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Alameda / San Pedro Development
(SE Corner of Alameda Blvd. / San Pedro Dr.)

Traffic Impact Study

January 23, 2019

Presented to:

NM Dept. of Transportation
District 3

City of Albuquerque
Transportation Development Section

Prepared for:

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**Alameda / San Pedro Development
(SE Corner)
Traffic Impact Study**

Executive Summary

The purpose of this study is to evaluate the transportation conditions before and after implementation of the proposed Alameda / San Pedro Development, determine the impact of the development on the adjacent transportation system and recommend mitigation measures where necessary. This study is prepared to meet the requirements of the New Mexico Department of Transportation (NMDOT) and the City of Albuquerque associated with their review of the Alameda / San Pedro Development.

The proposed development is located in the southeast quadrant of Alameda Blvd. / San Pedro Dr. The study area includes the intersections of Alameda Blvd. / San Pedro Dr., Alameda Blvd. / I-25 E. Ramp, Alameda Blvd. / I-25 W. Ramp, Alameda Blvd. / San Mateo Blvd., Alameda Blvd. / Louisiana Blvd., and Signal Ave. / San Pedro Dr. as well as the proposed driveways for the project.

The proposed development is to be developed as a 25,000 S.F. rock climbing gym, 14,500 S.F. of retail commercial, and a 3,000 S.F. sit-down restaurant. The anticipated implementation year for this site is the year 2019. According to the Institute of Traffic Engineers' (ITE) trip generation rates, the weekday AM Peak Hour period is anticipated to generate approximately 50 entering trips and 48 exiting trips. During the weekday PM Peak Hour period, it is anticipated that it will generate approximately 135 entering trips and 96 exiting trips. It should be noted that local data was used for the rock-climbing gym.

The development will be accessed via four proposed driveways: two on Alameda Blvd., one on San Pedro Dr. and one on Signal Ave. The driveways will be right-in / right-out only; the only exception is the one on Signal Ave., which will be full access.

Analysis results by analysis year are included in the following tables:

EXECUTIVE SUMMARY RESULTS TABLE

INTERSECTION NO. & NAME	SIGNALIZATION	2019 AM(PM) PEAK HOUR			2019 RECOMMENDATIONS
		NO BUILD	BUILD	MITIGATED	
1 - Alameda Blvd. / San Pedro Dr.	Signalized	C- 24.0 (B- 19.5)	C- 24.4 (C- 20.1)		No recommendation.
2 - Alameda Blvd. / I-25 East Ramp	Signalized	C- 29.2 (C- 28.0)	C- 29.2 (C- 28.5)		No Recommendation.
3 - Alameda Blvd. / I-25 West Ramp	Signalized	B- 14.9 (E- 63.3)	B- 14.9 (E- 63.4)		No recommendation.
4 - Alameda Blvd. / San Mateo Blvd.	Signalized	B- 10.6 (D- 44.8)	B- 10.7 (D- 45.3)		No recommendation.
5 - Alameda Blvd. / Louisiana Blvd.	Signalized	B- 19.7 (B- 16.9)	B- 19.8 (B- 17.0)		No Recommendation.
6 - Signal Ave. / San Pedro Dr.	Unsignalized	u- 1.4 (u- 2.5)	u- 2.1 (u- 4.1)		No Recommendation.
7 - Signal Ave. / Driveway "A"	Unsignalized	u- 0.0 (u- 0.0)	u- 2.4 (u- 3.1)		No Recommendation.
8 - Driveway "B" / San Pedro Dr.	Unsignalized	u- 0.0 (u- 0.0)	u- 0.1 (u- 0.2)		No recommendation.
9 - Alameda Blvd. / Driveway "C"	Unsignalized	u- 0.0 (u- 0.0)	u- 0.1 (u- 0.1)		No recommendation.
10 - Alameda Blvd. / Driveway "D"	Unsignalized	u- 0.0 (u- 0.0)	u- 0.1 (u- 0.1)		No recommendation.

EXECUTIVE SUMMARY RESULTS TABLE

INTERSECTION NO. & NAME	SIGNALIZATION	2029 AM(PM) PEAK HOUR			2029 RECOMMENDATIONS
		NO BUILD	BUILD	MITIGATED	
1 - Alameda Blvd. / San Pedro Dr.	Signalized	E- 55.9 (C- 25.3)	E- 55.9 (C- 26.7)		No recommendation.
2 - Alameda Blvd. / I-25 East Ramp	Signalized	C- 33.6 (C- 32.3)	C- 33.7 (C- 33.3)		No Recommendation.
3 - Alameda Blvd. / I-25 West Ramp	Signalized	B- 13.6 (F- 106)	B- 14.7 (F- 106)		No recommendation.
4 - Alameda Blvd. / San Mateo Blvd.	Signalized	B- 19.0 (E- 74.7)	B- 19.1 (E- 75.3)		No recommendation.
5 - Alameda Blvd. / Louisiana Blvd.	Signalized	C- 20.7 (B- 19.4)	C- 20.8 (B- 19.8)		No Recommendation.
6 - Signal Ave. / San Pedro Dr.	Unsignalized	u- 1.5 (u- 2.7)	u- 2.2 (u- 4.5)		No Recommendation.
7 - Signal Ave. / Driveway "A"	Unsignalized	u- 0.0 (u- 0.0)	u- 2.4 (u- 3.0)		No Recommendation.
8 - Driveway "B" / San Pedro Dr.	Unsignalized	u- 0.0 (u- 0.0)	u- 0.1 (u- 0.1)		No recommendation.
9 - Alameda Blvd. / Driveway "C"	Unsignalized	u- 0.0 (u- 0.0)	u- 0.0 (u- 0.1)		No recommendation.
10 - Alameda Blvd. / Driveway "D"	Unsignalized	u- 0.0 (u- 0.0)	u- 0.0 (u- 0.1)		No recommendation.

In summary, the proposed development does not have a significant adverse impact to the adjacent transportation system and the minimal impact to the transportation system can be mitigated by the recommended measures described in this report and summarized in the table above. In summary, the recommendations of this study are:

Recommendations:

- 1) Site improvements for the project shall maintain adequate site distances for the four driveways on the project as well as for the existing signalized intersection of Alameda Blvd. / San Pedro Dr.
- 2) Alameda Blvd. / San Pedro Dr. – the northbound left turn lane on San Pedro Dr. at Alameda Blvd. should be extended to the maximum length possible by narrowing the existing bulb in the raised median located approximately 150 feet south of the northbound stop bar on San Pedro Dr. at Alameda Blvd. In narrowing the bulb, the raised median should be maintained so that the width is approximately 4 feet to match the existing raised median to the north. This measure should extend the existing left turn lane length by at least 75 feet.
- 3) Driveway Guidelines:
 - a. Driveway "A" – a full access unsignalized driveway designed and constructed with one entering lane and one exiting lane minimum.

- b. Driveway “B” – a right-in, right-out only unsignalized driveway designed and constructed with one entering lane and one exiting lane minimum.
- c. Driveway “C” and Driveway “D” - right-in, right-out only unsignalized driveway designed and constructed with one entering lane and one exiting lane minimum.
- d. All driveways should be designed and constructed to accommodate delivery trucks for commercial uses.

**Alameda / San Pedro Development
(SE Corner)
Traffic Impact Study**

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Alameda / San Pedro Development (SE Corner) Traffic Impact Study

Introduction

The purpose of this study is to evaluate the transportation conditions before and after implementation of the proposed Alameda / San Pedro Development and determine the impact of the development on the adjacent transportation system. The recommendations of this study will provide 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 NMDOT and the City of Albuquerque associated with its review of the Alameda / San Pedro Development as shown on the plan on Page A-3 in the Appendix of this report.

The proposed development is located at southeast corner of Alameda Blvd. / San Pedro Dr. in Albuquerque, New Mexico. If the property was to develop in a manner significantly different than the proposed plan considered in this report such that the number of generated trips is significantly greater, then an update to this study may be required by NMDOT and / or the City of Albuquerque.

