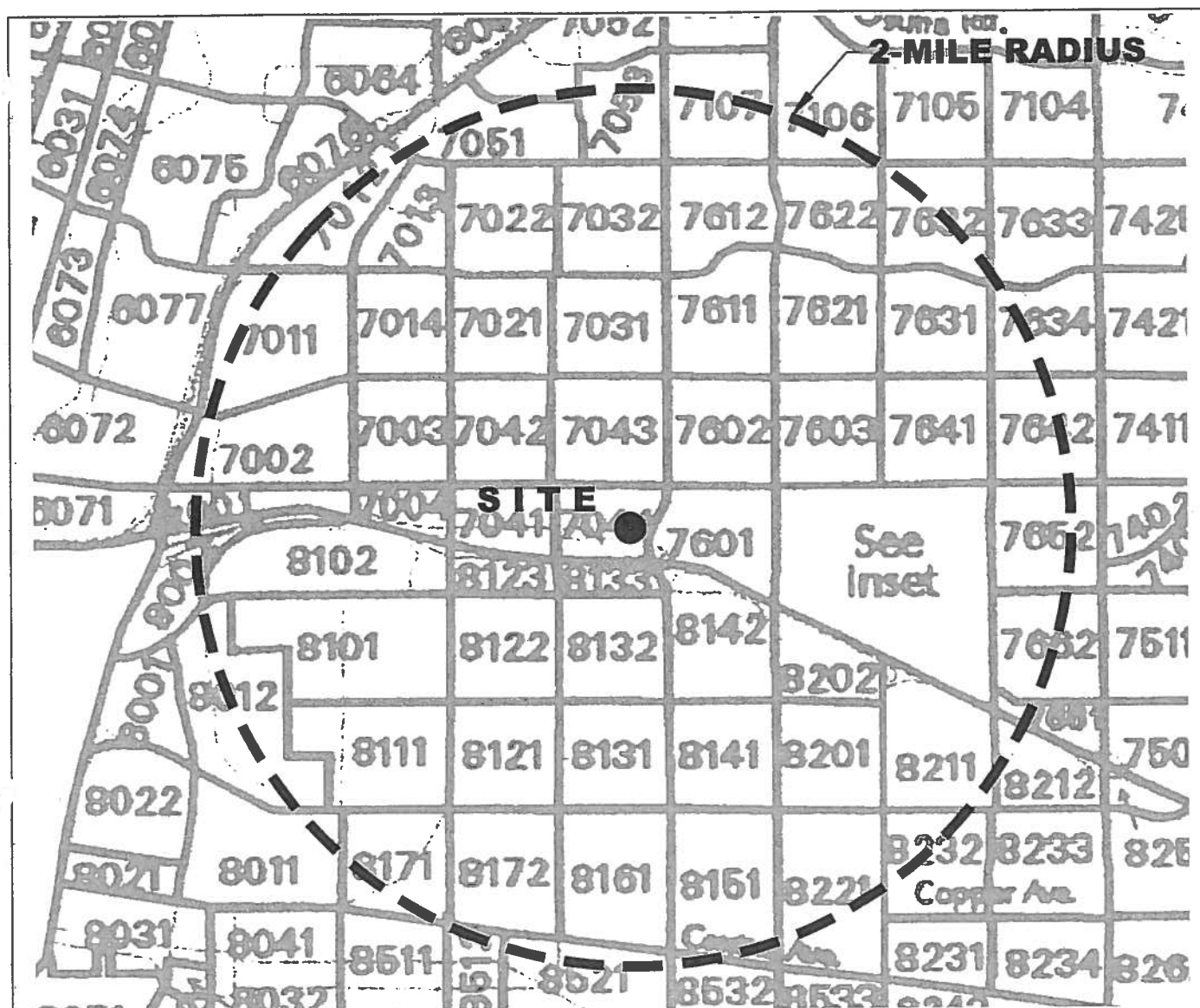
Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

$$T = \begin{matrix} 1.12 & (X) + & 78.81 \\ 17\% & \text{Enter,} & 83\% \text{ Exit} \end{matrix}$$

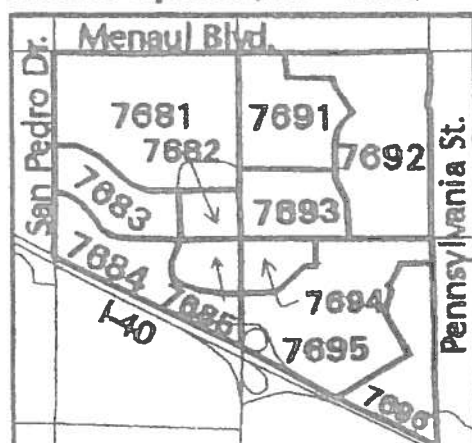
Comments:

Existing

Based on ITE Trip Generation Manual - 8th Edition



Inset for Uptown (not to scale)



DATA ANALYSIS SUBZONE (DASZ) MAP
Plaza at San Mateo (San Mateo Blvd / Prospect Ave)

Trip Distribution Table Plaza at San Mateo (San Mateo Blvd / Prospect Ave)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial Trips**

2004 and 2030 Data Taken from Mid-Region Council of Governments' 2030 Socioeconomic
2030 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area in Study	2004 Population		2030 Population	Interpolated Population for the Year 2014	Population In Study	Dist. (Mi.)	Population / Distance	(QN)			(SN)			(PE)		
		2004	2004 Population						% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	
Boundary Specified on DASZ Map																	
7001	70%	0	0	0	0	0	1.00	0	0.00%	50%	0.00%	0	0%	0.00%	0	0%	0.00%
7002	90%	5	0	3	3	3	1.00	3	0.01%	50%	0.00%	2	0%	0.00%	0	0%	0.00%
7003	100%	87	79	84	84	84	1.00	84	0.15%	50%	0.07%	42	0%	0.00%	0	0%	0.00%
7004	2	7004	2	2	2	2	1.00	2	0.00%	50%	0.00%	1	0%	0.00%	0	0%	0.00%
7011	90%	13	12	13	13	12	1.00	12	0.02%	0%	0.00%	0	100%	0.02%	12	0%	0.00%
7012	90%	454	420	441	441	397	1.00	397	0.69%	0%	0.00%	0	100%	0.69%	397	0%	0.00%
7013	100%	1084	1031	1064	1064	1,064	1.00	1,064	1.86%	0%	0.00%	0	100%	1.86%	1,064	0%	0.00%
7014	100%	1946	1807	1,893	1,893	1,893	1.00	1,893	3.31%	0%	0.00%	0	100%	3.31%	1,893	0%	0.00%
7021	100%	1282	1185	1,245	1,245	1,245	1.00	1,245	2.18%	0%	0.00%	0	100%	2.18%	1,245	0%	0.00%
7022	100%	1690	1570	1,644	1,644	1,644	1.00	1,644	2.88%	0%	0.00%	0	100%	2.88%	1,644	0%	0.00%
7031	100%	1956	1815	1,902	1,902	1,902	1.00	1,902	3.33%	0%	0.00%	0	100%	3.33%	1,902	0%	0.00%
7032	100%	1648	1541	1,607	1,607	1,607	1.00	1,607	2.81%	0%	0.00%	0	100%	2.81%	1,607	0%	0.00%
7041	100%	182	166	176	176	176	1.00	176	0.31%	0%	0.00%	0	0%	0.00%	0	0%	0.00%
7042	100%	1110	1028	1,078	1,078	1,078	1.00	1,078	1.89%	50%	0.94%	539	0%	0.00%	0	0%	0.00%
7043	100%	1467	1360	1,426	1,426	1,426	1.00	1,426	2.50%	0%	0.00%	0	100%	2.50%	1,426	0%	0.00%
7044	100%	13	15	14	14	14	1.00	14	0.02%	0%	0.00%	0	0%	0.00%	0	0%	0.00%
7051	95%	2889	2687	2,811	2,811	2,670	1.00	2,670	4.87%	0%	0.00%	0	100%	4.87%	2,670	0%	0.00%
7052	10%	6	6	6	6	1	1.00	1	0.00%	0%	0.00%	0	100%	0.00%	1	0%	0.00%
7053	100%	7	0	4	4	4	1.00	4	0.01%	0%	0.00%	0	100%	0.01%	4	0%	0.00%
7106	45%	1869	1731	1,816	817	817	1.00	817	1.43%	0%	0.00%	0	100%	1.43%	817	0%	0.00%
7107	90%	2225	2064	2,163	1,947	1,947	1.00	1,947	3.41%	0%	0.00%	0	100%	3.41%	1,947	0%	0.00%
7601	100%	924	858	899	899	899	1.00	899	1.57%	0%	0.00%	0	0%	0.00%	0	100%	1.57%
7602	100%	1062	987	1,033	1,033	1,033	1.00	1,033	1.81%	0%	0.00%	0	100%	1.81%	1,033	0%	0.00%
7603	100%	1221	1132	1,187	1,187	1,187	1.00	1,187	2.08%	0%	0.00%	0	100%	2.08%	1,187	0%	0.00%
7611	100%	1854	1720	1,802	1,802	1,802	1.00	1,802	3.15%	0%	0.00%	0	100%	3.15%	1,802	0%	0.00%
7612	100%	926	863	902	902	902	1.00	902	1.58%	0%	0.00%	0	100%	1.58%	902	0%	0.00%
7621	100%	1297	1205	1,262	1,262	1,262	1.00	1,262	2.21%	0%	0.00%	0	100%	2.21%	1,262	0%	0.00%
7622	100%	1012	942	985	985	985	1.00	985	1.72%	0%	0.00%	0	100%	1.72%	985	0%	0.00%
7631	100%	1101	1018	1,069	1,069	1,069	1.00	1,069	1.87%	0%	0.00%	0	100%	1.87%	1,069	0%	0.00%
7632	85%	859	802	837	711	711	1.00	711	1.24%	0%	0.00%	0	100%	1.24%	711	0%	0.00%
7634	50%	682	630	662	331	331	1.00	331	0.58%	0%	0.00%	0	100%	0.58%	331	0%	0.00%
7641	100%	1259	1165	1,223	1,223	1,223	1.00	1,223	2.14%	0%	0.00%	0	100%	2.14%	1,223	0%	0.00%
7642	85%	904	841	880	748	748	1.00	748	1.31%	0%	0.00%	0	100%	1.31%	748	0%	0.00%
7652	90%	1024	951	996	896	896	1.00	896	1.57%	0%	0.00%	0	100%	1.57%	896	0%	0.00%
7661	10%	194	215	202	20	20	1.00	20	0.03%	0%	0.00%	0	0%	0.00%	0	100%	0.03%

Trip Distribution Table Plaza at San Mateo (San Mateo Blvd / Prospect Ave)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial Trips**

2004 and 2030 Data Taken from Mid-Region Council of Governments' 2030 Socioeconomic
2030 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area in Study	2004 Population		Interpolated Population for the Year 2014	Population in Study	Dist. (Mi.)	Population / Distance	Percent Population	(QN)			(SN)			(PE)			
		2004	2030						% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing		
Boundary Specified on DASZ Map																		
7662	50%	1692	1572	1,646	823	1.00	823	1.44%	0%	0.00%	0	0%	0.00%	0	100%	1.44%	823	
7681	100%	0	0	0	0	1.00	0	0.00%	0%	0.00%	0	30%	0.00%	0	70%	0.00%	0	
7682	100%	0	0	0	0	1.00	0	0.00%	0%	0.00%	0	0%	0.00%	0	100%	0.00%	0	
7683	100%	126	117	123	123	1.00	123	0.22%	0%	0.00%	0	0%	0.00%	0	100%	0.22%	123	
7684	100%	662	632	650	650	1.00	650	1.14%	0%	0.00%	0	0%	0.00%	0	100%	1.14%	650	
7685	100%	0	0	0	0	1.00	0	0.00%	0%	0.00%	0	0%	0.00%	0	100%	0.00%	0	
7691	100%	147	150	148	148	1.00	148	0.26%	0%	0.00%	0	100%	0.26%	148	0%	0.00%	0	
7692	100%	659	868	739	739	1.00	739	1.29%	0%	0.00%	0	100%	1.29%	739	0%	0.00%	0	
7693	100%	0	796	306	306	1.00	306	0.54%	0%	0.00%	0	100%	0.54%	306	0%	0.00%	0	
7694	100%	0	85	33	33	1.00	33	0.06%	0%	0.00%	0	100%	0.06%	33	0%	0.00%	0	
7695	100%	0	139	53	53	1.00	53	0.09%	0%	0.00%	0	100%	0.09%	53	0%	0.00%	0	
7696	100%	877	837	862	862	1.00	862	1.51%	0%	0.00%	0	100%	1.51%	862	0%	0.00%	0	
8012	25%	466	471	468	117	1.00	117	0.20%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8101	100%	2346	2176	2,281	2,281	1.00	2,281	3.99%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8102	100%	1462	1378	1,430	1,430	1.00	1,430	2.50%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8111	100%	1772	1643	1,722	1,722	1.00	1,722	3.01%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8121	100%	1229	1136	1,193	1,193	1.00	1,193	2.09%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8122	100%	1241	1168	1,213	1,213	1.00	1,213	2.12%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8123	100%	471	435	457	457	1.00	457	0.80%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8131	100%	1262	1170	1,227	1,227	1.00	1,227	2.15%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8132	100%	1162	1076	1,129	1,129	1.00	1,129	1.98%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8133	100%	1	1	1	1	1.00	1	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8141	100%	1021	951	994	994	1.00	994	1.74%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8142	100%	1483	1376	1,442	1,442	1.00	1,442	2.52%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8151	90%	1752	1674	1,722	1,550	1.00	1,550	2.71%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8161	95%	2081	2358	2,188	2,079	1.00	2,079	3.64%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8171	50%	1020	974	1,002	501	1.00	501	0.88%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8172	95%	1605	1514	1,570	1,492	1.00	1,492	2.61%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8201	100%	1126	1045	1,095	1,095	1.00	1,095	1.92%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8202	100%	806	757	787	787	1.00	787	1.38%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8211	95%	1580	1479	1,541	1,464	1.00	1,464	2.56%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8221	50%	3	10	6	3	1.00	3	0.01%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
8232	15%	1199	1118	1,168	175	1.00	175	0.31%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
												584			30,919			2,515
												1.02%			54.11%			4.40%

Trip Distribution Table Plaza at San Mateo (San Mateo Blvd / Prospect Ave)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed Retail Commercial Trips

2004 and 2030 Data Taken from Mid-Region Council of Governments' 2030 Socioeconomic
2030 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area in Study	2004 Population		Interpolated Population for the Year 2014	Population in Study	Dist. (Mi.)	Population / Distance	(IE)		(SS)		(IW)	
		2004 Population	2030 Population					% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
Boundary Specified on DASZ Map													
7001	70%	0	0	0	0	1.00	0	0%	0.00%	0	0%	0.00%	0
7002	90%	5	0	3	3	1.00	3	0%	0.01%	0	0%	0.00%	0
7003	100%	87	79	84	84	1.00	84	0%	0.15%	0	0%	0.00%	0
7004	100%	2	2	2	2	1.00	2	0%	0.00%	0	0%	0.00%	0
7011	90%	13	12	13	12	1.00	12	0%	0.02%	0	0%	0.00%	0
7012	90%	454	420	441	397	1.00	397	0%	0.68%	0	0%	0.00%	0
7013	100%	1084	1031	1,064	1,064	1.00	1,064	0%	1.88%	0	0%	0.00%	0
7014	100%	1946	1807	1,893	1,893	1.00	1,893	0%	3.31%	0	0%	0.00%	0
7021	100%	1282	1185	1,245	1,245	1.00	1,245	0%	2.18%	0	0%	0.00%	0
7022	100%	1690	1570	1,644	1,644	1.00	1,644	0%	2.88%	0	0%	0.00%	0
7031	100%	1956	1815	1,902	1,902	1.00	1,902	0%	3.33%	0	0%	0.00%	0
7032	100%	1648	1541	1,607	1,607	1.00	1,607	0%	2.81%	0	0%	0.00%	0
7041	100%	182	166	176	176	1.00	176	0%	0.31%	0	0%	0.00%	0
7042	100%	1110	1028	1,078	1,078	1.00	1,078	0%	1.89%	0	0%	0.00%	0
7043	100%	1467	1360	1,426	1,426	1.00	1,426	0%	2.50%	0	0%	0.00%	0
7044	100%	13	15	14	14	1.00	14	0%	0.02%	0	0%	0.00%	0
7051	95%	2889	2687	2,811	2,670	1.00	2,670	0%	4.67%	0	0%	0.00%	0
7052	10%	6	6	6	1	1.00	1	0%	0.00%	0	0%	0.00%	0
7053	100%	7	0	4	4	1.00	4	0%	0.01%	0	0%	0.00%	0
7106	45%	1869	1731	1,816	817	1.00	817	0%	1.43%	0	0%	0.00%	0
7107	90%	2225	2064	2,163	1,947	1.00	1,947	0%	3.41%	0	0%	0.00%	0
7601	100%	924	858	898	899	1.00	899	0%	1.57%	0	0%	0.00%	0
7602	100%	1062	987	1,033	1,033	1.00	1,033	0%	1.81%	0	0%	0.00%	0
7603	100%	1221	1132	1,187	1,187	1.00	1,187	0%	2.08%	0	0%	0.00%	0
7611	100%	1854	1720	1,802	1,802	1.00	1,802	0%	3.15%	0	0%	0.00%	0
7612	100%	926	863	902	902	1.00	902	0%	1.58%	0	0%	0.00%	0
7621	100%	1297	1205	1,262	1,262	1.00	1,262	0%	2.21%	0	0%	0.00%	0
7622	100%	1012	942	985	985	1.00	985	0%	1.72%	0	0%	0.00%	0
7631	100%	1101	1018	1,069	1,069	1.00	1,069	0%	1.87%	0	0%	0.00%	0
7632	85%	859	802	837	711	1.00	711	0%	1.24%	0	0%	0.00%	0
7634	50%	682	630	662	331	1.00	331	0%	0.58%	0	0%	0.00%	0
7641	100%	1259	1165	1,223	1,223	1.00	1,223	0%	2.14%	0	0%	0.00%	0
7642	85%	904	841	880	748	1.00	748	0%	0.00%	0	0%	0.00%	0
7652	90%	1024	951	996	896	1.00	896	0%	1.31%	0	0%	0.00%	0
7661	10%	194	215	202	20	1.00	20	0%	0.03%	0	0%	0.00%	0

Trip Distribution Table Plaza at San Mateo (San Mateo Blvd / Prospect Ave)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed Retail Commercial Trips

2004 and 2030 Data Taken from Mid-Region Council of Governments' 2030 Socioeconomic
2030 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

(IE)										(SS)		(IW)		
Indian School Rd East				San Mateo Blvd South		Indian School Rd West								
DASZ #	% Sub Area In Study	2004 Population	2030 Population	Interpolated Population for the Year 2014	Population In Study	Dist. (Mi.)	Population / Distance	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
Boundary Specified on DASZ Map														
7662	50%	1692	1572	1,646	823	1.00	823	1.44%	0	0.00%	0	0%	0.00%	0
7681	100%	0	0	0	0	1.00	0	0.00%	0	0.00%	0	0%	0.00%	0
7682	100%	0	0	0	0	1.00	0	0.00%	0	0.00%	0	0%	0.00%	0
7683	100%	126	117	123	123	1.00	123	0.22%	0	0.00%	0	0%	0.00%	0
7684	100%	662	632	650	650	1.00	650	1.14%	0	0.00%	0	0%	0.00%	0
7685	100%	0	0	0	0	1.00	0	0.00%	0	0.00%	0	0%	0.00%	0
7691	100%	147	150	148	148	1.00	148	0.28%	0	0.00%	0	0%	0.00%	0
7692	100%	659	868	739	739	1.00	739	1.29%	0	0.00%	0	0%	0.00%	0
7693	100%	0	796	306	306	1.00	306	0.84%	0	0.00%	0	0%	0.00%	0
7694	100%	0	85	33	33	1.00	33	0.06%	0	0.00%	0	0%	0.00%	0
7695	100%	0	139	53	53	1.00	53	0.09%	0	0.00%	0	0%	0.00%	0
7696	100%	877	837	862	862	1.00	862	1.51%	0	0.00%	0	0%	0.00%	0
8012	25%	466	471	468	117	1.00	117	0.20%	0	0.00%	0	0%	0.00%	0
8101	100%	2346	2176	2,281	2,281	1.00	2,281	3.99%	0	0.00%	0	0%	0.00%	0
8102	100%	1462	1378	1,430	1,430	1.00	1,430	2.80%	0	0.00%	0	0%	0.00%	0
8111	100%	1772	1643	1,722	1,722	1.00	1,722	3.01%	0	0.00%	0	0%	0.00%	0
8121	100%	1229	1136	1,193	1,193	1.00	1,193	1.09%	0	0.00%	0	0%	0.00%	0
8122	100%	1241	1168	1,213	1,213	1.00	1,213	2.12%	0	0.00%	0	0%	0.00%	0
8123	100%	471	435	457	457	1.00	457	0.80%	0	0.00%	0	0%	0.00%	0
8131	100%	1262	1170	1,227	1,227	1.00	1,227	2.05%	0	0.00%	0	50%	1.07%	614
8132	100%	1162	1076	1,129	1,129	1.00	1,129	1.98%	0	0.00%	0	40%	0.79%	452
8133	100%	1	0	1	1	1.00	1	0.00%	0	0.00%	0	0%	0.00%	0
8141	100%	1021	951	994	994	1.00	994	1.74%	0	0.00%	0	100%	1.74%	994
8142	100%	1483	1376	1,442	1,442	1.00	1,442	2.52%	0	0.00%	0	75%	1.89%	1,082
8151	90%	1752	1674	1,722	1,550	1.00	1,550	2.71%	0	0.00%	0	100%	2.71%	1,550
8161	95%	2081	2358	2,188	2,079	1.00	2,079	3.64%	0	0.00%	0	50%	1.82%	1,040
8171	50%	1020	974	1,002	501	1.00	501	0.88%	0	0.00%	0	0%	0.00%	0
8172	95%	1605	1514	1,570	1,492	1.00	1,492	2.61%	0	0.00%	0	0%	0.00%	0
8201	100%	1126	1045	1,095	1,095	1.00	1,095	1.92%	0	0.00%	0	0%	0.00%	0
8202	100%	806	757	787	787	1.00	787	1.38%	0	0.00%	0	50%	0.96%	548
8211	95%	1580	1479	1,541	1,464	1.00	1,464	2.66%	0	0.00%	0	100%	2.66%	1,464
8221	50%	3	10	6	3	1.00	3	0.01%	0	0.00%	0	100%	0.01%	3
8232	15%	1199	1118	1,168	1,175	1.00	1,175	0.31%	0	0.00%	0	100%	0.31%	1,175
31,274								57,143	48.57%	1,302	8,313	14.55%	226	
									2.28%			0.40%		

Trip Distribution Table

Plaza at San Mateo (San Mateo Blvd / Prospect Ave)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial Trips**

2004 and 2030 Data Taken from Mid-Region Council of Governments' 2030 Socioeconomic
2030 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area in Study	2004		2030 Population	Interpolated Population for the Year	Population In Study	Dist. (Mi.)	Population / Distance	Percent Population	(7C) DASZ 7044 Central		(WS) Washington St South			
		2004 Population	2030							% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
Boundary Specified on DASZ Map															
7001	70%	0	0	0	0	0	1.00	0	0.00%	0%	0.00%	0	0.00%	0	
7002	90%	5	0	3	3	3	1.00	3	0.01%	0%	0.00%	0	0.00%	0	
7003	100%	87	79	84	84	84	1.00	84	0.15%	0%	0.00%	0	0.00%	0	
7004	100%	2	2	2	2	2	1.00	2	0.00%	0%	0.00%	0	0.00%	0	
7011	90%	13	12	13	13	12	1.00	12	0.02%	0%	0.00%	0	0.00%	0	
7012	90%	454	420	441	397	397	1.00	397	0.69%	0%	0.00%	0	0.00%	0	
7013	100%	1084	1031	1,064	1,064	1,064	1.00	1,064	1.86%	0%	0.00%	0	0.00%	0	
7014	100%	1946	1807	1,893	1,893	1,893	1.00	1,893	3.31%	0%	0.00%	0	0.00%	0	
7021	100%	1282	1185	1,245	1,245	1,245	1.00	1,245	2.18%	0%	0.00%	0	0.00%	0	
7022	100%	1690	1570	1,644	1,644	1,644	1.00	1,644	2.88%	0%	0.00%	0	0.00%	0	
7031	100%	1956	1815	1,902	1,902	1,902	1.00	1,902	3.33%	0%	0.00%	0	0.00%	0	
7032	100%	1648	1541	1,607	1,607	1,607	1.00	1,607	2.81%	0%	0.00%	0	0.00%	0	
7041	100%	182	166	176	176	176	1.00	176	0.31%	0%	0.00%	0	0.00%	0	
7042	100%	1110	1028	1,078	1,078	1,078	1.00	1,078	1.89%	0%	0.00%	0	0.00%	0	
7043	100%	1467	1360	1,426	1,426	1,426	1.00	1,426	2.50%	0%	0.00%	0	0.00%	0	
7044	100%	13	15	14	14	14	1.00	14	0.02%	100%	0.02%	14	0%	0.00%	0
7051	95%	2889	2687	2,811	2,670	2,670	1.00	2,670	4.67%	0%	0.00%	0	0.00%	0	
7052	10%	6	6	6	1	1	1.00	1	0.00%	0%	0.00%	0	0.00%	0	
7053	100%	7	0	4	4	4	1.00	4	0.01%	0%	0.00%	0	0.00%	0	
7106	45%	1869	1731	1,816	817	817	1.00	817	1.43%	0%	0.00%	0	0.00%	0	
7107	90%	2225	2064	2,163	1,947	1,947	1.00	1,947	3.41%	0%	0.00%	0	0.00%	0	
7601	100%	924	858	899	899	899	1.00	899	1.57%	0%	0.00%	0	0.00%	0	
7602	100%	1062	987	1,033	1,033	1,033	1.00	1,033	1.81%	0%	0.00%	0	0.00%	0	
7603	100%	1221	1132	1,187	1,187	1,187	1.00	1,187	2.08%	0%	0.00%	0	0.00%	0	
7611	100%	1854	1720	1,802	1,802	1,802	1.00	1,802	3.15%	0%	0.00%	0	0.00%	0	
7612	100%	926	863	902	902	902	1.00	902	1.58%	0%	0.00%	0	0.00%	0	
7621	100%	1297	1205	1,262	1,262	1,262	1.00	1,262	2.21%	0%	0.00%	0	0.00%	0	
7622	100%	1012	942	985	985	985	1.00	985	1.72%	0%	0.00%	0	0.00%	0	
7631	100%	1101	1018	1,069	1,069	1,069	1.00	1,069	1.87%	0%	0.00%	0	0.00%	0	
7632	85%	859	802	837	711	711	1.00	711	1.24%	0%	0.00%	0	0.00%	0	
7634	50%	682	630	662	331	331	1.00	331	0.58%	0%	0.00%	0	0.00%	0	
7641	100%	1259	1165	1,223	1,223	1,223	1.00	1,223	2.14%	0%	0.00%	0	0.00%	0	
7642	85%	904	841	880	748	748	1.00	748	1.31%	0%	0.00%	0	0.00%	0	
7652	90%	1024	951	996	896	896	1.00	896	1.57%	0%	0.00%	0	0.00%	0	
7661	10%	194	215	202	20	20	1.00	20	0.03%	0%	0.00%	0	0.00%	0	

Trip Distribution Table Plaza at San Mateo (San Mateo Blvd / Prospect Ave)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial Trips**

2004 and 2030 Data Taken from Mid-Region Council of Governments' 2030 Socioeconomic
2030 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area in Study	2004 Population	2030 Population	Interpolated Population for the Year 2014	Population in Study	Dist. (Mi.)	Population / Distance	Percent Population	(7C) DASZ 7044 Central			(WS) Washington St South		
									% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
Boundary Specified on DASZ Map														
7662	50%	1692	1572	1,646	823	1.00	823	1.44%	0%	0.00%	0	0%	0.00%	0
7681	100%	0	0	0	0	1.00	0	0.00%	0%	0.00%	0	0%	0.00%	0
7682	100%	0	0	0	0	1.00	0	0.00%	0%	0.00%	0	0%	0.00%	0
7683	100%	126	117	123	123	1.00	123	0.22%	0%	0.00%	0	0%	0.00%	0
7684	100%	662	632	650	650	1.00	650	1.14%	0%	0.00%	0	0%	0.00%	0
7685	100%	0	0	0	0	1.00	0	0.00%	0%	0.00%	0	0%	0.00%	0
7691	100%	147	150	148	148	1.00	148	0.26%	0%	0.00%	0	0%	0.00%	0
7692	100%	659	668	739	739	1.00	739	1.29%	0%	0.00%	0	0%	0.00%	0
7693	100%	0	796	306	306	1.00	306	0.54%	0%	0.00%	0	0%	0.00%	0
7694	100%	0	85	33	33	1.00	33	0.06%	0%	0.00%	0	0%	0.00%	0
7695	100%	0	139	53	53	1.00	53	0.09%	0%	0.00%	0	0%	0.00%	0
7696	100%	877	837	862	862	1.00	862	1.51%	0%	0.00%	0	0%	0.00%	0
8012	25%	466	466	468	117	1.00	117	0.20%	0%	0.00%	0	100%	0.20%	117
8101	100%	2346	2176	2,281	2,281	1.00	2,281	3.99%	0%	0.00%	0	100%	3.99%	2,281
8102	100%	1462	1378	1,430	1,430	1.00	1,430	2.50%	0%	0.00%	0	100%	2.50%	1,430
8111	100%	1772	1643	1,722	1,722	1.00	1,722	3.01%	0%	0.00%	0	100%	3.01%	1,722
8121	100%	1229	1121	1,193	1,193	1.00	1,193	2.09%	0%	0.00%	0	100%	2.09%	1,193
8122	100%	1241	1168	1,213	1,213	1.00	1,213	2.12%	0%	0.00%	0	100%	2.12%	1,213
8123	100%	471	435	457	457	1.00	457	0.80%	0%	0.00%	0	100%	0.80%	457
8131	100%	1262	1170	1,227	1,227	1.00	1,227	2.15%	0%	0.00%	0	50%	1.07%	614
8132	100%	1162	1076	1,129	1,129	1.00	1,129	1.98%	0%	0.00%	0	48%	0.79%	452
8133	100%	1	0	1	1	1.00	1	0.00%	0%	0.00%	0	50%	0.00%	1
8141	100%	1021	951	994	994	1.00	994	1.74%	0%	0.00%	0	0%	0.00%	0
8142	100%	1483	1376	1,442	1,442	1.00	1,442	2.52%	0%	0.00%	0	0%	0.00%	0
8151	90%	1752	1674	1,722	1,550	1.00	1,550	2.71%	0%	0.00%	0	0%	0.00%	0
8161	95%	2081	2358	2,188	2,079	1.00	2,079	3.64%	0%	0.00%	0	50%	1.82%	1,040
8171	50%	1020	974	1,002	501	1.00	501	0.88%	0%	0.00%	0	100%	0.88%	501
8172	95%	1605	1514	1,570	1,492	1.00	1,492	2.61%	0%	0.00%	0	100%	2.61%	1,492
8201	100%	1126	1045	1,095	1,095	1.00	1,095	1.92%	0%	0.00%	0	0%	0.00%	0
8202	100%	806	757	787	787	1.00	787	1.38%	0%	0.00%	0	0%	0.00%	0
8211	95%	1580	1479	1,541	1,464	1.00	1,464	2.56%	0%	0.00%	0	0%	0.00%	0
8221	50%	3	10	6	3	1.00	3	0.01%	0%	0.00%	0	0%	0.00%	0
8232	15%	1199	1118	1,168	175	1.00	175	0.31%	0%	0.00%	0	0%	0.00%	0
					57,143	1.00	57,143	48.57%				14	12,511	
					31,274	1.00	31,274	0.02%				21	89%	

Trip Distribution Table Plaza at San Mateo (San Mateo Blvd / Prospect Ave)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial Trips**

2004 and 2030 Data Taken from Mid-Region Council of Governments' 2030 Socioeconomic
2030 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area in Study	2004		2030 Population	Interpolated Population for the Year 2014	Population In Study	Dist. (Mi.)	Population / Distance	(CW)			(PW)			
		2004 Population	2004						Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
Boundary Specified on DASZ Map															
7001	70%	0	0	0	0	0	1.00	0	0.00%	0%	0.00%	0	50%	0.00%	0
7002	90%	5	0	3	3	3	1.00	3	0.01%	0%	0.00%	0	50%	0.00%	2
7003	7003	87	79	84	84	84	1.00	84	0.15%	0%	0.00%	0	50%	0.07%	42
7004	100%	2	7004	2	2	2	1.00	2	0.00%	0%	0.00%	0	50%	0.00%	0
7011	90%	13	12	13	13	12	1.00	12	0.02%	0%	0.00%	0	0%	0.00%	0
7012	90%	454	420	441	397	1.00	397	397	0.88%	0%	0.00%	0	0%	0.00%	0
7013	100%	1084	1031	1064	1064	1.00	1064	1,064	1.86%	0%	0.00%	0	0%	0.00%	0
7014	100%	1946	1807	1893	1893	1.00	1893	1,893	3.31%	0%	0.00%	0	0%	0.00%	0
7021	100%	1282	1185	1245	1245	1.00	1245	1,245	2.18%	0%	0.00%	0	0%	0.00%	0
7022	100%	1690	1570	1644	1644	1.00	1644	1,644	2.88%	0%	0.00%	0	0%	0.00%	0
7031	100%	1956	1815	1902	1902	1.00	1902	1,902	3.33%	0%	0.00%	0	0%	0.00%	0
7032	100%	1648	1541	1607	1607	1.00	1607	1,607	2.81%	0%	0.00%	0	0%	0.00%	0
7041	100%	182	166	176	176	1.00	176	176	0.31%	50%	0.15%	88	50%	0.15%	88
7042	100%	1110	1028	1078	1078	1.00	1078	1,078	1.89%	0%	0.00%	0	50%	0.94%	539
7043	100%	1467	1360	1426	1426	1.00	1426	1,426	2.50%	0%	0.00%	0	0%	0.00%	0
7044	100%	13	7044	15	14	14	1.00	14	0.02%	0%	0.00%	0	0%	0.00%	0
7051	95%	2889	2687	2811	2670	1.00	2670	2,670	4.87%	0%	0.00%	0	0%	0.00%	0
7052	10%	6	7052	6	6	1	1.00	1	0.00%	0%	0.00%	0	0%	0.00%	0
7053	100%	7	7053	0	4	4	1.00	4	0.01%	0%	0.00%	0	0%	0.00%	0
7106	45%	1869	1731	1816	817	1.00	817	817	1.43%	0%	0.00%	0	0%	0.00%	0
7107	90%	2225	2064	2163	1947	1.00	1947	1,947	3.41%	0%	0.00%	0	0%	0.00%	0
7601	100%	924	858	899	899	1.00	899	899	1.57%	0%	0.00%	0	0%	0.00%	0
7602	100%	1062	987	1033	1033	1.00	1033	1,033	1.81%	0%	0.00%	0	0%	0.00%	0
7603	100%	1221	1132	1187	1187	1.00	1187	1,187	2.08%	0%	0.00%	0	0%	0.00%	0
7611	100%	1854	1720	1802	1802	1.00	1802	1,802	3.15%	0%	0.00%	0	0%	0.00%	0
7612	100%	926	863	902	902	1.00	902	902	1.58%	0%	0.00%	0	0%	0.00%	0
7621	100%	1297	1205	1262	1262	1.00	1262	1,262	2.21%	0%	0.00%	0	0%	0.00%	0
7622	100%	1012	942	985	985	1.00	985	985	1.72%	0%	0.00%	0	0%	0.00%	0
7631	100%	1101	1018	1069	1069	1.00	1069	1,069	1.87%	0%	0.00%	0	0%	0.00%	0
7632	85%	859	802	837	711	1.00	711	711	1.24%	0%	0.00%	0	0%	0.00%	0
7634	50%	682	630	662	331	1.00	331	331	0.58%	0%	0.00%	0	0%	0.00%	0
7641	100%	1259	1165	1223	1223	1.00	1223	1,223	2.14%	0%	0.00%	0	0%	0.00%	0
7642	85%	904	841	880	748	1.00	748	748	1.31%	0%	0.00%	0	0%	0.00%	0
7652	90%	1024	951	996	896	1.00	896	896	1.57%	0%	0.00%	0	0%	0.00%	0
7661	10%	194	215	202	20	1.00	20	20	0.03%	0%	0.00%	0	0%	0.00%	0

Trip Distribution Table Plaza at San Mateo (San Mateo Blvd / Prospect Ave)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed Retail Commercial Trips

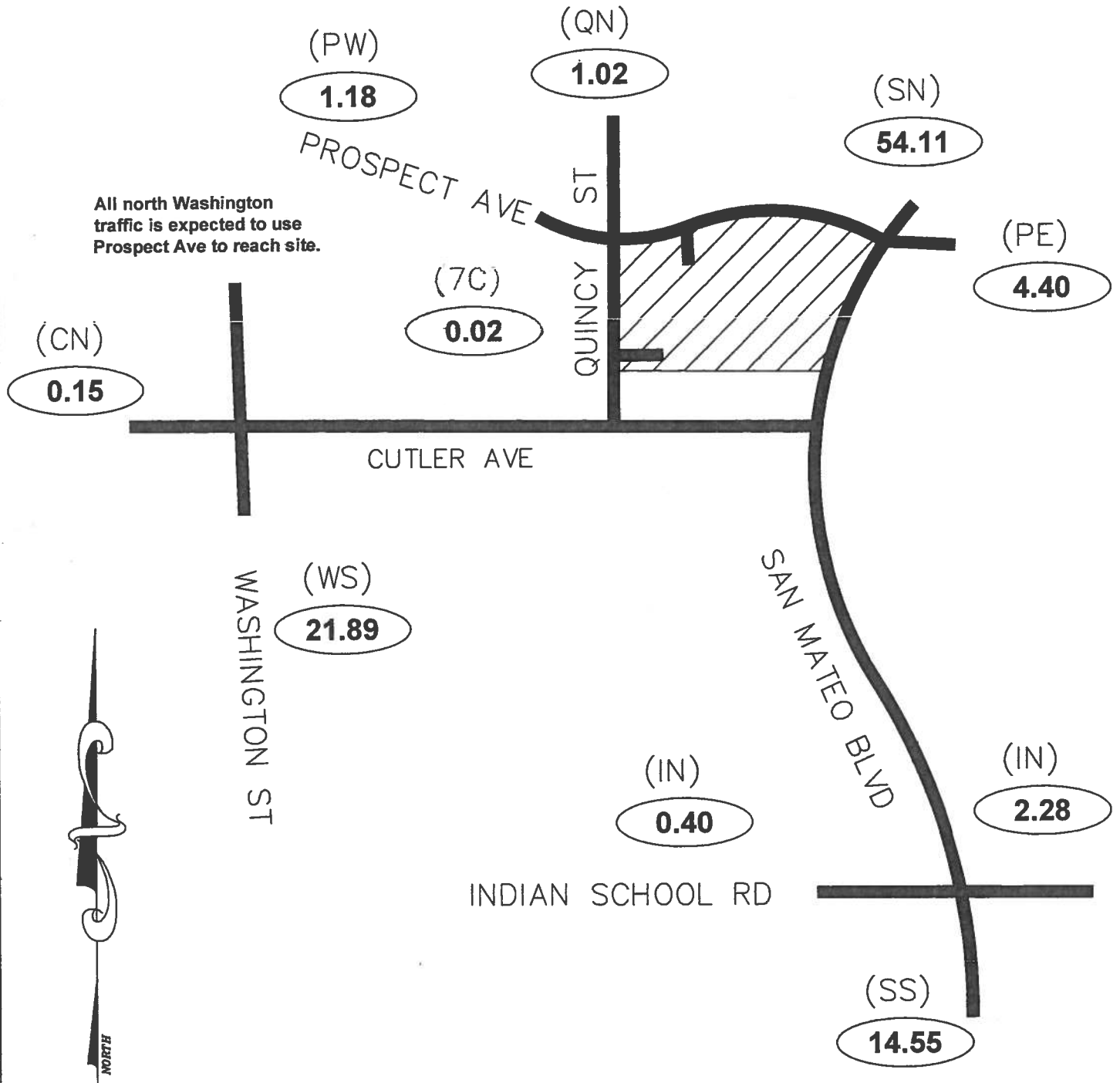
2004 and 2030 Data Taken from Mid-Region Council of Governments' 2030 Socioeconomic
2030 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area in Study	2004 Population		2030 Population	Interpolated Population for the Year 2014	Population In Study	Dist. (Mi.)	Population / Distance	Percent Population	(CW)		(PW)		
		2004	2004 Population	2030						% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing
Boundary Specified on DASZ Map														
7662	50%	1692	1572	1,646	823	1.00	823	1.44%	0	0.00%	0	0%	0.00%	0
7681	100%	0	0	0	0	1.00	0	0.00%	0	0.00%	0	0%	0.00%	0
7682	100%	0	0	0	0	1.00	0	0.00%	0	0.00%	0	0%	0.00%	0
7683	100%	126	117	123	123	1.00	123	0.22%	0	0.00%	0	0%	0.00%	0
7684	100%	662	632	650	650	1.00	650	1.14%	0	0.00%	0	0%	0.00%	0
7685	100%	0	0	0	0	1.00	0	0.00%	0	0.00%	0	0%	0.00%	0
7691	100%	147	150	148	148	1.00	148	0.26%	0	0.00%	0	0%	0.00%	0
7692	100%	659	688	739	739	1.00	739	1.29%	0	0.00%	0	0%	0.00%	0
7693	100%	0	796	306	306	1.00	306	0.54%	0	0.00%	0	0%	0.00%	0
7694	100%	0	85	33	33	1.00	33	0.06%	0	0.00%	0	0%	0.00%	0
7695	100%	0	139	53	53	1.00	53	0.09%	0	0.00%	0	0%	0.00%	0
7696	100%	877	837	862	862	1.00	862	1.51%	0	0.00%	0	0%	0.00%	0
8012	25%	466	471	468	117	1.00	117	0.20%	0	0.00%	0	0%	0.00%	0
8101	100%	2346	2176	2,281	2,281	1.00	2,281	3.99%	0	0.00%	0	0%	0.00%	0
8102	100%	1462	1378	1,430	1,430	1.00	1,430	2.50%	0	0.00%	0	0%	0.00%	0
8111	100%	1772	1643	1,722	1,722	1.00	1,722	3.01%	0	0.00%	0	0%	0.00%	0
8121	100%	1229	1136	1,193	1,193	1.00	1,193	2.09%	0	0.00%	0	0%	0.00%	0
8122	100%	1241	1168	1,213	1,213	1.00	1,213	2.12%	0	0.00%	0	0%	0.00%	0
8123	100%	471	435	457	457	1.00	457	0.80%	0	0.00%	0	0%	0.00%	0
8131	100%	1262	1170	1,227	1,227	1.00	1,227	2.15%	0	0.00%	0	0%	0.00%	0
8132	100%	1162	1076	1,129	1,129	1.00	1,129	1.98%	0	0.00%	0	0%	0.00%	0
8133	100%	1	0	1	1	1.00	1	0.00%	0	0.00%	0	0%	0.00%	0
8141	100%	1021	951	994	994	1.00	994	1.74%	0	0.00%	0	0%	0.00%	0
8142	100%	1463	1376	1,442	1,442	1.00	1,442	2.57%	0	0.00%	0	0%	0.00%	0
8151	90%	1752	1674	1,722	1,550	1.00	1,550	2.71%	0	0.00%	0	0%	0.00%	0
8161	95%	2081	2358	2,188	2,079	1.00	2,079	3.64%	0	0.00%	0	0%	0.00%	0
8171	50%	1020	974	1,002	501	1.00	501	0.89%	0	0.00%	0	0%	0.00%	0
8172	95%	1605	1514	1,570	1,492	1.00	1,492	2.61%	0	0.00%	0	0%	0.00%	0
8201	100%	1126	1045	1,095	1,095	1.00	1,095	1.92%	0	0.00%	0	0%	0.00%	0
8202	100%	806	757	787	787	1.00	787	1.39%	0	0.00%	0	0%	0.00%	0
8211	95%	1580	1479	1,541	1,464	1.00	1,464	2.55%	0	0.00%	0	0%	0.00%	0
8221	50%	3	10	6	3	1.00	3	0.01%	0	0.00%	0	0%	0.00%	0
8232	15%	1199	1118	1,168	175	1.00	175	0.31%	0	0.00%	0	0%	0.00%	0
									48.57%	88				672
									57,143	0.15%				1,18%

Plaza at San Mateo

(San Mateo Blvd / Prospect Ave)

Trip Distribution Map (%)



NTS

Terry O. Brown, P.E.