Following is a vicinity map depicting the location of the proposed project:



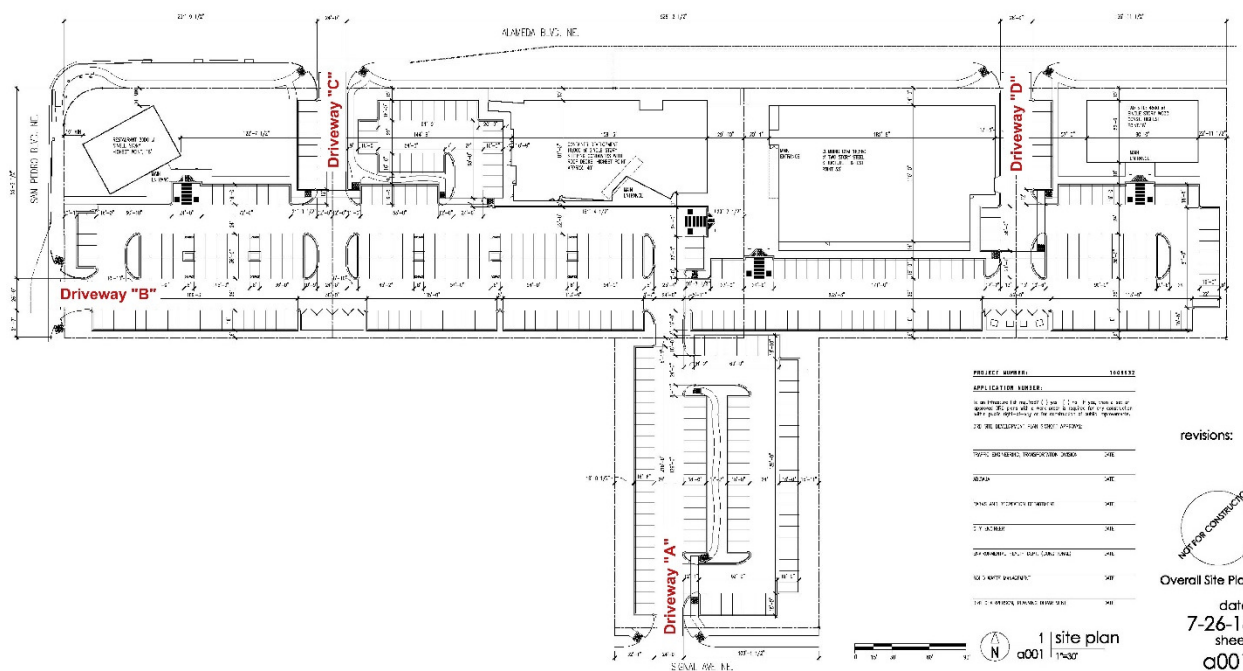
Description of Proposed Development

The proposed project is described as a 25,000 S.F. rock climbing gym, 14,500 S.F. of retail commercial, and a 3,000 S.F. sit-down restaurant in the southeast quadrant of Alameda Blvd. / San Pedro Dr. The project lies in the city limits of Albuquerque, NM. The project fronts on a Regional Principal Arterial Roadway (Alameda Blvd.) which is maintained by the City of Albuquerque. The project is also close to the existing Alameda Blvd. / I-25 Interchange. Therefore, the project will be required to comply with the requirements of the City of Albuquerque with regard to the overall development, and with the requirements of the New Mexico Department of Transportation with regard to transportation issues near the Alameda Blvd. / I-25 Interchange and the existing signalized intersection of Alameda Blvd. / San Mateo.

This development will be constructed in one phase. This study will analyze an implementation year of 2019 and a horizon year of 2029.

The development will be accessed via four proposed driveways: two on Alameda Blvd., one on San Pedro Dr. and one on Signal Ave. All proposed driveways are proposed as right-in, right-out only driveways except the proposed Driveway "A" on Signal Ave. which is proposed to be full access.

Following is the proposed site development plan depicting driveway (access) locations (also, see Appendix Page A-3 for a more complete version of the proposed site development plan):



Study Area Conditions

A Traffic Impact Study Scoping Meeting was held on October 3, 2018 with the NMDOT (Nancy Perea) and City of Albuquerque (Ernest Armijo). During the exchange, it was determined that the study area would include the following list of intersections to be analyzed in the Traffic Impact Study:

1. Alameda Blvd. / San Pedro Dr.
2. Alameda Blvd. / I-25 East Ramp
3. Alameda Blvd. / I-25 West Ramp
4. Alameda Blvd. / San Mateo Blvd.
5. Alameda Blvd. / Louisiana Blvd.
6. Signal Ave. / San Pedro Dr.
7. Signal Ave. / Driveway "A"
8. Driveway "B" / San Pedro Dr.
9. Alameda Blvd. / Driveway "C"
10. Alameda Blvd. / Driveway "D"

This scope of study was based on the assumption that the parcel in question would be developed as a Retail / Commercial Development as shown on the proposed site plan.

There are no other known land development projects in the area which need to be incorporated into the background traffic model for this study. Also, there are no known Transportation Improvement Program projects in the area that need to be considered in the Traffic Impact Study.

This project is served by public transit services in the area; specifically Routes #31 and #98. Route 98 runs along Alameda Blvd. and then along Wyoming Blvd. Route #31 runs along Wyoming Blvd. and connects to Kirtland Air Force Base. See Appendix page A-155 for route map.

San Pedro Dr., Louisiana Blvd, & Alameda Blvd. are designated on the Futures 2040 Metropolitan Transportation Plan (2040 Long Range Bikeway System) as Proposed or Existing Bicycle Lanes. See Appendix page A-5 for a portion of the map.

There are pedestrian facilities in the project area – curb & gutter and sidewalks along the roads, as well as raised medians for pedestrians & bicyclists crossing against traffic.

Alameda Blvd. is classified as a Regional Principal Arterial Roadway. Alameda Blvd. is generally a four-lane divided highway with raised medians and curb & gutter with sidewalks. The posted speed limit along Alameda Blvd. is 35 MPH.

San Mateo Blvd., San Pedro Dr. and Louisiana Blvd. are classified as Major Collector Roadways on the Mid-Region Council of Government's Futures 2040 Long Range Roadway System Map. San Mateo Blvd. & San Pedro Dr. are two-lane roadways with curb & gutter with sidewalks. The posted speed limit along San Pedro Dr. is 35 MPH & along San Mateo Blvd. is 30 MPH.

Analysis of Existing Conditions

Due to the fact that the Implementation Year is only one year in the future, no existing analysis was performed. Existing traffic volumes (turning movement counts) were collected at the intersections targeted for analysis in this study in October 2018 and are included on Appendix Pages A-156 thru A-167. Traffic turning movements volumes at the Alameda Blvd. / I-25 East Ramp and the Alameda Blvd. / I-25 West Ramp were adjusted for demand based on drone videos collected during the traffic count periods for this project.

Analysis of Implementation Year Conditions

Traffic Projections

This study assumes that the development will be implemented in one phase with an implementation year of 2019.

Projected trips were calculated based on the Institute of Traffic Engineers (ITE) Trip Generation Manual (10th Edition) except for the Rock Climbing Gym use which utilized local trip generation data. Trips for the development were determined based on land use defined on the Conceptual Site Development Plan on Page A-3 in the Appendix of this report. The following table summarized the trip generation rate for the project:

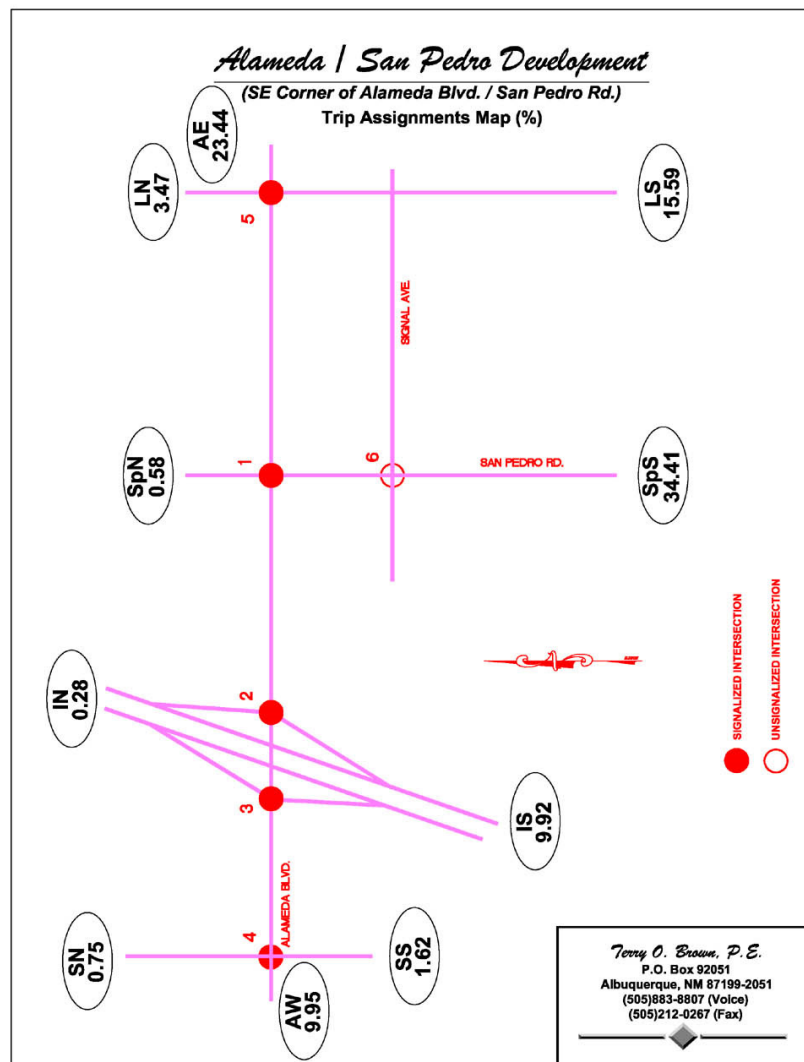
Alameda / San Pedro Development (SE Corner)

Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

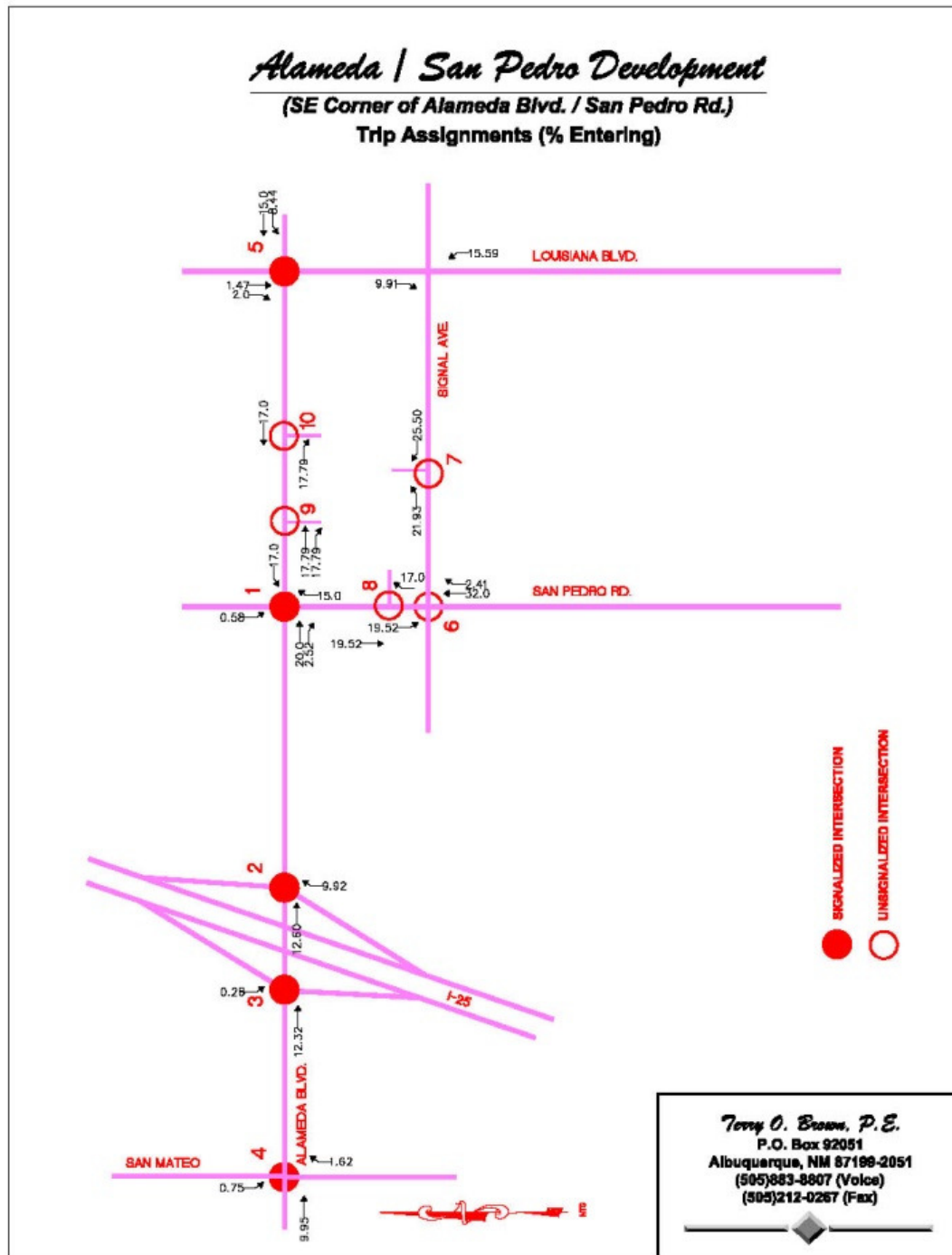
USE (ITE CODE)		24 HR VOL	A. M. PEAK HR.		P. M. PEAK HR.	
DESCRIPTION		GROSS	ENTER	EXIT	ENTER	EXIT
Summary Sheet						
	Units					
High Turnover (Sit-Down) Restaurant (932)	3.00	337	16	13	18	11
Variety Store (814)	14.50	920	26	20	52	48
Rock Climbing Gym (Local Data)	25.00	-	8	15	65	37
Subtotal		1,257	50	48	135	96

Pass-by trips were not applied to this project. See Appendix Pages A-7 thru A-10 for more information regarding the trip generation.

The Gravity Model was used to determine trip distribution where primary trips for the commercial land use development were distributed proportionally to the 2019 projected population within a 2 ½ mile radius. Population data for the years 2012 and 2040 were taken from the 2040 Socioeconomic Forecasts by Subareas for the Mid-Region of New Mexico supplied by the Mid-Region Council of Governments (MRCOG). Population data from the years 2012 and 2040 was interpolated linearly to obtain 2019 population data to utilize for this analysis. Population Subzones were grouped based on the most likely major street(s) or route(s) to the subject development. The trip distribution worksheets and associated map of data analysis subzones are shown in the Appendix on Pages A-11 thru A-16. The commercial Trip Distribution map can be found below and in the Appendix on Page A-14.



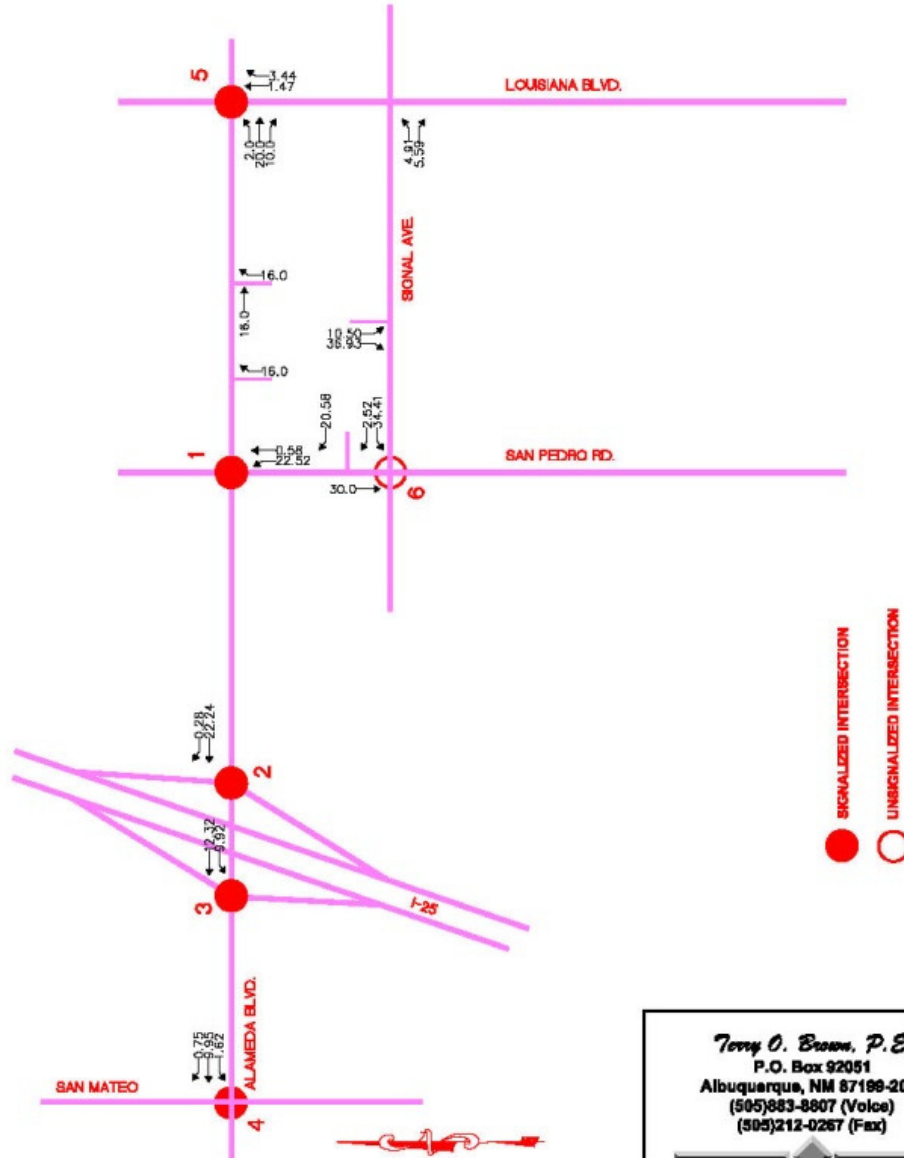
Trip assignments are first made on a percentage basis derived from data established in the trip distribution determination process and logical routing. Those percentages are then applied to the projected trips to determine individual traffic movements. Percentage trip assignments for commercial trips are shown below and in the Appendix on Pages A-15 thru A-16. No adjustments for pass-by trips on this project were applied.