P.O. Box 92051

Albuquerque, NM 87199-2051

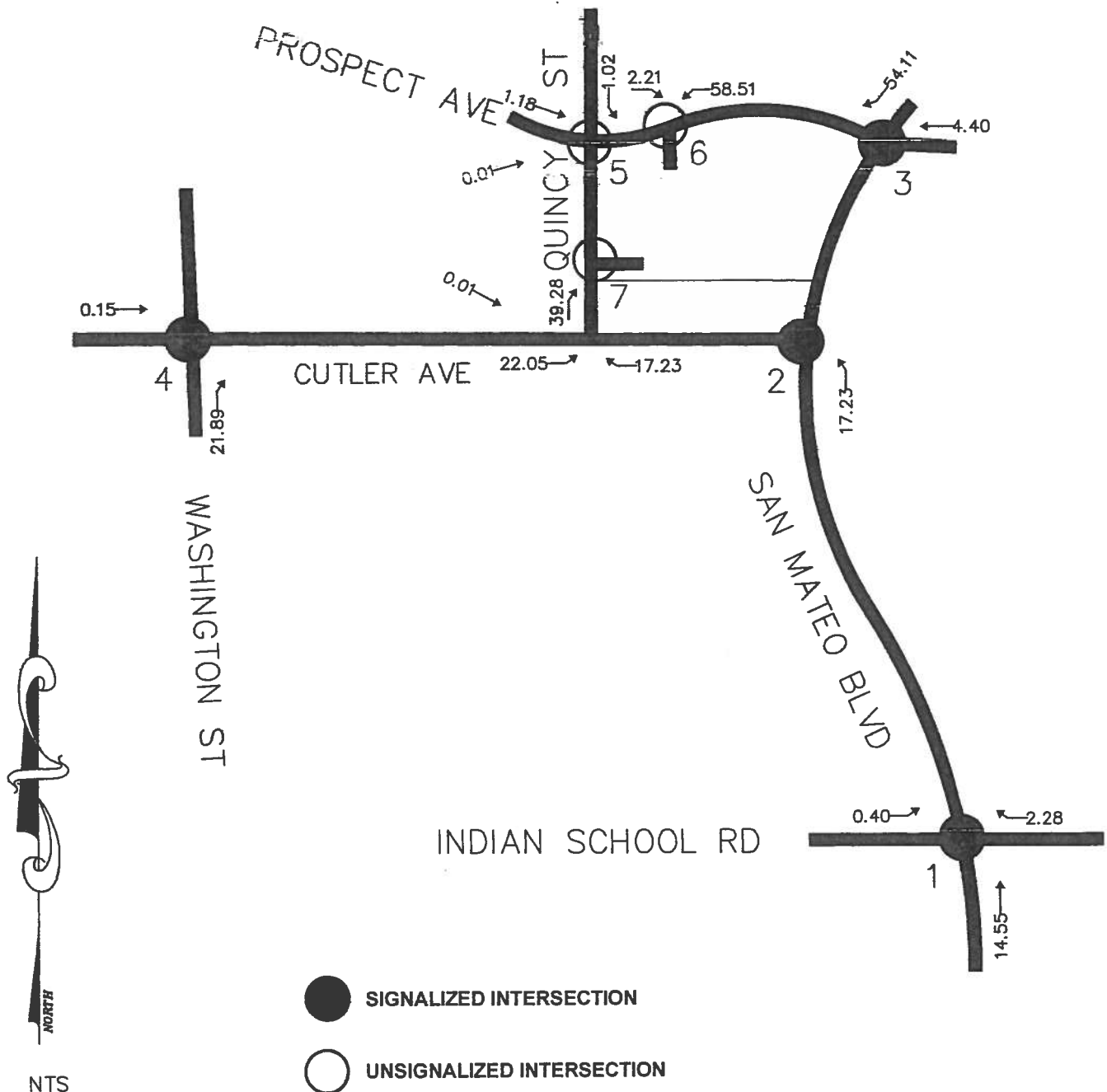
(505)883-8807 (Voice)

(505)212-0267 (Fax)

Plaza at San Mateo

(San Mateo Blvd / Prospect Ave)

Trip Assignments (% Entering)



Terry O. Brown, P.E.

P.O. Box 92051

Albuquerque, NM 87199-2051

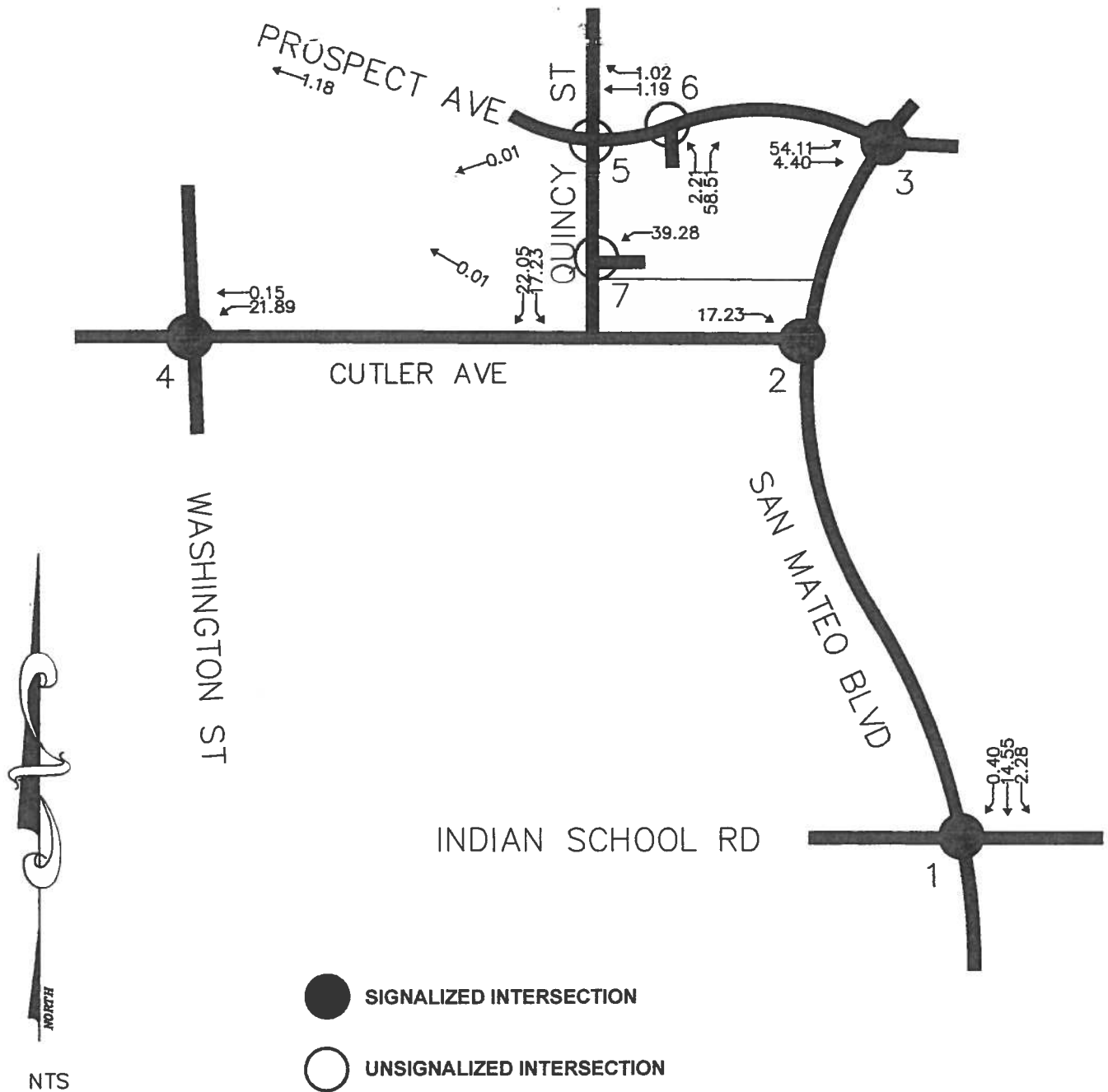
(505)883-8807 (Voice)

(505)212-0267 (Fax)

Plaza at San Mateo

(San Mateo Blvd / Prospect Ave)

Trip Assignments (% Exiting)



Terry O. Brown, P.E.

P.O. Box 92051

Albuquerque, NM 87199-2051

(505)883-8807 (Voice)

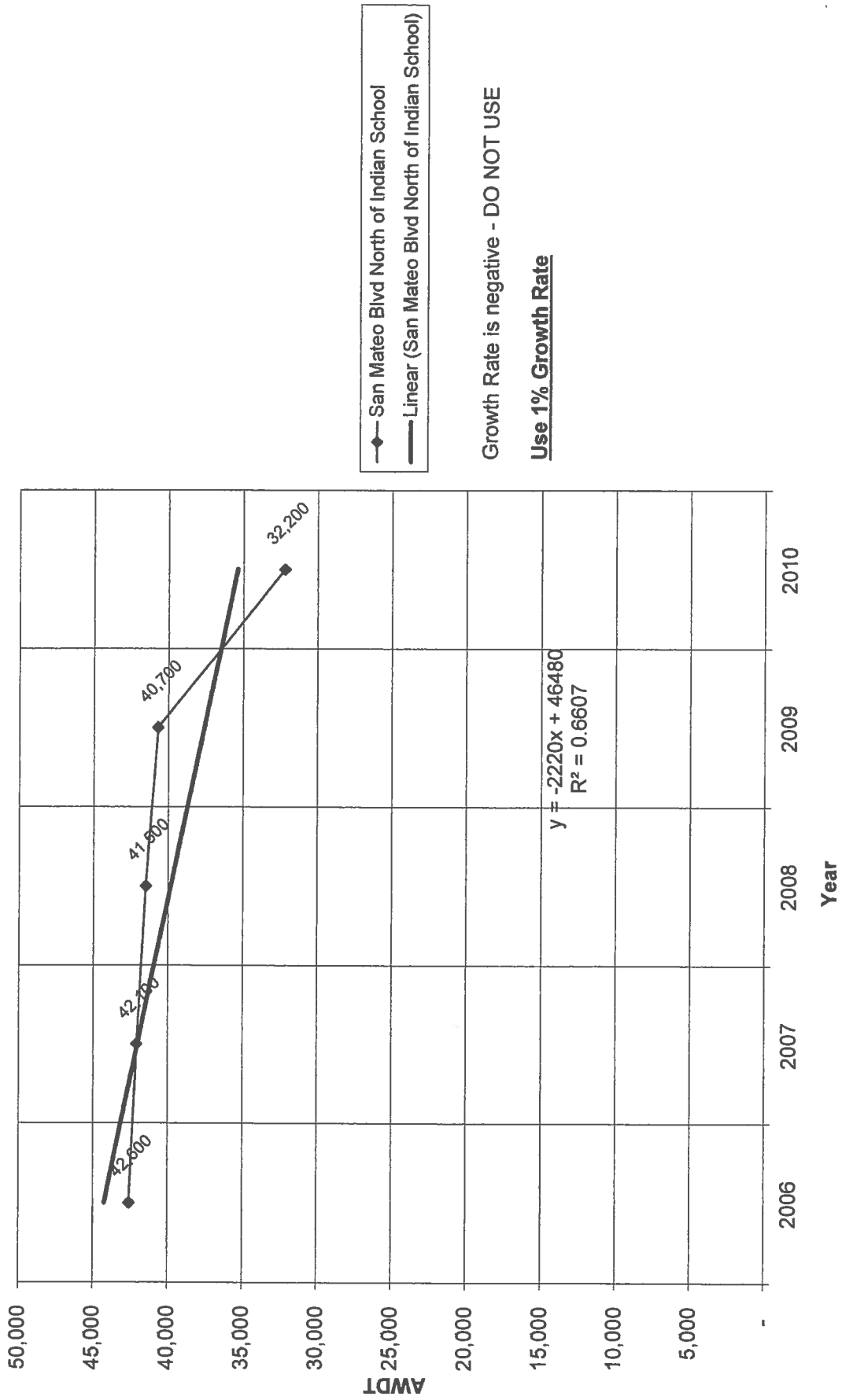
(505)212-0267 (Fax)

Plaza at San Mateo (Prospect Ave / San Mateo Blvd)
Historic Growth Rate Table

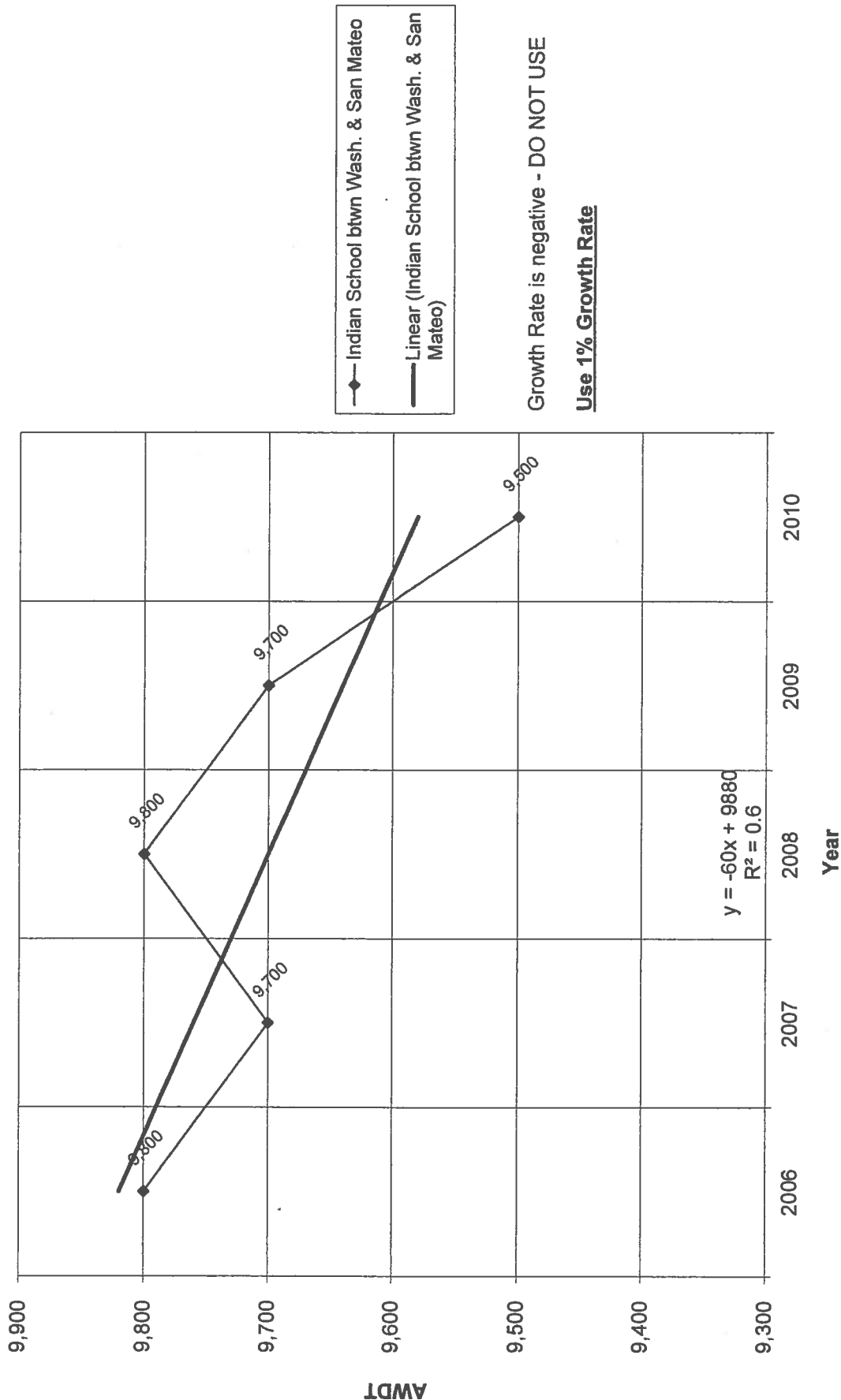
Traffic Flows from MRCOG Map

	2006	2007	2008	2009	2010
San Mateo Blvd North of Indian School	42,600	42,100	41,500	40,700	32,200
Indian School btwn Wash. & San Mateo	9,800	9,700	9,800	9,700	9,600
Washington St North of Indian School	8,700	8,600	9,800	9,600	9,600

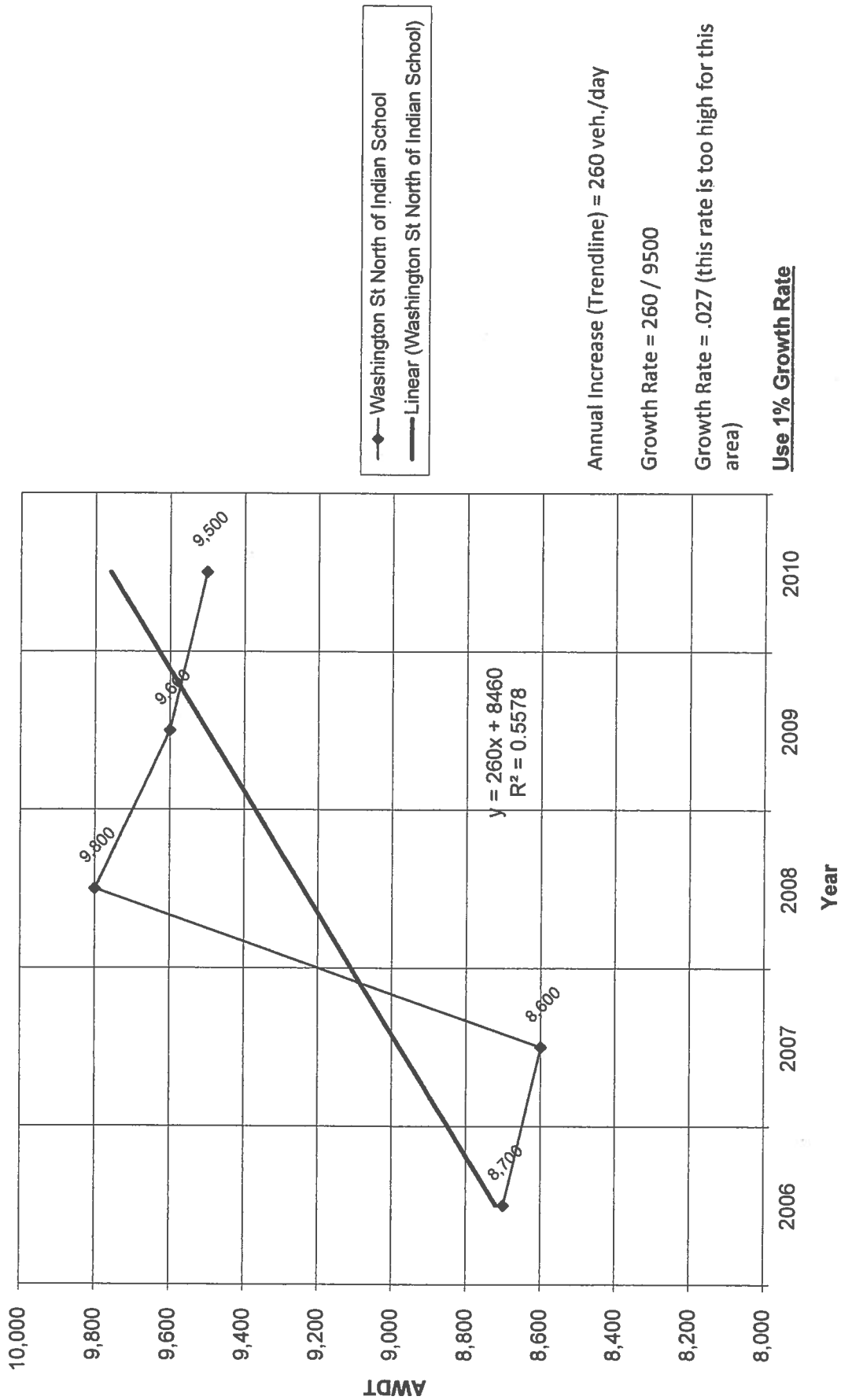
Historic Growth Chart San Mateo Blvd North of Indian School (2006-2010)



Historic Growth Chart Indian School btwn Wash. & San Mateo (2006-2010)



Historic Growth Chart Washington St North of Indian School (2006-2010)



Plaza at San Mateo (Prospect Ave / San Mateo Blvd)

Projected Turning Movements SUMMARY
PROPOSED DEVELOPMENT (2014) - 100% Development

INTERSECTION: Summary

Indian School Rd / San Mateo Blvd

			0.85			0.85			0.89			0.94			PHF
(1)	Eastbound (Indian School Rd)			Westbound (Indian School Rd)			Northbound (San Mateo Blvd)			Southbound (San Mateo Blvd)					
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
3.0% Truck	103	88	88	14	139	104	79	1,029	8	112	1,514	222			
Existing (2011)	106	91	91	14	143	107	81	1,060	8	115	1,559	229			
2014 (NO BUILD - A.M.)	106	91	91	14	143	110	81	1,077	8	119	1,585	230			
2014 (BUILD - A.M.)															
			0.81			0.91			0.90			0.93			PHF
	Eastbound (Indian School Rd)			Westbound (Indian School Rd)			Northbound (San Mateo Blvd)			Southbound (San Mateo Blvd)					
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
Existing (2011)	209	289	96	22	121	137	90	1,930	33	104	1,547	199			
2014 (NO BUILD - P.M.)	215	298	99	23	125	141	93	1,988	34	107	1,593	205			
2014 (BUILD - P.M.)	216	298	99	23	125	148	93	2,030	34	111	1,620	206			

Cutler Ave / San Mateo Blvd

			0.86			0.78			0.87			0.91			PHF
(2)	Eastbound (Cutler Ave)			Westbound (Cutler Ave)			Northbound (San Mateo Blvd)			Southbound (San Mateo Blvd)					
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
3.0% Truck	29	0	184	238	112	226	182	937	4	0	1,278	112			
Existing (2011)	30	0	190	245	115	233	187	965	4	0	1,316	115			
2014 (NO BUILD - A.M.)	30	0	221	245	115	233	207	965	4	0	1,316	115			
2014 (BUILD - A.M.)															
			0.75			0.89			0.90			0.93			PHF
	Eastbound (Cutler Ave)			Westbound (Cutler Ave)			Northbound (San Mateo Blvd)			Southbound (San Mateo Blvd)					
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
Existing (2011)	121	0	396	182	79	225	215	1,472	0	0	1,449	107			
2014 (NO BUILD - P.M.)	125	0	408	187	81	232	221	1,516	0	0	1,492	110			
2014 (BUILD - P.M.)	125	0	440	187	81	232	271	1,516	0	0	1,492	110			

Prospect Ave / San Mateo Blvd

			0.88			0.75			0.83			0.96			PHF
(3)	Eastbound (Prospect Ave)			Westbound (Prospect Ave)			Northbound (San Mateo Blvd)			Southbound (San Mateo Blvd)					
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
3.0% Truck	1	6	14	99	10	7	31	861	71	66	1,454	8			
Existing (2011)	1	6	14	102	10	7	32	887	73	68	1,498	8			
2014 (NO BUILD - A.M.)	98	14	14	102	15	7	32	887	73	68	1,498	71			
2014 (BUILD - A.M.)															
			0.81			0.76			0.94			0.94			PHF
	Eastbound (Prospect Ave)			Westbound (Prospect Ave)			Northbound (San Mateo Blvd)			Southbound (San Mateo Blvd)					
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
Existing (2011)	21	15	58	151	18	25	51	1,684	147	74	1,365	20			
2014 (NO BUILD - P.M.)	22	15	60	156	19	26	53	1,735	151	76	1,406	21			
2014 (BUILD - P.M.)	123	23	60	156	32	26	53	1,735	151	76	1,406	179			

Cutler Ave / Washington St

			0.75			0.75			0.79			0.80			PHF
(4)	Eastbound (Cutler Ave)			Westbound (Cutler Ave)			Northbound (Washington St)			Southbound (Washington St)					
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
3.0% Truck	18	70	36	60	81	44	32	197	45	53	287	39			
Existing (2011)	19	72	37	62	83	45	33	203	46	55	296	40			
2014 (NO BUILD - A.M.)	19	72	37	101	83	45	33	203	72	55	296	40			
2014 (BUILD - A.M.)															
			0.75			0.75			0.88			0.88			PHF
	Eastbound (Cutler Ave)			Westbound (Cutler Ave)			Northbound (Washington St)			Southbound (Washington St)					
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
Existing (2011)	55	107	81	87	41	80	37	435	73	58	289	8			
2014 (NO BUILD - P.M.)	57	110	83	90	42	82	38	448	75	60	298	8			
2014 (BUILD - P.M.)	57	110	83	131	42	82	38	448	139	60	298	8			

Plaza at San Mateo (Prospect Ave / San Mateo Blvd)

**Projected Turning Movements SUMMARY
PROPOSED DEVELOPMENT (2014) - 100% Development**

INTERSECTION: Summary

Prospect Ave / Quincy St

(5)	0.75 Truck	Eastbound (Prospect Ave)				Westbound (Prospect Ave)				Northbound (Quincy St)				Southbound (Quincy St)			
		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right	
Existing (2011)		4	14	3		8	22	4		3	19	1		12	25	5	
2014 (NO BUILD - A.M.)		4	14	3		8	23	4		3	20	1		12	26	5	
2014 (BUILD - A.M.)		4	15	3		8	25	6		3	20	1		13	26	5	

Existing (2011) 2014 (NO BUILD - P.M.) 2014 (BUILD - P.M.)	0.75			0.75			0.75			0.75			PHF
	Eastbound (Prospect Ave)			Westbound (Prospect Ave)			Northbound (Quincy St)			Southbound (Quincy St)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
	7	37	1	7	27	10	1	13	10	11	21	9	
	7	38	1	7	28	10	1	13	10	11	22	9	
	7	41	1	7	30	12	1	13	10	14	22	9	

Prospect Ave / Driveway 'A'

(6)	3.0% Truck	Eastbound (Prospect Ave)			Westbound (Prospect Ave)			Northbound (Driveway 'A')			Southbound (Driveway 'A')		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2011)		0	27	0	0	34	0	0	0	0	0	0	0
2014 (NO BUILD - A.M.)		0	28	0	0	35	0	0	0	0	0	0	0
2014 (BUILD - A.M.)		0	28	3	68	35	0	4	0	105	0	0	0

Existing (2011) 2014 (NO BUILD - P.M.) 2014 (BUILD - P.M.)	0.75			0.75			0.85			0.85			PHF	
	Eastbound (Prospect Ave)			Westbound (Prospect Ave)			Northbound (Driveway 'A')			Southbound (Driveway 'A')				
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
	0	58	0	0	44	0	0	0	0	0	0	0	0	
	0	60	0	0	45	0	0	0	0	0	0	0	0	
	0	60	6	171	45	0	4	0	109	0	0	0	0	

Driveway 'B' / Quincy St

(7)	3.0% Truck	Eastbound (Driveway 'B')			Westbound (Driveway 'B')			Northbound (Quincy St)			Southbound (Quincy St)		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2011)		0	0	0	0	0	0	0	23	0	0	36	0
2014 (NO BUILD - A.M.)		0	0	0	0	0	0	0	24	0	0	37	0
2014 (BUILD - A.M.)		0	0	0	71	0	0	0	24	46	0	37	0

Existing (2011) 2014 (NO BUILD - P.M.) 2014 (BUILD - P.M.)	0.85			0.85			0.75			0.75			PHF
	Eastbound (Driveway 'B')			Westbound (Driveway 'B')			Northbound (Quincy St)			Southbound (Quincy St)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
	0	0	0	0	0	0	0	0	24	0	0	29	
	0	0	0	0	0	0	0	25	0	0	30	0	
	0	0	0	73	0	0	0	25	115	0	30	0	

Plaza at San Mateo (Prospect Ave / San Mateo Blvd)
Projected Turning Movements Worksheet
Indian School Rd / San Mateo Blvd

INTERSECTION: E-W Street: Indian School Rd (1)
 N-S Street: San Mateo Blvd
 Year of Existing Counts: 2011
 Implementation Year: 2014
 Growth Rates: 1.00% 1.00% 1.00% 1.00%

	Eastbound (Indian School Rd)			Westbound (Indian School Rd)			Northbound (San Mateo Blvd)			Southbound (San Mateo Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	103	88	88	14	139	104	79	1,029	8	112	1,514	222
Background Traffic Growth	3	3	3	0	4	3	2	31	0	3	45	7
Subtotal (NO BUILD - A.M.)	106	91	91	14	143	107	81	1,060	8	115	1,559	229
Percent Commercial Trips Generated(Entering)	0.40%	0.00%	0.00%	0.00%	0.00%	2.28%	0.00%	14.55%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.28%	14.55%	0.40%
Total Trips Generated	0	0	0	0	0	3	0	17	0	4	26	1
Total AM Peak Hour BUILD Volumes	106	91	91	14	143	110	81	1,077	8	119	1,585	230

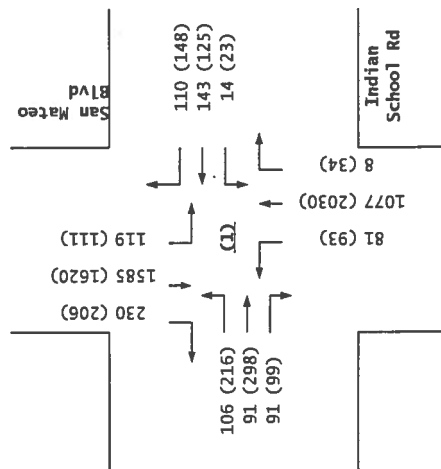
	Eastbound (Indian School Rd)			Westbound (Indian School Rd)			Northbound (San Mateo Blvd)			Southbound (San Mateo Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	209	289	96	22	121	137	90	1,930	33	104	1,547	199
Background Traffic Growth	6	9	3	1	4	4	3	58	1	3	46	6
Subtotal (NO BUILD - P.M.)	215	298	99	23	125	141	93	1,988	34	107	1,593	205
Percent Commercial Trips Generated(Entering)	0.40%	0.00%	0.00%	0.00%	0.00%	2.28%	0.00%	14.55%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.28%	14.55%	0.40%
Total Trips Generated	1	0	0	0	0	7	0	42	0	4	27	1
Total PM Peak Hour BUILD Volumes	216	298	99	23	125	148	93	2,030	34	111	1,620	206

Number of Commercial Trips Generated

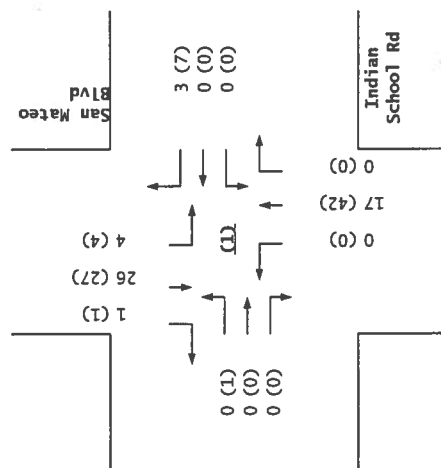
Entering	117	180	A.M.	100% Commercial Development
Exiting	292	186	P.M.	

	Eastbound (Indian School Rd)			Westbound (Indian School Rd)			Northbound (San Mateo Blvd)			Southbound (San Mateo Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2011 AM Peak Hr. Volumes	103	88	88	14	139	104	79	1,029	8	112	1,514	222
2011 PM Peak Hr. Volumes	209	289	96	22	121	137	90	1,930	33	104	1,547	199

2014
BUILD

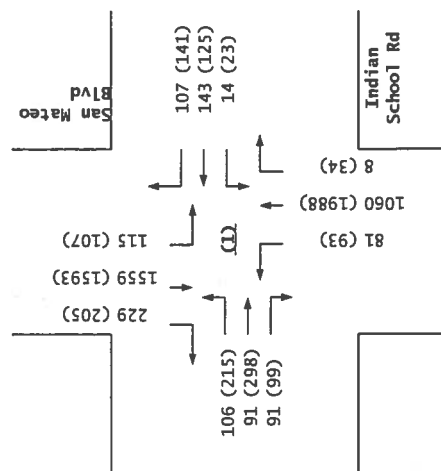


Trips



Indian School Rd / San Mateo Blvd

2014
NO BUILD



Plaza at San Mateo (Prospect Ave / San Mateo Blvd)

Projected Turning Movements Worksheet

Cutler Ave / San Mateo Blvd

INTERSECTION:

E-W Street: Cutler Ave (2)

N-S Street: San Mateo Blvd

Year of Existing Counts

2011

Implementation Year

2014

Growth Rates

1.00%

1.00%

1.00%

1.00%

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total AM Peak Hour BUILD Volumes

Eastbound (Cutler Ave)			Westbound (Cutler Ave)			Northbound (San Mateo Blvd)			Southbound (San Mateo Blvd)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
29	0	184	238	112	226	182	937	4	0	1,278	112
1	0	6	7	3	7	5	28	0	0	38	3
30	0	190	245	115	233	187	965	4	0	1,316	115
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	17.23%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	17.23%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	0	31	0	0	0	20	0	0	0	0	0
30	0	221	245	115	233	207	965	4	0	1,316	115

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

Eastbound (Cutler Ave)			Westbound (Cutler Ave)			Northbound (San Mateo Blvd)			Southbound (San Mateo Blvd)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
121	0	396	182	79	225	215	1,472	0	0	1,449	107
4	0	12	5	2	7	6	44	0	0	43	3
125	0	408	187	81	232	221	1,516	0	0	1,492	110
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	17.23%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	17.23%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	0	32	0	0	0	50	0	0	0	0	0
125	0	440	187	81	232	271	1,516	0	0	1,492	110

Number of Commercial Trips Generated

Entering

Exiting

117

180

A.M.

100% Commercial Development

292

186

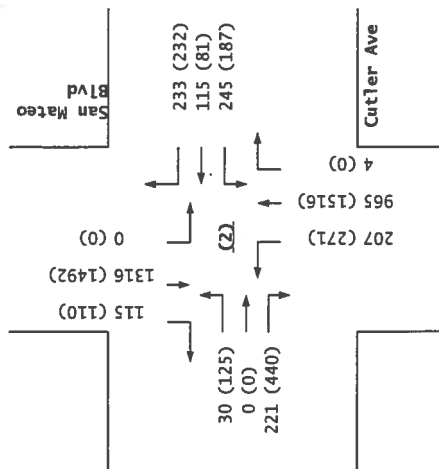
P.M.

2011 AM Peak Hr. Volumes

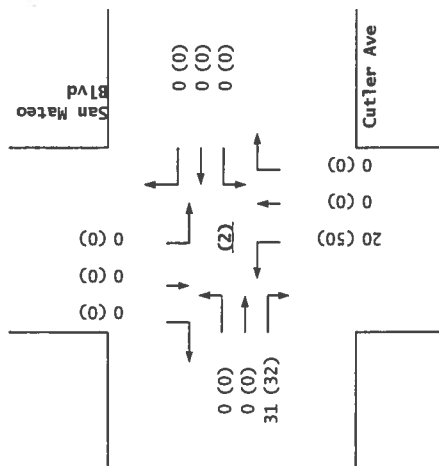
2011 PM Peak Hr. Volumes

Eastbound (Cutler Ave)			Westbound (Cutler Ave)			Northbound (San Mateo Blvd)			Southbound (San Mateo Blvd)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
29	0	184	238	112	226	182	937	4	0	1,278	112
121	0	396	182	79	225	215	1,472	0	0	1,449	107

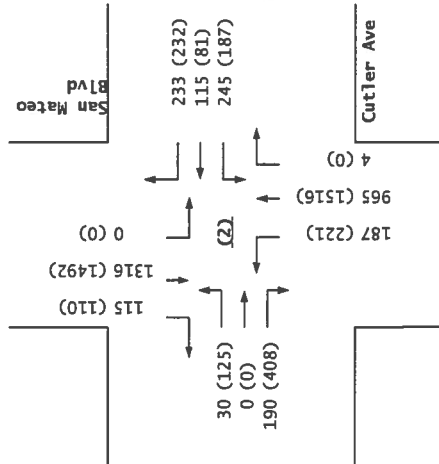
2014
BUILD



Trips



2014
NO BUILD



Cutler Ave / San Mateo Blvd

Plaza at San Mateo (Prospect Ave / San Mateo Blvd)

Projected Turning Movements Worksheet

Prospect Ave / San Mateo Blvd

INTERSECTION: E-W Street: Prospect Ave (3)

N-S Street: San Mateo Blvd

Year of Existing Counts 2011

Implementation Year 2014

Growth Rates 1.00% 1.00% 1.00% 1.00%

	Eastbound (Prospect Ave)			Westbound (Prospect Ave)			Northbound (San Mateo Blvd)			Southbound (San Mateo Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	1	6	14	99	10	7	31	861	71	66	1,454	8
Background Traffic Growth	0	0	0	3	0	0	1	26	2	2	44	0
Subtotal (NO BUILD - A.M.)	1	6	14	102	10	7	32	887	73	68	1,498	8
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	4.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	54.11%
Percent Commercial Trips Generated(Exiting)	54.11%	4.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	97	8	0	0	5	0	0	0	0	0	0	63
Total AM Peak Hour BUILD Volumes	98	14	14	102	15	7	32	887	73	68	1,498	71

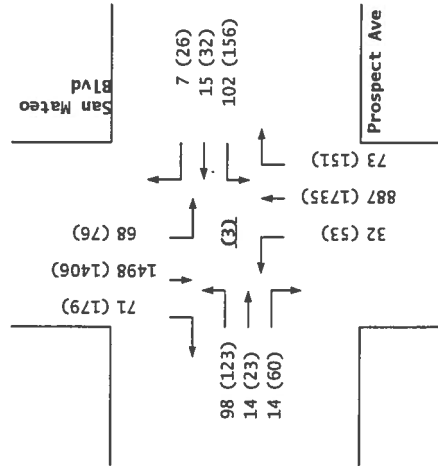
	Eastbound (Prospect Ave)			Westbound (Prospect Ave)			Northbound (San Mateo Blvd)			Southbound (San Mateo Blvd)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	21	15	58	151	18	25	51	1,684	147	74	1,365	20
Background Traffic Growth	1	0	2	5	1	1	2	51	4	2	41	1
Subtotal (NO BUILD - P.M.)	22	15	60	156	19	26	53	1,735	151	76	1,406	21
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	4.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	54.11%
Percent Commercial Trips Generated(Exiting)	54.11%	4.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	101	8	0	0	13	0	0	0	0	0	0	158
Total PM Peak Hour BUILD Volumes	123	23	60	156	32	26	53	1,735	151	76	1,406	179

Number of Commercial Trips Generated

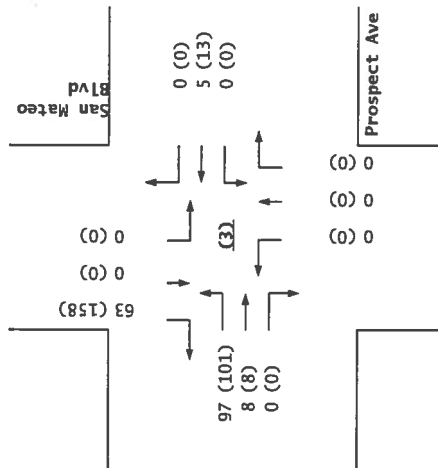
Entering	Exiting		
117	180	A.M.	100% Commercial Development
292	186	P.M.	

	Eastbound (Prospect Ave)			Westbound (Prospect Ave)			Northbound (San Mateo Blvd)			Southbound (San Mateo Blvd)		
2011 AM Peak Hr. Volumes	1	6	14	99	10	7	31	861	71	66	1,454	8
2011 PM Peak Hr. Volumes	21	15	58	151	18	25	51	1,684	147	74	1,365	20

2014
BUILD

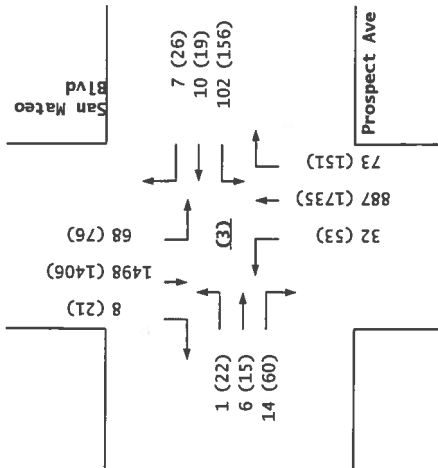


Trips



Prospect Ave / San Mateo Blvd

2014
NO BUILD



Plaza at San Mateo (Prospect Ave / San Mateo Blvd)
 Projected Turning Movements Worksheet
Cutler Ave / Washington St

INTERSECTION : E-W Street: **Cutler Ave** (4)
 N-S Street: **Washington St**

Year of Existing Counts: **2011**
 Implementation Year: **2014**

	1.00%			1.00%			1.00%			1.00%		
	Eastbound (Cutler Ave)			Westbound (Cutler Ave)			Northbound (Washington St)			Southbound (Washington St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	18	70	36	60	81	44	32	197	45	53	287	39
Background Traffic Growth	1	2	1	2	2	1	1	6	1	2	9	1
Subtotal (NO BUILD - A.M.)	19	72	37	62	83	45	33	203	46	55	296	40
Percent Commercial Trips Generated(Entering)	0.00%	0.15%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	21.89%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	21.89%	0.15%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	39	0	0	0	0	26	0	0	0
Total AM Peak Hour BUILD Volumes	19	72	37	101	83	45	33	203	72	55	296	40

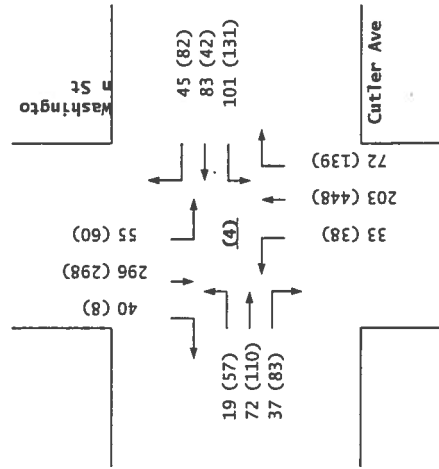
	Eastbound (Cutler Ave)			Westbound (Cutler Ave)			Northbound (Washington St)			Southbound (Washington St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	55	107	81	87	41	80	37	435	73	58	289	8
Background Traffic Growth	2	3	2	3	1	2	1	13	2	2	9	0
Subtotal (NO BUILD - P.M.)	57	110	83	90	42	82	38	448	75	60	298	8
Percent Commercial Trips Generated(Entering)	0.00%	0.15%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	21.89%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	21.89%	0.15%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	41	0	0	0	0	64	0	0	0
Total PM Peak Hour BUILD Volumes	57	110	83	131	42	82	38	448	139	60	298	8

Number of Commercial Trips Generated

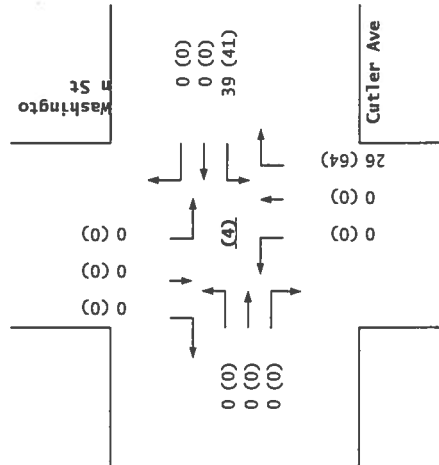
Entering	117	180	A.M.	100% Commercial Development
Exiting	292	186	P.M.	

	Eastbound (Cutler Ave)			Westbound (Cutler Ave)			Northbound (Washington St)			Southbound (Washington St)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2011 AM Peak Hr. Volumes	18	70	36	60	81	44	32	197	45	53	287	39
2011 PM Peak Hr. Volumes	55	107	81	87	41	80	37	435	73	58	289	8

2014
BUILD

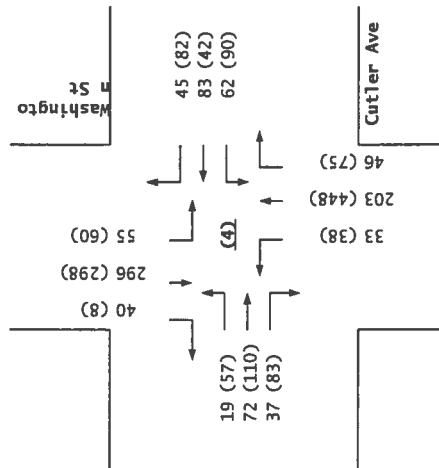


Trips



Cutler Ave / Washington St

2014
NO BUILD



Plaza at San Mateo (Prospect Ave / San Mateo Blvd)
 Projected Turning Movements Worksheet
Prospect Ave / Quincy St

INTERSECTION :E-W Street: **Prospect Ave** (5)N-S Street: **Quincy St**

Year of Existing Counts

2011

Implementation Year

2014

Growth Rates

1.00%

1.00%

1.00%

1.00%

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total AM Peak Hour BUILD Volumes

Eastbound (Prospect Ave)			Westbound (Prospect Ave)			Northbound (Quincy St)			Southbound (Quincy St)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
4	14	3	8	22	4	3	19	1	12	25	5
0	0	0	0	1	0	0	1	0	0	1	0
4	14	3	8	23	4	3	20	1	12	26	5
0.00%	1.19%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.02%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	1.19%	1.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	1	0	0	2	2	0	0	0	1	0	0
4	15	3	8	25	6	3	20	1	13	26	5

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

Eastbound (Prospect Ave)			Westbound (Prospect Ave)			Northbound (Quincy St)			Southbound (Quincy St)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
7	37	1	7	27	10	1	13	10	11	21	9
0	1	0	0	1	0	0	0	0	0	1	0
7	38	1	7	28	10	1	13	10	11	22	9
0.00%	1.19%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.02%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	1.19%	1.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	3	0	0	2	2	0	0	0	3	0	0
7	41	1	7	30	12	1	13	10	14	22	9

Number of Commercial Trips Generated

Entering

Exiting

117

180

A.M.

100% Commercial Development

292

186

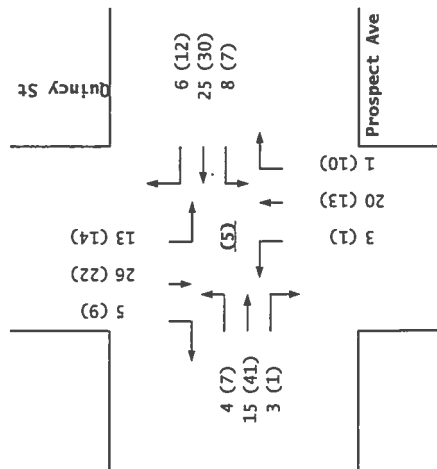
P.M.

2011 AM Peak Hr. Volumes

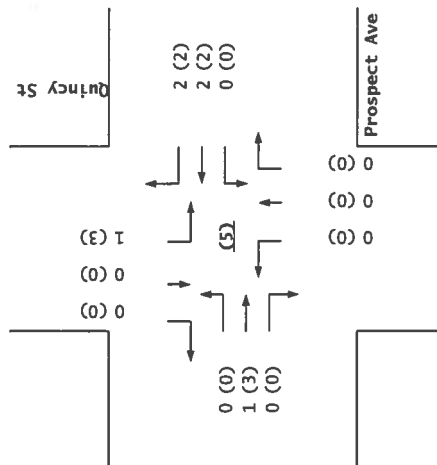
2011 PM Peak Hr. Volumes

Eastbound (Prospect Ave)			Westbound (Prospect Ave)			Northbound (Quincy St)			Southbound (Quincy St)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
4	14	3	8	22	4	3	19	1	12	25	5
7	37	1	7	27	10	1	13	10	11	21	9

2014
BUILD

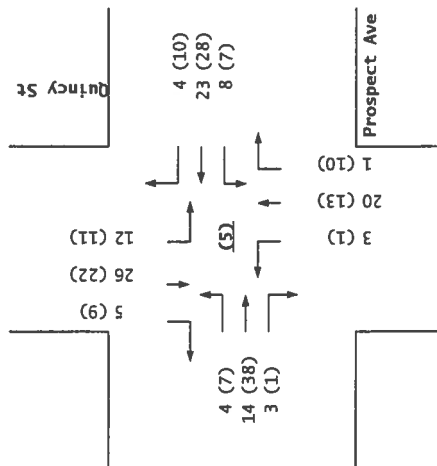


Trips



Prospect Ave / Quincy St

2014
NO BUILD



Plaza at San Mateo (Prospect Ave / San Mateo Blvd)

Projected Turning Movements Worksheet

Prospect Ave / Driveway 'A'**INTERSECTION:**E-W Street: **Prospect Ave** (6)N-S Street: **Driveway 'A'**

Year of Existing Counts

2011

Implementation Year

2014

Growth Rates

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total AM Peak Hour BUILD Volumes

1.00%			1.00%			1.00%			1.00%		
Eastbound (Prospect Ave)			Westbound (Prospect Ave)			Northbound (Driveway 'A')			Southbound (Driveway 'A')		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	27	0	0	34	0	0	0	0	0	0	0
0	1	0	0	1	0	0	0	0	0	0	0
0	28	0	0	35	0	0	0	0	0	0	0
0.00%	0.00%	2.21%	58.51%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.21%	0.00%	58.51%	0.00%	0.00%	0.00%
0	0	3	68	0	0	4	0	105	0	0	0
0	28	3	68	35	0	4	0	105	0	0	0

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

1.00%			1.00%			1.00%			1.00%		
Eastbound (Prospect Ave)			Westbound (Prospect Ave)			Northbound (Driveway 'A')			Southbound (Driveway 'A')		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	58	0	0	44	0	0	0	0	0	0	0
0	2	0	0	1	0	0	0	0	0	0	0
0	60	0	0	45	0	0	0	0	0	0	0
0.00%	0.00%	2.21%	58.51%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.21%	0.00%	58.51%	0.00%	0.00%	0.00%
0	0	6	171	0	0	4	0	109	0	0	0
0	60	6	171	45	0	4	0	109	0	0	0

Number of Commercial Trips Generated

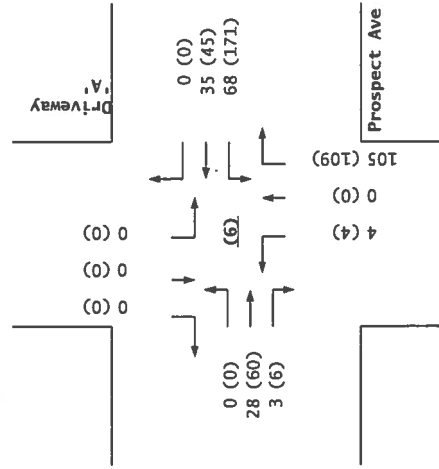
Entering	Exiting		
117	180	A.M.	100% Commercial Development
292	186	P.M.	

2011 AM Peak Hr. Volumes

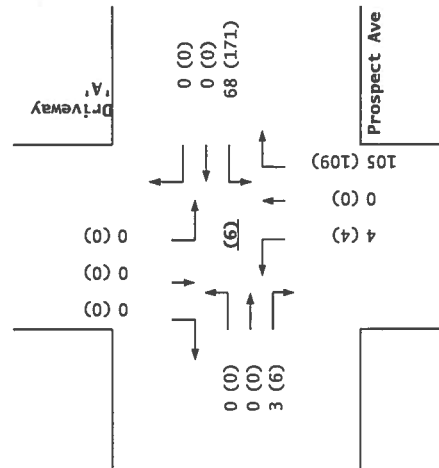
2011 PM Peak Hr. Volumes

Eastbound (Prospect Ave)			Westbound (Prospect Ave)			Northbound (Driveway 'A')			Southbound (Driveway 'A')		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	27	0	0	34	0	0	0	0	0	0	0
0	58	0	0	44	0	0	0	0	0	0	0

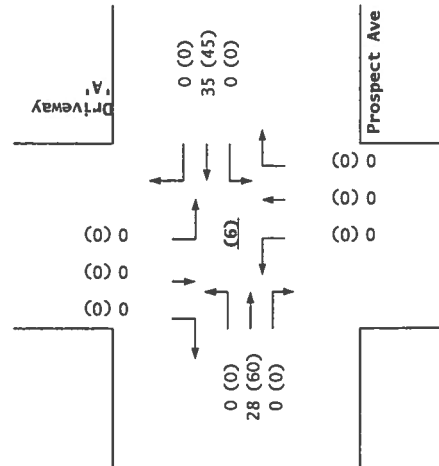
2014
BUILD



Trips



2014
NO BUILD



Prospect Ave / Driveway 'A'

Plaza at San Mateo (Prospect Ave / San Mateo Blvd)

Projected Turning Movements Worksheet

Driveway 'B' / Quincy St**INTERSECTION :**

E-W Street: Driveway 'B' (7)

N-S Street: Quincy St

Year of Existing Counts

2011

Implementation Year

2014

Growth Rates

1.00%

1.00%

1.00%

1.00%

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total AM Peak Hour BUILD Volumes

Eastbound (Driveway 'B')			Westbound (Driveway 'B')			Northbound (Quincy St)			Southbound (Quincy St)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	0	0	0	0	0	0	23	0	0	36	0
0	0	0	0	0	0	0	1	0	0	1	0
0	0	0	0	0	0	0	24	0	0	37	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	39.28%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	39.28%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	0	0	71	0	0	0	0	46	0	0	0
0	0	0	71	0	0	0	24	46	0	37	0

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

Eastbound (Driveway 'B')			Westbound (Driveway 'B')			Northbound (Quincy St)			Southbound (Quincy St)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	0	0	0	0	0	0	24	0	0	29	0
0	0	0	0	0	0	0	1	0	0	1	0
0	0	0	0	0	0	0	25	0	0	30	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	39.28%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	39.28%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	0	0	73	0	0	0	0	115	0	0	0
0	0	0	73	0	0	0	25	115	0	30	0

Number of Commercial Trips Generated

Entering Exiting

117

180

A.M.

100% Commercial Development

292

186

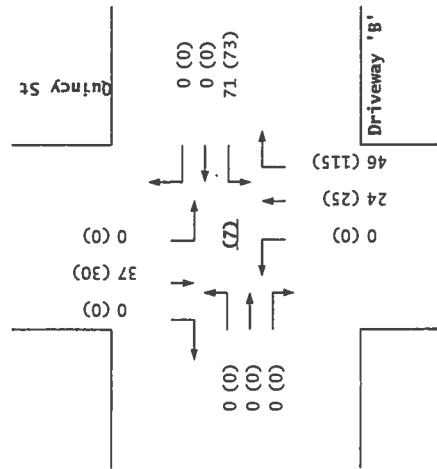
P.M.

2011 AM Peak Hr. Volumes

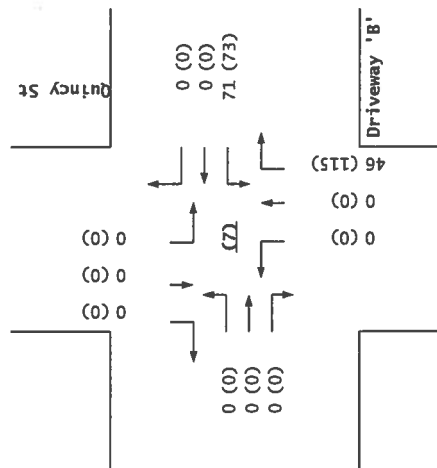
2011 PM Peak Hr. Volumes

Eastbound (Driveway 'B')			Westbound (Driveway 'B')			Northbound (Quincy St)			Southbound (Quincy St)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	0	0	0	0	0	0	23	0	0	36	0
0	0	0	0	0	0	0	24	0	0	29	0

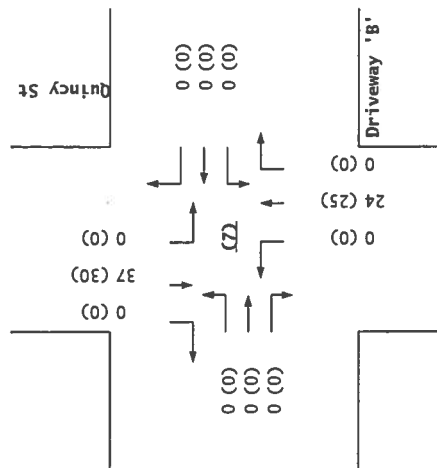
2014
BUILD



Trips



2014
NO BUILD



Driveway 'B' / Quincy St

Timings

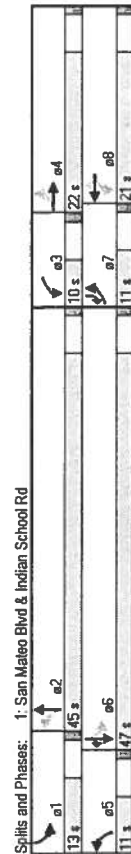
1: San Mateo Blvd & Indian School Rd

Terry O. Brown, P.E.
2014 AM Peak NOBUILD Conditions

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	106	91	14	143	107	81	115	1559	229
Volume (vph)	pm+pt	NA	pm+pt	NA	perm	pm+pt	NA	pm+pt	NA
Turn Type	7	4	3	8	8	2	1	6	67
Protected Phases	4	8	8	8	2	6			
Permitted Phases	7	4	3	8	8	5	2	1	6
Detector Phase									
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0
Total Split (s)	11.0	22.0	10.0	21.0	11.0	45.0	13.0	47.0	58.0
Total Split (%)	12.2%	24.4%	11.1%	23.3%	12.2%	50.0%	14.4%	52.2%	64.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead/Lag Optimize?									
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Eff Green (s)	18.1	11.3	14.9	9.6	9.6	53.0	45.6	54.1	46.2
Actuated g/C Ratio	0.20	0.13	0.17	0.11	0.11	0.59	0.51	0.60	0.51
Max v/c Ratio	0.48	0.43	0.07	0.45	0.45	0.41	0.47	0.38	0.64
Control Delay	35.2	20.8	26.8	41.1	12.4	14.1	15.5	9.6	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.2	20.8	26.8	41.1	12.4	14.1	15.5	9.6	8.5
LOS	D	C	C	D	B	B	B	A	A
Approach Delay	26.1								
Approach LOS	C								

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 35 (39%), Referenced to phase 2(NBTL and 6(SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.64
 Intersection Signal Delay: 13.4
 Intersection Capacity Utilization 61.3%
 Analysis Period (min) 15



Existing Geometry

O:\ATOBEP\PROJECTS\Piazza_at_San_Mateo\Synchro\2014ANX.syn
 Synchro 8 Report

HCM 2010 Signalized Intersection Capacity Analysis

1: San Mateo Blvd & Indian School Rd

Terry O. Brown, P.E.
2014 AM Peak NOBUILD Conditions

Movement	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	106	91	14	143	107	81	115	1559	229
Volume (vph)	7	4	14	3	8	18	5	2	12
Movement Number	0	0	0	0	0	0	0	0	0
Initial Queue, veh	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj. Factor (A _{pbt})	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking, Bus Adj. Factors	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Sat. Flow Rate, veh/h/h	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	1	2	0	1	2	1	3	0	1
Lane Assignment									
Capacity, veh/h	288	229	195	252	377	169	2615	20	399
Proportion Arriving On Green	0.08	0.12	0.12	0.06	0.11	0.11	0.08	0.51	0.08
Movement Delay, s/veh	32.3	38.1	40.2	31.8	38.5	55.5	14.3	14.4	14.6
Movement LOS	C	D	D	C	D	E	B	B	A
Approach Volume, veh/h	339								
Approach Delay, s/veh	36.6								
Approach LOS	D								
Timer:	1	2	3	4	5	6	7	8	
Assigned Phase	1	2	3	4	5	6	7	8	
Case No	1.1	4.0	1.1	4.0	1.1	3.0	1.1	3.0	
Phase Duration (G+Y+Rc), s	12.90	50.66	10.30	16.18	12.40	51.16	11.80	14.68	
Change Period (Y+Rc), s	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	
Max. Allowable Headway (MAH), s	3.77	5.03	3.77	4.91	3.77	5.03	3.77	4.81	
Maximum Green Setting (Gmax), s	7.90	45.60	5.30	11.30	7.40	46.20	6.80	9.60	
Max. Queue Clearance Time (q _c +t ₁), s	4.70	15.33	2.71	7.78	4.02	29.06	7.51	9.01	
Green Extension Time (q _e), s	0.08	25.43	0.00	0.81	0.05	15.35	0.00	0.18	
Probability of Phase Call (p _c), s	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Probability of Max Out (p _o), s	1.000	0.799	1.000	1.000	1.000	0.898	1.000	1.000	

Left-Turn Movement Data

Assigned Movement	1	3	5	7
Mvmt. Sat Flow, veh/h	1756.82	1756.82	1756.82	1756.82

Through Movement Data

Assigned Movement	2	4	6	8
Mvmt. Sat Flow, veh/h	5156.16	1844.66	5035.92	3504.85

Right-Turn Movement Data

Assigned Movement	12	14	16	18
Mvmt. Sat Flow, veh/h	38.91	1567.96	1567.96	1567.96

Left Lane Group Data

Lane Assignment	1	0	3	0	5	0	7	0
Lanes In Group	1	0	1	0	1	0	1	0
Group Volume (V), veh/h	122.3	0.0	16.5	0.0	91.0	0.0	124.7	0.0
Group Sat. Flow (s), veh/h/h	1756.8	0.0	1756.8	0.0	1756.8	0.0	1756.8	0.0
Queue Serve Time (q _s), s	2.7	0.0	0.7	0.0	2.0	0.0	5.5	0.0
Cycle Queue Clear Time (q _c), s	2.7	0.0	0.7	0.0	2.0	0.0	5.5	0.0

Existing Geometry

D:\ATOBEP\PROJECTS\Piazza_at_San_Mateo\Synchro\2014ANX.syn
 Synchro 8 Report

HCM 2010 Signalized Intersection Capacity Analysis
1: San Mateo Blvd & Indian School Rd

Terry O. Brown, P.E.
2014 AM Peak NOBUILD Conditions

Perm LT Sat Flow Rate (s.f.), veh/h	459.8	0.0	1151.3	0.0	296.2	0.0	1200.4	0.0
Shared LT Sat Flow (s.f.), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Eff. Green (g.p.), s	46.2	0.0	9.7	0.0	45.7	0.0	11.2	0.0
Perm LT Serve Time (g.u.), s	32.3	0.0	5.4	0.0	19.1	0.0	5.5	0.0
Perm LT Que Serve Time (g.pe), s	5.0	0.0	0.1	0.0	11.8	0.0	0.6	0.0
Time to First Blk (g.f.), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time per Blk (g.f.), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proportion LT Inside Lane (P.L)	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Lane Group Capacity (c), veh/h	399.2	0.0	252.5	0.0	287.2	0.0	287.7	0.0
Volume-to-Capacity Ratio (X)	0.306	0.000	0.065	0.000	0.317	0.000	0.433	0.000
Available Capacity (c.a), veh/h	399.2	0.0	252.5	0.0	287.2	0.0	287.7	0.0
Upstream Filter Factor (f)	0.620	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Uniform Delay (d1), s/veh	9.2	0.0	31.7	0.0	13.7	0.0	31.2	0.0
Incremental Delay (d2), s/veh	0.3	0.0	0.1	0.0	0.6	0.0	1.0	0.0
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	9.5	0.0	31.8	0.0	14.3	0.0	32.3	0.0
First-Term Queue (Q1), veh/h	0.9	0.0	0.3	0.0	0.8	0.0	2.3	0.0
Second-Term Queue (Q2), veh/h	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-queue factor (L.B%)	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Percentile Back of Queue (Q%), veh/h	0.9	0.0	0.3	0.0	0.8	0.0	2.4	0.0
Percentile Storage Ratio (RC%), veh/h	0.08	0.00	0.06	0.00	0.18	0.00	0.67	0.00
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Existing Geometry
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Synchro 8 Report

HCM 2010 Signalized Intersection Capacity Analysis
1: San Mateo Blvd & Indian School Rd

Terry O. Brown, P.E.
2014 AM Peak NOBUILD Conditions

Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Movement	0	12	0	14	0	16	0	18
Lane Assignment		T-R		T-R		R		R
Lanes in Group	0	1	0	1	0	1	0	1
Group Volume (V), veh/h	0.0	424.5	0.0	107.1	0.0	243.6	0.0	125.9
Group Sat. Flow (s), veh/h	0.0	1837.8	0.0	1568.0	0.0	1568.0	0.0	1568.0
Queue Serve Time (g.s), s	0.0	13.3	0.0	5.8	0.0	11.1	0.0	7.0
Cycle Queue Clear Time (g.c), s	0.0	13.3	0.0	5.8	0.0	11.1	0.0	7.0
Prot RT Sat Flow Rate (s.R), veh/h	0.0	0.0	0.0	0.0	0.0	1568.0	0.0	0.0
Prot RT Eff. Green (g.R), s	0.0	0.0	0.0	0.0	0.0	6.8	0.0	0.0
Proportion RT Outside Lane (P-R)	0.000	0.021	0.000	1.000	0.000	1.000	0.000	1.000
Lane Group Capacity (c), veh/h	0.0	931.9	0.0	194.8	0.0	922.2	0.0	168.6
Volume-to-Capacity Ratio (X)	0.000	0.456	0.000	0.550	0.000	0.264	0.000	0.746
Available Capacity (c.a), veh/h	0.0	931.9	0.0	196.8	0.0	922.9	0.0	168.6
Upstream Filter Factor (f)	0.000	1.000	0.000	1.000	0.000	0.620	0.000	1.000
Uniform Delay (d1), s/veh	0.0	14.2	0.0	37.1	0.0	18.5	0.0	39.0
Incremental Delay (d2), s/veh	0.0	0.3	0.0	3.2	0.0	0.1	0.0	16.5
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	14.6	0.0	40.2	0.0	18.6	0.0	55.5
First-Term Queue (Q1), veh/h	0.0	5.1	0.0	2.2	0.0	4.6	0.0	2.6
Second-Term Queue (Q2), veh/h	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.8
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-queue factor (L.B%)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q%), veh/h	0.0	5.2	0.0	2.3	0.0	4.6	0.0	3.4
Percentile Storage Ratio (RC%), veh/h	0.00	0.43	0.00	0.30	0.00	0.59	0.00	1.74
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

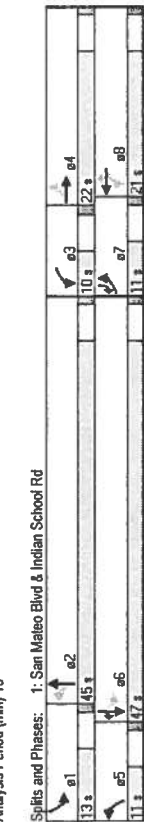
Intersection Summary								
HCM Average Control Delay	24.6							
HCM Level of Service	C							

Existing Geometry
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Synchro 8 Report

Timings 1: San Mateo Blvd & Indian School Rd

Terry O. Brown, P.E.
2014 AM Peak BUILD Conditions

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SRB
Lane Configurations	←	←	←	←	←	←	←	←	←
Volume (vph)	106	91	14	143	110	81	1077	119	1585
Turn Type	pm-pt	NA	pm-pt	NA	pm-pt	NA	pm-pt	NA	pm-pt
Permitted Phases	4	4	3	8	8	2	1	8	6.7
Detector Phases	7	4	8	8	8	2	6	6	6.7
Switch Phase	7	4	3	8	8	5	2	1	6.7
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	21.0
Total Split (s)	11.0	22.0	10.0	21.0	11.0	45.0	13.0	47.0	58.0
Total Split (%)	12.2%	24.4%	11.1%	23.3%	12.2%	50.0%	14.4%	52.2%	64.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?									
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Elmt Green (s)	18.1	11.3	14.9	9.6	9.6	52.8	45.5	54.2	58.0
Actuated G/C Ratio	0.20	0.13	0.17	0.11	0.11	0.59	0.51	0.60	0.51
W/C Ratio	0.48	0.43	0.07	0.45	0.46	0.41	0.48	0.40	0.55
Control Delay	35.2	20.8	26.8	41.1	12.4	14.2	15.7	10.8	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.2	20.8	26.8	41.1	12.4	14.2	15.7	10.8	8.1
LOS	D	C	C	D	B	B	B	B	A
Approach Delay	26.1								
Approach LOS	C								



Existing Geometry

Synchro 8 Report

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HCM 2010 Signalized Intersection Capacity Analysis 1: San Mateo Blvd & Indian School Rd

Terry O. Brown, P.E.
2014 AM Peak BUILD Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SRB
Lane Configurations	←	←	←	←	←	←	←	←	←	←	←	←
Volume (vph)	106	91	91	14	143	110	81	1077	8	119	1585	230
Movement Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj. Factor (A _{pbt})	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking, Bus Adj. Factors	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Sat. Flow Rate, veh/h	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	1	2	0	1	2	1	1	3	0	1	3	1
Lane Assignment	288	229	195	253	377	169	282	2608	19	395	2586	924
Capacity, veh/h	0.08	0.12	0.12	0.05	0.11	0.11	0.08	0.51	0.51	0.10	0.20	0.05
Proportion Arriving On Green	32.2	38.1	40.2	31.8	38.5	57.9	14.7	14.6	14.7	9.4	28.9	19.6
Movement Delay, s/veh	C	D	D	C	D	E	B	B	B	A	C	B
Movement LOS	C	D	D	C	D	E	B	B	B	A	C	B
Approach Volume, veh/h	339			314			1310			2057		
Approach Delay, s/veh	36.6			46.1			14.6			26.6		
Approach LOS	D			D			B			C		
Timer:	1	2	3	4	5	6	7	8				
Assigned Phase	1	2	3	4	5	6	7	8				
Case No	1.1	4.0	1.1	4.0	1.1	3.0	1.1	3.0				
Phase Duration (G+Y+R), s	13.00	50.50	10.30	18.18	12.30	51.20	11.80	14.68				
Change Period (Y+R), s	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00				
Max. Allowable Headway (MAH), s	3.77	5.04	3.77	4.91	3.77	5.04	3.77	4.91				
Maximum Green Setting (G _{max}), s	8.00	45.50	5.30	11.30	7.30	46.20	6.80	9.60				
Max. Queue Clearance Time (G _{clear}), s	4.77	15.64	2.71	7.77	4.03	29.71	7.50	9.22				
Green Extension Time (G _{ex}), s	0.08	25.39	0.00	0.81	0.05	14.95	0.00	0.12				
Probability of Phase Call (p _c), s	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
Probability of Max Out (p _o), s	1.000	0.813	1.000	1.000	1.000	0.909	1.000	1.000				
Left-Turn Movement Data												
Assigned Movement	1		3		5		7					
Mvmt. Sat. Flow, veh/h	1756.82		1756.82		1756.82		1756.82					
Through Movement Data												
Assigned Movement		2		4		6				8		
Mvmt. Sat. Flow, veh/h		5155.88		1844.66		5035.92				3504.85		
Right-Turn Movement Data												
Assigned Movement			12		14		16					
Mvmt. Sat. Flow, veh/h			38.30		1567.96		1567.96					
Left Lane Group Data												
Assigned Movement	1	0	3	0	5	0	7	0				
Lane Assignment	L (PrPm)	L (PrPm)	L (PrPm)	L (PrPm)	L (PrPm)	L (PrPm)	L (PrPm)	L (PrPm)				
Lanes in Group	1	0	1	0	1	0	1	0				
Group Volume (v), veh/h	126.6	0.0	16.5	0.0	91.0	0.0	124.7	0.0				
Group Sat. Flow (s), veh/h	1756.8	0.0	1756.8	0.0	1756.8	0.0	1756.8	0.0				
Queue Serve Time (q _s), s	2.8	0.0	0.7	0.0	2.0	0.0	5.5	0.0				
Cycle Queue Clear Time (q _c), s	2.8	0.0	0.7	0.0	2.0	0.0	5.5	0.0				

Existing Geometry

Synchro 8 Report

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HCM 2010 Signalized Intersection Capacity Analysis
1: San Mateo Blvd & Indian School Rd

Terry O. Brown, P.E.
2014 AM Peak BUILD Conditions

Perm LT Sat Flow Rate (s, ft), veh/h	451.5	0.0	1151.3	0.0	288.3	0.0	1200.4	0.0
Shared LT Sat Flow (s, ft), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Eff. Green (g, p), s	46.2	0.0	9.7	0.0	45.5	0.0	11.2	0.0
Perm LT Serve Time (g, u), s	31.9	0.0	5.4	0.0	18.5	0.0	5.6	0.0
Perm LT Que Serve Time (g, ps), s	5.5	0.0	0.1	0.0	12.5	0.0	0.6	0.0
Time to First Bk (g, j), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time per Bk (g, fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proportion LT Inside Lane (P, L)	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Lane Group Capacity (c), veh/h	395.1	0.0	252.7	0.0	281.8	0.0	287.9	0.0
Volume-to-Capacity Ratio (X)	0.320	0.000	0.065	0.000	0.323	0.000	0.433	0.000
Available Capacity (c-a), veh/h	395.1	0.0	252.7	0.0	281.8	0.0	287.9	0.0
Upstream Filter Factor (f)	0.578	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Uniform Delay (d1), s/veh	9.2	0.0	31.7	0.0	14.0	0.0	31.2	0.0
Incremental Delay (d2), s/veh	0.3	0.0	0.1	0.0	0.7	0.0	1.0	0.0
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	9.4	0.0	31.8	0.0	14.7	0.0	32.2	0.0
First-Term Queue (Q1), veh/h	0.9	0.0	0.3	0.0	0.9	0.0	2.3	0.0
Second-Term Queue (Q2), veh/h	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-queue factor (L, B%), veh/h	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Percentile Back of Queue (Q%), veh/h	1.0	0.0	0.3	0.0	0.9	0.0	2.3	0.0
Percentile Storage Ratio (RQ%), veh/h	0.08	0.00	0.06	0.00	0.18	0.00	0.67	0.00
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data

Assigned Movement	0	2	0	4	0	6	0	8
Lane Assignment	T	T	T	T	T	T	T	T
Lanes in Group	0	2	0	1	0	3	0	2
Group Volume (V), veh/h	0.0	787.8	0.0	107.1	0.0	1686.2	0.0	168.2
Group Sat. Flow (s), veh/h	0.0	1878.8	0.0	1844.7	0.0	1676.6	0.0	1752.4
Queue Serve Time (g, s), s	0.0	13.6	0.0	4.9	0.0	27.7	0.0	4.0
Cycle Queue Clear Time (g, c), s	0.0	13.6	0.0	4.9	0.0	27.7	0.0	4.0
Lane Group Capacity (c), veh/h	0.0	1697.6	0.0	229.3	0.0	2585.6	0.0	446.6
Volume-to-Capacity Ratio (X)	0.000	0.464	0.000	0.467	0.000	0.652	0.000	0.446
Available Capacity (c-a), veh/h	0.0	1697.6	0.0	231.6	0.0	2585.6	0.0	377.2
Upstream Filter Factor (f)	0.000	1.000	0.000	1.000	0.000	0.578	0.000	1.000
Uniform Delay (d1), s/veh	0.0	14.4	0.0	36.6	0.0	28.6	0.0	37.6
Incremental Delay (d2), s/veh	0.0	0.2	0.0	1.5	0.0	0.3	0.0	0.8
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	14.8	0.0	38.1	0.0	28.9	0.0	38.5
First-Term Queue (Q1), veh/h	0.0	4.8	0.0	2.1	0.0	12.1	0.0	1.7
Second-Term Queue (Q2), veh/h	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-queue factor (L, B%), veh/h	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q%), veh/h	0.0	4.8	0.0	2.2	0.0	12.2	0.0	1.7
Percentile Storage Ratio (RQ%), veh/h	0.00	0.40	0.00	0.28	0.00	0.25	0.00	0.27