Alameda / San Pedro Development

(SE Corner of Alameda Blvd. / San Pedro Rd.)

Trip Assignments (% Exiting)



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Background traffic growth rates were considered for each individual approach to an intersection that was targeted for analysis based on data from the 2008 through 2017 Traffic Flow maps prepared by the Mid-Region Council of Governments. Most of the Traffic Flow Data for those years taken from the MRCOG Traffic Flow Maps were Standard Data. The data from those

years for each approach was plotted on a graph and a linear “regression trend line” calculated using the equation format $y=mx+b$. The growth rate was determined by calculating the average volume increase per year during the time period considered and dividing that volume into the most recent AWDT used in the analysis from which future volumes will be calculated. The rate of growth of that trend line was utilized as the annual growth rate for each approach if that calculated rate appeared feasible. However, when a roadway segment considered in this analysis indicated either an inconsistent or a negative growth trend, then the growth rate was considered to be a generic 0.5%. Historical Growth Rate Graphs with linear regression trend lines are shown in the Appendix on Pages A-17 thru A-24. The growth rate utilized for each approach to an intersection is printed at the top of the Turning Movement sheets for each intersection (Appendix Pages A-25 thru A-47).

The trip generation, trip distribution and trip assignments were utilized along with the existing 2018 background traffic volumes and the historical traffic growth rates to determine the Implementation year NO BUILD and BUILD volumes, see Appendix Pages A-25 thru A-47. Implementation year AM Peak Hour and PM Peak Hour NO BUILD and BUILD volumes, intersection geometries (laneage), and calculated levels-of-service are displayed on the Lanes / Volumes / Analysis map located at the end of the front-end text of this report.

Traffic Analysis

A capacity analysis using existing traffic signal timing obtained from the City of Albuquerque Traffic Operations Division (see Appendix Pages A-71 thru A-102) was conducted for the Implementation Year (2019) AM and PM Peak Hour NO BUILD and BUILD Conditions. Analysis was conducted utilized Trafficware’s Synchro 10 software (version 10.3.15.0) which substantially complies with the methodology established in the Highway Capacity Manual, 6th Edition. A graphical summary of the Implementation Year conditions (i.e., Lane Geometry, 2019 NO BUILD and BUILD Volumes, and calculated levels-of-service associated with each lane group and each intersection) are displayed on the Lanes / Volumes / Analysis Maps at the end of the front-end text of this Study. The results are also summarized as follows:

#1 – Alameda Blvd. / San Pedro Dr. - Pages A-71 thru A-102

The results of the 2019 analyses of the signalized intersection of Alameda Blvd. / San Pedro Dr. are summarized in the following table:

Intersection: 1 - Alameda Blvd. / San Pedro Dr.

<u>2019 AM Peak Hour</u>						<u>2019 PM Peak Hour</u>					
		(EXIST. GEOM.)						(EXIST. GEOM.)			
		NO BUILD		BUILD				NO BUILD		BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay			Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	1	B - 17.1	1	B - 17.4	L	1	B - 12.8	1	B - 13.2	
	T	3	B - 18.4	3	B - 18.7	T	3	C - 21.0	3	C - 22.1	
	R	>	B - 10.5	>	B - 10.4	R	>	B - 12.8	>	B - 12.6	
WB	L	1	B - 13.7	1	B - 14.0	L	1	B - 14.1	1	B - 15.4	
	T	2	C - 28.8	2	C - 29.4	T	2	B - 17.4	2	B - 17.8	
	R	>	C - 28.6	>	C - 29.1	R	>	B - 17.3	>	B - 17.7	
NB	L	1	C - 26.0	1	C - 26.8	L	1	C - 21.5	1	C - 22.4	
	T	2	C - 23.2	2	C - 23.2	T	2	C - 22.8	2	C - 22.8	
	R	>	C - 23.2	>	C - 23.3	R	>	C - 22.9	>	C - 23.4	
SB	L	1	C - 25.2	1	C - 25.4	L	1	C - 22.2	1	C - 23.1	
	T	2	C - 29.2	2	C - 29.5	T	2	C - 27.4	2	C - 28.3	
	R	>	D - 36.7	>	D - 37.1	R	>	C - 33.3	>	C - 34.5	
Intersection:		C - 24.0		C - 24.4				B - 19.5		C - 20.1	
Note: ">" designates a shared right or left turn lane.											
No recommendation.											

This signalized intersection falls under the jurisdiction of the City of Albuquerque.

The 2019 analysis of the intersection of Alameda Blvd. / San Pedro Dr. demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions analyzed in this report. The implementation of the proposed development increases the delay at the intersection by 0.4 seconds during the AM Peak Hour and by 0.6 seconds during the PM Peak Hour. Therefore, no recommendations are made for the intersection of Alameda Blvd. / San Pedro Dr.

The following table summarizes the results of the queuing analysis (95th Percentile confidence level) for the auxiliary lanes at the intersection:

Queueing Analysis Summary Sheet

Project: Alameda / San Pedro Development
 Intersection: Alameda Blvd. / San Pedro Dr.

2019									
Approach	Left Turns			Thru Movements			Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	71	150	2	428	Cont	1	292	325
AM NO BUILD Queue	1	71	39	2	430	126	1	293	27
AM BUILD Queue	1	71	39	2	440	130	1	294	28
Existing Lane Length	1	94	150	2	881	Cont	1	424	325
PM NO BUILD Queue	1	94	49	2	885	291	1	426	34
PM BUILD Queue	1	94	49	2	912	308	1	429	34
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	46	150	2	945	Cont	0	26	0
AM NO BUILD Queue	1	47	28	2	962	347	0	26	347
AM BUILD Queue	1	56	32	2	962	347	0	26	347
Existing Lane Length	1	44	150	2	489	Cont	0	11	0
PM NO BUILD Queue	1	45	28	2	498	160	0	11	160
PM BUILD Queue	1	68	38	2	498	160	0	11	160
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	311	100	2	61	Cont	0	30	0
AM NO BUILD Queue	1	313	#263	2	61	39	0	30	38
AM BUILD Queue	1	324	#279	2	61	40	0	38	40
Existing Lane Length	1	229	100	2	56	Cont	0	57	0
PM NO BUILD Queue	1	230	160	2	56	36	0	57	36
PM BUILD Queue	1	252	178	2	57	38	0	77	38
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length
Existing Lane Length	1	11	100	2	30	Cont	0	143	0
AM NO BUILD Queue	1	11	85	2	31	40	0	149	40
AM BUILD Queue	1	11	85	2	31	40	0	149	40
Existing Lane Length	1	18	100	2	52	Cont	0	143	0
PM NO BUILD Queue	1	19	21	2	54	47	0	149	47
PM BUILD Queue	1	20	23	2	54	47	0	149	47

NOTE: Queue Lengths are in feet.

Queue Lengths are 95th percentile confidence level.

Queue Lengths are based on Synchro 10 (HCM6) methodology.

~ Volume Exceeds Capacity. Queue is theoretically infinite.

(Queue shown is maximum after two cycles)

95th Percentile volume exceeds capacity, queue may be longer.

m Volume for 95th percentile queue is metered by upstream signal.

The queuing analysis demonstrates that the northbound left turn lane should be lengthened from 100 feet to 279 feet plus transition for both the NO BUILD and BUILD Conditions. The proposed Alameda / San Pedro Development is projected to increase the northbound left turn movement from 313 vehicles per hour to 324 vehicles per hour (an increase of 11 vehicles per hour) during the 2019 AM Peak Hour period. Similarly, the increase in the 2019 PM Peak Hour volume for the northbound left turn movement is increased from 230 vehicles per hour to 252 vehicles per hour (an increase of 22 vehicles per hour). The proposed Alameda / San Pedro Development does have an impact to the northbound left turn queue, but the calculated increase in queue length is only about 16 feet (less than one vehicle length). This report recommends that the northbound left turn lane, therefore, be extended by removing the bulb in the raised median on the south end of the south leg of San Pedro Dr. at Alameda Blvd. This action should provide an increase in the northbound left turn queuing by approximately 75 feet. In removing the bulb in the median, the raised median should not be shortened, but rather the bulb in the raised median should be narrowed to a width of approximately 4 feet (consistent with the width of the existing median to the north).

#2 – Alameda Blvd. / I-25 E. Ramp - Pages A-71 thru A-102

The results of the 2019 analyses of the full access signalized intersection of Alameda Blvd. / I-25 E. Ramp are summarized in the following table:

Intersection: 2 - Alameda Blvd. / I-25 East Ramp

<u>2019 AM Peak Hour</u>						<u>2019 PM Peak Hour</u>					
		(EXIST. GEOM.)						(EXIST. GEOM.)			
		NO BUILD		BUILD				NO BUILD		BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay			Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	1	C - 23.2	1	C - 23.7	L	1	B - 19.9	1	C - 21.2	
	T	2	A - 0.4	2	A - 0.4	T	2	A - 0.6	2	A - 0.6	
	R		A - 0.0		A - 0.0	R		A - 0.0		A - 0.0	
WB	L		A - 0.0		A - 0.0	L		A - 0.0		A - 0.0	
	T	3	C - 23.8	3	C - 23.9	T	3	C - 27.7	3	C - 28.7	
	R	>	C - 24.5	>	C - 24.6	R	>	C - 28.7	>	C - 29.7	
NB	L	2	E - 55.8	2	E - 55.8	L	2	D - 46.3	2	D - 45.4	
	T	2	C - 32.6	2	C - 32.6	T	2	D - 37.8	2	D - 37.1	
	R	1	D - 37.0	1	D - 37.2	R	1	E - 73.3	1	E - 75.2	
Intersection:		C - 29.2		C - 29.2				C - 28.0		C - 28.5	

Note: ">" designates a shared right or left turn lane.

No Recommendation.

This signalized intersection falls under the jurisdiction of the New Mexico Department of Transportation (District 3 Office).

The 2019 analysis of the intersection of Alameda Blvd. / I-25 E. Ramp demonstrates that the overall intersection delays will be acceptable for all conditions analyzed in this report. There is a marginal level-of-service "E" for the northbound left turn movement during the 2019 AM Peak Hour (less than 1 second beyond level-of-service "D") and level-of-service "E" for the northbound right turn movement during the 2019 PM Peak Hour period. The resulting level-of-service "E" is shown for both the 2019 AM NO BUILD and BUILD conditions and the 2019 PM NO BUILD and BUILD conditions. Additionally, it is demonstrated in the above table that the increase in overall intersection delay is increased by 0.0 seconds during that 2019 AM Peak Hour and 0.5 seconds during the 2019 PM Peak Hour as a result of the implementation of the Alameda / San Pedro Development. Thus, the impact of this proposed development is demonstrated to be minimal for this intersection. Therefore, no recommendations are made for the intersection of Alameda Blvd. / I-25 E. Ramp

It should be noted in the preceding table as well as the following queuing table that the existing geometric configuration of the northbound approach cannot be sufficiently represented due to limitations of the structures of the tables. The northbound intersection approach is comprised of an exclusive left turn lane, a thru / left turn lane, an exclusive thru lane, and an exclusive right turn lane.

The following table summarizes the results of the queuing analysis for the auxiliary lanes at the intersection:

Queueing Analysis Summary Sheet

Project: Alameda / San Pedro Development

Intersection: Alameda Blvd. / I-25 E. Ramp

2019											
Approach		Left Turns			Thru Movements			Right Turns			
Eastbound		# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	
Existing Lane Length		1	202	180	2	641	Cont	0	0	0	
AM NO BUILD Queue		1	203	#272	2	644	256	0	0	0	
AM BUILD Queue		1	203	#222	2	650	261	0	0	0	
Existing Lane Length		1	333	180	2	1,041	Cont	0	0	0	
PM NO BUILD Queue		1	335	m217	2	1,046	m217	0	0	0	
PM BUILD Queue		1	335	m227	2	1,063	m227	0	0	0	
Westbound		# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	
Existing Lane Length		0	0	0	3	1,208	Cont	0	157	0	
AM NO BUILD Queue		0	0	0	3	1,214	400	0	158	400	
AM BUILD Queue		0	0	0	3	1,225	405	0	158	405	
Existing Lane Length		0	0	0	3	616	Cont	0	252	0	
PM NO BUILD Queue		0	0	0	3	619	257	0	253	257	
PM BUILD Queue		0	0	0	3	640	266	0	253	266	
Northbound		# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	
Existing Lane Length		2	933	750	1	73	Cont	1	209	750	
AM NO BUILD Queue		2	938	#712	1	73	286	1	210	57	
AM BUILD Queue		2	938	#712	1	73	286	1	215	58	
Existing Lane Length		2	653	750	1	79	Cont	1	412	750	
PM NO BUILD Queue		2	656	464	1	79	241	1	414	474	
PM BUILD Queue		2	656	464	1	79	241	1	427	#507	
Southbound		# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	
Existing Lane Length		0	0	0	0	0	Cont	0	0	0	
AM NO BUILD Queue		0	0	0	0	0	0	0	0	0	
AM BUILD Queue		0	0	0	0	0	0	0	0	0	
Existing Lane Length		0	0	0	0	0	Cont	0	0	0	
PM NO BUILD Queue		0	0	0	0	0	0	0	0	0	
PM BUILD Queue		0	0	0	0	0	0	0	0	0	

NOTE: Queue Lengths are in feet.

Queue Lengths are 95th percentile confidence level.

Queue Lengths are based on Synchro 10 (HCM6) methodology.

~ Volume Exceeds Capacity. Queue is theoretically infinite.

(Queue shown is maximum after two cycles)

95th Percentile volume exceeds capacity, queue may be longer.

m Volume for 95th percentile queue is metered by upstream signal.

The New Mexico Department of Transportation's *State Access Management Manual* requires that deceleration lanes be designed and constructed for three components: transition taper, deceleration distance, and queue storage. The eastbound left turn lane does not meet the State's requirements. The northbound auxiliary lanes contain the queue storage, but fall short of providing deceleration distance during the peak hour periods. Therefore, they do not currently meet the New Mexico Department of Transportation's State Access Management Manual standards.

The queuing analysis demonstrates that the eastbound left turn lane should be lengthened from 180 feet to 272 feet plus transition for both the NO BUILD and BUILD Conditions. All other auxiliary lanes at the intersection are of sufficient length to accommodate the calculated 95th Percentile queues. The eastbound left turn lane cannot be extended since it would reduce the queue length of the complimentary westbound left turn lane at the I-25 West Ramp. Therefore, no recommendation is made.