Existing Geometry

Synchro 8 Report
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HCM 2010 Signalized Intersection Capacity Analysis
1: San Mateo Blvd & Indian School Rd

Terry O. Brown, P.E.
2014 AM Peak BUILD Conditions

Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Movement	0	12	0	14	0	16	0	18
Lane Assignment	T+R	T+R	0	1	0	1	0	1
Lanes in Group	0	1	0	1	0	1	0	1
Group Volume (V), veh/h	0.0	431.3	0.0	107.1	0.0	244.7	0.0	129.4
Group Sat. Flow (s), veh/h	0.0	1837.9	0.0	1568.0	0.0	1568.0	0.0	1568.0
Queue Serve Time (g, s), s	0.0	13.6	0.0	5.8	0.0	11.5	0.0	7.2
Cycle Queue Clear Time (g, c), s	0.0	13.6	0.0	5.8	0.0	11.5	0.0	7.2
Prot RT Sat Flow Rate (s, R), veh/h	0.0	0.0	0.0	0.0	0.0	1568.0	0.0	0.0
Prot RT Eff. Green (g, R), s	0.0	0.0	0.0	0.0	0.0	8.8	0.0	0.0
Proportion RT Outside Lane (P, R)	0.000	0.021	0.000	1.000	0.000	1.000	0.000	1.000
Lane Group Capacity (c), veh/h	0.0	926.3	0.0	194.9	0.0	923.5	0.0	168.7
Volume-to-Capacity Ratio (X)	0.000	0.464	0.000	0.549	0.000	0.265	0.000	0.767
Available Capacity (c-a), veh/h	0.0	926.3	0.0	196.9	0.0	923.5	0.0	168.7
Upstream Filter Factor (f)	0.000	1.000	0.000	1.000	0.000	0.578	0.000	1.000
Uniform Delay (d1), s/veh	0.0	14.4	0.0	37.0	0.0	19.5	0.0	38.1
Incremental Delay (d2), s/veh	0.0	0.4	0.0	3.2	0.0	0.1	0.0	18.9
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	14.7	0.0	40.2	0.0	19.6	0.0	57.9
First-Term Queue (Q1), veh/h	0.0	5.2	0.0	2.2	0.0	4.9	0.0	2.7
Second-Term Queue (Q2), veh/h	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.9
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-queue factor (L, B%), veh/h	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q%), veh/h	0.0	5.3	0.0	2.3	0.0	5.0	0.0	3.6
Percentile Storage Ratio (RQ%), veh/h	0.00	0.45	0.00	0.30	0.00	0.53	0.00	1.84
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM Average Control Delay	25.1
HCM Level of Service	C

Existing Geometry

Synchro 8 Report
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Timings
1: San Mateo Blvd & Indian School Rd

Terry O. Brown, P.E.
2014 PM Peak NOBUILD Conditions

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	←	←	←	←	←	←	←	←	←
Volume (vph)	215	298	23	125	141	93	1988	107	1593
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt
Prohibited Phases	7	4	3	8	8	2	1	8	6
Permitted Phases	4	4	8	8	8	2	6	6	6
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0
Total Split (s)	15.0	26.0	10.0	21.0	13.0	54.0	10.0	51.0	66.0
Total Split (%)	15.0%	26.0%	10.0%	21.0%	13.0%	54.0%	10.0%	51.0%	66.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?									
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	28.2	18.2	18.2	13.2	57.8	50.5	55.8	49.5	64.5
Actuated g/C Ratio	0.28	0.18	0.18	0.13	0.58	0.50	0.56	0.50	0.64
v/c Ratio	0.79	0.76	0.15	0.30	0.50	0.51	0.89	0.62	0.69
Control Delay	48.3	43.3	27.3	40.1	18.1	20.5	28.0	30.1	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.3	43.3	27.3	40.1	18.1	20.5	28.0	30.1	7.2
LOS	D	D	C	D	B	C	C	C	A
Approach Delay	45.1	28.3							
Approach LOS	D	C							

Intersection Summary	
Cycle Length: 100	
Offset: 26 (26%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 22.6	
Intersection Capacity Utilization: 77.8%	
Analysis Period (min): 15	



Existing Geometry
Synchro 8 Report
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HCM 2010 Signalized Intersection Capacity Analysis
1: San Mateo Blvd & Indian School Rd

Terry O. Brown, P.E.
2014 PM Peak NOBUILD Conditions

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	←	←	←	←	←	←	←	←	←	←
Volume (vph)	215	298	99	23	125	141	93	1988	107	1593
Movement Number	7	4	14	3	8	5	2	12	1	6
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj. Factor (A _{pbt})	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj. Factors	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Sat. Flow Rate, veh/h	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	1	2	0	1	2	1	3	0	1	3
Lane Assignment										
Capacity, veh/h	357	485	159	203	463	207	249	2575	44	204
Proportion Arriving On Green	0.10	0.18	0.05	0.13	0.13	0.07	0.50	0.50	0.09	0.15
Movement Delay, s/veh	38.2	48.1	50.2	34.8	39.6	55.8	19.3	26.2	29.8	21.7
Movement LOS	D	D	D	C	D	E	B	C	C	C
Approach Volume, veh/h	756			318			2350			
Approach Delay, s/veh	45.3			47.1			27.1			
Approach LOS	D			D			C			

Timer:	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Case No	1	1	4	1	1	3	1	3
Phase Duration (G+Y+R _c), s	11.30	55.50	10.00	23.20	12.30	54.50	15.00	18.20
Change Period (Y+R _c), s	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Max. Allowable Headway (MAH), s	3.77	5.07	3.77	4.95	3.77	5.07	3.77	4.95
Maximum Green Setting (G _{max}), s	6.30	50.50	5.00	18.20	7.30	49.50	10.00	13.20
Max. Queue Clearance Time (G _c +I), s	5.10	39.83	3.19	15.33	4.64	34.25	12.00	11.52
Green Extension Time (G _e), s	0.03	10.40	0.00	1.23	0.05	14.92	0.00	0.76
Probability of Phase Call (p _c), s	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Probability of Max Out (p _o), s	1.000	0.990	1.000	1.000	1.000	0.982	1.000	1.000

Left-Turn Movement Data
Assigned Movement
Mvmt. Sat Flow, veh/h
1756.82
1756.82
1756.82

Through Movement Data
Assigned Movement
Mvmt. Sat Flow, veh/h
5099.50
2663.23
5035.92
3504.85

Right-Turn Movement Data
Assigned Movement
Mvmt. Sat Flow, veh/h
87.08
872.17
1567.96
1567.96

Left Lane Group Data
Assigned Movement
Lanes in Group
Group Volume (V), veh/h
Group Sat. Flow (S), veh/h
Queue Serve Time (g_s), s
Cycle Queue Clear Time (g_c), s

HCM 2010 Signalized Intersection Capacity Analysis
1: San Mateo Blvd & Indian School Rd

Terry O. Brown, P.E.
2014 PM Peak NOBUILD Conditions

Perm LT Sat Flow Rate (s _f), veh/h	166.5	0.0	893.9	0.0	281.0	0.0	1234.5	0.0
Shared LT Sat Flow (s _{sf}), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Eff. Green (g _p), s	49.5	0.0	13.2	0.0	50.5	0.0	20.2	0.0
Perm LT Serve Time (g _s), s	12.6	0.0	4.9	0.0	17.2	0.0	9.7	0.0
Perm LT Queue Clear Time (g _{cl}), s	12.6	0.0	0.2	0.0	17.2	0.0	6.6	0.0
Time to First Blk (g _f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time per Blk (g _{bl}), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proportion LT Inside Lane (P _L),	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Lane Group Capacity (c), veh/h	203.6	0.0	203.4	0.0	248.7	0.0	366.9	0.0
Volume-to-Capacity Ratio (X)	0.565	0.000	0.124	0.000	0.415	0.000	0.723	0.000
Available Capacity (c _a), veh/h	203.6	0.0	203.4	0.0	248.7	0.0	366.9	0.0
Upstream Filter Factor (f)	0.231	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Uniform Delay (d1), s/veh	20.9	0.0	34.3	0.0	18.2	0.0	31.3	0.0
Incremental Delay (d2), s/veh	0.8	0.0	0.3	0.0	1.1	0.0	6.9	0.0
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	21.7	0.0	34.6	0.0	19.3	0.0	38.2	0.0
First-Term Queue (Q1), veh/h	1.5	0.0	0.5	0.0	1.3	0.0	6.1	0.0
Second-Term Queue (Q2), veh/h	0.0	0.0	0.0	0.0	0.1	0.0	0.7	0.0
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-queue factor (f _b), %	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Percentile Back of Queue (Q%), veh/h	1.6	0.0	0.5	0.0	1.4	0.0	6.8	0.0
Percentile Storage Ratio (RO%),	0.13	0.00	0.11	0.00	0.28	0.00	1.93	0.00
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Existing Geometry
Synchro 8 Report
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HCM 2010 Signalized Intersection Capacity Analysis
1: San Mateo Blvd & Indian School Rd

Terry O. Brown, P.E.
2014 PM Peak NOBUILD Conditions

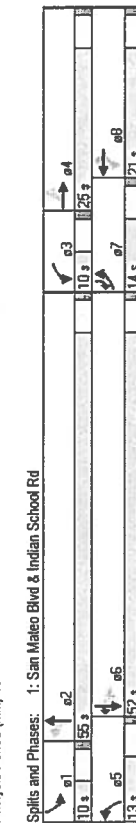
Perm LT Sat Flow Rate (s _f), veh/h	166.5	0.0	893.9	0.0	281.0	0.0	1234.5	0.0
Shared LT Sat Flow (s _{sf}), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Eff. Green (g _p), s	49.5	0.0	13.2	0.0	50.5	0.0	20.2	0.0
Perm LT Serve Time (g _s), s	12.6	0.0	4.9	0.0	17.2	0.0	9.7	0.0
Perm LT Queue Clear Time (g _{cl}), s	12.6	0.0	0.2	0.0	17.2	0.0	6.6	0.0
Time to First Blk (g _f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time per Blk (g _{bl}), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proportion LT Inside Lane (P _L),	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Lane Group Capacity (c), veh/h	203.6	0.0	203.4	0.0	248.7	0.0	366.9	0.0
Volume-to-Capacity Ratio (X)	0.565	0.000	0.124	0.000	0.415	0.000	0.723	0.000
Available Capacity (c _a), veh/h	203.6	0.0	203.4	0.0	248.7	0.0	366.9	0.0
Upstream Filter Factor (f)	0.231	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Uniform Delay (d1), s/veh	20.9	0.0	34.3	0.0	18.2	0.0	31.3	0.0
Incremental Delay (d2), s/veh	0.8	0.0	0.3	0.0	1.1	0.0	6.9	0.0
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	21.7	0.0	34.6	0.0	19.3	0.0	38.2	0.0
First-Term Queue (Q1), veh/h	1.5	0.0	0.5	0.0	1.3	0.0	6.1	0.0
Second-Term Queue (Q2), veh/h	0.0	0.0	0.0	0.0	0.1	0.0	0.7	0.0
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-queue factor (f _b), %	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Percentile Back of Queue (Q%), veh/h	1.6	0.0	0.5	0.0	1.4	0.0	6.8	0.0
Percentile Storage Ratio (RO%),	0.13	0.00	0.11	0.00	0.28	0.00	1.93	0.00
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Existing Geometry
Synchro 8 Report
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Timings
1: San Mateo Blvd & Indian School Rd

Terry O. Brown, P.E.
Existing Geometry

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1
Volume (vph)	216	298	23	125	148	93	2030	111	1620
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	8	5	2	1	8
Permitted Phases	4	8	8	8	2	2	6	6	6
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0
Total Split (s)	14.0	25.0	10.0	21.0	13.0	55.0	10.0	52.0	66.0
Total Split (%)	14.0%	25.0%	10.0%	21.0%	13.0%	55.0%	10.0%	52.0%	66.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?									
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Eff Green (s)	26.8	17.8	18.8	13.8	13.8	58.3	51.0	56.1	49.9
Actuated g/C Ratio	0.27	0.18	0.19	0.14	0.14	0.58	0.51	0.56	0.50
W/C Ratio	0.82	0.77	0.15	0.28	0.52	0.51	0.89	0.65	0.69
Control Delay	52.4	44.7	27.8	39.5	19.9	20.5	28.2	30.8	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.4	44.7	27.8	39.5	19.9	20.5	28.2	30.8	8.3
LOS	D	D	C	D	B	C	C	C	A
Approach Delay	47.4		26.8				27.8		8.7
Approach LOS	D		C				C		A



2014 PM Peak BUILD Conditions
Synchro 8 Report
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HCM 2010 Signalized Intersection Capacity Analysis
1: San Mateo Blvd & Indian School Rd

Terry O. Brown, P.E.
Existing Geometry

Movement	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1
Volume (vph)	216	298	23	125	148	93	2030	111	1620
Movement Number	7	4	3	8	8	5	2	1	6
Initial Queue, veh	0	0	0	0	0	0	0	0	0
Ped-Bike Adj. Factor (A _{pbt})	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj. Factors	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Sat. Flow Rate, veh/hln	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	1	2	0	1	2	1	3	0	1
Lane Assignment									
Capacity, veh/h	357	474	155	199	484	216	2602	44	200
Proportion Arriving On Green	0.09	0.18	0.05	0.14	0.14	0.07	0.51	0.09	0.17
Movement Delay, s/veh	42.2	49.9	52.3	34.2	39.0	55.1	19.4	26.5	30.3
Movement LOS	D	D	D	C	D	E	B	C	C
Approach Volume, veh/h	757		325		2397				2083
Approach Delay, s/veh	47.9		46.7		27.5				32.1
Approach LOS	D		D		C				C
Timer:	1	2	3	4	5	6	7	8	
Assigned Phase	1	2	3	4	5	6	7	8	
Case No	1.1	4.0	1.1	4.0	1.1	3.0	1.1	3.0	
Phase Duration (G+Y+Rc), s	11.20	56.00	10.00	22.80	12.30	54.90	14.00	18.80	
Change Period (Y+Rc), s	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	
Max. Allowable Headway (MAH), s	3.77	5.07	3.77	4.94	3.77	4.94	3.77	4.94	
Maximum Green Setting (Gmax), s	6.20	51.00	5.00	17.80	7.30	49.90	9.00	13.80	
Max. Queue Clearance Time (q _{cH}), s	5.21	40.96	3.19	15.40	4.61	34.48	11.00	11.98	
Green Extension Time (g _e), s	0.02	9.91	0.00	1.06	0.05	15.12	0.00	0.83	
Probability of Phase Call (p _c), s	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Probability of Max Out (p _o), s	1.000	0.992	1.000	1.000	1.000	0.984	1.000	1.000	
Left-Turn Movement Data									
Assigned Movement	1	3			5		7		
Mvmt. Sat. Flow, veh/h	1756.82		1756.82		1756.82		1756.82		
Through Movement Data									
Assigned Movement		2	4		6		8		
Mvmt. Sat. Flow, veh/h		5101.59	2663.23		5035.92		3504.85		
Right-Turn Movement Data									
Assigned Movement		12		14		16		18	
Mvmt. Sat. Flow, veh/h		85.30	872.17		1567.96		1567.96		
Left Lane Group Data									
Assigned Movement	1	0	3	0	5	0	7	0	
Lane Assignment	L (P/Pm)	L (P/Pm)	L (P/Pm)	L (P/Pm)	L (P/Pm)	L (P/Pm)	L (P/Pm)	L (P/Pm)	
Lanes in Group	1	0	1	0	1	0	1	0	
Group Sat. Flow (s), veh/h	119.4	0.0	25.3	0.0	103.3	0.0	266.7	0.0	
Group Sat. Flow (s), veh/hln	1756.8	0.0	1756.8	0.0	1756.8	0.0	1756.8	0.0	
Queue Serve Time (q _s), s	3.2	0.0	1.2	0.0	2.6	0.0	9.0	0.0	
Cycle Queue Clear Time (q _c), s	3.2	0.0	1.2	0.0	2.6	0.0	9.0	0.0	

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HCM 2010 Signalized Intersection Capacity Analysis
1: San Mateo Blvd & Indian School Rd

Terry O. Brown, P.E.
Existing Geometry

Perm LT Sat Flow Rate (s.f.), veh/h	159.0	0.0	893.9	0.0	273.1	0.0	1234.5	0.0
Shared LT Sat Flow (s.f.), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Eff. Green (g.e.), s	49.9	0.0	13.8	0.0	51.0	0.0	18.8	0.0
Perm LT Serve Time (g.s.), s	12.0	0.0	4.4	0.0	17.4	0.0	10.3	0.0
Perm LT Que Serve Time (g.qs.), s	12.0	0.0	0.3	0.0	17.4	0.0	8.4	0.0
Time to First Blk (g.f.), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time per Blk (g.fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proportion LT Inside Lane (P.L.),	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Lane Group Capacity (c), veh/h	200.1	0.0	199.2	0.0	247.8	0.0	357.1	0.0
Volume-to-Capacity Ratio (X)	0.597	0.000	0.127	0.000	0.417	0.000	0.747	0.000
Available Capacity (c.a), veh/h	200.1	0.0	199.2	0.0	247.8	0.0	357.1	0.0
Upstream Filter Factor (f)	0.219	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Uniform Delay (d1), sveh	21.2	0.0	33.9	0.0	18.2	0.0	33.8	0.0
Incremental Delay (d2), sveh	1.1	0.0	0.3	0.0	1.1	0.0	8.4	0.0
Initial Queue Delay (d3), sveh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), sveh	22.3	0.0	34.2	0.0	19.4	0.0	42.2	0.0
First-Term Queue (Q1), veh/h	1.6	0.0	0.5	0.0	1.4	0.0	6.2	0.0
Second-Term Queue (Q2), veh/h	0.1	0.0	0.0	0.0	0.1	0.0	0.8	0.0
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-que factor (f.B%),	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Percentile Back of Queue (Q%), veh/h	1.7	0.0	0.5	0.0	1.4	0.0	7.0	0.0
Percentile Storage Ratio (RC%),	0.14	0.00	0.11	0.00	0.28	0.00	2.00	0.00
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qc), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), sveh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data

Assigned Movement	0	2	0	4	0	6	0	8
Lane Assignment	T	T	0	T	0	T	0	T
Lanes in Group	0	2	0	1	0	3	0	2
Group Volume (v), veh/h	0.0	1483.0	0.0	253.2	0.0	1741.9	0.0	137.4
Group Sat. Flow (s), veh/h	0.0	1678.6	0.0	1944.7	0.0	1678.6	0.0	1752.4
Queue Serve Time (g.s.), s	0.0	38.8	0.0	13.1	0.0	32.5	0.0	3.5
Cycle Queue Clear Time (g.c), s	0.0	38.8	0.0	13.1	0.0	32.5	0.0	3.5
Lane Group Capacity (c), veh/h	0.0	1712.2	0.0	328.3	0.0	2512.9	0.0	483.7
Volume-to-Capacity Ratio (X)	0.000	0.866	0.000	0.771	0.000	0.693	0.000	0.284
Available Capacity (c.a), veh/h	0.0	1712.2	0.0	328.3	0.0	2512.9	0.0	483.7
Upstream Filter Factor (f)	0.000	1.000	0.000	1.000	0.000	0.219	0.000	1.000
Uniform Delay (d1), sveh	0.0	21.5	0.0	39.2	0.0	34.1	0.0	38.7
Incremental Delay (d2), sveh	0.0	5.0	0.0	10.7	0.0	0.2	0.0	0.3
Initial Queue Delay (d3), sveh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), sveh	0.0	26.5	0.0	49.9	0.0	34.3	0.0	39.0
First-Term Queue (Q1), veh/h	0.0	13.9	0.0	5.8	0.0	14.4	0.0	1.5
Second-Term Queue (Q2), veh/h	0.0	1.2	0.0	1.0	0.0	0.0	0.0	0.0
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-que factor (f.B%),	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q%), veh/h	0.0	15.1	0.0	6.8	0.0	14.5	0.0	1.5
Percentile Storage Ratio (RC%),	0.00	1.27	0.00	0.86	0.00	0.30	0.00	0.23

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HCM 2010 Signalized Intersection Capacity Analysis
1: San Mateo Blvd & Indian School Rd

Terry O. Brown, P.E.
Existing Geometry

Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qc), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), sveh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Movement	0	12	0	14	0	16	0	18
Lane Assignment	T+R	0	1	0	1	0	1	0
Lanes in Group	0	0	1	0	1	0	1	0
Group Volume (v), veh/h	0.0	810.3	0.0	236.9	0.0	221.5	0.0	162.6
Group Sat. Flow (s), veh/h	0.0	1829.6	0.0	1690.7	0.0	1588.0	0.0	1568.0
Queue Serve Time (g.s.), s	0.0	39.0	0.0	13.4	0.0	11.2	0.0	10.0
Cycle Queue Clear Time (g.c), s	0.0	39.0	0.0	13.4	0.0	11.2	0.0	10.0
Prot RT Sat Flow Rate (s.R), veh/h	0.0	0.0	0.0	0.0	0.0	1568.0	0.0	0.0
Prot RT Eff. Green (g.R), s	0.0	0.0	0.0	0.0	0.0	9.0	0.0	0.0
Proportion RT Outside Lane (P.R),	0.000	0.047	0.000	0.516	0.000	1.000	0.000	1.000
Lane Group Capacity (c), veh/h	0.0	933.1	0.0	301.0	0.0	923.5	0.0	216.4
Volume-to-Capacity Ratio (X)	0.000	0.868	0.000	0.787	0.000	0.240	0.000	0.752
Available Capacity (c.a), veh/h	0.0	933.1	0.0	301.0	0.0	923.5	0.0	216.4
Upstream Filter Factor (f)	0.000	1.000	0.000	1.000	0.000	0.219	0.000	1.000
Uniform Delay (d1), sveh	0.0	21.5	0.0	39.3	0.0	20.5	0.0	41.5
Incremental Delay (d2), sveh	0.0	8.8	0.0	13.0	0.0	0.0	0.0	13.7
Initial Queue Delay (d3), sveh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), sveh	0.0	30.3	0.0	52.3	0.0	20.6	0.0	55.1
First-Term Queue (Q1), veh/h	0.0	15.3	0.0	6.4	0.0	4.8	0.0	3.8
Second-Term Queue (Q2), veh/h	0.0	2.3	0.0	1.1	0.0	0.0	0.0	0.8
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-que factor (f.B%),	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q%), veh/h	0.0	17.6	0.0	6.5	0.0	4.8	0.0	4.6
Percentile Storage Ratio (RC%),	0.00	1.47	0.00	0.83	0.00	0.62	0.00	2.36
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qc), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), sveh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

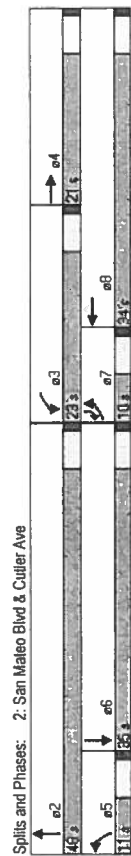
HCM Average Control Delay	33.1	C
HCM Level of Service		

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Timings 2: San Mateo Blvd & Cutler Ave

Terry O. Brown, P.E.
2014 AM Peak NOBUILD Conditions

Lane Group	EBL	EBR	WBL	WBR	NBL	NBT	SBT	SBR
Lane Configurations	30	190	245	115	233	187	965	1316
Volume (vph)	30	190	245	115	233	187	965	1316
Turn Type	Prot	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4	3	8	5	2	6	7
Permitted Phases	7	4	3	8	5	2	6	7
Detector Phase	7	4	3	8	5	2	6	7
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	10.0
Minimum Split (s)	10.0	21.0	23.0	34.0	11.0	46.0	35.0	10.0
Total Split (s)	11.1%	23.3%	25.6%	37.8%	12.2%	51.1%	38.9%	11.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min	Min
Recall Mode	5.0	9.4	17.7	22.1	10.0	47.9	32.9	42.9
Act Effct Green (s)	0.06	0.10	0.20	0.25	0.11	0.53	0.37	0.48
Actuated g/C Ratio	0.19	0.69	0.91	0.32	0.65	0.57	0.41	0.78
v/c Ratio	43.0	22.1	68.0	28.6	26.9	36.1	13.6	21.5
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	22.1	68.0	28.6	26.9	36.1	13.6	21.5
LOS	D	C	E	C	C	D	B	C
Approach Delay	44.2						17.3	19.9
Approach LOS	D						B	B



Cycle Length: 90	3	3	3	3	3	3	3	3
Actuated Cycle Length: 90	3	3	3	3	3	3	3	3
Offset: 0 (0%) Referenced to phase 2:NBT and 6:SBT, Start of Green	3	3	3	3	3	3	3	3
Natural Cycle: 90	3	3	3	3	3	3	3	3
Control Type: Actuated-Coordinated	3	3	3	3	3	3	3	3
Maximum v/c Ratio: 0.91	3	3	3	3	3	3	3	3
Intersection Signal Delay: 24.0	3	3	3	3	3	3	3	3
Intersection Capacity Utilization 63.5%	3	3	3	3	3	3	3	3
Analysis Period (min) 15	3	3	3	3	3	3	3	3

Splits and Phases: 2: San Mateo Blvd & Cutler Ave

Existing Geometry

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HCM 2010 Signalized Intersection Capacity Analysis 2: San Mateo Blvd & Cutler Ave

Terry O. Brown, P.E.
2014 AM Peak NOBUILD Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Configurations	30	0	190	245	115	233	187	965	0	1316	115
Volume (vph)	30	0	190	245	115	233	187	965	0	1316	115
Movement Number	7	4	14	3	8	18	5	2	12	1	6
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj. Factor (A _{pbt})	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking, Bus Adj. Factors	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Sat. Flow Rate, veh/h	1845	1900	1845	1845	1845	1845	1845	1845	1900	1845	1845
Lanes	2	1	1	1	1	1	2	3	0	0	3
Lane Assignment	189	198	164	346	453	385	379	2680	0	0	1841
Capacity, veh/h	0.06	0.00	0.10	0.20	0.25	0.25	0.07	0.46	0.00	0.22	0.13
Proportion Arriving On Green	41.0	0.0	232.2	62.3	28.3	41.2	41.4	15.5	0.0	0.0	34.6
Movement Delay, s/veh	D	F	F	E	C	D	D	B	C	C	C
Movement LOS	D	F	F	E	C	D	D	B	C	C	C
Approach Volume, veh/h	256							1324			1573
Approach Delay, s/veh	206.1							19.7			33.7
Approach LOS	F							B			C

Timer	1	2	3	4	5	6	7	8
Assigned Phase	2	3	4	5	6	7	8	
Case No	4.0	2.0	3.0	2.0	7.0	2.0	3.0	
Phase Duration (G+Y+Rc), s	52.90	22.70	14.40	15.00	37.90	10.00	27.10	
Change Period (Y+Rc), s	5.00	5.00	5.00	5.00	5.00	5.00	5.00	
Max. Allowable Headway (MAH), s	5.07	3.81	4.31	3.77	5.07	3.81	4.31	
Maximum Green Setting (Gmax), s	47.90	17.70	9.40	10.00	32.90	5.00	22.10	
Max. Queue Clearance Time (g _c +t ₁), s	15.30	17.74	11.40	7.49	26.34	2.88	17.98	
Green Extension Time (g _e), s	24.72	0.00	0.00	0.17	6.03	0.01	1.15	
Probability of Phase Call (p _c)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Probability of Max Out (p _x)	0.655	1.000	1.000	1.000	0.977	1.000	1.000	

Left-Turn Movement Data	3	3	3	3	3	3	3	3
Assigned Movement	1756.82							
Mvmt. Sat Flow, veh/h	3408.23							
Through Movement Data	2	2	2	2	2	2	2	2
Assigned Movement	5201.94							
Mvmt. Sat Flow, veh/h	1900.00							
Right-Turn Movement Data	12	12	12	12	12	12	12	12
Assigned Movement	0.00							
Mvmt. Sat Flow, veh/h	1567.96							
Left Lane Group Data	0	0	0	0	0	0	0	0
Assigned Movement	0							
Lane Assignment	0							
Lanes in Group	0							
Group Volume (v), veh/h	0.0							
Group Sat. Flow (s), veh/h	0.0							
Queue Serve Time (g _s), s	0.0							
Cycle Queue Clear Time (g _c), s	0.0							

Existing Geometry

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HCM 2010 Signalized Intersection Capacity Analysis
 2: San Mateo Blvd & Cutler Ave

Timings
 2: San Mateo Blvd & Cutler Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Configurations	30	0	221	245	115	233	207	965	0	1316	115
Volume (vph)	7	4	14	3	8	18	5	2	12	1	6
Movement Number	7	4	14	3	8	18	5	2	12	1	6
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj. Factor (A _{pbT})	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking, Bus Adj. Factors	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Sat. Flow Rate, veh/h	1845	1900	1845	1845	1845	1845	1845	1845	1900	1845	1845
Lane Assignment	2	1	1	1	1	1	2	3	0	0	3
Capacity, veh/h	189	211	174	345	465	395	386	2649	0	1800	647
Proportion Arriving On Green	0.06	0.00	0.11	0.20	0.25	0.25	0.07	0.41	0.00	0.22	0.08
Movement Delay, s/veh	41.1	0.0	282.9	62.6	27.8	39.3	42.4	17.3	0.0	35.5	25.5
Movement LOS	D	F	F	E	C	D	D	B	C	D	C
Approach Volume, veh/h	292	254.0	760	46.7	21.7	1347	34.7	1573	21.7	34.7	C
Approach Delay, s/veh	254.0	F	46.7	D	C	C	C	C	C	C	C
Approach LOS	F	F	D	D	C	C	C	C	C	C	C
Timer:	1	2	3	4	5	6	7	8			
Assigned Phase	2	3	4	5	6	7	8				
Case No	4.0	2.0	3.0	2.0	7.0	2.0	3.0				
Phase Duration (G+Y+Rc), s	52.40	22.70	15.00	15.20	37.20	10.00	27.70				
Change Period (Y+Rc), s	5.00	5.00	5.00	5.00	5.00	5.00	5.00				
Max. Allowable Headway (MAH), s	5.07	3.81	4.30	3.77	5.07	3.81	4.30				
Maximum Green Setting (Gmax), s	47.30	17.70	10.00	10.20	32.20	5.00	22.70				
Max. Queue Clearance Time (g_c+1), s	16.17	17.76	12.00	8.10	26.54	2.88	17.86				
Green Extension Time (g_e), s	23.86	0.00	0.00	0.00	0.17	5.24	0.01	1.37			
Probability of Phase Call (p_c)	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
Probability of Max Out (p_x)	0.670	1.000	1.000	1.000	0.991	1.000	0.865				
Left-Turn Movement Data											
Assigned Movement											
Mvmt. Sat. Flow, veh/h											
Through Movement Data											
Assigned Movement											
Mvmt. Sat. Flow, veh/h											
Right-Turn Movement Data											
Assigned Movement											
Mvmt. Sat. Flow, veh/h											
Left Lane Group Data											
Assigned Movement											
Lane Assignment											
Lanes in Group											
Group Volume (v), veh/h											
Group Sat. Flow (s), veh/h											
Queue Serve Time (g_s), s											
Cycle Queue Clear Time (g_c), s											

Existing Geometry
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Configurations	30	221	245	115	233	207	965	1316	115		
Turn Type	Prot	Perm	Prot	Prot	NA	Perm	Prot	NA	pm+ov		
Protected Phases	7	4	3	8	8	5	2	6	7		
Permitted Phases	7	4	3	8	8	5	2	6	7		
Detector Phase											
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		
Minimum Split (s)	10.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0		
Total Split (s)	10.0	21.0	23.0	34.0	34.0	34.0	46.0	34.0	10.0		
Total Split (%)	11.1%	23.3%	25.6%	37.8%	37.8%	37.8%	51.1%	37.8%	11.1%		
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		
Lead-Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead		
Lead-Lag Optimize?											
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min		
Act. Eff. Green (s)	5.0	10.0	17.7	22.7	10.2	47.3	32.2	42.2			
Actuated g/C Ratio	0.06	0.11	0.20	0.25	0.25	0.53	0.36	0.47			
v/c Ratio	0.19	0.74	0.91	0.32	0.64	0.62	0.42	0.80	0.16		
Control Delay	43.0	24.4	68.0	28.0	26.0	36.4	12.7	22.4	1.1		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	43.0	24.4	68.0	28.0	26.0	36.4	12.7	22.4	1.1		
LOS	D	C	E	C	C	D	B	C	A		
Approach Delay											
Approach LOS											
Intersection Summary											
Cycle Length: 90											
Actuated Cycle Length: 90											
Offset: 0.0 (0%). Referenced to phase 2:NBT and 6:SBT, Start of Green											
Natural Cycle: 90											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.91											
Intersection Signal Delay: 24.2											
Intersection Capacity Utilization 65.2%											
Analysis Period (min) 15											
Splits and Phases: 2: San Mateo Blvd & Cutler Ave											
	a2	a3	a4	a5	a6	a7	a8	a9	a10	a11	a12
	12 s	23 s	21 s	12 s	34 s	10 s	34 s	21 s	12 s	34 s	21 s

Existing Geometry
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HCM 2010 Signalized Intersection Capacity Analysis 2: San Mateo Blvd & Cutler Ave

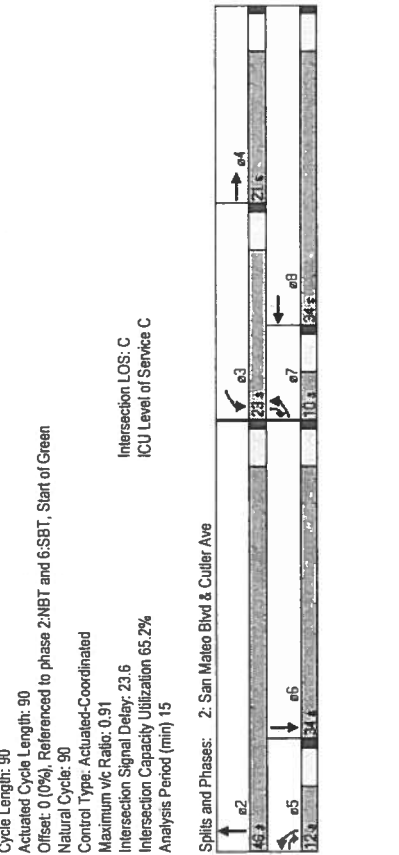
Terry O. Brown, P.E.
 2014 AM Peak BUILD Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	30	0	221	245	115	233	207	965	0	0	1316	115
Volume (vph)	7	4	14	3	8	18	5	2	12	1	6	16
Movement Number	0	0	0	0	0	0	0	0	0	0	0	0
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj. Factor (A _{pbt})	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking, Bus Adj. Factors	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Sat. Flow Rate, veh/h	1845	1900	1845	1845	1845	1845	1845	1845	1900	1900	1845	1845
Lanes	2	1	1	1	1	1	2	3	0	0	3	1
Lane Assignment												
Capacity, veh/h	189	169	333	346	424	361	420	2759	0	0	1858	566
Proportion Arriving On Green	0.06	0.00	0.09	0.20	0.23	0.23	0.08	0.41	0.00	0.00	0.22	0.06
Movement Delay, s/veh	41.0	0.0	44.1	62.3	29.5	47.7	40.7	16.6	0.0	0.0	34.4	25.5
Movement LOS	D	D	D	E	C	D	D	B	C	C	C	C
Approach Volume, veh/h	292			760			1347				1573	
Approach Delay, s/veh	43.7			50.2			20.9				33.7	
Approach LOS	D			D			C				C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phase	2	3	4	5	6	7	8					
Case No	4.0	2.0	3.0	2.0	7.0	2.0	3.0					
Phase Duration (G+Y+Rc), s	54.30	22.70	13.00	16.10	38.20	10.00	25.70					
Change Period (Y+Rc), s	5.00	5.00	5.00	5.00	5.00	5.00	5.00					
Max. Allowable Headway (MAH), s	5.07	3.81	4.30	3.77	5.07	3.81	4.30					
Maximum Green Setting (Gmax), s	49.30	17.70	8.00	11.10	33.20	5.00	20.70					
Max. Queue Clearance Time (q _{c+1}), s	16.06	17.74	10.00	8.06	26.33	2.88	18.31					
Green Extension Time (g _{ex}), s	25.09	0.00	0.00	0.00	6.31	0.01	0.78					
Probability of Phase Call (p _c), s	1.000	1.000	1.000	1.000	1.000	1.000	1.000					
Probability of Max Out (p _x)	0.648	1.000	1.000	1.000	0.973	1.000	1.000					

Left-Turn Movement Data												
Assigned Movement												
Mvmt Sat Flow, veh/h												
Through Movement Data												
Assigned Movement												
Mvmt Sat Flow, veh/h												
Right-Turn Movement Data												
Assigned Movement												
Mvmt Sat Flow, veh/h												
Left Lane Group Data												
Assigned Movement												
Lane Assignment												
Lanes in Group												
Group Volume (v), veh/h												
Group Sat. Flow (s), veh/h												
Queue Serve Time (g _s), s												
Cycle Queue Clear Time (g _c), s												

Existing Geometry, Mitigated Phasing
 Synchro 8 Report
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	30	0	221	245	115	233	207	965	0	0	1316	115
Turn Type	Prot	pm+ov	Prot	NA	Perm	Prot	NA	NA	pm+ov	NA	NA	NA
Protected Phases	7	4	5	3	8	5	2	6	7	4	6	7
Permitted Phases	7	5	3	8	8	5	2	6	7	4	6	7
Detector Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	10.0	10.0	10.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Minimum Split (s)	10.0	12.0	23.0	34.0	34.0	12.0	46.0	34.0	10.0	21.0	10.0	21.0
Total Split (%)	11.1%	13.3%	25.6%	37.8%	37.8%	13.3%	51.1%	37.8%	11.1%	23%	23%	23%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	5.0	24.1	17.7	20.7	20.7	11.1	49.3	33.2	43.2			
Actuated g/C Ratio	0.06	0.27	0.20	0.23	0.23	0.12	0.55	0.37	0.48			
v/c Ratio	0.19	0.57	0.91	0.35	0.69	0.57	0.40	0.78	0.15			
Control Delay	43.0	28.1	68.0	30.4	29.6	32.1	11.0	20.9	0.9			
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay	43.0	28.1	68.0	30.4	29.6	32.1	11.0	20.9	0.9			
LOS	D	C	E	C	C	C	B	C	A			
Approach Delay				45.6			14.7	19.3				
Approach LOS				D			B	B				
Intersection Summary												
Cycle Length: 90												
Actuated Cycle Length: 90												
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green												
Natural Cycle: 90												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.91												
Intersection Signal Delay: 23.6												
Intersection Capacity Utilization 65.2%												
Analysis Period (min) 15												



Existing Geometry, Mitigated Phasing
 Synchro 8 Report
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Terry O. Brown, P.E.
2014 AM Peak BUILD Conditions

Existing Geometry, Mitigated Phasing

Terry O. Brown, P.E.
2014 AM Peak BUILD Conditions

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HCM 2010 Signalized Intersection Capacity Analysis 2: San Mateo Blvd & Cutler Ave

Terry O. Brown, P.E.
 2014 PM Peak NOBUILD Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Configurations	125	0	408	187	81	232	221	1516	0	1492	110
Volume (vph)	7	4	14	3	8	18	5	2	12	1	6
Movement Number	7	4	14	3	8	18	5	2	12	1	6
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj. Factor (A _{pbt})	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking, Bus Adj. Factors	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Sat. Flow Rate, veh/h/m	1845	1900	1845	1845	1845	1845	1845	1845	1900	1845	1845
Lanes	2	1	1	2	1	1	2	3	0	0	1
Lane Assignment	297	532	439	239	485	412	290	2518	0	1838	709
Capacity, veh/h	0.09	0.00	0.28	0.07	0.26	0.26	0.05	0.60	0.00	0.29	0.47
Proportion Arriving On Green	46.2	0.0	161.8	75.4	28.8	35.7	56.0	15.0	0.0	38.6	13.9
Movement Delay, s/veh	D	D	F	E	C	D	E	B	D	D	B
Movement LOS	D	D	F	E	C	D	E	B	D	D	B
Approach Volume, veh/h	711	134.7	562	49.4	562	49.4	1930	20.2	1723	36.9	D
Approach Delay, s/veh	F	F	D	D	D	D	C	C	D	D	D
Approach LOS	F	F	D	D	D	D	C	C	D	D	D
Timer:	1	2	3	4	5	6	7	8			
Assigned Phase	2	3	4	5	6	7	8				
Case No	4.0	2.0	3.0	2.0	7.0	2.0	3.0				
Phase Duration (G+Y+Rc), s	55.00	12.00	33.00	13.50	41.50	13.70	31.30				
Change Period (Y+Rc), s	5.00	5.00	5.00	5.00	5.00	5.00	5.00				
Max. Allowable Headway (MAH), s	5.08	3.81	4.16	3.77	5.08	3.81	4.16				
Maximum Green Setting (G _{max}), s	50.00	7.00	28.00	8.50	36.50	8.70	26.30				
Max. Queue Clearance Time (g _{c+H}), s	24.32	8.11	30.00	9.14	32.32	6.69	16.70				
Green Extension Time (g _e), s	23.52	0.00	0.00	0.00	0.00	4.09	0.10	2.69			
Probability of Phase Call (p _c), s	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
Probability of Max Out (p _x)	0.891	1.000	1.000	1.000	1.000	1.000	1.000				

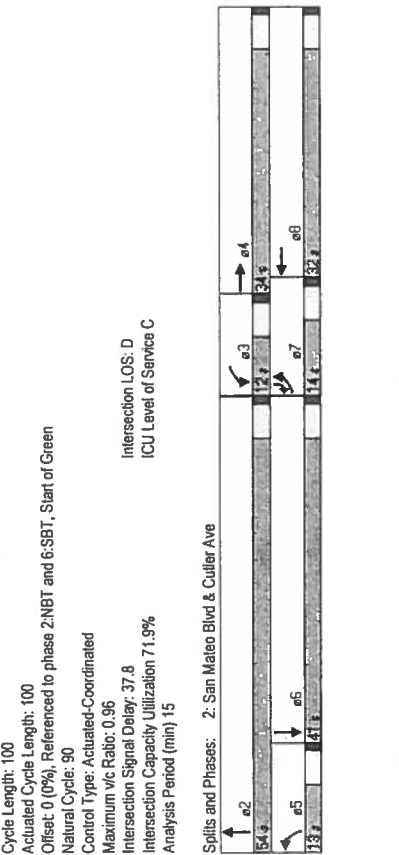
Left-Turn Movement Data											
Assigned Movement	3	3	3	3	3	3	3	3	3	3	3
Mvmt. Sat Flow, veh/h	3408.23	3408.23	3408.23	3408.23	3408.23	3408.23	3408.23	3408.23	3408.23	3408.23	3408.23
Through Movement Data											
Assigned Movement	2	2	2	2	2	2	2	2	2	2	2
Mvmt. Sat Flow, veh/h	5201.94	5201.94	5201.94	5201.94	5201.94	5201.94	5201.94	5201.94	5201.94	5201.94	5201.94
Right-Turn Movement Data											
Assigned Movement	12	12	12	12	12	12	12	12	12	12	12
Mvmt. Sat Flow, veh/h	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Left Lane Group Data											
Assigned Movement	0	0	0	0	0	0	0	0	0	0	0
Lanes in Group	0	0	0	0	0	0	0	0	0	0	0
Group Volume (v), veh/h	0.0	0.0	210.1	0.0	245.6	0.0	166.7	0.0	0.0	0.0	0.0
Group Sat. Flow (s), veh/h/m	0.0	0.0	1704.1	0.0	1704.1	0.0	1704.1	0.0	0.0	0.0	0.0
Queue Serve Time (g _s), s	0.0	0.0	6.1	0.0	7.1	0.0	4.7	0.0	0.0	0.0	0.0
Queue Queue Clear Time (g _c), s	0.0	0.0	6.1	0.0	7.1	0.0	4.7	0.0	0.0	0.0	0.0

Existing Geometry
 Synchro 8 Report
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Timings 2: San Mateo Blvd & Cutler Ave

Terry O. Brown, P.E.
 2014 PM Peak NOBUILD Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Configurations	125	0	408	187	81	232	221	1516	0	1492	110
Volume (vph)	7	4	14	3	8	18	5	2	12	1	6
Turn Type	7	4	14	3	8	18	5	2	12	1	6
Protected Phases	7	4	14	3	8	18	5	2	12	1	6
Permitted Phases	7	4	14	3	8	18	5	2	12	1	6
Detector Phase	7	4	14	3	8	18	5	2	12	1	6
Switch Phase	7	4	14	3	8	18	5	2	12	1	6
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0
Total Split (s)	14.0	34.0	12.0	32.0	13.0	54.0	41.0	14.0	14.0	14.0	14.0
Total Split (%)	14.0%	34.0%	12.0%	32.0%	13.0%	54.0%	41.0%	14.0%	14.0%	14.0%	14.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead
Lead/Lag Optimized?											
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Eff Green (s)	8.7	28.0	7.0	26.3	8.5	50.0	36.5	50.2			
Actuated g/C Ratio	0.09	0.28	0.07	0.26	0.08	0.50	0.36	0.50			
v/c Ratio	0.57	0.96	0.88	0.19	0.61	0.85	0.67	0.87	0.14		
Control Delay	51.7	54.6	81.7	29.4	36.3	47.9	27.4	32.3	5.3		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1		
Total Delay	51.7	54.6	81.7	29.4	36.3	47.9	27.4	37.5	5.3		
LOS	D	D	F	C	D	D	C	D	A		
Approach Delay	52.2										
Approach LOS	D										
Intersection Summary											
Cycle Length: 100											
Actuated Cycle Length: 100											
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green											
Natural Cycle: 90											
Control Type: Actuated-Coordinated											
Maximum v/c Ratio: 0.96											
Intersection Signal Delay: 37.8											
Intersection Capacity Utilization 71.9%											
Analysis Period (min) 15											



Existing Geometry
 Synchro 8 Report
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Right Lane Group Data													
Assigned Movement													
Lane Assignment													
Lanes in Group													
Group Volume (V), veh/h													
Group Sat. Flow (s), veh/h/m													
Queue Serve Time (g_s), s													
Cycle Queue Clear Time (g_c), s													
Prot RT Sat Flow Rate (s_R), veh/h/m													
Prot RT Eff. Green (g_R), s													
Proportion RT Outside Lane (P_R)													
Lane Group Capacity (c), veh/h													
Volume-to-Capacity Ratio (X)													
Available Capacity (c_a), veh/h													
Upstream Filter Factor (f)													
Uniform Delay (d1), s/veh													
Incremental Delay (d2), s/veh													
Initial Queue Delay (d3), s/veh													
Control Delay (d), s/veh													
First-Term Queue (Q1), veh/h													
Second-Term Queue (Q2), veh/h													
Third-Term Queue (Q3), veh/h													
Percentile bk-of-queue factor (f_B%)													
Percentile Back of Queue (Q%), veh/h													
Percentile Storage Ratio (RQ%)													
Initial Queue (Qb), veh													
Final (Residual) Queue (Qe), veh													
Saturated Delay (ds), s/veh													
Saturated Queue (Qs), veh													
Saturated Capacity (cs), veh/h													
Initial Queue Clear Time (tc), h													
Intersection Summary													
HCM Average Control Delay													
HCM Level of Service													

Synchro 8 Report
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Timings 2: San Mateo Blvd & Cutler Ave

Terry O. Brown, P.E.
Existing Geometry

Lane Group	EBL	EBR	WBL	WBR	NBL	NBT	SBT	SBR
Lane Configurations	125	440	187	81	232	271	1516	1492
Volume (vph)	125	440	187	81	232	271	1516	1492
Turn Type	Prot	Parm	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	7	4	3	8	5	2	6	7
Permitted Phases	7	4	3	8	5	2	6	7
Detector Phase	7	4	3	8	5	2	6	7
Switch Phase	7	4	3	8	5	2	6	7
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	21.0	10.0
Total Split (s)	14.0	33.0	12.0	31.0	15.0	55.0	40.0	14.0
Total Split (%)	14.0%	33.0%	12.0%	31.0%	15.0%	55.0%	40.0%	14.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	8.7	28.0	7.0	26.3	10.0	50.0	35.0	48.7
Act/Eff Green (s)	0.09	0.28	0.07	0.26	0.10	0.50	0.35	0.49
Actuated g/C Ratio	0.57	0.99	0.88	0.19	0.61	0.89	0.67	0.91
v/c Ratio	51.7	59.3	81.7	30.1	36.6	55.5	14.9	29.6
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.7	59.3	81.7	30.1	36.6	55.5	14.9	30.2
LOS	D	E	F	C	D	E	B	C
Approach Delay								
Approach LOS								

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 32.5	Intersection LOS: C
Intersection Capacity Utilization 73.9%	ICU Level of Service D
Analysis Period (min) 15	



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HCM 2010 Signalized Intersection Capacity Analysis 2: San Mateo Blvd & Cutler Ave

Terry O. Brown, P.E.
Existing Geometry

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Configurations	125	440	187	81	232	271	1516	1492	110	1492	110
Volume (vph)	125	440	187	81	232	271	1516	1492	110	1492	110
Movement Number	7	4	14	3	8	18	5	2	12	1	6
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj. Factor (A _{pbt})	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking, Bus Adj. Factors	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Sat. Flow Rate, veh/h	1845	1900	1845	1845	1845	1845	1845	1845	1900	1845	1845
Lanes	2	1	1	2	1	1	2	3	0	3	1
Lane Assignment											
Capacity, veh/h	297	532	439	239	485	412	341	2518	0	1763	685
Proportion Arriving On Green	0.09	0.00	0.28	0.07	0.26	0.26	0.08	0.33	0.00	0.00	0.22
Movement Delay, s/veh	46.2	0.0	202.2	75.4	28.8	35.7	56.0	27.0	0.0	44.4	26.5
Movement LOS	D	F	E	E	C	D	E	C	C	D	C
Approach Volume, veh/h	753	562	1986	314	494	314	432	1723	432	1723	432
Approach Delay, s/veh	167.7	49.4	31.4	31.4	49.4	31.4	432	1723	432	1723	432
Approach LOS	F	D	C	C	D	C	D	C	C	D	D
Timer:	1	2	3	4	5	6	7	8			
Assigned Phase	2	3	4	5	6	7	8				
Case No	4.0	2.0	3.0	2.0	7.0	2.0	3.0				
Phase Duration (G+Y+Rc), s	55.00	12.00	33.00	15.00	40.00	13.70	31.30				
Change Period (Y+Rc), s	5.00	5.00	5.00	5.00	5.00	5.00	5.00				
Max. Allowable Headway (MAH), s	5.08	3.81	4.16	3.77	5.08	3.81	4.16				
Maximum Green Setting (G _{max}), s	50.00	7.00	28.00	10.00	35.00	8.70	26.30				
Max. Queue Clearance Time (g _{c+1}), s	30.79	8.11	30.00	10.75	33.08	6.69	16.70				
Green Extension Time (g _e), s	17.93	0.00	0.00	0.00	1.89	0.10	2.85				
Probability of Phase Call (p _c)	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
Probability of Max Out (p _x)	0.924	1.000	1.000	1.000	1.000	1.000	0.334				
Left-Turn Movement Data											
Assigned Movement			3		5		7				
Mvmt. Sat Flow, veh/h			3408.23		3408.23		3408.23				
Through Movement Data											
Assigned Movement		2		4		6			8		
Mvmt. Sat Flow, veh/h		5201.94		1900.00		5201.94			1844.66		
Right-Turn Movement Data											
Assigned Movement			12		14		16		18		
Mvmt. Sat Flow, veh/h			0.00		1567.96		1567.96		1567.96		
Left Lane Group Data											
Assigned Movement		0	0	3	0	5	0	7	0		
Lane Assignment			L (Prot)		L (Prot)		L (Prot)				
Lanes in Group		0	0	2	0	2	0	2	0		
Group Volume (v), veh/h		0.0	0.0	210.1	0.0	301.1	0.0	166.7	0.0		
Group Sat. Flow (s), veh/h		0.0	0.0	1704.1	0.0	1704.1	0.0	1704.1	0.0		
Queue Serve Time (g _s), s		0.0	0.0	6.1	0.0	8.7	0.0	4.7	0.0		
Cycle Queue Clear Time (g _c), s		0.0	0.0	6.1	0.0	8.7	0.0	4.7	0.0		

Left-Turn Movement Data	
Assigned Movement	
Mvmt. Sat Flow, veh/h	
Through Movement Data	
Assigned Movement	
Mvmt. Sat Flow, veh/h	
Right-Turn Movement Data	
Assigned Movement	
Mvmt. Sat Flow, veh/h	
Left Lane Group Data	
Assigned Movement	
Lane Assignment	
Lanes in Group	
Group Volume (v), veh/h	
Group Sat. Flow (s), veh/h	
Queue Serve Time (g _s), s	
Cycle Queue Clear Time (g _c), s	

2014 PM Peak BUILD Conditions
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HCM 2010 Signalized Intersection Capacity Analysis
2: San Mateo Blvd & Cutler Ave

[illegible]

Right Lane Group Data														
Assigned Movement														
Lane Assignment														
Lanes In Group														
Group Volume (V), veh/h														
Group Sat. Flow (s), veh/hIn														
Queue Serve Time (g_s), s														
Cycle Queue Clear Time (g_c), s														
Prot RT Sat Flow Rate (s_R), veh/hIn														
Prot RT Eff. Green (g_R), s														
Proportion RT Outside Lane (P_R)														
Lane Group Capacity (c), veh/h														
Volume-to-Capacity Ratio (X)														
Available Capacity (c_a), veh/h														
Upstream Filter Factor (f)														
Uniform Delay (d1), sveh														
Incremental Delay (d2), sveh														
Initial Queue Delay (d3), sveh														
Control Delay (d), sveh														
First-Term Queue (Q1), veh/hIn														
Second-Term Queue (Q2), veh/hIn														
Third-Term Queue (Q3), veh/hIn														
Percentile bk-of-que factor (L_B%)														
Percentile Back of Queue (Q%), veh/hIn														
Percentile Storage Ratio (RQ%)														
Initial Queue (Qb), veh														
Final (Residual) Queue (Qe), veh														
Saturated Delay (ds), sveh														
Saturated Queue (Qs), veh														
Saturated Capacity (cs), veh/h														
Initial Queue Clear Time (tc), h														
Intersection Summary														
HCM Average Control Delay														
HCM Level of Service														

HCM 2010 Signalized Intersection Capacity Analysis
 2: San Mateo Blvd & Cutler Ave

Timings
 2: San Mateo Blvd & Cutler Ave

Terry O. Brown, P.E.
 Existing Geometry, Mitigated Phasing

Terry O. Brown, P.E.
 Existing Geometry, Mitigated Phasing

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	125	0	440	187	81	232	271	1516	0	0	1492	110
Volume (vph)	7	4	14	3	8	18	5	2	12	1	6	16
Movement Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj. Factor (A _{pbt})	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking, Bus Adj. Factors	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Sat. Flow Rate, veh/h	1845	1900	1845	1845	1845	1845	1845	1845	1900	1900	1845	1845
Lanes	2	1	1	2	1	1	2	3	0	0	3	1
Lane Assignment	297	414	580	239	371	315	518	2830	0	0	1813	701
Capacity, veh/h	0.09	0.00	0.22	0.07	0.20	0.20	0.12	0.31	0.00	0.00	0.22	0.04
Proportion Arriving On Green	46.2	0.0	71.7	75.4	33.9	54.7	41.7	25.1	0.0	0.0	42.2	26.0
Movement Delay, s/veh	D	D	F	E	E	D	D	C	C	C	D	C
Movement LOS	D	D	F	E	E	D	D	C	C	C	D	C
Approach Volume, veh/h	753	66.1	59.1	562	59.1	562	1996	27.6	1723	41.1	1723	41.1
Approach Delay, s/veh	E	E	E	E	E	E	E	E	E	E	E	E
Approach LOS	E	E	E	E	E	E	E	E	E	E	E	E
Timer	1	2	3	4	5	6	7	8				
Assigned Phase	2	3	4	5	6	7	8					
Case No	4.0	2.0	3.0	2.0	7.0	2.0	3.0					
Phase Duration (G+Y+R), s	61.20	12.00	26.80	20.20	41.00	13.70	25.10					
Change Period (Y+R), s	5.00	5.00	5.00	5.00	5.00	5.00	5.00					
Max. Allowable Headway (MAH), s	5.08	3.81	4.16	3.77	5.08	3.81	4.16					
Maximum Green Setting (G _{max}), s	56.20	7.00	21.80	15.20	36.00	8.70	20.10					
Max. Queue Clearance Time (g _{c+1}), s	30.23	8.11	23.80	10.37	32.85	6.69	17.93					
Green Extension Time (g _e), s	23.76	0.00	0.00	0.46	3.09	0.10	0.95					
Probability of Phase Call (p _c), s	1.000	1.000	1.000	1.000	1.000	1.000	1.000					
Probability of Max Out (p _x)	0.889	1.000	1.000	0.478	1.000	1.000	1.000					
Left-Turn Movement Data												
Assigned Movement												
Mvmt. Sat Flow, veh/h												
Through Movement Data												
Assigned Movement												
Mvmt. Sat Flow, veh/h												
Right-Turn Movement Data												
Assigned Movement												
Mvmt. Sat Flow, veh/h												
Left Lane Group Data												
Assigned Movement												
Lane Assignment												
Lanes in Group												
Group Volume (v), veh/h												
Group Sat. Flow (s), veh/h												
Queue Serve Time (g _s), s												
Cycle Queue Clear Time (g _c), s												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	125	0	440	187	81	232	271	1516	0	0	1492	110
Volume (vph)	7	4	14	3	8	18	5	2	12	1	6	16
Movement Number	7	4	14	3	8	18	5	2	12	1	6	16
Protected Phases	7	4	14	3	8	18	5	2	12	1	6	16
Permitted Phases	7	4	14	3	8	18	5	2	12	1	6	16
Detector Phase	7	4	14	3	8	18	5	2	12	1	6	16
Switch Phase	7	4	14	3	8	18	5	2	12	1	6	16
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	14.0	15.0	12.0	31.0	31.0	31.0	15.0	55.0	40.0	14.0	33.0	33.0
Total Split (%)	14.0%	15.0%	12.0%	31.0%	31.0%	31.0%	15.0%	55.0%	40.0%	14.0%	33.0%	33.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Effect Green (s)	8.7	42.0	7.0	20.1	20.1	20.1	15.2	56.2	36.0	49.7		
Actuated g/C Ratio	0.09	0.42	0.07	0.20	0.20	0.20	0.15	0.56	0.36	0.50		
vic Ratio	0.57	0.89	0.88	0.25	0.78	0.58	0.60	0.88	0.14	0.14		
Control Delay	51.7	43.9	81.7	33.5	50.6	39.0	10.2	27.4	0.7	0.7		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.0		
Total Delay	51.7	43.9	81.7	33.5	50.7	39.0	10.3	27.7	0.7	0.7		
LOS	D	D	D	F	C	D	D	B	C	A		
Approach Delay												
Approach LOS												
Intersection Summary												
Cycle Length: 100												
Actuated Cycle Length: 100												
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green												
Natural Cycle: 80												
Control Type: Actuated-Coordinated												
Maximum v/c Ratio: 0.89												
Intersection Signal Delay: 28.2												
Intersection Capacity Utilization 73.9%												
Analysis Period (min) 15												
Splits and Phases: 2: San Mateo Blvd & Cutler Ave												



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Metric	Phase 1: Initial Queue (Q1)										Phase 2: Second-Term Queue (Q2)										Phase 3: Third-Term Queue (Q3)										Phase 4: Final Queue (Q4)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
	Q1_Lane	Q1_Lane	Q1_Lane	Q1_Lane	Q1_Lane	Q1_Lane	Q1_Lane	Q1_Lane	Q1_Lane	Q1_Lane	Q2_Lane	Q2_Lane	Q2_Lane	Q2_Lane	Q2_Lane	Q2_Lane	Q2_Lane	Q2_Lane	Q2_Lane	Q2_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane	Q3_Lane

Right Lane Group Data												
Assigned Movement												
Lane Assignment												
Lanes in Group												
Group Volume (V), veh/h												
Group Sat. Flow (s), veh/hIn												
Queue Serve Time (q_s), s												
Cycle Queue Clear Time (q_c), s												
Prot RT Sat Flow Rate (s_R), veh/hIn												
Prot RT Eff. Green (g_R), s												
Proportion RT Outside Lane (P_R)												
Lane Group Capacity (c), veh/h												
Volume-to-Capacity Ratio (X)												
Available Capacity (c_a), veh/h												
Upstream Filter Factor (f)												
Uniform Delay (d1), s/veh												
Incremental Delay (d2), s/veh												
Initial Queue Delay (d3), s/veh												
Control Delay (d), s/veh												
First-Term Queue (Q1), veh/hIn												
Second-Term Queue (Q2), veh/hIn												
Third-Term Queue (Q3), veh/hIn												
Percentile bc-of-queue factor (f_B%)												
Percentile Back of Queue (Q%), veh/hIn												
Percentile Storage Ratio (RQ%), veh/hIn												
Initial Queue (Qb), veh												
Final (Residual) Queue (Qe), veh												
Saturated Delay (ds), s/veh												
Saturated Queue (Qs), veh												
Saturated Capacity (cs), veh/h												
Initial Queue Clear Time (tc), h												
Intersection Summary												
HCM Average Control Delay												
HCM Level of Service												

Timings

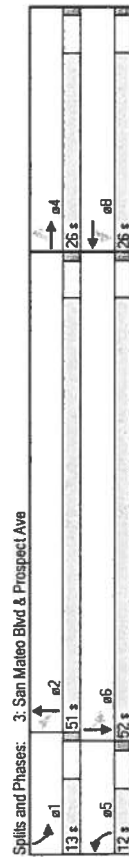
3: San Mateo Blvd & Prospect Ave

Terry O. Brown, P.E.
2014 AM Peak NOBUILD Conditions

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	1	6	102	10	32	887	68	1488
Volume (vph)	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Turn Type	4	4	8	8	2	2	1	6
Permitted Phases	4	4	8	8	2	2	1	6
Detector Phase	4	4	8	8	2	2	1	6
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	21.0	21.0	21.0	21.0	10.0	21.0	10.0	21.0
Minimum Split (s)	26.0	26.0	26.0	26.0	12.0	51.0	13.0	52.0
Total Split (s)	28.9%	28.9%	28.9%	28.9%	13.3%	56.7%	14.4%	57.9%
Total Split (%)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Yellow Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Total Lost Time (s)	Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead/Lag Optimizer?	Min	Min	Min	Min	Min	Min	Min	Min
Recall Mode	14.2	14.2	14.2	14.2	60.3	54.2	61.3	54.7
Act Effect Green (s)	0.16	0.16	0.16	0.16	0.67	0.60	0.68	0.61
Actuated g/C Ratio	0.00	0.08	0.63	0.08	0.15	0.38	0.20	0.51
Control Delay	28.0	17.4	47.7	22.1	3.1	3.0	5.7	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Length	28.0	17.4	47.7	22.1	3.1	3.0	5.7	11.5
LOS	C	B	D	C	A	A	A	B
Approach Delay	17.8	44.1	44.1	44.1	3.0	3.0	11.3	11.3
Approach LOS	B	D	D	D	A	A	A	B

Intersection Summary

Cycle Length: 90	Actuated Cycle Length: 90
Offset: 76 (84%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	Natural Cycle: 55
Control Type: Actuated-Coordinated	Maximum v/c Ratio: 0.63
Intersection Signal Delay: 9.8	Intersection Capacity Utilization: 58.1%
Analysis Period (min): 15	Intersection LOS: A
	ICU Level of Service B



Existing Geometry

Synchro 8 Report
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HCM 2010 Signalized Intersection Capacity Analysis
3: San Mateo Blvd & Prospect Ave

Terry O. Brown, P.E.
2014 AM Peak NOBUILD Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	6	14	102	10	7	32	887	73	68	1488	8
Volume (vph)	7	4	14	3	8	18	5	2	12	1	6	16
Movement Number	0	0	0	0	0	0	0	0	0	0	0	0
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj. Factor (A _{pdbt})	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking, Bus Adj. Factors	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Sat. Flow Rate, veh/h	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	1	1	0	1	1	0	1	3	0	1	3	0
Lane Assignment	281	78	181	280	160	112	341	2856	235	400	3142	17
Capacity, veh/h	0.16	0.16	0.16	0.16	0.16	0.16	0.03	0.15	0.15	0.07	0.51	0.61
Proportion Arriving On Green	32.8	0.0	32.5	37.7	0.0	32.5	6.8	23.6	24.0	7.3	10.8	11.5
Movement Delay, s/veh	C	C	C	D	D	C	A	C	C	A	B	B
Movement LOS	C	C	C	D	D	C	A	C	C	A	B	B
Approach Volume, veh/h	24	32.5	159	37.0	23.2	10.9	1640	10.9	10.9	10.9	10.9	10.9
Approach Delay, s/veh	C	C	D	D	D	C	B	C	C	A	B	B
Approach LOS	C	C	D	D	D	C	B	C	C	A	B	B
Timer	1	2	3	4	5	6	7	8	9	10	11	12
Assigned Phase	1	2	3	4	5	6	7	8	9	10	11	12
Case No	1.1	4.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Phase Duration (G+Y+Rc), s	11.60	59.20	19.20	11.10	59.70	19.20	11.10	59.70	19.20	11.10	59.70	19.20
Change Period (Y+Rc), s	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Max. Allowable Headway (MAH), s	3.77	5.13	4.30	3.77	5.13	4.30	3.77	5.13	4.30	3.77	5.13	4.30
Maximum Green Setting (Gmax), s	6.60	54.20	14.20	6.10	54.70	14.20	6.10	54.70	14.20	6.10	54.70	14.20
Max. Queue Clearance Time (q _{c+H}), s	3.21	20.32	3.08	2.69	17.26	3.08	2.69	17.26	3.08	2.69	17.26	3.08
Green Extension Time (q _e), s	0.03	25.42	0.45	0.01	27.39	0.45	0.01	27.39	0.45	0.01	27.39	0.45
Probability of Phase Call (p _c), s	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Probability of Max Out (p _x)	1.000	0.000	0.009	1.000	0.009	1.000	0.009	1.000	0.009	1.000	0.009	1.000
Left-Turn Movement Data	1	2	3	4	5	6	7	8	9	10	11	12
Assigned Movement	1756.82	1369.73	1756.82	1369.73	1756.82	1369.73	1756.82	1369.73	1756.82	1369.73	1756.82	1369.73
Mvmt. Sat Flow, veh/h	1	2	3	4	5	6	7	8	9	10	11	12
Through Movement Data	1	2	3	4	5	6	7	8	9	10	11	12
Assigned Movement	4743.21	492.55	5169.46	4743.21	492.55	5169.46	4743.21	492.55	5169.46	4743.21	492.55	5169.46
Mvmt. Sat Flow, veh/h	2	3	4	5	6	7	8	9	10	11	12	13
Right-Turn Movement Data	1	2	3	4	5	6	7	8	9	10	11	12
Assigned Movement	389.92	1149.29	27.61	389.92	1149.29	27.61	389.92	1149.29	27.61	389.92	1149.29	27.61
Mvmt. Sat Flow, veh/h	12	13	14	15	16	17	18	19	20	21	22	23
Left Lane Group Data	1	2	3	4	5	6	7	8	9	10	11	12
Assigned Movement	1	2	3	4	5	6	7	8	9	10	11	12
Lane Assignment	L (Pr/Pm)	L (Pr/Pm)	L (Pr/Pm)	L (Pr/Pm)	L (Pr/Pm)	L (Pr/Pm)	L (Pr/Pm)	L (Pr/Pm)	L (Pr/Pm)	L (Pr/Pm)	L (Pr/Pm)	L (Pr/Pm)
Lanes in Group	1	0	0	0	1	1	0	0	0	1	1	0
Group Volume (v), veh/h	70.8	0.0	0.0	0.0	1.1	38.6	0.0	0.0	0.0	136.0	0.0	0.0
Group Sat. Flow (s), veh/h	1756.8	0.0	0.0	0.0	1369.7	1756.8	0.0	0.0	0.0	1369.7	0.0	0.0
Queue Serve Time (q _s), s	1.2	0.0	0.0	0.0	0.1	0.7	0.0	0.0	0.0	0.8	0.0	0.0
Cycle Queue Clear Time (q _c), s	1.2	0.0	0.0	0.0	1.1	0.7	0.0	0.0	0.0	0.9	0.0	0.0

Existing Geometry

Synchro 8 Report
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Lane Group Details	Left Lane Group Data										Through Lane Group Data										Right Lane Group Data									
	Lane 1 (Left)					Lane 2 (Left)					Lane 3 (Through)					Lane 4 (Through)					Lane 5 (Right)					Lane 6 (Right)				
	Flow (vph)	Capacity (vph)	Utilization (%)	Delay (s)	Queue (ft)	Flow (vph)	Capacity (vph)	Utilization (%)	Delay (s)	Queue (ft)	Flow (vph)	Capacity (vph)	Utilization (%)	Delay (s)	Queue (ft)	Flow (vph)	Capacity (vph)	Utilization (%)	Delay (s)	Queue (ft)	Flow (vph)	Capacity (vph)	Utilization (%)	Delay (s)	Queue (ft)					
	100	120	83%	15	10	150	180	83%	20	15	200	240	83%	25	20	100	120	83%	15	10	150	180	83%	20	15					
	120	150	80%	18	12	180	210	86%	22	18	240	280	86%	28	22	120	150	80%	18	12	180	210	86%	22	18					
	150	180	83%	20	15	210	240	88%	25	20	280	320	88%	30	25	150	180	83%	20	15	210	240	88%	25	20					
	180	210	86%	22	18	240	280	91%	28	22	320	360	91%	35	28	180	210	86%	22	18	240	280	91%	28	22					
	210	240	88%	25	20	280	320	94%	30	25	360	400	94%	40	30	210	240	88%	25	20	280	320	94%	30	25					
	240	280	91%	28	22	320	360	97%	35	28	400	440	97%	45	35	240	280	91%	28	22	320	360	97%	35	28					
	280	320	94%	30	25	360	400	99%	40	30	440	480	99%	50	40	280	320	94%	30	25	360	400	99%	40	30					
Signal Timing	Phase 1 (Left)										Phase 2 (Through)										Phase 3 (Right)									
	Green (s)	Yellow (s)	Red (s)	Start (s)	End (s)	Green (s)	Yellow (s)	Red (s)	Start (s)	End (s)	Green (s)	Yellow (s)	Red (s)	Start (s)	End (s)	Green (s)	Yellow (s)	Red (s)	Start (s)	End (s)	Green (s)	Yellow (s)	Red (s)	Start (s)	End (s)					
	30	5	25	0	60	30	5	25	0	60	30	5	25	0	60	30	5	25	0	60	30	5	25	0	60					
	35	5	20	0	65	35	5	20	0	65	35	5	20	0	65	35	5	20	0	65	35	5	20	0	65					
	40	5	15	0	70	40	5	15	0	70	40	5	15	0	70	40	5	15	0	70	40	5	15	0	70					
	45	5	10	0	75	45	5	10	0	75	45	5	10	0	75	45	5	10	0	75	45	5	10	0	75					
	50	5	5	0	80	50	5	5	0	80	50	5	5	0	80	50	5	5	0	80	50	5	5	0	80					
	55	5	0	0	85	55	5	0	0	85	55	5	0	0	85	55	5	0	0	85	55	5	0	0	85					
	60	5	0	0	90	60	5	0	0	90	60	5	0	0	90	60	5	0	0	90	60	5	0	0	90					
	65	5	0	0	95	65	5	0	0	95	65	5	0	0	95	65	5	0	0	95	65	5	0	0	95					
Performance Metrics	Left Lane Group										Through Lane Group										Right Lane Group									
	Flow (vph)	Capacity (vph)	Utilization (%)	Delay (s)	Queue (ft)	Flow (vph)	Capacity (vph)	Utilization (%)	Delay (s)	Queue (ft)	Flow (vph)	Capacity (vph)	Utilization (%)	Delay (s)	Queue (ft)	Flow (vph)	Capacity (vph)	Utilization (%)	Delay (s)	Queue (ft)	Flow (vph)	Capacity (vph)	Utilization (%)	Delay (s)	Queue (ft)					
	100	120	83%	15	10	150	180	83%	20	15	200	240	83%	25	20	100	120	83%	15	10	150	180	83%	20	15					
	120	150	80%	18	12	180	210	86%	22	18	240	280	86%	28	22	120	150	80%	18	12	180	210	86%	22	18					
	150	180	83%	20	15	210	240	88%	25	20	280	320	88%	30	25	150	180	83%	20	15	210	240	88%	25	20					
	180	210	86%	22	18	240	280	91%	28	22	320	360	91%	35	28	180	210	86%	22	18	240	280	91%	28	22					
	210	240	88%	25	20	280	320	94%	30	25	360	400	94%	40	30	210	240	88%	25	20	280	320	94%	30	25					
	240	280	91%	28	22	320	360	97%	35	28	400	440	97%	45	35	240	280	91%	28	22	320	360	97%	35	28					
	280	320	94%	30	25	360	400	99%	40	30	440	480	99%	50	40	280	320	94%	30	25	360	400	99%	40	30					
	320	360	97%	35	28	400	440	99%	50	40	480	520	99%	60	50	320	360	97%	35	28	400	440	99%	50	40					

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Terry O. Brown, P.E.
2014 AM Peak NOBUILD Conditions

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Timings 3: San Mateo Blvd & Prospect Ave

Terry O. Brown, P.E.
2014 AM Peak BUILD Conditions

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	98	14	102	15	32	887	68	1498
Volume (vph)	98	14	102	15	32	887	68	1498
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases	4	4	8	8	2	2	1	6
Permitted Phases	4	4	8	8	2	2	6	6
Detector Phase	4	4	8	8	2	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	10.0	21.0
Total Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	13.0	26.0
Total Split (%)	28.9%	28.9%	28.9%	28.9%	28.9%	28.9%	14.4%	28.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	14.2	14.2	14.2	14.2	14.2	14.2	6.3	14.2
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.16	0.08	0.16
W/C Ratio	0.52	0.11	0.63	0.10	0.16	0.39	0.20	0.54
Control Delay	42.1	19.9	47.8	23.6	3.6	3.0	5.7	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.1	19.9	47.8	23.6	3.6	3.0	5.7	11.8
LOS	D	B	D	C	A	A	A	B
Approach Delay								
Approach LOS								
Intersection Summary								
Cycle Length: 90								
Actuated Cycle Length: 90								
Offset: 78 (87%), Referenced to phase 2,NBTL and 6,SBTL, Start of Green								
Natural Cycle: 60								
Control Type: Actuated-Coordinated								
Maximum W/C Ratio: 0.63								
Intersection Signal Delay: 11.1								
Intersection Capacity Utilization 59.5%								
Analysis Period (min) 15								



Splits and Phases: 3: San Mateo Blvd & Prospect Ave

Existing Geometry

Synchro 8 Report

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HCM 2010 Signalized Intersection Capacity Analysis 3: San Mateo Blvd & Prospect Ave

Terry O. Brown, P.E.
2014 AM Peak BUILD Conditions

Movement	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	98	14	102	15	32	887	68	1498
Volume (vph)	98	14	102	15	32	887	68	1498
Movement Number	7	4	14	3	8	18	5	2
Initial Queue, veh	0	0	0	0	0	0	0	0
Per-Dike Adj. Factor (A _{pdt})	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking, Bus Adj. Factors	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Sat. Flow Rate, veh/h	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	1	1	0	1	0	1	3	0
Lane Assignment	275	134	134	272	188	88	330	2851
Capacity, veh/h	275	134	134	272	188	88	330	2851
Proportion Arriving On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.07
Movement Delay, s/veh	36.9	0.0	32.7	38.3	0.0	32.6	24.1	7.3
Movement LOS	D	C	C	D	C	A	C	A
Approach Volume, veh/h	143			165		1195		1705
Approach Delay, s/veh	36.0			37.3		23.2		11.3
Approach LOS	D			D		C		B
Timer	1	2	3	4	5	6	7	8
Assigned Phase	1	2	3	4	5	6	7	8
Case No	1.1	4.0		6.0	1.1	4.0		6.0
Phase Duration (G+Y+R _c), s	11.70	59.10		19.20	11.20	59.60		19.20
Change Period (Y+R _c), s	5.00	5.00		5.00	5.00	5.00		5.00
Max Allowable Headway (MAH), s	3.77	5.14		4.23	3.77	5.14		4.23
Maximum Green Setting (G _{max}), s	6.70	54.10		14.20	6.20	54.60		14.20
Max Queue Clearance Time (g _c +t ₁), s	3.21	20.33		10.16	2.69	18.41		12.04
Green Extension Time (g _e), s	0.04	25.98		0.43	0.01	27.40		0.25
Probability of Phase Call (p _c), s	1.000	1.000		1.000	1.000	1.000		1.000
Probability of Max Out (p _x)	1.000	0.714		1.000	1.000	0.694		1.000
Left-Turn Movement Data								
Assigned Movement	1			7	5		3	
Mmt. Sat Flow, veh/h	1756.82			1361.50	1756.82		1358.44	
Through Movement Data								
Assigned Movement		2		4	6		8	
Mmt. Sat Flow, veh/h		4743.21		847.55	4927.25		1190.86	
Right-Turn Movement Data								
Assigned Movement		12		14	16		18	
Mmt. Sat Flow, veh/h		389.92		847.55	233.48		555.73	
Left Lane Group Data								
Assigned Movement	1	0	0	7	5	0	0	3
Lane Assignment	L (P+Pm)			L (P+Pm)			L	
Lanes in Group	1	0	0	1	0	0	1	
Group Volume (V), veh/h	70.8	0.0	0.0	111.4	38.6	0.0	136.0	
Group Sat. Flow (s), veh/h	1756.8	0.0	0.0	1361.5	1756.8	0.0	1358.4	
Queue Serve Time (g _s), s	1.2	0.0	0.0	6.9	0.7	0.0	8.6	
Cycle Queue Clear Time (g _c), s	1.2	0.0	0.0	8.2	0.7	0.0	10.0	

Existing Geometry

Synchro 8 Report

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HCM 2010 Signalized Intersection Capacity Analysis
3: San Mateo Blvd & Prospect Ave

Terry O. Brown, P.E.
2014 AM Peak BUILD Conditions

Perm LT Sat Flow Rate (s ⁻¹), veh/h	479.1	0.0	0.0	1361.5	303.2	0.0	0.0	1358.4	
Shared LT Sat Flow (s ⁻¹), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Perm LT Eff. Green (g _{eff}), s	54.6	0.0	0.0	14.2	54.1	0.0	0.0	14.2	
Perm LT Serve Time (g _u), s	35.8	0.0	0.0	12.9	38.2	0.0	0.0	12.7	
Perm LT Que. Serve Time (g _u), s	3.3	0.0	0.0	6.9	2.4	0.0	0.0	8.6	
Time to First Bk (g _u), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Serve Time per Bk (g _u), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Proportion LT Inside Lane (P _L)	1.000	0.000	0.000	1.000	1.000	0.000	0.000	1.000	
Lane Group Capacity (c), veh/h	401.2	0.0	0.0	275.2	329.7	0.0	0.0	272.4	
Volume-to-Capacity Ratio (X)	0.177	0.000	0.000	0.405	0.117	0.000	0.000	0.499	
Available Capacity (c _a), veh/h	401.2	0.0	0.0	275.2	329.7	0.0	0.0	272.4	
Upstream Filter Factor (f)	1.000	0.000	0.000	1.000	0.918	0.000	0.000	1.000	
Uniform Delay (d ₁), s/veh	7.1	0.0	0.0	36.0	6.9	0.0	0.0	36.8	
Incremental Delay (d ₂), s/veh	0.2	0.0	0.0	1.0	0.1	0.0	0.0	1.4	
Initial Queue Delay (d ₃), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay (d), s/veh	7.3	0.0	0.0	36.9	7.1	0.0	0.0	38.3	
First-Term Queue (Q1), veh/h	0.4	0.0	0.0	2.5	0.2	0.0	0.0	3.1	
Second-Term Queue (Q2), veh/h	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Percentile bk-of-queue factor (LBP)	1.000	0.000	1.000	1.000	0.000	0.000	0.000	1.000	
Percentile Back of Queue (Q%), veh/h	0.4	0.0	0.0	2.5	0.2	0.0	0.0	3.2	
Percentile Storage Ratio (RQ%),	0.09	0.00	0.00	0.76	0.05	0.00	0.00	0.83	
Initial Queue (Q ₀), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Final (Residual) Queue (Q _e), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Saturated Delay (d _s), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Saturated Queue (Q _s), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Saturated Capacity (c _s), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Initial Queue Clear Time (t _c), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Middle Lane Group Data