#3 –Alameda Blvd. / I-25 W. Ramp – Pages A-71 thru A-102

The results of the analysis of the signalized intersection of Alameda Blvd. / I-25 W. Ramp are summarized in the following table:

Intersection: 3 - Alameda Blvd. / I-25 West Ramp

2019 AM Peak Hour					2019 PM Peak Hour					
(EXIST. GEOM.)					(EXIST. GEOM.)					
NO BUILD					NO BUILD					
BUILD					BUILD					
Lanes LOS-Delay					Lanes LOS-Delay					
EB	L		A - 0.0		A - 0.0	L		A - 0.0		A - 0.0
	T	2	A - 0.4	2	A - 0.4	T	2	D - 41.6	2	D - 42.3
	R	1	A - 2.4	1	A - 2.4	R	1	E - 67.8	1	E - 68.5
WB	L	2	D - 51.5	2	D - 51.6	L	2	E - 70.1	2	E - 70.5
	T	2	A - 0.6	2	A - 0.6	T	2	A - 0.5	2	A - 0.5
	R		A - 0.0		A - 0.0	R		A - 0.0		A - 0.0
SB	L	2	D - 53.9	2	D - 53.9	L	2	F - 141	2	F - 141
	T	2	E - 55.5	2	E - 55.5	T	2	F - 143	2	F - 143
	R	1	E - 64.0	1	E - 64.0	R	1	E - 56.1	1	E - 56.1
Intersection:		B - 14.9		B - 14.9		E - 63.3		E - 63.4		
Note: ">" designates a shared right or left turn lane.										
No recommendation.										

The 2019 analysis of the intersection of Alameda Blvd. / I-25 W. Ramp demonstrates that the delays will be acceptable for the 2019 AM Peak Hour Conditions, but not for the 2019 PM Peak

Hour period. The southbound approach for the left turn and the thru movements are projected to operate at level-of-service "F". Implementation of the proposed Alameda / San Pedro Development does not significantly impact the delays at this signalized intersection. As a result of this proposed development, the 2019 AM Peak Hour intersection delay is increased by 0.0 seconds and the 2019 PM Peak Hour intersection delays is increased by 0.1 seconds. Therefore, no recommendations are made for the intersection of Alameda Blvd. / I-25 W. Ramp.

The following table summarizes the results of the queuing analysis at the intersection:

Queueing Analysis Summary Sheet

Project: Alameda / San Pedro Development
 Intersection: Alameda Blvd. / I-25 W. Ramp

2019											
Approach	Left Turns			Thru Movements			Right Turns				
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
Existing Lane Length	0	0	0	2	658	Cont	1	513	350+		
AM NO BUILD Queue	0	0	0	2	661	168	1	516	146		
AM BUILD Queue	0	0	0	2	667	168	1	516	146		
Existing Lane Length	0	0	0	2	952	Cont	1	747	350+		
PM NO BUILD Queue	0	0	0	2	957	m481	1	751	m#952		
PM BUILD Queue	0	0	0	2	974	m491	1	751	m#948		
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
Existing Lane Length	2	509	220+	2	1,608	Cont	0	0	0		
AM NO BUILD Queue	2	512	m249	2	1,616	m135	0	0	0		
AM BUILD Queue	2	517	m249	2	1,622	m135	0	0	0		
Existing Lane Length	2	294	220+	2	984	Cont	0	0	0		
PM NO BUILD Queue	2	295	210	2	989	351	0	0	0		
PM BUILD Queue	2	305	218	2	1,001	350	0	0	0		
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
Existing Lane Length	0	0	0	0	0	Cont	0	0	0		
AM NO BUILD Queue	0	0	0	0	0	0	0	0	0		
AM BUILD Queue	0	0	0	0	0	0	0	0	0		
Existing Lane Length	0	0	0	0	0	Cont	0	0	0		
PM NO BUILD Queue	0	0	0	0	0	0	0	0	0		
PM BUILD Queue	0	0	0	0	0	0	0	0	0		
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
Existing Lane Length	2	204	715	1	120	Cont	1	149	170		
AM NO BUILD Queue	2	205	160	1	121	140	1	150	147		
AM BUILD Queue	2	205	160	1	121	140	1	150	147		
Existing Lane Length	2	450	715	1	485	Cont	1	126	170		
PM NO BUILD Queue	2	452	#632	1	487	#574	1	127	117		
PM BUILD Queue	2	452	#632	1	487	#574	1	127	117		

NOTE: Queue Lengths are in feet.

Queue Lengths are 95th percentile confidence level.

Queue Lengths are based on Synchro 10 (HCM6) methodology.

~ Volume Exceeds Capacity. Queue is theoretically infinite.

(Queue shown is maximum after two cycles)

95th Percentile volume exceeds capacity, queue may be longer.

m Volume for 95th percentile queue is metered by upstream signal.

Generally speaking, the existing auxiliary lanes at the Alameda Blvd. / I-25 West Ramp are of sufficient length to accommodate the calculated queues in the preceding table. The eastbound right turn lane is shown in the table as 350+ feet long. That, however, is the length of the eastbound right turn lane between the first driveway to the west and the I-25 West Ramp. In reality, the lane extends all the way to San Mateo Blvd. making it in excess of 1,000 feet of storage for the eastbound right turn movement. However, any queue greater than 350 feet will block one or more private driveways. Also, the westbound dual left turn lanes are shown as 220+ feet long. The outside left turn lane, however, extends beyond that length by a distance of approximately 250 feet. Therefore, it is apparent that there is sufficient total storage for the calculated 95th Percentile queue shown in the queuing table above. Therefore, no recommendation is made.

The southbound thru and the southbound left turn queues extend to the gore of the ramp / frontage road during the PM Peak Hour period. Southbound traffic on I-25 at the Freeway / ramp gore have sight distance to see the southbound traffic backing up on the ramp. The distance from the Freeway / ramp gore to the ramp / frontage road gore is approximately 500 feet. The advisory speed limit on the southbound ramp is 35 MPH. Minimum required stopping sight distance at 35 MPH is 250 feet. Therefore, the available sight distance for southbound I-25 traffic exiting onto the ramp is sufficient.

The deceleration lanes at Alameda Blvd. / I-25 West Ramp heading southbound, eastbound, and westbound do not meet SAMM requirements and there is substantial queuing on the southbound approach that are not contained within the available storage lanes. This fact is due primarily to existing (background) traffic volumes at the intersection. The proposed Alameda / San Pedro Development is adding a minor volume of traffic to the intersection as summarized in the following table:

	EB Thru	EB Right	WB Left	WB Thru	SB Left	SB Thru	SB Right
AM Peak	6	0	5	6	1	0	0
PM Peak	17	0	10	12	1	0	0

Total intersection volume is 3,750 vehicles per hour during the AM Peak Hour and 4,050 vehicles per hour during the PM Peak Hour. This project contributes negligible traffic to the intersection and, therefore, queuing is minimally affected..

It should be noted in the preceding level-of-service table as well as the preceding queuing table that the existing geometric configuration of the southbound approach cannot be sufficiently represented due to limitations of the structures of the tables. The southbound intersection approach is comprised of an exclusive left turn lane, a thru / left turn lane, an exclusive thru lane, and an exclusive right turn lane

#4 – Alameda Blvd. / San Mateo Blvd. – Pages A-71 thru A-102

The results of the analysis of the full access signalized intersection of Alameda Blvd. / San Mateo Blvd. are summarized in the following table:

Intersection: 4 - Alameda Blvd. / San Mateo Blvd.

2019 AM Peak Hour						2019 PM Peak Hour					
		(EXIST. GEOM.)						(EXIST. GEOM.)			
		NO BUILD		BUILD				NO BUILD		BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay			Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	1	A - 6.2	1	A - 6.2	L	1	B - 13.2	1	B - 13.3	
	T	2	B - 10.7	2	B - 10.8	T	2	B - 19.5	2	B - 19.7	
	R	>	B - 10.7	>	B - 10.7	R	>	B - 19.4	>	B - 19.6	
WB	L	1	A - 6.8	1	A - 6.9	L	1	B - 14.0	1	B - 14.3	
	T	2	A - 2.2	2	A - 2.3	T	2	C - 27.6	2	C - 27.8	
	R	>	A - 2.8	>	A - 2.9	R	>	C - 27.6	>	C - 27.8	
NB	L	1	D - 50.5	1	D - 50.4	L	1	F - 81.0	1	F - 81.0	
	T	1	A - 0.0	1	A - 0.0	T	1	A - 0.0	1	A - 0.0	
	R	>	D - 51.6	>	D - 51.6	R	>	D - 47.1	>	D - 47.2	
SB	L	1	E - 61.4	1	E - 61.4	L	1	F - 153	1	F - 159	
	T	1	A - 0.0	1	A - 0.0	T	1	A - 0.0	1	A - 0.0	
	R	>	D - 48.1	>	D - 48.1	R	>	F - 101	>	F - 101	
Intersection:		B - 10.6		B - 10.7		D - 44.8		D - 45.3			

Note: ">" designates a shared right or left turn lane.
No recommendation.