Assigned Movement	0	2	0	4	0	6	0	8	
Lane Assignment	T					T			
Lanes in Group	0	2	0	0	0	2	0	0	
Group Volume (v), veh/h	0.0	756.1	0.0	0.0	0.0	1063.1	0.0	0.0	
Group Sat. Flow (s), veh/h	0.0	1678.6	0.0	0.0	0.0	1678.6	0.0	0.0	
Queue Serve Time (g _s), s	0.0	18.3	0.0	0.0	0.0	16.4	0.0	0.0	
Cycle Queue Clear Time (g _c), s	0.0	18.3	0.0	0.0	0.0	16.4	0.0	0.0	
Lane Group Capacity (c), veh/h	0.0	2018.1	0.0	0.0	0.0	2036.8	0.0	0.0	
Volume-to-Capacity Ratio (X)	0.000	0.375	0.000	0.000	0.000	0.522	0.000	0.000	
Available Capacity (c _a), veh/h	0.0	2018.1	0.0	0.0	0.0	2036.8	0.0	0.0	
Upstream Filter Factor (f)	0.000	0.918	0.000	0.000	0.000	1.000	0.000	0.000	
Uniform Delay (d ₁), s/veh	0.0	23.1	0.0	0.0	0.0	10.2	0.0	0.0	
Incremental Delay (d ₂), s/veh	0.0	0.5	0.0	0.0	0.0	1.0	0.0	0.0	
Initial Queue Delay (d ₃), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay (d), s/veh	0.0	23.8	0.0	0.0	0.0	11.1	0.0	0.0	
First-Term Queue (Q1), veh/h	0.0	8.2	0.0	0.0	0.0	5.2	0.0	0.0	
Second-Term Queue (Q2), veh/h	0.0	0.1	0.0	0.0	0.0	0.3	0.0	0.0	
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Percentile bk-of-queue factor (LBP)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000	
Percentile Back of Queue (Q%), veh/h	0.0	8.4	0.0	0.0	0.0	5.5	0.0	0.0	
Percentile Storage Ratio (RQ%),	0.00	0.55	0.00	0.00	0.00	1.37	0.00	0.00	

Existing Geometry

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2014 AM Peak BUILD Conditions

Initial Queue (Q ₀), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Final (Residual) Queue (Q _e), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Saturated Delay (d _s), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Saturated Queue (Q _s), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Saturated Capacity (c _s), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Initial Queue Clear Time (t _c), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Right Lane Group Data	0	12	0	14	0	16	0	16	
Assigned Movement	0	1	0	1	0	1	0	1	
Lane Assignment	0	1	0	1	0	1	0	1	
Lanes in Group	0.0	400.6	0.0	31.8	0.0	571.3	0.0	29.3	
Group Volume (v), veh/h	0.0	1775.9	0.0	1895.1	0.0	1903.5	0.0	1746.6	
Group Sat. Flow (s), veh/h	0.0	18.3	0.0	1.5	0.0	16.4	0.0	1.3	
Queue Serve Time (g _s), s	0.0	18.3	0.0	1.5	0.0	16.4	0.0	1.3	
Cycle Queue Clear Time (g _c), s	0.0	18.3	0.0	1.5	0.0	16.4	0.0	1.3	
Prot RT Sat Flow Rate (s ⁻¹), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Prot RT Eff. Green (g _{eff}), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Proportion RT Outside Lane (P _R)	0.000	0.220	0.000	0.500	0.000	0.129	0.000	0.318	
Lane Group Capacity (c), veh/h	0.0	1067.5	0.0	267.4	0.0	1094.1	0.0	275.6	
Volume-to-Capacity Ratio (X)	0.000	0.375	0.000	0.119	0.000	0.522	0.000	0.106	
Available Capacity (c _a), veh/h	0.0	1067.5	0.0	267.4	0.0	1094.1	0.0	275.6	
Upstream Filter Factor (f)	0.000	0.918	0.000	1.000	0.000	1.000	0.000	1.000	
Uniform Delay (d ₁), s/veh	0.0	23.1	0.0	32.5	0.0	10.2	0.0	32.5	
Incremental Delay (d ₂), s/veh	0.0	0.9	0.0	0.2	0.0	1.8	0.0	0.2	
Initial Queue Delay (d ₃), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay (d), s/veh	0.0	24.1	0.0	32.7	0.0	12.0	0.0	32.6	
First-Term Queue (Q1), veh/h	0.0	8.7	0.0	0.6	0.0	5.6	0.0	0.6	
Second-Term Queue (Q2), veh/h	0.0	0.3	0.0	0.0	0.0	0.5	0.0	0.0	
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Percentile bk-of-queue factor (LBP)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000	
Percentile Back of Queue (Q%), veh/h	0.0	9.0	0.0	0.6	0.0	6.2	0.0	0.6	
Percentile Storage Ratio (RQ%),	0.00	0.59	0.00	0.03	0.00	1.53	0.00	0.17	
Initial Queue (Q ₀), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Final (Residual) Queue (Q _e), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Saturated Delay (d _s), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Saturated Queue (Q _s), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Saturated Capacity (c _s), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Initial Queue Clear Time (t _c), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Intersection Summary	18.2	B							
HCM Average Control Delay									
HCM Level of Service									

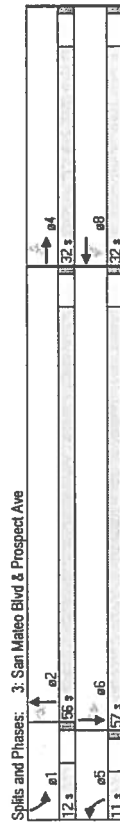
Existing Geometry

Synchro 8 Report
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Timings 3: San Mateo Blvd & Prospect Ave

Terry O. Brown, P.E.
2014 PM Peak NOBUILD Conditions

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	22	15	156	19	53	1735	76	1406
Volume (vph)	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Turn Type	4	4	8	8	5	2	1	6
Protected Phases	4	4	8	8	5	2	1	6
Permitted Phases	4	4	8	8	5	2	1	6
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase	4	4	8	8	5	2	1	6
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0
Total Split (%)	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%	32.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?								
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6
Actuated Cycle Length (s)	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Maximum v/c Ratio	0.10	0.24	0.77	0.16	0.23	0.70	0.42	0.52
Control Delay	30.3	11.5	56.2	16.6	4.1	6.0	16.4	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	30.3	11.5	56.2	16.6	4.1	6.0	16.4	14.2
LOS	C	B	E	B	A	A	B	B
Approach Delay	15.7		47.4		5.9		14.3	
Approach LOS	B		D		A		B	
Intersection Summary								
Cycle Length: 100								
Actuated Cycle Length: 100								
Offset: 72 (72%), Referenced to phase 2(NBT), and 6(SBT), Start of Green								
Natural Cycle: 60								
Control Type: Actuated-Coordinated								
Maximum v/c Ratio: 0.77								
Intersection Signal Delay: 12.2								
Intersection Capacity Utilization 68.9%								
Analysis Period (min) 15								



Splits and Phases: 3: San Mateo Blvd & Prospect Ave

Existing Geometry
Synchro 8 Report
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HCM 2010 Signalized Intersection Capacity Analysis 3: San Mateo Blvd & Prospect Ave

Terry O. Brown, P.E.
2014 PM Peak NOBUILD Conditions

Movement	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	22	15	156	19	53	1735	76	1406
Volume (vph)	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Movement Number	7	4	14	3	8	18	5	2
Initial Queue, veh	0	0	0	0	0	0	0	0
Ped-Bike Adj. Factor (A _{pbt})	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking, Bus Adj. Factors	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Sat. Flow Rate, veh/h	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	1	1	0	1	1	3	0	1
Lane Assignment	306	67	266	275	146	199	320	2724
Capacity, veh/h	0.21	0.21	0.21	0.21	0.21	0.21	0.16	0.07
Proportion Arriving On Green	34.7	0.0	33.9	52.9	0.0	32.9	9.0	34.7
Movement Delay, s/veh	C	C	C	D	C	A	C	D
Movement LOS	C	C	C	D	C	A	C	D
Approach Volume, veh/h	120		284		2063		1599	
Approach Delay, s/veh	34.1		48.4		34.5		13.8	
Approach LOS	C		D		C		B	
Timer	1	2	3	4	5	6	7	8
Assigned Phase	1	2	4	5	6			
Case No	1.1	4.0		6.0	1.1	4.0		
Phase Duration (G+Y+Rc), s	11.70	62.70		25.60	11.20	63.20		
Change Period (Y+Rc), s	5.00	5.00		5.00	5.00	5.00		
Max Allowable Headway (MAH), s	3.77	5.14		4.67	3.77	5.14		
Maximum Green Setting (Gmax), s	6.70	57.70		20.60	6.20	58.20		
Max. Queue Clearance Time (g_c+H), s	3.68	39.00		6.82	3.22	19.29		
Green Extension Time (g_e), s	0.04	17.59		1.46	0.02	34.64		
Probability of Phase Call (p_c)	1.000	1.000		1.000	1.000	1.000		
Probability of Max Out (p_x)	1.000	0.946		0.028	1.000	0.871		
Left-Turn Movement Data								
Assigned Movement	1			7	5		3	
Mvmt. Sat Flow, veh/h	1756.82			1325.20	1756.82		1285.72	
Through Movement Data								
Assigned Movement		2				6		8
Mvmt. Sat Flow, veh/h		4720.50				5112.11		706.79
Right-Turn Movement Data								
Assigned Movement			12				18	
Mvmt. Sat Flow, veh/h			409.23				967.19	
Left-Lane Group Data								
Assigned Movement	1	0	0	7	5	0	0	3
Lane Assignment	L (P+Pm)			L (P+Pm)			L	
Lanes In Group	1	0	0	1	1	0	0	1
Group Volume (V), veh/h	80.9	0.0	0.0	27.2	56.4	0.0	0.0	205.3
Group Sat. Flow (s), veh/h	1756.8	0.0	0.0	1325.2	1756.8	0.0	0.0	1285.7
Queue Serve Time (g_s), s	1.7	0.0	0.0	1.7	1.2	0.0	0.0	15.8
Cycle Queue Clear Time (g_c), s	1.7	0.0	0.0	4.6	1.2	0.0	0.0	20.6

Existing Geometry
Synchro 8 Report
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HCM 2010 Signalized Intersection Capacity Analysis
3: San Mateo Blvd & Prospect Ave

Terry O. Brown, P.E.
2014 PM Peak NOBUILD Conditions

Perm LT Sat Flow (s _f), veh/h	211.0	0.0	0.0	1325.2	339.2	0.0	0.0	1285.7
Shared LT Sat Flow (s _{sf}), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Eff. Green (g _{eff}), s	58.2	0.0	0.0	20.6	57.7	0.0	0.0	20.6
Perm LT Serve Time (g _u), s	20.7	0.0	0.0	17.7	40.9	0.0	0.0	15.8
Perm LT Queue Time (g _q), s	20.7	0.0	0.0	1.7	3.5	0.0	0.0	15.8
Time to First Blk (g _f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time per Blk (g _{bl}), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proportion LT Inside Lane (P _{LI})	1.000	0.000	0.000	1.000	1.000	0.000	0.000	1.000
Lane Group Capacity (c), veh/h	233.4	0.0	0.0	306.4	319.7	0.0	0.0	274.8
Volume-to-Capacity Ratio (X)	0.346	0.000	0.000	0.098	0.176	0.000	0.000	0.747
Available Capacity (c _a), veh/h	233.4	0.0	0.0	306.4	319.7	0.0	0.0	274.8
Upstream Filter Factor (f)	1.000	0.000	0.000	1.000	0.781	0.000	0.000	1.000
Uniform Delay (d1), s/veh	17.8	0.0	0.0	34.6	8.8	0.0	0.0	42.2
Incremental Delay (d2), s/veh	0.8	0.0	0.0	0.1	0.2	0.0	0.0	10.7
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	18.7	0.0	0.0	34.7	9.0	0.0	0.0	52.9
First-Term Queue (Q1), veh/h	1.2	0.0	0.0	0.6	0.4	0.0	0.0	5.1
Second-Term Queue (Q2), veh/h	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-queue factor (f _{B%})	1.000	0.000	0.000	1.000	0.000	0.000	0.000	1.000
Percentile Back of Queue (Q%), veh/h	1.3	0.0	0.0	0.6	0.4	0.0	0.0	5.9
Percentile Storage Ratio (RQ%), veh/h	0.28	0.00	0.00	0.18	0.10	0.00	0.00	1.51
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Existing Geometry
Synchro 8 Report
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HCM 2010 Signalized Intersection Capacity Analysis
3: San Mateo Blvd & Prospect Ave

Terry O. Brown, P.E.
2014 PM Peak NOBUILD Conditions

Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data	0	12	0	14	0	16	0	18
Assigned Movement	0	1	0	1	0	1	0	1
Lane Assignment	0	0	0	0	0	0	0	0
Lanes in Group	0	0	0	0	0	0	0	0
Group Volume (v), veh/h	0.0	695.8	0.0	92.6	0.0	535.8	0.0	59.2
Group Sat. Flow (s), veh/h	0.0	1772.4	0.0	1816.5	0.0	1831.2	0.0	1674.0
Queue Serve Time (g _s), s	0.0	37.0	0.0	4.8	0.0	17.3	0.0	2.9
Cycle Queue Clear Time (g _c), s	0.0	37.0	0.0	4.8	0.0	17.3	0.0	2.9
Prot RT Sat Flow Rate (s _f), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff. Green (g _{eff}), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proportion RT Outside Lane (P _{OR})	0.000	0.231	0.000	0.800	0.000	0.042	0.000	0.578
Lane Group Capacity (c), veh/h	0.0	1022.7	0.0	333.0	0.0	1065.8	0.0	344.8
Volume-to-Capacity Ratio (X)	0.000	0.680	0.000	0.278	0.000	0.503	0.000	0.172
Available Capacity (c _a), veh/h	0.0	1022.7	0.0	333.0	0.0	1065.8	0.0	344.8
Upstream Filter Factor (f)	0.000	0.781	0.000	1.000	0.000	1.000	0.000	1.000
Uniform Delay (d1), s/veh	0.0	33.3	0.0	33.4	0.0	12.3	0.0	32.7
Incremental Delay (d2), s/veh	0.0	2.9	0.0	0.4	0.0	1.7	0.0	0.2
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	36.2	0.0	33.9	0.0	14.0	0.0	32.9
First-Term Queue (Q1), veh/h	0.0	17.5	0.0	1.9	0.0	6.4	0.0	1.2
Second-Term Queue (Q2), veh/h	0.0	0.8	0.0	0.0	0.0	0.5	0.0	0.0
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-queue factor (f _{B%})	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q%), veh/h	0.0	18.4	0.0	1.9	0.0	6.9	0.0	1.2
Percentile Storage Ratio (RQ%), veh/h	0.00	1.20	0.00	0.07	0.00	1.72	0.00	0.36
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	27.2	C
HCM Level of Service		

Existing Geometry
Synchro 8 Report
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Timings Terry O. Brown, P.E.
Existing Geometry
3: San Mateo Blvd & Prospect Ave

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	123	23	156	32	53	1735	76	1406
Volume (vph)	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Turn Type	4	4	8	8	5	2	1	6
Permitted Phases	4	4	8	8	5	2	1	6
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Minimum Split (s)	33.0	33.0	33.0	33.0	11.0	55.0	12.0	56.0
Total Split (%)	33.0%	33.0%	33.0%	33.0%	11.0%	55.0%	12.0%	56.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0

Lead/Lag	Min	Min	Min	Min	Min	Min	Min	Min
Recall Mode	20.9	20.9	20.9	20.9	63.6	57.3	64.6	57.9
Act Elct Green (s)	0.21	0.21	0.21	0.21	0.64	0.57	0.65	0.58
Actuated g/C Ratio	0.56	0.25	0.77	0.20	0.27	0.70	0.42	0.59
Control Delay	42.1	12.5	55.3	19.3	7.0	8.6	16.6	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	42.1	12.5	55.3	19.3	7.0	8.6	16.6	15.2
LOS	D	B	E	B	A	A	B	B
Approach Delay	30.2	45.6	45.6	45.6	8.6	8.6	15.2	15.2
Approach LOS	C	D	D	D	A	A	B	B

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 92 (92%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 14.9
Intersection Capacity Utilization: 68.9%
Analysis Period (min): 15



2014 PM Peak BUILD Conditions
Synchro 8 Report
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HCM 2010 Signalized Intersection Capacity Analysis Terry O. Brown, P.E.
Existing Geometry
3: San Mateo Blvd & Prospect Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	123	23	60	156	32	26	53	1735	151	76	1406	179
Volume (vph)	7	4	14	3	8	18	5	2	12	1	6	16
Movement Number	0	0	0	0	0	0	0	0	0	0	0	0
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj. Factor (A _{pbt})	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking, Bus Adj. Factors	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Sat. Flow Rate, veh/hln	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	1	1	0	1	1	0	1	3	0	1	3	0
Lane Assignment	296	95	247	271	197	160	289	2712	235	235	2617	333
Capacity, veh/h	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.23	0.23	0.23	0.07	0.58
Proportion Arriving On Green	40.4	0.0	33.9	54.2	0.0	33.1	9.9	31.5	33.0	18.1	14.6	15.7
Movement Delay, s/veh	D	C	C	D	D	C	A	C	C	B	B	B
Movement LOS	D	C	C	D	D	C	A	C	C	B	B	B
Approach Volume, veh/h	254	37.8	282	48.5	282	31.4	2063	31.4	2063	1767	15.0	15.0
Approach Delay, s/veh	D	D	D	D	D	D	D	D	D	D	D	D
Approach LOS	D	D	D	D	D	D	D	D	D	D	D	D

Timer	1	2	3	4	5	6	7	8
Assigned Phase	1	2	4	5	6	8	3	8
Case No	1.1	4.0	6.0	1.1	4.0	6.0	1.1	4.0
Phase Duration (G+Y+Rc), s	11.70	62.50	25.90	11.30	62.90	25.90	11.30	62.90
Change Period (Y+Rc), s	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Max. Allowable Headway (MAH), s	3.77	5.15	4.56	3.77	5.15	4.56	3.77	5.15
Maximum Green Setting (Gmax), s	6.70	57.30	20.90	6.30	57.90	20.90	6.30	57.90
Max. Queue Clearance Time (g_c+H), s	3.71	37.84	16.62	3.22	22.87	22.90	3.22	22.87
Green Extension Time (g_e), s	0.04	18.53	1.00	0.02	32.24	0.00	1.00	32.24
Probability of Phase Call (p_c)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Probability of Max Out (p_x)	1.000	0.956	1.000	1.000	0.910	1.000	1.000	0.910

Left-Turn Movement Data
Assigned Movement
Mvmt. Sat. Flow, veh/h
Through Movement Data
Assigned Movement
Mvmt. Sat. Flow, veh/h
Right-Turn Movement Data
Assigned Movement
Mvmt. Sat. Flow, veh/h
Left Lane Group Data
Assigned Movement
Lanes in Group
Group Volume (v), veh/h
Group Sat. Flow (s), veh/hln
Queue Serve Time (g_s), s
Cycle Queue Clear Time (g_c), s

HCM 2010 Signalized Intersection Capacity Analysis
3: San Mateo Blvd & Prospect Ave

Terry O. Brown, P.E.
Existing Geometry

Perm LT Sat Flow Rate (s, J), veh/h	211.0	0.0	0.0	1304.8	288.3	0.0	0.0	1274.3
Shared LT Sat Flow (s, sh), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Eff. Green (g, p), s	57.9	0.0	0.0	20.9	57.5	0.0	0.0	20.9
Perm LT Serve Time (g, u), s	21.7	0.0	0.0	17.2	37.0	0.0	0.0	15.6
Perm LT Que Serve Time (g, ps), s	21.7	0.0	0.0	10.9	5.1	0.0	0.0	15.6
Time to First Blk (g, J), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time per Blk (g, s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proportion LT Inside Lane (P, L)	1.000	0.000	0.000	1.000	1.000	0.000	0.000	1.000
Lane Group Capacity (C), veh/h	235.2	0.0	0.0	295.1	289.2	0.0	0.0	270.6
Volume-to-Capacity Ratio (X)	0.344	0.000	0.000	0.513	0.195	0.000	0.000	0.759
Available Capacity (c, a), veh/h	235.2	0.0	0.0	295.1	289.2	0.0	0.0	270.6
Upstream Filter Factor (f)	1.000	0.000	0.000	1.000	0.797	0.000	0.000	1.000
Uniform Delay (d1), s/veh	17.2	0.0	0.0	38.8	9.7	0.0	0.0	42.5
Incremental Delay (d2), s/veh	0.9	0.0	0.0	1.5	0.3	0.0	0.0	11.7
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	18.1	0.0	0.0	40.4	9.9	0.0	0.0	54.2
First-Term Queue (Q1), veh/h	1.2	0.0	0.0	3.5	0.4	0.0	0.0	5.1
Second-Term Queue (Q2), veh/h	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.9
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-queue factor (f, B%)	1.000	0.000	0.000	1.000	1.000	0.000	0.000	1.000
Percentile Back of Queue (Q%), veh/h	1.2	0.0	0.0	3.6	0.4	0.0	0.0	6.0
Percentile Storage Ratio (RC%)	0.27	0.00	0.00	1.09	0.10	0.00	0.00	1.53
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data

Assigned Movement	0	2	0	4	0	6	0	8
Lanes in Group	0	2	0	0	0	2	0	0
Group Volume (V), veh/h	0.0	1310.6	0.0	0.0	0.0	1109.4	0.0	0.0
Group Sat. Flow (s), veh/h	0.0	1678.6	0.0	0.0	0.0	1678.6	0.0	0.0
Queue Serve Time (g, s), s	0.0	35.6	0.0	0.0	0.0	20.8	0.0	0.0
Cycle Queue Clear Time (g, c), s	0.0	35.6	0.0	0.0	0.0	20.8	0.0	0.0
Lane Group Capacity (C), veh/h	0.0	1928.5	0.0	0.0	0.0	1941.9	0.0	0.0
Volume-to-Capacity Ratio (X)	0.000	0.680	0.000	0.000	0.000	0.571	0.000	0.000
Available Capacity (c, a), veh/h	0.0	1928.5	0.0	0.0	0.0	1941.9	0.0	0.0
Upstream Filter Factor (f)	0.000	0.797	0.000	0.000	0.000	1.000	0.000	0.000
Uniform Delay (d1), s/veh	0.0	30.0	0.0	0.0	0.0	13.3	0.0	0.0
Incremental Delay (d2), s/veh	0.0	1.6	0.0	0.0	0.0	1.2	0.0	0.0
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	31.5	0.0	0.0	0.0	14.5	0.0	0.0
First-Term Queue (Q1), veh/h	0.0	15.6	0.0	0.0	0.0	7.1	0.0	0.0
Second-Term Queue (Q2), veh/h	0.0	0.4	0.0	0.0	0.0	0.3	0.0	0.0
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-queue factor (f, B%)	0.000	1.000	0.000	0.000	1.000	0.000	1.000	0.000
Percentile Back of Queue (Q%), veh/h	0.0	16.0	0.0	0.0	0.0	7.5	0.0	0.0
Percentile Storage Ratio (RC%)	0.00	1.05	0.00	0.00	0.00	1.86	0.00	0.00

2014 PM Peak BUILD Conditions
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HCM 2010 Signalized Intersection Capacity Analysis
3: San Mateo Blvd & Prospect Ave

Terry O. Brown, P.E.
Existing Geometry

Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data	0	12	0	14	0	16	0	18
Assigned Movement	0	1	0	1	0	1	0	1
Lanes in Group	0	0	0	0	0	0	0	0
Group Volume (V), veh/h	0.0	695.8	0.0	102.5	0.0	576.8	0.0	76.3
Group Sat. Flow (s), veh/h	0.0	1772.4	0.0	1636.0	0.0	1743.1	0.0	1709.4
Queue Serve Time (g, s), s	0.0	35.8	0.0	5.3	0.0	20.9	0.0	3.7
Cycle Queue Clear Time (g, c), s	0.0	35.8	0.0	5.3	0.0	20.9	0.0	3.7
Prot RT Sat Flow Rate (s, R), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff. Green (g, R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proportion RT Outside Lane (P, R)	0.000	0.231	0.000	0.723	0.000	0.330	0.000	0.448
Lane Group Capacity (C), veh/h	0.0	1018.1	0.0	341.6	0.0	1008.2	0.0	356.9
Volume-to-Capacity Ratio (X)	0.000	0.683	0.000	0.300	0.000	0.572	0.000	0.214
Available Capacity (c, a), veh/h	0.0	1018.1	0.0	341.6	0.0	1008.2	0.0	356.9
Upstream Filter Factor (f)	0.000	0.797	0.000	1.000	0.000	1.000	0.000	1.000
Uniform Delay (d1), s/veh	0.0	30.1	0.0	33.4	0.0	13.3	0.0	32.8
Incremental Delay (d2), s/veh	0.0	3.0	0.0	0.5	0.0	2.4	0.0	0.3
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	33.0	0.0	33.9	0.0	15.7	0.0	33.1
First-Term Queue (Q1), veh/h	0.0	16.6	0.0	2.1	0.0	7.4	0.0	1.5
Second-Term Queue (Q2), veh/h	0.0	0.8	0.0	0.0	0.0	0.7	0.0	0.0
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-queue factor (f, B%)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q%), veh/h	0.0	17.4	0.0	2.2	0.0	8.1	0.0	1.6
Percentile Storage Ratio (RC%)	0.00	1.14	0.00	0.10	0.00	2.01	0.00	0.46
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	26.3	C
HCM Average Control Delay		
HCM Level of Service		

2014 PM Peak BUILD Conditions
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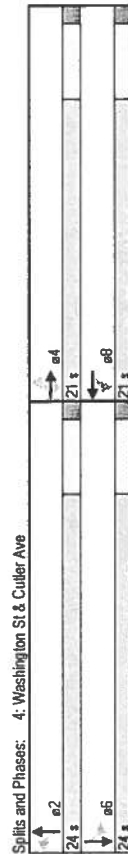
Timings
4: Washington St & Cutler Ave

Terry O. Brown, P.E.
2014 AM Peak NOBUILD Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	19	72	37	62	83	33	203	55	296	40
Volume (vph)	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	NA	6
Turn Type	4	4	4	8	8	2	2	6	6	6
Protected Phases	4	4	4	8	8	2	2	6	6	6
Permitted Phases	4	4	4	8	8	2	2	6	6	6
Detector Phase	4	4	4	8	8	2	2	6	6	6
Switch Phase	4	4	4	8	8	2	2	6	6	6
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (%)	46.7%	46.7%	46.7%	46.7%	46.7%	46.7%	46.7%	46.7%	46.7%	46.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Effect Green (s)	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
Actuated g/c Ratio	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
v/c Ratio	0.08	0.20	0.11	0.25	0.34	0.12	0.43	0.17	0.58	0.17
Control Delay	10.6	11.0	4.9	12.2	9.3	6.9	8.2	7.2	10.5	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.6	11.0	4.9	12.2	9.3	6.9	8.2	7.2	10.5	7.2
LOS	B	B	A	B	A	A	A	A	A	B
Approach Delay	9.2									
Approach LOS	A									

Intersection Summary

Cycle Length: 45	
Actuated Cycle Length: 30.3	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 9.4	
Intersection Capacity Utilization 50.1%	
Analysis Period (min): 15	



Signal and Phases: 4: Washington St & Cutler Ave

Existing Geometry
Synchro 8 Report
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HCM 2010 Signalized Intersection Capacity Analysis
4: Washington St & Cutler Ave

Terry O. Brown, P.E.
2014 AM Peak NOBUILD Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	19	72	37	62	83	45	33	203	55	296	40
Volume (vph)	7	4	14	3	8	18	5	2	12	1	6
Movement Number	0	0	0	0	0	0	0	0	0	0	0
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj. Factor (A _{pbt})	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking, Bus Adj. Factors	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Sat. Flow Rate, veh/h	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	1	1	1	1	1	1	0	1	1	1	0
Lane Assignment	423	359	494	258	140	484	607	138	561	663	90
Capacity, veh/h	0.23	0.23	0.23	0.23	0.23	0.23	0.42	0.42	0.42	0.42	0.42
Proportion Arriving On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.42	0.42	0.42	0.42	0.42
Movement Delay, s/veh	10.6	9.1	8.8	10.1	0.0	10.0	8.6	0.0	6.2	7.7	6.9
Movement LOS	B	A	A	B	B	B	A	A	A	A	A
Approach Volume, veh/h	171			253			357				489
Approach Delay, s/veh	9.3			10.1			6.5				7.0
Approach LOS	A			B			A				A
Timer:	1	2	3	4	5	6	7	8			
Assigned Phase	2			4			6				8
Case No	6.0			5.0			6.0				6.0
Phase Duration (G+Y+Rc), s	16.77			11.47			16.77				11.47
Change Period (Y+Rc), s	5.00			5.00			5.00				5.00
Max. Allowable Headway (MAH), s	5.11			4.86			5.11				4.86
Maximum Green Setting (Gmax), s	19.00			16.00			19.00				16.00
Max. Queue Clearance Time (g _{ch}), s	7.97			4.89			6.99				4.78
Green Extension Time (g _{ex}), s	3.80			1.58			3.98				1.58
Probability of Phase Call (p _c), s	1.000			1.000			1.000				1.000
Probability of Max Out (p _x)	0.408			0.117			0.351				0.112
Left-Turn Movement Data											
Assigned Movement	5			7			1				3
Mvmt. Sat Flow, veh/h	953.49			1197.73			1049.74				1281.76
Through Movement Data											
Assigned Movement	2			4			6				8
Mvmt. Sat Flow, veh/h	1456.40			1844.66			1591.62				1126.27
Right-Turn Movement Data											
Assigned Movement	12			14			16				18
Mvmt. Sat Flow, veh/h	330.02			1567.96			215.08				610.63
Left Lane Group Data											
Assigned Movement	0	5	0	7	0	1	0	3			
Lane Assignment	0	L		L		L	L	L			L
Lanes in Group	0	1	0	1	0	1	0	1	0	1	1
Group Volume (v), veh/h	0.0	41.8	0.0	25.3	0.0	68.8	0.0	82.7	0.0	82.7	0.0
Group Sat. Flow (s), veh/h	0.0	953.5	0.0	1197.7	0.0	1049.7	0.0	1281.8	0.0	1281.8	0.0
Queue Serve Time (g _s), s	0.0	1.0	0.0	0.5	0.0	1.4	0.0	1.6	0.0	1.6	0.0
Queue Clear Time (g _c), s	0.0	6.0	0.0	2.9	0.0	4.9	0.0	2.8	0.0	2.8	0.0

Existing Geometry
Synchro 8 Report
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HCM 2010 Signalized Intersection Capacity Analysis
4: Washington St & Cutler Ave

Terry O. Brown, P.E.
2014 AM Peak NOBUILD Conditions

Perm LT Sat Flow Rate (s.f.), veh/h	0.0	953.5	0.0	1197.7	0.0	1049.7	0.0	1281.8
Shared LT Sat Flow (s.f.), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Eff. Green (g.e.), s	0.0	11.8	0.0	6.5	0.0	11.8	0.0	6.5
Perm LT Serve Time (g.s.), s	0.0	6.8	0.0	4.1	0.0	8.2	0.0	5.3
Perm LT Queue Serve Time (g.qs), s	0.0	1.0	0.0	0.5	0.0	1.4	0.0	1.6
Time to First Blk (g.f.), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time per Blk (g.fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proportion LT Inside Lane (P.L)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Lane Group Capacity (c), veh/h	0.0	483.9	0.0	428.8	0.0	561.3	0.0	494.4
Volume-to-Capacity Ratio (X)	0.000	0.086	0.000	0.059	0.000	0.122	0.000	0.167
Available Capacity (c.a), veh/h	0.0	728.2	0.0	833.1	0.0	830.2	0.0	927.1
Upstream Filter Factor (f)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Uniform Delay (d1), s/veh	0.0	8.5	0.0	10.5	0.0	7.6	0.0	10.0
Incremental Delay (d2), s/veh	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.2
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	8.6	0.0	10.6	0.0	7.7	0.0	10.1
First-Term Queue (Q1), veh/h	0.0	0.1	0.0	0.1	0.0	0.2	0.0	0.3
Second-Term Queue (Q2), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-queue factor (L.B%)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q%), veh/h	0.0	0.1	0.0	0.1	0.0	0.2	0.0	0.4
Percentile Storage Ratio (RQ%),	0.00	0.04	0.00	0.04	0.00	0.03	0.00	0.07
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Existing Geometry
Synchro 8 Report
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HCM 2010 Signalized Intersection Capacity Analysis
4: Washington St & Cutler Ave

Terry O. Brown, P.E.
2014 AM Peak NOBUILD Conditions

Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Movement	0	12	0	14	0	16	0	18
Lanes In Group	0	T+R	1	R	0	T+R	1	T+R
Group Volume (v), veh/h	0.0	315.2	0.0	49.3	0.0	420.0	0.0	170.7
Group Sat. Flow (s), veh/h	0.0	1786.4	0.0	1588.0	0.0	1806.7	0.0	1736.9
Queue Serve Time (g.s), s	0.0	3.5	0.0	0.7	0.0	5.0	0.0	2.4
Cycle Queue Clear Time (g.c), s	0.0	3.5	0.0	0.7	0.0	5.0	0.0	2.4
Prot RT Sat Flow Rate (s.R), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff. Green (g.R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proportion RT Outside Lane (P.R)	0.000	0.185	0.000	1.000	0.000	0.119	0.000	0.352
Lane Group Capacity (c), veh/h	0.0	744.5	0.0	359.2	0.0	752.9	0.0	398.0
Volume-to-Capacity Ratio (X)	0.000	0.423	0.000	0.137	0.000	0.558	0.000	0.429
Available Capacity (c.a), veh/h	0.0	1202.1	0.0	888.5	0.0	1215.7	0.0	984.2
Upstream Filter Factor (f)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Uniform Delay (d1), s/veh	0.0	5.8	0.0	8.7	0.0	6.3	0.0	9.3
Incremental Delay (d2), s/veh	0.0	0.4	0.0	0.2	0.0	0.6	0.0	0.7
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	6.2	0.0	8.8	0.0	6.9	0.0	10.0
First-Term Queue (Q1), veh/h	0.0	0.6	0.0	0.2	0.0	0.8	0.0	0.6
Second-Term Queue (Q2), veh/h	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-queue factor (L.B%)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q%), veh/h	0.0	0.6	0.0	0.2	0.0	0.9	0.0	0.7
Percentile Storage Ratio (RQ%),	0.00	0.05	0.00	0.07	0.00	0.10	0.00	0.01
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

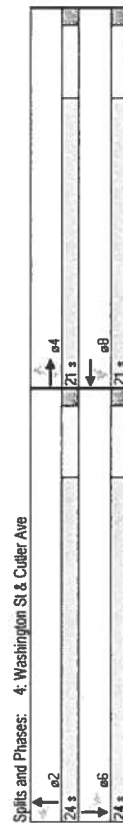
Intersection Summary								
HCM Average Control Delay	7.8							
HCM Level of Service	A							

Existing Geometry
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Timings
4: Washington St & Cutler Ave

Terry O. Brown, P.E.
2014 AM Peak BUILD Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	19	72	37	101	83	33	203	55	296
Volume (vph)	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	NA
Turn Type	4	4	4	8	8	2	2	6	6
Prohibited Phases	4	4	4	8	8	2	2	6	6
Permitted Phases	4	4	4	8	8	2	2	6	6
Detector Phase	4	4	4	8	8	2	2	6	6
Switch Phase	4	4	4	8	8	2	2	6	6
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	21.0	21.0	21.0	24.0	24.0	24.0	24.0	24.0	24.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.29	0.39	0.39	0.39	0.39
v/c Ratio	0.07	0.18	0.10	0.37	0.32	0.12	0.49	0.18	0.59
Control Delay	10.1	10.4	4.5	13.4	5.6	7.8	9.2	8.2	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.1	10.4	4.5	13.4	5.6	7.8	9.2	8.2	11.7
LOS	B	B	A	B	A	A	A	A	B
Approach Delay	8.7								
Approach LOS	A								
Intersection Summary									
Cycle Length: 45									
Actuated Cycle Length: 31.9									
Natural Cycle: 45									
Control Type: Actuated-Uncoordinated									
Maximum v/c Ratio: 0.59									
Intersection Signal Delay: 10.2									
Intersection Capacity Utilization 50.1%									
Analysis Period (min) 15									



Existing Geometry
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Terry O. Brown, P.E.
2014 AM Peak BUILD Conditions

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	19	72	37	101	83	33	203	55	296
Volume (vph)	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	NA
Turn Type	4	4	4	8	8	2	2	6	6
Prohibited Phases	4	4	4	8	8	2	2	6	6
Permitted Phases	4	4	4	8	8	2	2	6	6
Detector Phase	4	4	4	8	8	2	2	6	6
Switch Phase	4	4	4	8	8	2	2	6	6
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	21.0	21.0	21.0	24.0	24.0	24.0	24.0	24.0	24.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.29	0.39	0.39	0.39	0.39
v/c Ratio	0.07	0.18	0.10	0.37	0.32	0.12	0.49	0.18	0.59
Control Delay	10.1	10.4	4.5	13.4	5.6	7.8	9.2	8.2	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.1	10.4	4.5	13.4	5.6	7.8	9.2	8.2	11.7
LOS	B	B	A	B	A	A	A	A	B
Approach Delay	8.7								
Approach LOS	A								
Intersection Summary									
Cycle Length: 45									
Actuated Cycle Length: 31.9									
Natural Cycle: 45									
Control Type: Actuated-Uncoordinated									
Maximum v/c Ratio: 0.59									
Intersection Signal Delay: 10.2									
Intersection Capacity Utilization 50.1%									
Analysis Period (min) 15									

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2014 AM Peak BUILD Conditions

Perm LT Sat Flow (s ⁻¹), veh/h	0.0	953.5	0.0	1197.7	0.0	1018.6	0.0	1281.8
Shared LT Sat Flow (s ⁻¹), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Eff. Green (g _{eff}), s	0.0	12.3	0.0	7.6	0.0	12.3	0.0	7.6
Perm LT Serve Time (g _u), s	0.0	6.9	0.0	5.2	0.0	7.9	0.0	6.4
Perm LT Queue Serve Time (g _{ps}), s	0.0	1.1	0.0	0.5	0.0	1.6	0.0	2.8
Time to First BK (g _f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time per BK (g _{is}), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proportion LT Inside Lane (P _L)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Lane Group Capacity (c), veh/h	0.0	462.0	0.0	449.0	0.0	511.3	0.0	515.2
Volume-to-Capacity Ratio (X)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Available Capacity (c _a), veh/h	0.0	676.3	0.0	784.3	0.0	740.2	0.0	874.0
Upstream Filter Factor (f)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Uniform Delay (d1), s/veh	0.0	9.2	0.0	10.4	0.0	8.6	0.0	10.3
Incremental Delay (d2), s/veh	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.3
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	9.3	0.0	10.5	0.0	8.8	0.0	10.6
First-Term Queue (Q1), veh/h	0.0	0.1	0.0	0.1	0.0	0.2	0.0	0.6
Second-Term Queue (Q2), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-queue factor (L _B %)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q%), veh/h	0.0	0.2	0.0	0.1	0.0	0.3	0.0	0.6
Percentile Storage Ratio (RO%), veh/h	0.0	0.04	0.00	0.04	0.00	0.04	0.00	0.13
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data

Assigned Movement	0	2	0	4	0	6	0	8
Lane Assignment				T				
Lanes in Group	0	0	0	1	0	0	0	0
Group Volume (v), veh/h	0.0	0.0	0.0	96.0	0.0	0.0	0.0	0.0
Group Sat. Flow (s), veh/h	0.0	0.0	0.0	1044.7	0.0	0.0	0.0	0.0
Queue Serve Time (g _s), s	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0
Cycle Queue Clear Time (g _c), s	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0
Lane Group Capacity (c), veh/h	0.0	0.0	0.0	470.4	0.0	0.0	0.0	0.0
Volume-to-Capacity Ratio (X)	0.000	0.000	0.000	0.204	0.000	0.000	0.000	0.000
Available Capacity (c _a), veh/h	0.0	0.0	0.0	966.9	0.0	0.0	0.0	0.0
Upstream Filter Factor (f)	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000
Uniform Delay (d1), s/veh	0.0	0.0	0.0	8.8	0.0	0.0	0.0	0.0
Incremental Delay (d2), s/veh	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	9.0	0.0	0.0	0.0	0.0
First-Term Queue (Q1), veh/h	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Second-Term Queue (Q2), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-queue factor (L _B %)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q%), veh/h	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0
Percentile Storage Ratio (RO%), veh/h	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00

Existing Geometry

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2014 AM Peak BUILD Conditions

Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Movement	0	12	0	14	0	16	0	18
Lane Assignment		T+R	R	1	0	T+R	0	T+R
Lanes in Group	0	1	0	1	0	1	0	1
Group Volume (v), veh/h	0.0	346.1	0.0	49.3	0.0	420.0	0.0	170.7
Group Sat. Flow (s), veh/h	0.0	1763.2	0.0	1568.0	0.0	1808.7	0.0	1736.9
Queue Serve Time (g _s), s	0.0	4.3	0.0	0.7	0.0	5.3	0.0	2.4
Cycle Queue Clear Time (g _c), s	0.0	4.3	0.0	0.7	0.0	5.3	0.0	2.4
Prot RT Sat Flow Rate (s _R), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff. Green (g _R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proportion RT Outside Lane (P _R)	0.000	0.262	0.000	1.000	0.000	0.119	0.000	0.352
Lane Group Capacity (c), veh/h	0.0	724.0	0.0	399.9	0.0	741.9	0.0	442.9
Volume-to-Capacity Ratio (X)	0.000	0.481	0.000	0.123	0.000	0.566	0.000	0.385
Available Capacity (c _a), veh/h	0.0	1120.1	0.0	838.8	0.0	1147.8	0.0	928.2
Upstream Filter Factor (f)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Uniform Delay (d1), s/veh	0.0	6.5	0.0	8.6	0.0	6.8	0.0	9.2
Incremental Delay (d2), s/veh	0.0	0.5	0.0	0.1	0.0	0.7	0.0	0.5
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	7.0	0.0	8.7	0.0	7.4	0.0	9.8
First-Term Queue (Q1), veh/h	0.0	0.8	0.0	0.2	0.0	1.0	0.0	0.6
Second-Term Queue (Q2), veh/h	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-queue factor (L _B %)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q%), veh/h	0.0	0.9	0.0	0.2	0.0	1.1	0.0	0.7
Percentile Storage Ratio (RO%), veh/h	0.00	0.07	0.00	0.07	0.00	0.11	0.00	0.01
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary								
HCM Average Control Delay	8.3							
HCM Level of Service	A							

Existing Geometry

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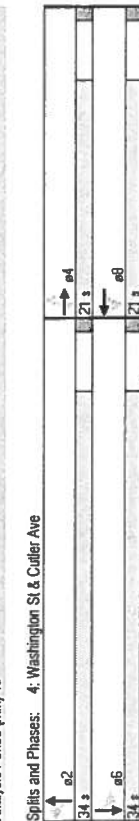
Timings
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Terry O. Brown, P.E.
2014 PM Peak NOBUILD Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	←	↑	→	←	↑	→	←	↑	→
Volume (vph)	57	110	83	90	42	38	448	60	298
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	NA
Protected Phases	4	4	4	8	8	2	2	6	6
Permitted Phases	4	4	4	8	8	2	2	6	6
Detector Phase	4	4	4	8	8	2	2	6	6
Switch Phase	4	4	4	8	8	2	2	6	6
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	6.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	21.0	21.0	21.0	34.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	38.2%	38.2%	38.2%	38.2%	38.2%	61.8%	61.8%	61.8%	61.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0

Lead-Lag Optimize?										
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Elct Green (s)	9.6	9.6	9.6	9.6	17.6	17.6	17.6	17.6	17.6	17.6
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.46	0.46	0.46	0.46	0.46	0.46
W/C Ratio	0.25	0.31	0.23	0.39	0.33	0.09	0.70	0.25	0.41	0.41
Control Delay	15.5	15.2	5.2	17.7	8.1	6.5	13.0	9.1	8.3	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.5	15.2	5.2	17.7	8.1	6.5	13.0	9.1	8.3	8.3
LOS	B	B	A	B	A	A	B	A	A	A
Approach Delay		12.0				12.2		12.5		8.5
Approach LOS		B				B		B		A
Intersection Summary										
Cycle Length: 55										
Actuated Cycle Length: 38										
Natural Cycle: 50										
Control Type: Actuated-Uncoordinated										
Maximum w/c Ratio: 0.70										
Intersection Signal Delay: 11.3										
Intersection Capacity Utilization 60.4%										
Analysis Period (min) 15										
	Intersection LOS: B									
	ICU Level of Service B									



Existing Geometry
Synchro 8 Report
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Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	←	↑	→	←	↑	→	←	↑	→
Volume (vph)	57	110	83	90	42	38	448	75	60
Movement Number	7	4	14	3	8	18	5	2	12
Initial Queue, veh	0	0	0	0	0	0	0	0	0
Pod-Bike Adj. Factor (A _{pb})	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking, Bus Adj. Factors	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Sat. Flow Rate, veh/h	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	1	1	1	1	1	1	1	1	1
Lane Assignment	377	460	391	404	140	272	573	777	130
Capacity, veh/h	0.25	0.25	0.25	0.25	0.25	0.25	0.50	0.50	0.50
Proportion Arriving On Green	15.3	12.8	12.7	15.3	0.0	13.3	6.0	0.0	8.3
Movement Delay, s/veh	B	B	B	B	B	A	A	B	A
Movement LOS	B	B	B	B	B	A	A	B	A
Approach Volume, veh/h	333			285			638		416
Approach Delay, s/veh	13.3			14.2			8.2		7.4
Approach LOS	B			B			A		A

Timer:	1	2	3	4	5	6	7	8
Assigned Phase	2	6.0	5.0	4	6	6	8	8
Case No	25.42	15.11	25.42	15.11	25.42	15.11	25.42	15.11
Phase Duration (G+Y+Rc), s	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Change Period (Y+Rc), s	5.16	4.76	5.16	4.76	5.16	4.76	5.16	4.76
Max. Allowable Headway (MAH), s	29.00	16.00	29.00	16.00	29.00	16.00	29.00	16.00
Maximum Green Setting (Gmax), s	11.92	7.55	11.92	7.55	11.92	7.55	11.92	7.55
Max. Queue Clearance Time (g_c+tt), s	6.29	1.97	6.29	1.97	6.29	1.97	6.29	1.97
Green Extension Time (g_e), s	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Probability of Phase Call (p_c)	0.284	0.398	0.284	0.398	0.284	0.398	0.284	0.398
Probability of Max Out (p_x)								
Left-Turn Movement Data								
Assigned Movement	5	7	1	3	1	3	1	3
Mmnt. Sat. Flow, veh/h	1018.91	1203.55	811.77	1224.15	1018.91	1203.55	811.77	1224.15
Through Movement Data								
Assigned Movement	2	4	6	8	2	4	6	8
Mmnt. Sat. Flow, veh/h	1541.13	1844.66	1788.18	559.51	1541.13	1844.66	1788.18	559.51
Right-Turn Movement Data								
Assigned Movement	12	14	16	18	12	14	16	18
Mmnt. Sat. Flow, veh/h	258.00	1567.96	48.00	1092.38	258.00	1567.96	48.00	1092.38
Left Lane Group Data								
Assigned Movement	0	5	0	7	0	1	0	3
Lane Assignment	0	1	0	1	0	1	0	1
Lanes in Group	0	43.2	0.0	76.0	0.0	68.2	0.0	120.0
Group Volume (V), veh/h	0.0	1018.9	0.0	1203.6	0.0	811.8	0.0	1224.1
Group Sat. Flow (s), veh/h	0.0	1018.9	0.0	1203.6	0.0	811.8	0.0	1224.1
Queue Serve Time (g_s), s	0.0	1.1	0.0	2.3	0.0	2.8	0.0	3.6
Cycle Queue Clear Time (g_c), s	0.0	5.8	0.0	5.7	0.0	12.7	0.0	6.2

Existing Geometry
Synchro 8 Report
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HCM 2010 Signalized Intersection Capacity Analysis
4: Washington St & Culler Ave

Terry O. Brown, P.E.
2014 PM Peak NOBUILD Conditions

Perm LT Sat Flow Rate (s ⁻¹), veh/h	0.0	1018.9	0.0	1203.6	0.0	811.8	0.0	1224.1	0.0
Shared LT Sat Flow (s ⁻¹), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Eff. Green (g.p.), s	0.0	20.4	0.0	10.1	0.0	20.4	0.0	10.1	0.0
Perm LT Serve Time (g.u.), s	0.0	15.7	0.0	8.7	0.0	10.5	0.0	7.5	0.0
Perm LT Que. Serve Time (g.ps), s	0.0	1.1	0.0	2.3	0.0	2.8	0.0	3.6	0.0
Time to First BK (g.u.), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time per BK (g.ps), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proportion LT Inside Lane (P _L),	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Lane Group Capacity (c), veh/h	0.0	573.0	0.0	377.3	0.0	388.1	0.0	403.5	0.0
Volume-to-Capacity Ratio (X)	0.000	0.075	0.000	0.201	0.000	0.176	0.000	0.297	0.000
Available Capacity (c _a), veh/h	0.0	788.6	0.0	552.3	0.0	559.8	0.0	581.5	0.0
Upstream Filter Factor (f)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Uniform Delay (d1), s/veh	0.0	7.9	0.0	15.1	0.0	12.1	0.0	14.9	0.0
Incremental Delay (d2), s/veh	0.0	0.1	0.0	0.3	0.0	0.2	0.0	0.4	0.0
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	8.0	0.0	15.3	0.0	12.4	0.0	15.3	0.0
First-Term Queue (Q1), veh/h	0.0	0.2	0.0	0.6	0.0	0.4	0.0	0.9	0.0
Second-Term Queue (Q2), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-queue factor (f _B %)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Percentile Back of Queue (Q%)	0.0	0.2	0.0	0.6	0.0	0.4	0.0	1.0	0.0
Percentile Storage Ratio (RQ%)	0.0	0.05	0.00	0.22	0.00	0.07	0.00	0.19	0.00
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data

Assigned Movement	0	2	0	4	0	6	0	8	0
Lane Assignment				T					
Lanes in Group	0	0	0	1	0	0	0	0	0
Group Volume (v), veh/h	0.0	0.0	0.0	146.7	0.0	0.0	0.0	0.0	0.0
Group Sat. Flow (s), veh/h	0.0	0.0	0.0	1844.7	0.0	0.0	0.0	0.0	0.0
Queue Serve Time (g.s), s	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0
Cycle Queue Clear Time (g.c), s	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0
Lane Group Capacity (c), veh/h	0.0	0.0	0.0	460.0	0.0	0.0	0.0	0.0	0.0
Volume-to-Capacity Ratio (X)	0.000	0.000	0.000	0.319	0.000	0.000	0.000	0.000	0.000
Available Capacity (c _a), veh/h	0.0	0.0	0.0	728.2	0.0	0.0	0.0	0.0	0.0
Upstream Filter Factor (f)	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
Uniform Delay (d1), s/veh	0.0	0.0	0.0	12.4	0.0	0.0	0.0	0.0	0.0
Incremental Delay (d2), s/veh	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	12.8	0.0	0.0	0.0	0.0	0.0
First-Term Queue (Q1), veh/h	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0
Second-Term Queue (Q2), veh/h	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-queue factor (f _B %)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000	0.000
Percentile Back of Queue (Q%)	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0
Percentile Storage Ratio (RQ%)	0.0	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.00

Existing Geometry

Synchro 8 Report
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HCM 2010 Signalized Intersection Capacity Analysis
4: Washington St & Culler Ave

Terry O. Brown, P.E.
2014 PM Peak NOBUILD Conditions

Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data									
Assigned Movement	0	12	0	14	0	16	0	18	
Lane Assignment		T+R		R		T+R		T+R	
Lanes in Group	0	1	0	1	0	1	0	1	
Group Volume (v), veh/h	0.0	594.3	0.0	110.7	0.0	347.7	0.0	165.3	
Group Sat. Flow (s), veh/h	0.0	1795.1	0.0	1588.0	0.0	1836.2	0.0	1651.9	
Queue Serve Time (g.s), s	0.0	9.9	0.0	2.3	0.0	4.7	0.0	3.4	
Cycle Queue Clear Time (g.c), s	0.0	9.9	0.0	2.3	0.0	4.7	0.0	3.4	
Prot. RT Sat Flow Rate (s ⁻¹), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Prot. RT Eff. Green (g.R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Proportion RT Outside Lane (P _R),	0.000	0.143	0.000	1.000	0.000	0.026	0.000	0.661	
Lane Group Capacity (c), veh/h	0.0	906.6	0.0	391.0	0.0	925.3	0.0	411.9	
Volume-to-Capacity Ratio (X)	0.000	0.656	0.000	0.283	0.000	0.376	0.000	0.401	
Available Capacity (c _a), veh/h	0.0	1287.3	0.0	618.0	0.0	1313.8	0.0	652.1	
Upstream Filter Factor (f)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000	
Uniform Delay (d1), s/veh	0.0	7.4	0.0	12.3	0.0	6.2	0.0	12.7	
Incremental Delay (d2), s/veh	0.0	0.8	0.0	0.4	0.0	0.3	0.0	0.6	
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay (d), s/veh	0.0	8.3	0.0	12.7	0.0	6.4	0.0	13.3	
First-Term Queue (Q1), veh/h	0.0	2.2	0.0	0.7	0.0	1.1	0.0	1.0	
Second-Term Queue (Q2), veh/h	0.0	0.2	0.0	0.0	0.0	0.1	0.0	0.1	
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Percentile bk-of-queue factor (f _B %)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000	
Percentile Back of Queue (Q%)	0.0	2.4	0.0	0.7	0.0	1.1	0.0	1.1	
Percentile Storage Ratio (RQ%)	0.00	0.20	0.00	0.26	0.00	0.11	0.00	0.02	
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Intersection Summary									
HCM Average Control Delay	10.1								
HCM Level of Service	B								

Existing Geometry

Synchro 8 Report
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Timings
4: Washington St & Cutler Ave

Terry O. Brown, P.E.
Existing Geometry

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	57	110	83	131	42	38	448	60	298
Volume (vph)	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	NA
Turn Type	4	4	4	8	8	2	2	6	6
Permitted Phases	4	4	4	8	8	2	2	6	6
Detector Phase	4	4	4	8	8	2	2	6	6
Switch Phase	4	4	4	8	8	2	2	6	6
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Minimum Split (%)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (%)	38.2%	38.2%	38.2%	38.2%	38.2%	61.8%	61.8%	61.8%	61.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Elct Green (s)	11.3	11.3	11.3	11.3	11.3	20.5	20.5	20.5	20.5
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27	0.48	0.48	0.48	0.48
vic Ratio	0.24	0.30	0.22	0.54	0.32	0.09	0.76	0.29	0.39
Control Delay	16.3	16.1	5.2	22.1	8.3	6.7	15.1	11.0	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.3	16.1	6.2	22.1	8.3	6.7	15.1	11.0	8.5
LOS	B	B	A	C	A	A	B	B	A
Approach Delay	12.5			15.4			14.8		8.9
Approach LOS	B			B			B		A
Intersection Summary									
Cycle Length: 55									
Actuated Cycle Length: 42.6									
Natural Cycle: 55									
Control Type: Actuated-Uncoordinated									
Maximum v/c Ratio: 0.76									
Intersection Signal Delay: 13.1									
Intersection Capacity Utilization: 65.9%									
Analysis Period (min): 15									
Splits and Phases: 4: Washington St & Cutler Ave									
	34 s	34 s	34 s	34 s	34 s	34 s	34 s	34 s	34 s
	34 s	34 s	34 s	34 s	34 s	34 s	34 s	34 s	34 s

2014 PM Peak BUILD Conditions
Synchro 8 Report
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HCM 2010 Signalized Intersection Capacity Analysis
4: Washington St & Cutler Ave

Terry O. Brown, P.E.
Existing Geometry

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	57	110	83	131	42	38	448	139	60	298
Volume (vph)	7	4	14	3	8	18	5	2	12	1
Movement Number	0	0	0	0	0	0	0	0	0	0
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj. Factor (A _{pbT})	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking, Bus Adj. Factors	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Sat. Flow Rate, veh/h	1845	1845	1845	1845	1845	1845	1845	1845	1845	1845
Lanes	1	1	1	1	1	1	1	1	1	1
Lane Assignment	380	497	422	406	151	294	566	699	217	325
Capacity, veh/h	0.27	0.27	0.27	0.27	0.27	0.27	0.52	0.52	0.52	0.52
Proportion Arriving On Green	16.7	13.9	13.8	17.9	0.0	14.4	8.7	0.0	10.8	15.8
Movement Delay, s/veh	B	B	B	B	B	B	A	B	B	A
Movement LOS	B	B	B	B	B	B	A	B	B	A
Approach Volume, veh/h	333			340			710			416
Approach Delay, s/veh	14.5			16.2			10.6			8.4
Approach LOS	B			B			B			A
Timer:	1	2	3	4	5	6	7	8		
Assigned Phase	2			4		6		8		
Case No	6.0			5.0		6.0		6.0		
Phase Duration (G+Y+Rc), s	28.21			17.81		29.21		17.81		
Change Period (Y+Rc), s	5.00			5.00		5.00		5.00		
Max. Allowable Headway (MAH), s	5.20			4.71		5.20		4.71		
Maximum Green Setting (Gmax), s	29.00			16.00		29.00		16.00		
Max. Queue Clearance Time (G+Y+Rc), s	15.67			8.37		19.25		11.14		
Green Extension Time (G _{ex}), s	6.07			2.01		4.96		1.47		
Probability of Phase Call (p _c)	1.000			1.000		1.000		1.000		
Probability of Max Out (p _x)	0.475			0.493		0.659		0.963		
Left-Turn Movement Data										
Assigned Movement	5			7		1		3		
Mmnt. Sat Flow, veh/h	1018.91			1203.55		758.79		1224.15		
Through Movement Data										
Assigned Movement	2			4		6		8		
Mmnt. Sat Flow, veh/h	1351.38			1844.66		1788.18		559.51		
Right-Turn Movement Data										
Assigned Movement	12			14		16		18		
Mmnt. Sat Flow, veh/h	419.29			1567.96		48.00		1092.38		
Left Lane Group Data										
Assigned Movement	0	5	0	7	0	1	0	3		
Lane Assignment	L	L	L	L	L	L	L	L		
Lanes In Group	0	1	0	1	0	1	0	1		
Group Volume (v), veh/h	0.0	43.2	0.0	76.0	0.0	68.2	0.0	174.7		
Group Sat. Flow (s), veh/h	0.0	1018.9	0.0	1203.6	0.0	758.8	0.0	1224.1		
Queue Serve Time (G _s), s	0.0	1.2	0.0	2.6	0.0	3.6	0.0	6.2		
Cycle Queue Clear Time (G _c), s	0.0	6.5	0.0	6.4	0.0	17.2	0.0	9.1		

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HCM 2010 Signalized Intersection Capacity Analysis
4: Washington St & Culler Ave

Terry O. Brown, P.E.
Existing Geometry

Perm LT Sat Flow Rate (s, J), veh/h	0.0	1018.9	0.0	1203.6	0.0	758.8	0.0	1224.1
Shared LT Sat Flow (s, sh), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Perm LT Eff. Green (s, g), s	0.0	24.2	0.0	12.6	0.0	24.2	0.0	12.6
Perm LT Serve Time (g, u), s	0.0	18.9	0.0	8.8	0.0	10.5	0.0	9.7
Perm LT Que Serve Time (g, ps), s	0.0	1.2	0.0	2.6	0.0	3.6	0.0	6.2
Time to First Bk (g, f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Bk (g, f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proportion LT Inside Lane (P, L)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Lane Group Capacity (c), veh/h	0.0	565.6	0.0	380.2	0.0	324.6	0.0	406.3
Volume-to-Capacity Ratio (X)	0.000	0.078	0.000	0.200	0.000	0.210	0.000	0.430
Available Capacity (c, a), veh/h	0.0	570.0	0.0	467.3	0.0	482.3	0.0	494.9
Upstream Filter Factor (f)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Uniform Delay (d1), s/veh	0.0	8.7	0.0	16.5	0.0	15.4	0.0	17.2
Incremental Delay (d2), s/veh	0.0	0.1	0.0	0.3	0.0	0.3	0.0	0.7
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	8.7	0.0	16.7	0.0	15.8	0.0	17.9
First-Term Queue (Q1), veh/h	0.0	0.2	0.0	0.7	0.0	0.5	0.0	1.7
Second-Term Queue (Q2), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-queue factor (L, B%)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q), veh/h	0.0	0.2	0.0	0.7	0.0	0.6	0.0	1.8
Percentile Storage Ratio (RO%)	0.00	0.06	0.00	0.25	0.00	0.09	0.00	0.36
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incremental Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Movement	0	2	0	4	0	6	0	8
Lane Assignment								
Lanes In Group	0	0	0	1	0	0	0	0
Group Sat. Flow (s), veh/h	0.0	0.0	0.0	146.7	0.0	0.0	0.0	0.0
Group Sat. Flow (s, sh), veh/h	0.0	0.0	0.0	1844.7	0.0	0.0	0.0	0.0
Queue Serve Time (g, s), s	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Cycle Queue Clear Time (g, c), s	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Lane Group Capacity (c), veh/h	0.0	0.0	0.0	496.9	0.0	0.0	0.0	0.0
Volume-to-Capacity Ratio (X)	0.000	0.000	0.000	0.295	0.000	0.000	0.000	0.000
Available Capacity (c, a), veh/h	0.0	0.0	0.0	630.4	0.0	0.0	0.0	0.0
Upstream Filter Factor (f)	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000
Uniform Delay (d1), s/veh	0.0	0.0	0.0	13.6	0.0	0.0	0.0	0.0
Incremental Delay (d2), s/veh	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	13.9	0.0	0.0	0.0	0.0
First-Term Queue (Q1), veh/h	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0
Second-Term Queue (Q2), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-queue factor (L, B%)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q), veh/h	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0
Percentile Storage Ratio (RO%)	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00

2014 PM Peak BUILD Conditions
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HCM 2010 Signalized Intersection Capacity Analysis
4: Washington St & Culler Ave

Terry O. Brown, P.E.
Existing Geometry

Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Right Lane Group Data								
Assigned Movement	0	12	0	14	0	16	0	18
Lane Assignment								
Lanes In Group	0	1	0	1	0	1	0	1
Group Volume (v), veh/h	0.0	667.0	0.0	110.7	0.0	347.7	0.0	165.3
Group Sat. Flow (s), veh/h	0.0	1770.7	0.0	1568.0	0.0	1838.2	0.0	1651.9
Queue Serve Time (g, s), s	0.0	13.7	0.0	2.6	0.0	5.3	0.0	3.8
Cycle Queue Clear Time (g, c), s	0.0	13.7	0.0	2.6	0.0	5.3	0.0	3.8
Prot RT Sat Flow Rate (s, R), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff. Green (g, R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proportion RT Outside Lane (P, R)	0.000	0.237	0.000	1.000	0.000	0.026	0.000	0.681
Lane Group Capacity (c), veh/h	0.0	915.5	0.0	422.3	0.0	949.4	0.0	445.0
Volume-to-Capacity Ratio (X)	0.000	0.729	0.000	0.262	0.000	0.366	0.000	0.372
Available Capacity (c, a), veh/h	0.0	1098.8	0.0	535.9	0.0	1137.4	0.0	584.6
Upstream Filter Factor (f)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Uniform Delay (d1), s/veh	0.0	8.8	0.0	13.4	0.0	6.7	0.0	13.9
Incremental Delay (d2), s/veh	0.0	2.0	0.0	0.3	0.0	0.2	0.0	0.5
Initial Queue Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	10.8	0.0	13.8	0.0	7.0	0.0	14.4
First-Term Queue (Q1), veh/h	0.0	3.4	0.0	0.8	0.0	1.4	0.0	1.2
Second-Term Queue (Q2), veh/h	0.0	0.5	0.0	0.0	0.0	0.1	0.0	0.1
Third-Term Queue (Q3), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Percentile bk-of-queue factor (L, B%)	0.000	1.000	0.000	1.000	0.000	1.000	0.000	1.000
Percentile Back of Queue (Q), veh/h	0.0	3.9	0.0	0.8	0.0	1.4	0.0	1.3
Percentile Storage Ratio (RO%)	0.00	0.32	0.00	0.30	0.00	0.14	0.00	0.02
Initial Queue (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Queue (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Queue (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saturated Capacity (cs), veh/h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Queue Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Intersection Summary								
HCM Average Control Delay	11.9							
HCM Level of Service	B							

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HCM Unsignalized Intersection Capacity Analysis 5: Quincy St & Prospect Ave

Terry O. Brown, P.E.
2014 AM Peak NOBUILD Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	14	3	8	23	4	3	20	1	12	26	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.77	0.77	0.77	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	5	19	4	10	30	5	4	27	1	16	35	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None								None			
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	125	106	38	119	109	27	41				28	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	125	106	38	119	109	27	41				28	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	99	98	100	99	96	100	100				99	
cM capacity (veh/h)	809	772	1031	828	770	1045	1561				1579	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	28	45	32	57								
Volume Left	5	10	4	16								
Volume Right	4	5	1	7								
cSH	808	807	1561	1579								
Volume to Capacity	0.03	0.06	0.00	0.01								
Queue Length 95th (ft)	3	4	0	1								
Control Delay (s)	9.6	9.7	0.9	2.1								
Lane LOS	A	A	A	A								
Approach Delay (s)	9.6	9.7	0.9	2.1								
Approach LOS	A	A										
Intersection Summary												
Average Delay			5.3									
Intersection Capacity Utilization			14.4%	ICU Level of Service					A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis 5: Quincy St & Prospect Ave

Terry O. Brown, P.E.
2014 AM Peak BUILD Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	15	3	8	25	6	3	20	1	13	26	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.77	0.77	0.77	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	5	20	4	10	32	8	4	27	1	17	35	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	132	109	38	122	111	27	41			28		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	132	109	38	122	111	27	41			28		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	97	100	99	96	99	100			99		
cM capacity (veh/h)	796	769	1031	822	766	1045	1561			1579		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	29	51	32	59								
Volume Left	5	10	4	17								
Volume Right	4	8	1	7								
cSH	802	811	1561	1579								
Volume to Capacity	0.04	0.06	0.00	0.01								
Queue Length 95th (ft)	3	5	0	1								
Control Delay (s)	9.7	9.7	0.9	2.2								
Lane LOS	A	A	A	A								
Approach Delay (s)	9.7	9.7	0.9	2.2								
Approach LOS	A	A										
Intersection Summary												
Average Delay			5.5									
Intersection Capacity Utilization			14.7%		ICU Level of Service					A		
Analysis Period (min)			15									

Existing Geometry

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HCM Unsignalized Intersection Capacity Analysis 5: Quincy St & Prospect Ave

Terry O. Brown, P.E.
2014 PM Peak NOBUILD Conditions

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	7	38	1	7	28	10	1	13	10	11	22	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	9	51	1	9	37	13	1	17	13	15	29	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	123	98	35	118	97	24	41			31		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	123	98	35	118	97	24	41			31		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	94	100	99	95	99	100			99		
cM capacity (veh/h)	801	782	1035	806	783	1050	1561			1575		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	61	60	32	56								
Volume Left	9	9	1	15								
Volume Right	1	13	13	12								
cSH	789	834	1561	1575								
Volume to Capacity	0.08	0.07	0.00	0.01								
Queue Length 95th (ft)	6	6	0	1								
Control Delay (s)	9.9	9.7	0.3	2.0								
Lane LOS	A	A	A	A								
Approach Delay (s)	9.9	9.7	0.3	2.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay			6.3									
Intersection Capacity Utilization			16.7%		ICU Level of Service					A		
Analysis Period (min)			15									

Existing Geometry

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HCM Unsignalized Intersection Capacity Analysis 5: Quincy St & Prospect Ave

Terry O. Brown, P.E.
Existing Geometry

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	41	1	7	30	12	1	13	10	14	22	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	9	55	1	9	40	16	1	17	13	19	29	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	135	106	35	128	105	24	41			31		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	135	106	35	128	105	24	41			31		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	93	100	99	95	98	100			99		
cM capacity (veh/h)	781	772	1035	789	773	1050	1561			1575		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	65	65	32	60								
Volume Left	9	9	1	19								
Volume Right	1	16	13	12								
cSH	778	829	1561	1575								
Volume to Capacity	0.08	0.08	0.00	0.01								
Queue Length 95th (ft)	7	6	0	1								
Control Delay (s)	10.1	9.7	0.3	2.3								
Lane LOS	B	A	A	A								
Approach Delay (s)	10.1	9.7	0.3	2.3								
Approach LOS	B	A										
Intersection Summary												
Average Delay			6.5									
Intersection Capacity Utilization			18.5%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis 6: "A" & Prospect Ave

Terry O. Brown, P.E.
2014 AM Peak BUILD Conditions

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	Y	
Volume (veh/h)	28	3	68	35	4	105
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.85	0.85
Hourly flow rate (vph)	36	4	88	45	5	124
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (ft)				622		
pX, platoon unblocked						
vC, conflicting volume			40		260	38
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			40		260	38
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		99	88
cM capacity (veh/h)			1563		685	1031
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	40	134	128			
Volume Left	0	88	5			
Volume Right	4	0	124			
cSH	1700	1563	1012			
Volume to Capacity	0.02	0.06	0.13			
Queue Length 95th (ft)	0	4	11			
Control Delay (s)	0.0	5.1	9.1			
Lane LOS		A	A			
Approach Delay (s)	0.0	5.1	9.1			
Approach LOS			A			
Intersection Summary						
Average Delay		6.1				
Intersection Capacity Utilization		25.7%	ICU Level of Service	A		
Analysis Period (min)		15				

Existing Geometry

Synchro 8 Report
D:\ATOB\PROJECTS\Plaza_at_San_Mateo\Synchro\2014ABX.syn

HCM Unsignalized Intersection Capacity Analysis 6: "A" & Prospect Ave

Terry O. Brown, P.E.
Existing Geometry



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Volume (veh/h)	60	6	171	45	4	109
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.85	0.85
Hourly flow rate (vph)	80	8	228	60	5	128
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)				622		
pX, platoon unblocked						
vC, conflicting volume			88		600	84
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			88		600	84
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			85		99	87
cM capacity (veh/h)			1501		392	972
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	88	288	133			
Volume Left	0	228	5			
Volume Right	8	0	128			
cSH	1700	1501	924			
Volume to Capacity	0.05	0.15	0.14			
Queue Length 95th (ft)	0	13	13			
Control Delay (s)	0.0	6.5	9.5			
Lane LOS		A	A			
Approach Delay (s)	0.0	6.5	9.5			
Approach LOS			A			
Intersection Summary						
Average Delay			6.1			
Intersection Capacity Utilization			32.1%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 7: Quincy St & "B"

Terry O. Brown, P.E.
2014 AM Peak BUILD Conditions

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	71	1	24	46	1	37
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	84	1	32	61	1	49
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	115	63			93	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	115	63			93	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	90	100			100	
cM capacity (veh/h)	878	999			1495	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	85	93	51			
Volume Left	84	0	1			
Volume Right	1	61	0			
cSH	880	1700	1495			
Volume to Capacity	0.10	0.05	0.00			
Queue Length 95th (ft)	8	0	0			
Control Delay (s)	9.5	0.0	0.2			
Lane LOS	A		A			
Approach Delay (s)	9.5	0.0	0.2			
Approach LOS	A					
Intersection Summary						
Average Delay			3.6			
Intersection Capacity Utilization			14.7%	ICU Level of Service		A
Analysis Period (min)			15			

Existing Geometry

Synchro 8 Report
D:\ATOB\PROJECTS\Plaza_at_San_Mateo\Synchro\2014ABX.syn

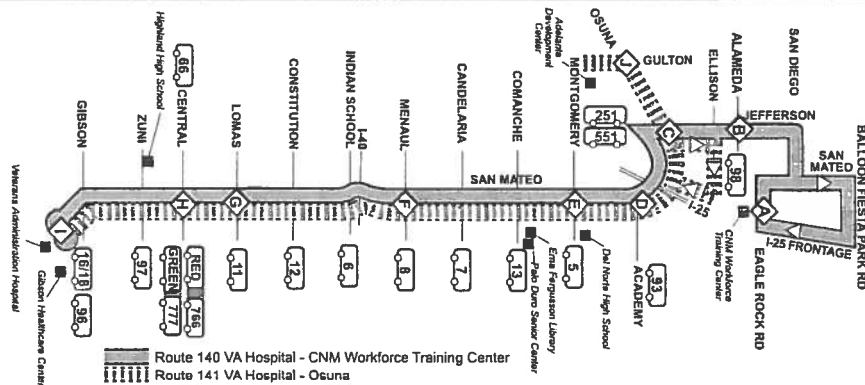
HCM Unsignalized Intersection Capacity Analysis 7: Quincy St & "B"

Terry O. Brown, P.E.
Existing Geometry

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	73	1	25	115	1	30
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	86	1	33	153	1	40
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	153	110			187	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	153	110			187	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	90	100			100	
cM capacity (veh/h)	836	941			1382	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	87	187	41			
Volume Left	86	0	1			
Volume Right	1	153	0			
cSH	837	1700	1382			
Volume to Capacity	0.10	0.11	0.00			
Queue Length 95th (ft)	9	0	0			
Control Delay (s)	9.8	0.0	0.3			
Lane LOS	A		A			
Approach Delay (s)	9.8	0.0	0.3			
Approach LOS	A					
Intersection Summary						
Average Delay		2.7				
Intersection Capacity Utilization		19.2%		ICU Level of Service		A
Analysis Period (min)		15				

Routes / Rutas 140 & 141 San Mateo Blvd.

Effective 8/27/2011



San Mateo Line - Weekday Southbound

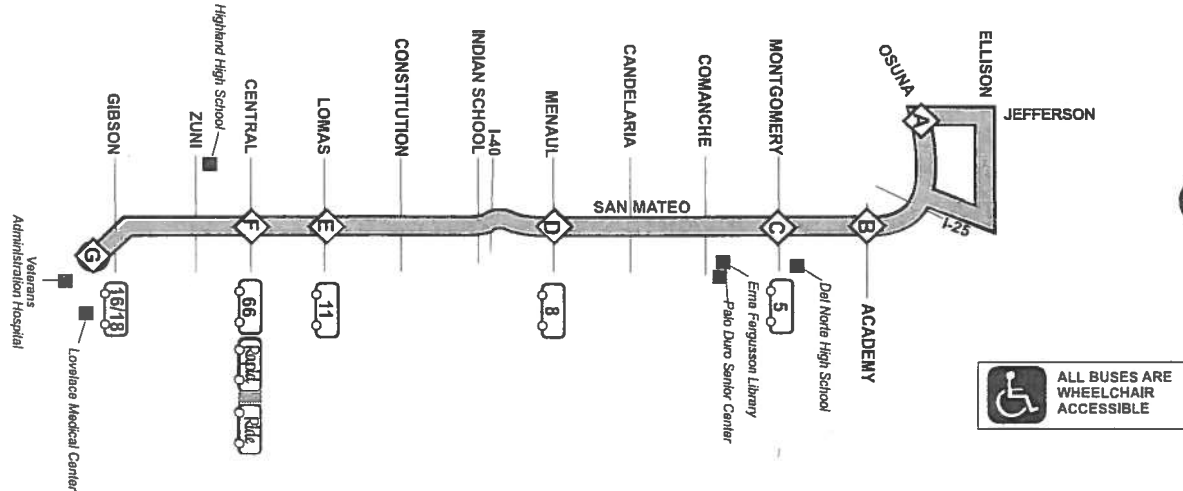
San Mateo Line - Weekday Northbound

ROUTE #	VA HOSPITAL	SAN MATEO & CENTRAL	SAN MATEO & LOMAS	SAN MATEO & MENAUL	SAN MATEO & MONTGOMERY	SAN MATEO & ACADEMY	JEFFERSON & OSUNA	GULTON CT. & OSUNA	JEFFERSON & ALAMEDA	CNM WORKFORCE TRAINING CTR.
141	6:24a	6:16a	6:13a	6:07a	6:01a	5:56a	...	...	...	...
140	6:47a	6:39a	6:36a	6:30a	6:24a	6:19a	6:15a	...	6:09a	6:04a
141	7:05a	6:57a	6:54a	6:48a	6:42a	6:37a	6:31a	...	...	...
140	7:28a	7:20a	7:17a	7:11a	7:05a	7:00a	6:55a	...	6:45a	6:39a
141	7:46a	7:38a	7:35a	7:29a	7:23a	7:18a	7:12a	...	...	...
140	8:11a	8:03a	8:00a	7:54a	7:48a	7:43a	7:37a	...	7:35a	7:30a
141	8:29a	8:21a	8:18a	8:12a	8:06a	8:01a	7:55a	...	...	...
140	8:44a	8:36a	8:33a	8:27a	8:21a	8:16a	8:11a	...	8:16a	8:11a
141	9:02a	8:54a	8:51a	8:45a	8:39a	8:34a	8:28a	...	...	...
140	9:17a	9:09a	9:06a	9:00a	8:54a	8:49a	8:43a	...	9:07a	9:02a
141	9:35a	9:27a	9:24a	9:18a	9:12a	9:07a	9:01a	...	...	...
140	9:50a	9:42a	9:39a	9:33a	9:27a	9:22a	9:16a	...	...	...
141	10:08a	10:00a	9:57a	9:51a	9:45a	9:40a	9:34a	...	...	...
140	10:23a	10:15a	10:12a	10:06a	10:00a	9:55a	9:49a	...	...	...
141	10:41a	10:33a	10:30a	10:24a	10:18a	10:13a	10:07a	...	...	...
140	10:56a	10:48a	10:45a	10:39a	10:33a	10:28a	10:22a	...	...	...
141	11:14a	11:06a	11:03a	10:57a	10:51a	10:46a	10:40a	...	...	...
140	11:29a	11:21a	11:18a	11:12a	11:06a	11:01a	10:55a	...	...	...
141	11:47a	11:39a	11:36a	11:30a	11:24a	11:19a	11:13a	...	...	...
140	12:02p	11:54p	11:51p	11:45p	11:39p	11:34p	11:28p	...	...	...
141	12:20p	12:12p	12:09p	12:03p	11:57p	11:52p	11:46p	...	...	...
140	12:35p	12:27p	12:24p	12:18p	12:12p	12:07p	12:01p	...	...	...
141	12:53p	12:45p	12:42p	12:36p	12:30p	12:25p	12:19p	...	...	...
140	1:10p	1:02p	1:00p	1:00p	1:00p	1:00p	1:00p	...	...	...
141	1:28p	1:20p	1:17p	1:11p	1:05p	1:00p	1:00p	...	...	...
140	1:43p	1:35p	1:32p	1:26p	1:20p	1:15p	1:10p	...	...	...
141	1:58p	1:50p	1:47p	1:41p	1:35p	1:30p	1:25p	...	...	...
140	2:13p	2:05p	2:02p	1:56p	1:50p	1:45p	1:40p	...	...	...
141	2:28p	2:20p	2:17p	2:11p	2:05p	2:00p	1:55p	...	...	...
140	2:43p	2:35p	2:32p	2:26p	2:20p	2:15p	2:10p	...	...	...
141	2:58p	2:50p	2:47p	2:41p	2:35p	2:30p	2:25p	...	...	...
140	3:13p	3:05p	3:02p	2:56p	2:50p	2:45p	2:40p	...	...	...
141	3:28p	3:20p	3:17p	3:11p	3:05p	3:00p	2:55p	...	...	...
140	3:43p	3:35p	3:32p	3:26p	3:20p	3:15p	3:10p	...	...	...
141	3:58p	3:50p	3:47p	3:41p	3:35p	3:30p	3:25p	...	...	...
140	4:13p	4:05p	4:02p	3:56p	3:50p	3:45p	3:40p	...	...	...
141	4:28p	4:20p	4:17p	4:11p	4:05p	4:00p	3:55p	...	...	...
140	4:43p	4:35p	4:32p	4:26p	4:20p	4:15p	4:10p	...	...	...
141	4:58p	4:50p	4:47p	4:41p	4:35p	4:30p	4:25p	...	...	...
140	5:13p	5:05p	5:02p	4:56p	4:50p	4:45p	4:40p	...	...	...
141	5:28p	5:20p	5:17p	5:11p	5:05p	5:00p	4:55p	...	...	...
140	5:43p	5:35p	5:32p	5:26p	5:20p	5:15p	5:10p	...	...	...
141	5:58p	5:50p	5:47p	5:41p	5:35p	5:30p	5:25p	...	...	...
140	6:13p	6:05p	6:02p	5:56p	5:50p	5:45p	5:40p	...	...	...
141	6:28p	6:20p	6:17p	6:11p	6:05p	6:00p	5:55p	...	...	...
140	6:43p	6:35p	6:32p	6:26p	6:20p	6:15p	6:10p	...	...	...
141	6:58p	6:50p	6:47p	6:41p	6:35p	6:30p	6:25p	...	...	...
140	7:13p	7:05p	7:02p	6:56p	6:50p	6:45p	6:40p	...	...	...
141	7:28p	7:20p	7:17p	7:11p	7:05p	7:00p	6:55p	...	...	...
140	7:43p	7:35p	7:32p	7:26p	7:20p	7:15p	7:10p	...	...	...
141	7:58p	7:50p	7:47p	7:41p	7:35p	7:30p	7:25p	...	...	...
140	8:13p	8:05p	8:02p	7:56p	7:50p	7:45p	7:40p	...	...	...
141	8:28p	8:20p	8:17p	8:11p	8:05p	8:00p	7:55p	...	...	...
140	8:43p	8:35p	8:32p	8:26p	8:20p	8:15p	8:10p	...	...	...
141	8:58p	8:50p	8:47p	8:41p	8:35p	8:30p	8:25p	...	...	...
140	9:13p	9:05p	9:02p	8:56p	8:50p	8:45p	8:40p	...	...	...
141	9:28p	9:20p	9:17p	9:11p	9:05p	9:00p	8:55p	...	...	...
140	9:43p	9:35p	9:32p	9:26p	9:20p	9:15p	9:10p	...	...	...