The 2019 analysis of the intersection of Alameda Blvd. / San Mateo Blvd. demonstrates that the delays will be acceptable for the 2019 AM Peak Hour period, but marginal for the 2019 PM Peak Hour period. As a result of this proposed development, the 2019 AM Peak Hour intersection delay is increased by 0.1 seconds and the 2019 PM Peak Hour intersection delays is increased by 0.5 seconds. Thus, it can be concluded that the proposed Alameda / San Pedro Development has no significant impact on the operation of the intersection of Alameda Blvd. / San Mateo Blvd. Therefore, no recommendations are made for the intersection of Alameda Blvd. / San Mateo Blvd.

The following table summarizes the results of the queuing analysis for the auxiliary lanes at the intersection:

Queueing Analysis Summary Sheet

Project: Alameda / San Pedro Development
 Intersection: Alameda Blvd. / San Mateo Blvd.

2019											
Approach		Left Turns			Thru Movements			Right Turns			
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
Existing Lane Length	1	260	253	2	1,027	Cont	0	28	0		
AM NO BUILD Queue	1	261	58	2	1,032	295	0	28	295		
AM BUILD Queue	1	261	60	2	1,037	298	0	28	298		
Existing Lane Length	1	64	253	2	1,260	Cont	0	12	0		
PM NO BUILD Queue	1	64	22	2	1,266	518	0	12	518		
PM BUILD Queue	1	64	22	2	1,279	529	0	12	529		
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
Existing Lane Length	1	77	150	2	900	Cont	0	585	0		
AM NO BUILD Queue	1	77	m27	2	905	176	0	588	176		
AM BUILD Queue	1	78	m27	2	910	176	0	588	176		
Existing Lane Length	1	43	150	2	855	Cont	0	149	0		
PM NO BUILD Queue	1	43	49	2	859	577	0	150	577		
PM BUILD Queue	1	45	50	2	869	583	0	151	583		
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
Existing Lane Length	1	15	75	1	84	Cont	0	63	0		
AM NO BUILD Queue	1	15	33	1	84	168	0	63	168		
AM BUILD Queue	1	15	33	1	84	169	0	64	169		
Existing Lane Length	1	20	75	1	8	Cont	0	97	0		
PM NO BUILD Queue	1	20	50	1	8	59	0	97	59		
PM BUILD Queue	1	20	50	1	8	60	0	99	60		
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
Existing Lane Length	1	74	310+	1	8	Cont	0	57	0		
AM NO BUILD Queue	1	76	120	1	8	48	0	59	48		
AM BUILD Queue	1	76	120	1	8	48	0	59	48		
Existing Lane Length	1	278	310+	1	51	Cont	0	293	0		
PM NO BUILD Queue	1	286	#544	1	52	320	0	301	320		
PM BUILD Queue	1	287	#549	1	52	320	0	301	320		

NOTE: Queue Lengths are in feet.

Queue Lengths are 95th percentile confidence level.

Queue Lengths are based on Synchro 10 (HCM6) methodology.

~ Volume Exceeds Capacity. Queue is theoretically infinite.

(Queue shown is maximum after two cycles)

95th Percentile volume exceeds capacity, queue may be longer.

m Volume for 95th percentile queue is metered by upstream signal.

The preceding queuing table demonstrates that the existing left turn auxiliary lanes are of sufficient lengths to accommodate the calculated 95th Percentile queues in this Study. It should be noted that the southbound left turn lane is much longer than the 310 feet shown in the table above, but beyond the 310 feet, the southbound left turn queue extends through the intersection of Larkspur Ln. with Alameda Blvd. No recommendation is made for the intersection of Alameda Blvd. / San Mateo Blvd. based on the queuing analysis.

#5 – Alameda Blvd. / Louisiana Blvd. - Pages A-71 thru A-102

The results of the 2019 analyses of the signalized intersection of Alameda Blvd. / Louisiana Blvd. are summarized in the following table:

Intersection: 5 - Alameda Blvd. / Louisiana Blvd.

2019 AM Peak Hour						2019 PM Peak Hour					
(EXIST. GEOM.)						(EXIST. GEOM.)					
NO BUILD			BUILD			NO BUILD			BUILD		
Lanes	LOS-Delay		Lanes	LOS-Delay		Lanes	LOS-Delay		Lanes	LOS-Delay	
EB	L	1 B - 13.4	1	B - 13.4	L	1	A - 9.4	1	A - 9.4		
	T	2 B - 18.9	2	B - 19.0	T	2	B - 16.7	2	B - 16.8		
	R	> B - 19.0	>	B - 19.1	R	>	B - 16.7	>	B - 16.8		
WB	L	1 B - 13.3	1	B - 13.4	L	1	B - 10.1	1	B - 10.3		
	T	2 C - 20.7	2	C - 20.8	T	2	B - 13.3	2	B - 13.3		
	R	> C - 20.7	>	C - 20.7	R	>	B - 13.3	>	B - 13.3		
NB	L	1 B - 16.7	1	B - 16.8	L	1	B - 19.8	1	C - 20.1		
	T	2 B - 18.5	2	B - 18.6	T	2	C - 25.4	2	C - 25.8		
	R	> B - 18.6	>	B - 18.7	R	>	C - 25.9	>	C - 26.4		
SB	L	1 B - 17.5	1	B - 17.6	L	1	B - 18.7	1	B - 19.1		
	T	2 C - 24.9	2	C - 25.0	T	2	C - 25.0	2	C - 25.5		
	R	> C - 25.7	>	C - 25.8	R	>	C - 25.4	>	C - 26.0		
Intersection:		B - 19.7		B - 19.8			B - 16.9		B - 17.0		
Note: ">" designates a shared right or left turn lane.											
No Recommendation.											

The 2019 analysis of the intersection of Alameda Blvd. / Louisiana Blvd. demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions analyzed in this report. The implementation of the proposed development increases the delay at the intersection by 0.1 seconds during the AM Peak Hour and by 0.1 seconds during the PM Peak Hour. Therefore, no recommendations are made for the intersection of Alameda Blvd. / Louisiana Blvd.

The following table summarizes the results of the queuing analysis for the auxiliary lanes at the intersection:

Queueing Analysis Summary Sheet

Project: Alameda / San Pedro Development
 Intersection: Alameda Blvd. / Louisiana Blvd.

2019											
Approach	Left Turns			Thru Movements			Right Turns				
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
Existing Lane Length	1	38	180	2	338	Cont	0	95	0		
AM NO BUILD Queue	1	39	27	2	344	130	0	97	130		
AM BUILD Queue	1	40	27	2	354	134	0	102	134		
Existing Lane Length	1	110	180	2	697	Cont	0	144	0		
PM NO BUILD Queue	1	112	52	2	710	250	0	147	250		
PM BUILD Queue	1	114	53	2	729	264	0	157	264		
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
Existing Lane Length	1	66	190	2	586	Cont	0	19	0		
AM NO BUILD Queue	1	67	40	2	593	191	0	19	191		
AM BUILD Queue	1	71	42	2	601	195	0	19	195		
Existing Lane Length	1	41	190	2	396	Cont	0	26	0		
PM NO BUILD Queue	1	41	24	2	401	123	0	26	123		
PM BUILD Queue	1	52	29	2	421	130	0	26	130		
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
Existing Lane Length	1	262	180	2	95	Cont	0	45	0		
AM NO BUILD Queue	1	263	157	2	95	44	0	45	44		
AM BUILD Queue	1	263	159	2	96	45	0	47	45		
Existing Lane Length	1	106	180	2	103	Cont	0	53	0		
PM NO BUILD Queue	1	107	77	2	104	52	0	53	52		
PM BUILD Queue	1	107	78	2	105	52	0	56	52		
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
Existing Lane Length	1	46	200	2	148	Cont	0	123	0		
AM NO BUILD Queue	1	46	36	2	149	73	0	124	73		
AM BUILD Queue	1	46	36	2	150	74	0	125	74		
Existing Lane Length	1	37	200	2	91	Cont	0	45	0		
PM NO BUILD Queue	1	37	34	2	91	50	0	45	50		
PM BUILD Queue	1	37	34	2	93	51	0	48	51		

NOTE: Queue Lengths are in feet.

Queue Lengths are 95th percentile confidence level.

Queue Lengths are based on Synchro 10 (HCM6) methodology.