ROUTE #	VA HOSPITAL	SAN MATEO & CENTRAL	SAN MATEO & LOMAS	SAN MATEO & MENAUL	SAN MATEO & MONTGOMERY	SAN MATEO & ACADEMY	JEFFERSON & OSUNA	GULTON CT. & OSUNA	JEFFERSON & ALAMEDA	CNM WORKFORCE TRAINING CTR.
140	5:40a	5:50a	5:53a	5:57a	6:02a	6:06a	6:09a	...	6:18a	6:27a
141	5:57a	6:06a	6:09a	6:13a	6:18a	6:24a	6:27a	...	...	...
140	6:14a	6:24a	6:27a	6:31a	6:36a	6:42a	6:45a	...	6:54a	7:02a
141	6:30a	6:39a	6:42a	6:46a	6:51a	6:57a	7:00a	...	...	...
140	6:47a	6:57a	7:00a	7:04a	7:09a	7:15a	7:18a	...	7:27a	7:35a
141	7:04a	7:14a	7:17a	7:21a	7:26a	7:32a	7:35a	...	...	...
140	7:21a	7:31a	7:34a	7:38a	7:43a	7:49a	7:52a	...	...	...
141	7:38a	7:48a	7:51a	7:55a	8:00a	8:06a	8:09a	...	...	...
140	7:55a	8:05a	8:08a	8:12a	8:17a	8:23a	8:26a	...	...	...
141	8:12a	8:22a	8:25a	8:29a	8:34a	8:40a	8:43a	...	...	...
140	8:29a	8:39a	8:42a	8:46a	8:51a	8:57a	9:00a	...	...	...
141	8:46a	8:56a	8:59a	9:03a	9:08a	9:14a	9:17a	...	...	...
140	9:03a	9:13a	9:16a	9:20a	9:25a	9:31a	9:34a	...	...	...
141	9:20a	9:30a	9:33a	9:37a	9:42a	9:48a	9:51a	...	...	...
140	9:37a	9:47a	9:50a	9:54a	9:59a	10:05a	10:08a	...	...	...
141	9:54a	10:04a	10:07a	10:11a	10:16a	10:22a	10:25a	...	...	...
140	10:11a	10:21a	10:24a	10:28a	10:33a	10:39a	10:42a	...	...	...
141	10:28a	10:38a	10:41a	10:45a	10:50a	10:56a	10:59a	...	...	...
140	10:45a	10:55a	10:58a	11:02a	11:07a	11:13a	11:16a	...	...	...
141	11:02a	11:12a	11:15a	11:19a	11:24a	11:30a	11:33a	...	...	...
140	11:19a	11:29a	11:32a	11:36a	11:41a	11:47a	11:50a	...	...	...
141	11:36a	11:46a	11:49a	11:53a	11:58a	12:04a	12:07a	...	...	...
140	11:53a	12:03a	12:06a	12:10a	12:15a	12:21a	12:24a	...	...	...
141	12:10a	12:20a	12:23a	12:27a	12:32a	12:38a	12:41a	...	...	...
140	12:27a	12:37a	12:40a	12:44a	12:49a	12:55a	12:58a	...	...	...
141	12:44a	12:54a	12:57a	13:01a	13:06a	13:12a	13:15a	...	...	...
140	13:01a	13:11a	13:14a	13:18a	13:23a	13:29a	13:32a	...	...	...
141	13:18a	13:28a	13:31a	13:35a	13:40a	13:46a	13:49a	...	...	...
140	13:35a	13:45a	13:48a	13:52a	13:57a	14:03a	14:06a	...	...	...
141	13:52a	14:02a	14:05a	14:09a	14:14a	14:20a	14:23a	...	...	...
140	14:09a	14:19a	14:22a	14:26a	14:31a	14:37a	14:40a	...	...	...
141	14:26a	14:36a	14:39a	14:43a	14:48a	14:54a	14:57a	...	...	...
140	14:43a	14:53a	14:56a	15:00a	15:05a	15:11a	15:14a	...	...	...
141	15:00a	15:10a	15:13a	15:17a	15:22a	15:28a	15:31a	...	...	...
140	15:17a	15:27a	15:30a	15:34a	15:39a	15:45a	15:48a	...	...	...
141	15:34a	15:44a	15:47a	15:51a	15:56a	16:02a	16:05a	...	...	...
140	15:51a	16:01a	16:04a	16:08a	16:13a	16:19a	16:22a	...	...	...
141	16:08a	16:18a	16:21a	16:25a	16:30a	16:36a	16:39a	...	...	...
140	16:25a	16:35a	16:38a	16:42a	16:47a	16:53a	16:56a	...	...	...
141	16:42a	16:52a	16:55a	16:59a	17:04a	17:10a	17:13a	...	...	...
140	17:09a	17:19a	17:22a	17:26a	17:31a	17:37a	17:40a	...	...	...
141	17:26a	17:36a	17:39a	17:43a	17:48a	17:54a	17:57a	...	...	...
140	17:43a	17:53a	17:56a	18:00a	18:05a	18:11a	18:14a	...	...	...
141	18:00a	18:10a	18:13a	18:17a	18:22a	18:28a	18:31a	...	...	...
140	18:17a	18:27a	18:30a	18:34a	18:39a	18:45a	18:48a	...	...	...
141	18:34a	18:44a	18:47a	18:51a	18:56a	19:02a	19:05a	...	...	...
140	18:51a	19:01a	19:04a	19:08a	19:13a	19:19a	19:22a	...	...	...
141	19:08a	19:18a	19:21a	19:25a	19:30a	19:36a	19:39a	...	...	...
140	19:25a	19:35a	19:38a	19:42a	19:47a	19:53a	19:56a	...	...	...
141	19:42a	19:52a	19:55a	19:59a	20:04a	20:10a	20:13a	...	...	...

Route 141 / Ruta 141 San Mateo Blvd.

Effective 8/27/2011



Route 141 - Saturday Southbound

JEFFERSON & OSUNA	SAN MATEO & ACADEMY	SAN MATEO & MONTGOMERY	SAN MATEO & MENAUL	SAN MATEO & LOMAS	SAN MATEO & CENTRAL	VA HOSPITAL
A	B	C	D	E	F	G
6:30a	6:35a	6:40a	6:45a	6:50a	6:53a	7:01a
7:00a	7:05a	7:10a	7:15a	7:20a	7:23a	7:31a
7:30a	7:35a	7:40a	7:45a	7:50a	7:53a	8:03a
7:59a	8:04a	8:09a	8:14a	8:19a	8:22a	8:32a
8:29a	8:34a	8:39a	8:44a	8:49a	8:52a	9:02a
8:57a	9:02a	9:07a	9:12a	9:17a	9:20a	9:30a
9:27a	9:32a	9:37a	9:43a	9:49a	9:52a	10:02a
9:55a	10:00a	10:05a	10:11a	10:17a	10:20a	10:30a
10:24a	10:29a	10:34a	10:41a	10:47a	10:50a	11:00a
10:53a	10:58a	11:03a	11:10a	11:16a	11:19a	11:29a
11:20a	11:26a	11:31a	11:38a	11:44a	11:47a	11:57a
11:51a	11:57a	12:03p	12:10p	12:17p	12:21p	12:31p
12:21p	12:27p	12:33p	12:40p	12:47p	12:51p	1:01p
12:51p	12:57p	1:03p	1:10p	1:17p	1:21p	1:31p
1:21p	1:27p	1:34p	1:41p	1:48p	1:52p	2:02p
1:51p	1:57p	2:04p	2:11p	2:18p	2:22p	2:32p
2:21p	2:27p	2:34p	2:41p	2:48p	2:52p	3:02p
2:51p	2:57p	3:04p	3:11p	3:18p	3:22p	3:32p
3:20p	3:26p	3:33p	3:40p	3:47p	3:51p	4:01p
3:50p	3:56p	4:03p	4:10p	4:16p	4:20p	4:30p
4:21p	4:27p	4:34p	4:41p	4:47p	4:51p	5:01p
4:51p	4:57p	5:03p	5:10p	5:16p	5:20p	5:29p
5:21p	5:27p	5:33p	5:40p	5:46p	5:50p	5:59p
5:53p	5:59p	6:05p	6:12p	6:18p	6:22p	6:31p
6:23p	6:29p	6:35p	6:42p	6:48p	6:52p	7:01p
6:53p	6:58p	7:03p	7:09p	7:14p	7:18p	7:27p
7:23p	7:28p	7:33p	7:39p	7:44p	7:48p	7:57p
7:58p	8:03p	8:08p	8:14p	8:19p	8:23p	8:32p
8:30p	8:35p	8:40p	8:46p	8:51p	8:55p	9:04p

Route 141- Saturday Northbound

JEFFERSON & OSUNA	SAN MATEO & ACADEMY	SAN MATEO & MONTGOMERY	SAN MATEO & MENAUL	SAN MATEO & LOMAS	SAN MATEO & CENTRAL	VA HOSPITAL
A	B	C	D	E	F	G
7:17a	7:14a	7:09a	7:04a	7:00a	6:57a	6:48a
7:47a	7:44a	7:39a	7:34a	7:30a	7:27a	7:18a
8:18a	8:15a	8:10a	8:05a	8:01a	7:58a	7:49a
8:49a	8:46a	8:41a	8:36a	8:31a	8:28a	8:18a
9:19a	9:16a	9:11a	9:06a	9:01a	8:58a	8:48a
9:49a	9:46a	9:41a	9:36a	9:31a	9:28a	9:18a
10:19a	10:16a	10:11a	10:06a	10:01a	9:56a	9:46a
10:47a	10:44a	10:39a	10:34a	10:28a	10:24a	10:14a
11:17a	11:14a	11:09a	11:03a	10:58a	10:54a	10:44a
11:49a	11:46a	11:40a	11:33a	11:28a	11:24a	11:14a
12:19p	12:16p	12:10p	12:03p	11:58a	11:54a	11:44a
12:49p	12:46p	12:40p	12:33p	12:28p	12:24p	12:14p
1:19p	1:16p	1:10p	1:03p	12:58p	12:54p	12:43p
1:49p	1:46p	1:40p	1:33p	1:28p	1:24p	1:13p
2:19p	2:16p	2:10p	2:03p	1:58p	1:54p	1:43p
2:49p	2:46p	2:40p	2:33p	2:28p	2:24p	2:13p
3:17p	3:14p	3:08p	3:02p	2:57p	2:54p	2:44p
3:47p	3:44p	3:38p	3:32p	3:27p	3:24p	3:14p
4:17p	4:14p	4:08p	4:02p	3:57p	3:54p	3:44p
4:47p	4:44p	4:38p	4:32p	4:27p	4:24p	4:14p
5:16p	5:13p	5:08p	5:02p	4:57p	4:54p	4:45p
5:47p	5:44p	5:39p	5:33p	5:28p	5:25p	5:16p
6:17p	6:14p	6:09p	6:03p	5:58p	5:55p	5:46p
6:46p	6:43p	6:38p	6:32p	6:28p	6:25p	6:16p
7:17p	7:14p	7:09p	7:03p	6:59p	6:56p	6:47p
7:48p	7:45p	7:40p	7:35p	7:31p	7:28p	7:19p
8:17p	8:14p	8:09p	8:04p	8:00p	7:58p	7:50p
8:48p	8:45p	8:40p	8:35p	8:31p	8:29p	8:21p

Route 141 - Sunday Southbound

JEFFERSON & OSUNA	SAN MATEO & ACADEMY	SAN MATEO & MONTGOMERY	SAN MATEO & MENAUL	SAN MATEO & LOMAS	SAN MATEO & CENTRAL	VA HOSPITAL
A	B	C	D	E	F	G
8:08a	8:14a	8:18a	8:24a	8:30a	8:33a	8:42a
8:54a	9:00a	9:04a	9:10a	9:16a	9:19a	9:28a
9:32a	9:38a	9:42a	9:48a	9:54a	9:57a	10:06a
10:14a	10:20a	10:25a	10:31a	10:37a	10:40a	10:49a
10:54a	11:00a	11:05a	11:11a	11:17a	11:20a	11:29a
11:32a	11:38a	11:43a	11:49a	11:55a	11:58a	12:07p
12:13p	12:19p	12:24p	12:30p	12:36p	12:39p	12:48p
12:54p	1:00p	1:05p	1:11p	1:17p	1:20p	1:29p
1:30p	1:36p	1:41p	1:47p	1:53p	1:56p	2:05p
2:11p	2:17p	2:22p	2:28p	2:34p	2:37p	2:46p
2:54p	3:00p	3:05p	3:11p	3:17p	3:20p	3:29p
3:29p	3:35p	3:41p	3:47p	3:53p	3:56p	4:05p
4:12p	4:18p	4:24p	4:30p	4:36p	4:39p	4:48p
4:52p	4:58p	5:04p	5:10p	5:16p	5:19p	5:28p

Route 141 - Sunday Northbound

JEFFERSON & OSUNA	SAN MATEO & ACADEMY	SAN MATEO & MONTGOMERY	SAN MATEO & MENAUL	SAN MATEO & LOMAS	SAN MATEO & CENTRAL	VA HOSPITAL
A	B	C	D	E	F	G
8:53a	8:51a	8:46a	8:41a	8:36a	8:33a	8:23a
9:31a	9:29a	9:24a	9:19a	9:14a	9:11a	9:01a
10:09a	10:07a	10:02a	9:56a	9:50a	9:48a	9:38a
10:49a	10:47a	10:42a	10:36a	10:30a	10:28a	10:18a
11:30a	11:28a	11:23a	11:17a	11:11a	11:09a	10:59a
12:10p	12:08p	12:03p	11:57a	11:51a	11:49a	11:39a
12:47p	12:45p	12:40p	12:34p	12:28p	12:26p	12:16p
1:29p	1:27p	1:22p	1:16p	1:10p	1:08p	12:58p
2:11p	2:09p	2:04p	1:58p	1:52p	1:50p	1:40p
2:47p	2:45p	2:40p	2:34p	2:28p	2:26p	2:17p
3:28p	3:26p	3:21p	3:15p	3:09p	3:07p	2:58p
4:11p	4:09p	4:04p	3:58p	3:53p	3:50p	3:40p
4:47p	4:45p	4:40p	4:34p	4:29p	4:26p	4:17p
5:31p	5:29p	5:24p	5:18p	5:13p	5:10p	5:00p

Traffic Count Data Sheet

Year Counts Taken:

2011

E-W Street Indian School Rd

Speed Limit (Indian School Rd)= 35 MPH

N-S Street: San Mateo Blvd

Speed Limit (San Mateo Blvd)= 35 MPH

Date of Count: 9/8/11

Begin Time	End Time	Eastbound (Indian School Rd)			Westbound (Indian School Rd)			Northbound (San Mateo Blvd)			Southbound (San Mateo Blvd)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	9	8	47	0	43	42	49	455	2	43	264	44
7:15 AM	7:30 AM	46	48	24	2	23	24	47	463	2	46	295	25
7:30 AM	7:45 AM	20	23	23	3	29	24	43	467	2	20	325	49
7:45 AM	8:00 AM	28	21	24	3	31	37	14	295	3	28	374	47
8:00 AM	8:15 AM	33	25	24	7	47	22	22	280	3	29	397	65
8:15 AM	8:30 AM	24	23	21	3	29	27	24	235	0	20	378	60
8:30 AM	8:45 AM	18	19	19	1	32	18	19	219	2	35	365	50
8:45 AM	9:00 AM	24	35	24	3	33	20	20	225	3	28	349	36
AM Peak Hour Volumes		103	88	88	14	139	104	79	1029	8	112	1514	222
% of Total Traffic		2.9%	2.5%	2.5%	0.4%	4.0%	3.0%	2.3%	29.4%	0.2%	3.2%	43.3%	6.3%
% Directional			8.0%			7.3%			31.9%			52.8%	
AM Peak Hour Factor			0.85			0.85			0.89			0.94	

Begin Time	End Time	Eastbound (Indian School Rd)			Westbound (Indian School Rd)			Northbound (San Mateo Blvd)			Southbound (San Mateo Blvd)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	56	77	40	7	40	34	27	454	4	23	334	28
4:15 PM	4:30 PM	53	54	27	6	25	29	20	465	8	38	442	28
4:30 PM	4:45 PM	50	48	23	4	42	32	19	390	6	24	386	40
4:45 PM	5:00 PM	48	58	10	2	31	36	18	507	2	30	429	41
5:00 PM	5:15 PM	51	72	30	7	28	27	18	448	10	23	391	46
5:15 PM	5:30 PM	46	70	26	7	32	33	17	543	11	18	418	44
5:30 PM	5:45 PM	64	89	30	6	30	41	37	432	10	33	309	68
5:45 PM	6:00 PM	46	67	27	3	40	34	38	474	4	27	369	75
PM Peak Hour Volumes		209	289	96	22	121	137	90	1930	33	104	1547	199
% of Total Traffic		4.4%	6.0%	2.0%	0.5%	2.5%	2.9%	1.9%	40.4%	0.7%	2.2%	32.4%	4.2%
% Directional			12.4%			5.9%			43.0%			38.7%	
PM Peak Hour Factor			0.81			0.91			0.90			0.93	

Traffic Count Data Sheet

Year Counts Taken:

2011

E-W Street Cutler Ave

N-S Street: San Mateo Blvd

Speed Limit (Cutler Ave)=

30 MPH

Speed Limit (San Mateo Blvd)=

35 MPH

Date of Count:

9/7/11

Begin Time	End Time	Eastbound (Cutler Ave)			Westbound (Cutler Ave)			Northbound (San Mateo Blvd)			Southbound (San Mateo Blvd)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	4	0	49	43	43	50	40	438	0	0	459	3
7:15 AM	7:30 AM	5	0	44	37	26	59	20	464	0	0	230	8
7:30 AM	7:45 AM	6	0	40	47	34	75	45	224	0	0	244	47
7:45 AM	8:00 AM	5	0	55	50	28	69	60	257	0	0	305	39
8:00 AM	8:15 AM	8	0	32	68	51	66	45	254	0	0	342	39
8:15 AM	8:30 AM	7	0	44	55	11	49	32	212	0	0	322	22
8:30 AM	8:45 AM	9	0	53	65	22	42	45	214	0	0	309	12
8:45 AM	9:00 AM	44	0	44	73	49	52	39	249	0	0	340	22
AM Peak Hour Volumes		29	0	184	238	112	226	182	937	0	0	1278	112
% of Total Traffic		0.9%	0.0%	5.6%	7.2%	3.4%	6.9%	5.5%	28.4%	0.0%	0.0%	38.8%	3.4%
% Directional									33.9%			42.1%	
AM Peak Hour Factor									0.88			0.91	

Begin Time	End Time	Eastbound (Cutler Ave)			Westbound (Cutler Ave)			Northbound (San Mateo Blvd)			Southbound (San Mateo Blvd)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	20	3	93	48	27	77	46	338	0	0	340	25
4:15 PM	4:30 PM	24	0	96	38	47	40	57	353	0	0	353	27
4:30 PM	4:45 PM	23	0	77	49	20	48	53	383	0	0	342	20
4:45 PM	5:00 PM	34	0	102	34	17	61	43	374	0	0	377	24
5:00 PM	5:15 PM	37	0	139	54	25	55	47	376	0	0	359	19
5:15 PM	5:30 PM	29	0	83	34	15	54	54	326	0	0	386	32
5:30 PM	5:45 PM	21	0	72	60	22	55	71	396	0	0	327	32
5:45 PM	6:00 PM	24	3	84	54	23	56	58	257	0	0	364	45
PM Peak Hour Volumes		121	0	396	182	79	225	215	1472	0	0	1449	107
% of Total Traffic		2.8%	0.0%	9.3%	4.3%	1.9%	5.3%	5.1%	34.7%	0.0%	0.0%	34.1%	2.5%
% Directional									39.7%			36.6%	
PM Peak Hour Factor									0.90			0.93	

Traffic Count Data Sheet

Year Counts Taken: 2011 E-W Street Prospect Ave Speed Limit (Prospect Ave)= 25 MPH
 N-S Street: San Mateo Blvd Speed Limit (San Mateo Blvd)= 25 MPH
 Date of Count: 8/31/11

Begin Time	End Time	Eastbound (Prospect Ave)			Westbound (Prospect Ave)			Northbound (San Mateo Blvd)			Southbound (San Mateo Blvd)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	0	40	2	47	12	0	5	162	12	4	172	4
7:15 AM	7:30 AM	0	0	3	22	4	2	5	185	20	8	234	2
7:30 AM	7:45 AM	0	0	4	47	2	3	7	236	40	14	273	0
7:45 AM	8:00 AM	0	2	2	32	1	3	9	256	24	20	378	1
8:00 AM	8:15 AM	0	1	5	36	4	1	8	195	21	24	368	3
8:15 AM	8:30 AM	0	1	4	18	4	3	4	196	13	8	363	1
8:30 AM	8:45 AM	1	2	3	13	1	0	10	214	13	14	345	3
8:45 AM	9:00 AM	2	3	4	44	7	0	15	274	47	11	311	6
AM Peak Hour Volumes		1	6	14	99	10	7	31	861	71	66	1454	8
% of Total Traffic		0.0%			3.8%			1.2%			2.5%		
% Directional		0.2%			0.4%			0.3%			2.7%		
AM Peak Hour Factor		0.88			0.71			0.83			0.96		

Begin Time	End Time	Eastbound (Prospect Ave)			Westbound (Prospect Ave)			Northbound (San Mateo Blvd)			Southbound (San Mateo Blvd)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	2	3	43	30	3	3	14	370	48	9	337	4
4:15 PM	4:30 PM	3	0	49	20	2	2	17	416	45	12	313	6
4:30 PM	4:45 PM	5	3	15	47	5	12	11	392	36	15	332	3
4:45 PM	5:00 PM	8	5	16	43	2	5	15	438	50	29	350	7
5:00 PM	5:15 PM	5	4	14	45	10	5	14	398	45	21	358	4
5:15 PM	5:30 PM	3	3	13	16	1	3	11	456	16	9	325	6
5:30 PM	5:45 PM	4	4	44	38	3	2	8	391	43	10	334	3
5:45 PM	6:00 PM	4	4	5	44	3	4	4	472	3	5	445	2
PM Peak Hour Volumes		21	15	58	151	18	25	51	1684	147	74	1365	20
% of Total Traffic		0.6%			4.2%			1.4%			2.0%		
% Directional		0.4%			0.5%			4.1%			37.6%		
PM Peak Hour Factor		0.81			0.76			0.94			40.2%		

Traffic Count Data Sheet

Year Counts Taken: 2011

E-W Street Cutler Ave
N-S Street: Washington StSpeed Limit (Cutler Ave)= 25 MPH
Speed Limit (Washington St)= 25 MPH
Date of Count: 9/1/11

Begin Time	End Time	Eastbound (Cutler Ave)			Westbound (Cutler Ave)			Northbound (Washington St)			Southbound (Washington St)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	2	9	6	12	0	7	2	29	5	6	20	0
7:15 AM	7:30 AM	3	13	10	13	5	4	4	34	11	6	50	5
7:30 AM	7:45 AM	0	19	6	10	13	9	3	40	9	14	69	4
7:45 AM	8:00 AM	1	13	7	14	19	8	11	54	22	15	95	9
8:00 AM	8:15 AM	9	25	9	20	29	15	10	59	7	18	67	17
8:15 AM	8:30 AM	8	13	14	16	20	12	8	44	7	6	56	9
8:30 AM	8:45 AM	3	14	11	14	21	7	4	37	12	8	55	6
8:45 AM	9:00 AM	8	14	9	11	12	5	12	40	12	7	62	6
AM Peak Hour Volumes		18	70	36	60	81	44	32	197	45	53	287	39
% of Total Traffic		1.9%	7.3%	3.7%	6.2%	8.4%	4.6%	3.3%	20.5%	4.7%	5.5%	29.8%	4.1%
% Directional			12.9%			19.2%			28.5%			39.4%	
AM Peak Hour Factor			0.72			0.72			0.79			0.80	

Begin Time	End Time	Eastbound (Cutler Ave)			Westbound (Cutler Ave)			Northbound (Washington St)			Southbound (Washington St)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	6	24	12	16	11	9	9	87	20	15	55	5
4:15 PM	4:30 PM	11	19	9	20	15	16	10	89	16	11	63	9
4:30 PM	4:45 PM	11	21	17	18	12	13	12	93	20	19	79	3
4:45 PM	5:00 PM	12	19	12	22	10	23	6	92	18	11	63	4
5:00 PM	5:15 PM	25	47	34	29	10	29	13	123	13	14	77	1
5:15 PM	5:30 PM	7	20	18	18	9	15	6	127	22	14	70	0
5:30 PM	5:45 PM	5	12	15	12	11	14	8	88	13	14	69	3
5:45 PM	6:00 PM	2	4	2	2	3	2	2	13	2	2	8	2
PM Peak Hour Volumes		55	107	81	87	41	80	37	435	73	58	289	8
% of Total Traffic		4.1%	7.9%	6.0%	6.4%	3.0%	5.9%	2.7%	32.2%	5.4%	4.3%	21.4%	0.6%
% Directional			18.0%			15.4%			40.3%			26.3%	
PM Peak Hour Factor			0.57			0.76			0.88			0.88	

Traffic Count Data Sheet

Year Counts Taken:

2011

E-W Street Prospect Ave
N-S Street: Quincy StSpeed Limit (Prospect Ave)= 25 MPH
Speed Limit (Quincy St)= 25 MPH
Date of Count: 8/30/11

Begin Time	End Time	Eastbound (Prospect Ave)			Westbound (Prospect Ave)			Northbound (Quincy St)			Southbound (Quincy St)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	0	4	0	0	3	4	0	0	0	2	2	0
7:15 AM	7:30 AM	0	4	0	0	3	4	0	4	2	4	2	0
7:30 AM	7:45 AM	1	1	0	2	8	1	0	4	1	2	8	1
7:45 AM	8:00 AM	1	4	0	2	5	1	1	9	0	3	9	2
8:00 AM	8:15 AM	0	3	2	4	5	2	1	3	0	6	5	2
8:15 AM	8:30 AM	2	6	1	0	4	0	1	3	0	1	3	0
8:30 AM	8:45 AM	4	3	4	4	3	4	0	6	4	4	5	4
8:45 AM	9:00 AM	3	4	0	4	8	4	4	5	0	4	6	2
AM Peak Hour Volumes		4	14	3	8	22	4	3	19	1	12	25	5
% of Total Traffic		3.3%	11.7%	2.5%	6.7%	18.3%	3.3%	2.5%	15.8%	0.8%	10.0%	20.8%	4.2%
% Directional			17.5%			28.3%			19.2%			35.0%	
AM Peak Hour Factor			0.58			0.77			0.58			0.75	

Begin Time	End Time	Eastbound (Prospect Ave)			Westbound (Prospect Ave)			Northbound (Quincy St)			Southbound (Quincy St)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	4	6	0	4	6	3	0	12	2	4	9	3
4:15 PM	4:30 PM	4	5	4	2	5	0	4	4	4	4	8	2
4:30 PM	4:45 PM	2	10	0	1	4	2	0	6	2	2	5	0
4:45 PM	5:00 PM	0	10	1	1	6	0	1	2	3	2	4	3
5:00 PM	5:15 PM	5	13	0	5	9	4	0	1	2	5	3	3
5:15 PM	5:30 PM	0	4	0	0	8	4	0	4	3	2	9	3
5:30 PM	5:45 PM	0	3	4	0	3	2	0	5	0	2	4	0
5:45 PM	6:00 PM	0	2	0	0	2	4	4	4	0	4	2	0
PM Peak Hour Volumes		7	37	1	7	27	10	1	13	10	11	21	9
% of Total Traffic		4.5%	24.0%	0.6%	4.5%	17.5%	6.5%	0.6%	8.4%	6.5%	7.1%	13.6%	5.8%
% Directional			29.2%			28.6%			15.6%			26.6%	
PM Peak Hour Factor			0.63			0.61			0.75			0.73	

Intersection Data SheetIntersection: **Indian School Rd / San Mateo Blvd**Posted Speed Limit (E-W Street): 35Date: 9/6/2011**Eastbound Approach: Indian School Rd**

# Left Turn Lanes	# Thru/Left Lanes	# Thru Lanes	# Thru/Right Lanes	# Right Turn Lanes
1	0	1	1	0

Length: 90'

turn on green arrow
only? (No)

Left Turn Arrow?	Thru Green?	Right Turn Arrow?
Y	Y	Y

Length:

add lane? (N)

Is there a right turn slip lane that by-passes the traffic signal?

No

Westbound Approach: Indian School Rd

# Left Turn Lanes	# Thru/Left Lanes	# Thru Lanes	# Thru/Right Lanes	# Right Turn Lanes
1	0	2	0	1

Length: 120'

turn on green arrow
only? (No)

Left Turn Arrow?	Thru Green?	Right Turn Arrow?
Y	Y	N

Length: 50'

add lane? (N)

Is there a right turn slip lane that by-passes the traffic signal?

No

Posted Speed Limit (N-S Street): 35**Northbound Approach: San Mateo Blvd**

# Left Turn Lanes	# Thru/Left Lanes	# Thru Lanes	# Thru/Right Lanes	# Right Turn Lanes
1	0	2	1	0

Length: 130'

turn on green arrow
only? (No)

Left Turn Arrow?	Thru Green?	Right Turn Arrow?
Y	Y	N

Length:

add lane? (N)

Is there a right turn slip lane that by-passes the traffic signal?

No

Southbound Approach: San Mateo Blvd

# Left Turn Lanes	# Thru/Left Lanes	# Thru Lanes	# Thru/Right Lanes	# Right Turn Lanes
1	0	3	0	1

Length: 310'

turn on green arrow
only? (No)

Left Turn Arrow?	Thru Green?	Right Turn Arrow?
Y	Y	Y

Length: 200'

add lane? (N)

Is there a right turn slip lane that by-passes the traffic signal?

No

Intersection Data SheetIntersection: **Cutler Ave / San Mateo Blvd**Posted Speed Limit (E-W Street): 30Date: 9/6/2011**Eastbound Approach: Cutler Ave**

# Left Turn Lanes	# Thru/Left Lanes	# Thru Lanes	# Thru/Right Lanes	# Right Turn Lanes
2	0	0	0	1

Length: 340'

turn on green arrow
only? (Yes)

Left Turn Arrow?	Thru Green?	Right Turn Arrow?
Y	Y	Y

Length: 340'

add lane? (N)

Is there a right turn slip lane that by-passes the traffic signal?

No

Westbound Approach: Cutler Ave

# Left Turn Lanes	# Thru/Left Lanes	# Thru Lanes	# Thru/Right Lanes	# Right Turn Lanes
2	0	1	0	1

Length: 230'

turn on green arrow
only? (Yes)

Left Turn Arrow?	Thru Green?	Right Turn Arrow?
Y	Y	N

Length: 230'

add lane? (N)

Is there a right turn slip lane that by-passes the traffic signal?

No

Posted Speed Limit (N-S Street): 35**Northbound Approach: San Mateo Blvd**

# Left Turn Lanes	# Thru/Left Lanes	# Thru Lanes	# Thru/Right Lanes	# Right Turn Lanes
2	0	3	0	0

Length: 160'

turn on green arrow
only? (No)

Left Turn Arrow?	Thru Green?	Right Turn Arrow?
Y	Y	N

Length:

add lane? (N)

Is there a right turn slip lane that by-passes the traffic signal?

Yes/No

Southbound Approach: San Mateo Blvd

# Left Turn Lanes	# Thru/Left Lanes	# Thru Lanes	# Thru/Right Lanes	# Right Turn Lanes
0	0	3	0	1

Length:

turn on green arrow
only? (No)

Left Turn Arrow?	Thru Green?	Right Turn Arrow?
N	Y	Y

Length: 160'

add lane? (N)

Is there a right turn slip lane that by-passes the traffic signal?

No

Intersection Data SheetIntersection: **Prospect Ave / San Mateo Blvd**Posted Speed Limit (E-W Street): 25Date: 9/6/2011**Eastbound Approach: Prospect Ave**

# Left Turn Lanes	# Thru/Left Lanes	# Thru Lanes	# Thru/Right Lanes	# Right Turn Lanes
1	0	0	1	0

Length: 85'

turn on green arrow
only? (No)

Left Turn Arrow?	Thru Green?	Right Turn Arrow?
N	Y	N

Length:

add lane? (N)

Is there a right turn slip lane that by-passes the traffic signal?

No

Westbound Approach: Prospect Ave

# Left Turn Lanes	# Thru/Left Lanes	# Thru Lanes	# Thru/Right Lanes	# Right Turn Lanes
1	0	0	1	0

Length: 100'

turn on green arrow
only? (No)

Left Turn Arrow?	Thru Green?	Right Turn Arrow?
N	Y	N

Length:

add lane? (N)

Is there a right turn slip lane that by-passes the traffic signal?

No
NoPosted Speed Limit (N-S Street): 35**Northbound Approach: San Mateo Blvd**

# Left Turn Lanes	# Thru/Left Lanes	# Thru Lanes	# Thru/Right Lanes	# Right Turn Lanes
1	0	2	1	0

Length: 110'

turn on green arrow
only? (No)

Left Turn Arrow?	Thru Green?	Right Turn Arrow?
Y	Y	N

Length:

add lane? (N)

Is there a right turn slip lane that by-passes the traffic signal?

No

Southbound Approach: San Mateo Blvd

# Left Turn Lanes	# Thru/Left Lanes	# Thru Lanes	# Thru/Right Lanes	# Right Turn Lanes
1	0	2	1	0

Length: 115'

turn on green arrow
only? (No)

Left Turn Arrow?	Thru Green?	Right Turn Arrow?
Y	Y	N

Length:

add lane? (N)

Is there a right turn slip lane that by-passes the traffic signal?

No

Intersection Data SheetIntersection: **Cutler Ave / Washington St**Posted Speed Limit (E-W Street): 30Date: 9/6/2011**Eastbound Approach: Cutler Ave**

# Left Turn Lanes	# Thru/Left Lanes	# Thru Lanes	# Thru/Right Lanes	# Right Turn Lanes
1	0	1	0	1

Length: 70'
turn on green arrow
only? (No)

Left Turn Arrow?	Thru Green?	Right Turn Arrow?
N	Y	N

Length: 70'
add lane? (N)

Is there a right turn slip lane that by-passes the traffic signal?

No

Westbound Approach: Cutler Ave

# Left Turn Lanes	# Thru/Left Lanes	# Thru Lanes	# Thru/Right Lanes	# Right Turn Lanes
1	0	0	1	0

Length:
turn on green arrow
only? (No)

Left Turn Arrow?	Thru Green?	Right Turn Arrow?
N	Y	N

Length:
add lane? (N)

Is there a right turn slip lane that by-passes the traffic signal?

No

Posted Speed Limit (N-S Street): 35**Northbound Approach: Washington St**

# Left Turn Lanes	# Thru/Left Lanes	# Thru Lanes	# Thru/Right Lanes	# Right Turn Lanes
1	0	0	1	0

Length:
turn on green arrow
only? (No)

Left Turn Arrow?	Thru Green?	Right Turn Arrow?
N	Y	N

Length:
add lane? (N)

Is there a right turn slip lane that by-passes the traffic signal?

No

Southbound Approach: Washington St

# Left Turn Lanes	# Thru/Left Lanes	# Thru Lanes	# Thru/Right Lanes	# Right Turn Lanes
1	0	0	1	0

Length:
turn on green arrow
only? (No)

Left Turn Arrow?	Thru Green?	Right Turn Arrow?
N	Y	N

Length:
add lane? (N)

Is there a right turn slip lane that by-passes the traffic signal?

No

9/7/2011

Intersection Data Sheet

Intersection: **Prospect Ave / Quincy St**

Posted Speed Limit (E-W Street): 25

Date: 9/6/2011

Eastbound Approach: **Prospect Ave**

# Left Turn Lanes	# Thru/Left Lanes	# Thru Lanes	# Thru/Right Lanes	# Right Turn Lanes
		1+		

Length:

turn on green arrow
only? (Yes/No)

Left Turn Arrow?	Thru Green?	Right Turn Arrow?
	STOP SIGN	

Length:

add lane? (Y/N)

Is there a right turn slip lane that by-passes the traffic signal?

Yes/No

Westbound Approach: **Prospect Ave**

# Left Turn Lanes	# Thru/Left Lanes	# Thru Lanes	# Thru/Right Lanes	# Right Turn Lanes
		1+		

Length:

turn on green arrow
only? (Yes/No)

Left Turn Arrow?	Thru Green?	Right Turn Arrow?
	STOP SIGN	

Length:

add lane? (Y/N)

Is there a right turn slip lane that by-passes the traffic signal?

Yes/No

Posted Speed Limit (N-S Street): 25

Northbound Approach: **Quincy St**

# Left Turn Lanes	# Thru/Left Lanes	# Thru Lanes	# Thru/Right Lanes	# Right Turn Lanes
		1+		

Length:

turn on green arrow
only? (Yes/No)

Left Turn Arrow?	Thru Green?	Right Turn Arrow?

Length:

add lane? (Y/N)

Is there a right turn slip lane that by-passes the traffic signal?

Yes/No

Southbound Approach: **Quincy St**

# Left Turn Lanes	# Thru/Left Lanes	# Thru Lanes	# Thru/Right Lanes	# Right Turn Lanes
		1+		

Length:

turn on green arrow
only? (Yes/No)

Left Turn Arrow?	Thru Green?	Right Turn Arrow?

Length:

add lane? (Y/N)

Is there a right turn slip lane that by-passes the traffic signal?

Yes/No