~ Volume Exceeds Capacity. Queue is theoretically infinite.

(Queue shown is maximum after two cycles)

95th Percentile volume exceeds capacity, queue may be longer.

m Volume for 95th percentile queue is metered by upstream signal.

The preceding queuing table demonstrates that the existing left turn auxiliary lanes are of sufficient lengths to accommodate the calculated 95th Percentile queues in this Study. No recommendation is made for the intersection of Alameda Blvd. / San Mateo Blvd. based on the queuing analysis.

#6 – Signal Ave. / San Pedro Rd. - Pages A-71 thru A-102

The results of the 2019 analyses of the unsignalized intersection of Signal Ave. / San Pedro Rd. are summarized in the following tables:

Intersection: 6 - Signal Ave. / San Pedro Dr.

<u>2019 AM Peak Hour</u>						<u>2019 PM Peak Hour</u>					
		(EXIST. GEOM.)						(EXIST. GEOM.)			
		NO BUILD		BUILD				NO BUILD		BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay			Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	>	C - 17.0	>	C - 17.9	L	>	C - 18.4	>	C - 20.9	
	T	1	C - 17.0	1	C - 17.9	T	1	C - 18.4	1	C - 20.9	
	R	>	C - 17.0	>	C - 17.9	R	>	C - 18.4	>	C - 20.9	
WB	L	>	B - 13.5	1	C - 18.0	L	>	C - 16.6	1	D - 32.7	
	T	1	B - 13.5	1	C - 18.0	T	1	C - 16.6	1	D - 32.7	
	R	>	B - 13.5	>	C - 18.0	R	>	C - 16.6	>	D - 32.7	
NB	L	>	A - 8.1	1	A - 8.1	L	>	A - 8.5	1	A - 8.5	
	T	1	A - 0.0	1	A - 0.0	T	1	A - 0.0	1	A - 0.0	
	R	>	A - 0.0	>	A - 0.0	R	>	A - 0.0	>	A - 0.0	
SB	L	>	A - 8.3	>	A - 8.4	L	>	A - 8.1	>	A - 8.3	
	T	1	A - 0.0	1	A - 0.0	T	1	A - 0.0	1	A - 0.0	
	R	1	A - 0.0	>	A - 0.0	R	1	A - 0.0	>	A - 0.0	
Intersection:		u - 1.4		u - 2.1		u - 2.5		u - 4.1			
Note: ">" designates a shared right or left turn lane.											
No Recommendation.											

The 2019 analysis of the intersection of Signal Ave. / San Pedro Rd. demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions analyzed in this report. Therefore, no recommendations are made for the intersection of Signal Ave. / San Pedro Rd.

#7 – Signal Ave. / Driveway “A” - Pages A-71 thru A-102

The results of the 2019 analyses of the unsignalized intersection of Signal Ave. / Driveway “A” are summarized in the following tables:

Intersection: 7 - Signal Ave. / Driveway “A”

<u>2019 AM Peak Hour</u>						<u>2019 PM Peak Hour</u>					
(EXIST. GEOM.)						(EXIST. GEOM.)					
NO BUILD			BUILD			NO BUILD			BUILD		
Lanes LOS-Delay			Lanes LOS-Delay			Lanes LOS-Delay			Lanes LOS-Delay		
EB	L	>	A - 0.0	>	A - 7.4	L	>	A - 0.0	>	A - 7.4	
	T	1	A - 0.0	>	A - 0.0	T	1	A - 0.0	>	A - 0.0	
	R	>	A - 0.0	>	A - 0.0	R	>	A - 0.0	>	A - 0.0	
WB	L	>	A - 0.0	>	A - 0.0	L	>	A - 0.0	>	A - 0.0	
	T	1	A - 0.0	>	A - 0.0	T	1	A - 0.0	>	A - 0.0	
	R	>	A - 0.0	>	A - 0.0	R	>	A - 0.0	>	A - 0.0	
SB	L	>	A - 0.0	>	A - 8.8	L	>	A - 0.0	>	A - 9.0	
	T	1	A - 0.0	>	A - 0.0	T	1	A - 0.0	>	A - 0.0	
	R	>	A - 0.0	>	A - 8.8	R	>	A - 0.0	>	A - 9.0	
Intersection:		u - 0.0		u - 2.4		u - 0.0		u - 3.1			
Note: ">" designates a shared right or left turn lane.											
No Recommendation.											

Driveway “A” is proposed as a full access driveway on Signal Ave. The 2019 analysis of the intersection of Signal Ave. / Driveway “A” demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions analyzed in this report. Therefore, no recommendations are made for the intersection of Signal Ave. / Driveway “A”.

#8 – Driveway “B” / San Pedro Rd. - Pages A-71 thru A-102

The results of the 2019 analyses of the unsignalized intersection of Driveway “B” / San Pedro Rd. are summarized in the following tables:

Intersection: 8 - Driveway “B” / San Pedro Dr.

<u>2019 AM Peak Hour</u>						<u>2019 PM Peak Hour</u>					
(EXIST. GEOM.)						(EXIST. GEOM.)					
NO BUILD			BUILD			NO BUILD			BUILD		
Lanes	LOS-Delay		Lanes	LOS-Delay		Lanes	LOS-Delay		Lanes	LOS-Delay	
WB	L	>	A - 0.0	>	A - 0.0	L	>	A - 0.0	>	A - 0.0	
	T	1	A - 0.0	>	A - 0.0	T	1	A - 0.0	>	A - 0.0	
	R	>	A - 0.0	>	B - 11.4	R	>	A - 0.0	>	B - 10.7	
NB	L		A - 0.0	>	A - 0.0	L	0	A - 0.0	>	A - 0.0	
	T	1	A - 0.0	>	A - 0.0	T	1	A - 0.0	>	A - 0.0	
	R	>	A - 0.0	>	A - 0.0	R	>	A - 0.0	>	A - 0.0	
SB	L		A - 0.0	>	A - 0.0	L	0	A - 0.0	>	A - 0.0	
	T	1	A - 0.0	>	A - 0.0	T	1	A - 0.0	>	A - 0.0	
	R		A - 0.0	>	A - 0.0	R	0	A - 0.0	>	A - 0.0	
Intersection:		<u>u - 0.0</u>		<u>u - 0.1</u>		<u>u - 0.0</u>		<u>u - 0.2</u>			

Note: ">" designates a shared right or left turn lane.

No recommendation.

Driveway “B” is proposed as a right-in, right-out only driveway on San Pedro Dr. The 2019 analysis of the intersection of Driveway “B” / San Pedro Rd. demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions analyzed in this report. Therefore, no recommendations are made for the intersection of Driveway “B” / San Pedro Rd.

#9 – Alameda Blvd. / Driveway “C” - Pages A-71 thru A-102

The results of the 2019 analyses of the unsignalized intersection of Alameda Blvd. / Driveway “C” are summarized in the following table:

Intersection: 9 - Alameda Blvd. / Driveway "C"

<u>2019 AM Peak Hour</u>						<u>2019 PM Peak Hour</u>					
(EXIST. GEOM.)						(EXIST. GEOM.)					
NO BUILD			BUILD			NO BUILD			BUILD		
Lanes		LOS-Delay	Lanes		LOS-Delay	Lanes		LOS-Delay	Lanes		LOS-Delay
EB	L		A - 0.0		A - 0.0	L		A - 0.0		A - 0.0	
	T	3	A - 0.0	3	A - 0.0	T	3	A - 0.0	3	A - 0.0	
	R	>	A - 0.0	>	A - 0.0	R	>	A - 0.0	>	A - 0.0	
WB	L		A - 0.0		A - 0.0	L		A - 0.0		A - 0.0	
	T	2	A - 0.0	2	A - 0.0	T	2	A - 0.0	2	A - 0.0	
	R		A - 0.0		A - 0.0	R		A - 0.0		A - 0.0	
NB	L		A - 0.0		A - 0.0	L		A - 0.0		A - 0.0	
	T	1	A - 0.0	1	A - 0.0	T	1	A - 0.0	1	A - 0.0	
	R	>	A - 0.0	>	B - 10.8	R	>	A - 0.0	>	B - 14.0	
Intersection:		<u>u - 0.0</u>		<u>u - 0.1</u>		<u>u - 0.0</u>		<u>u - 0.1</u>			
Note: ">" designates a shared right or left turn lane.											
No recommendation.											

The 2019 analysis of the intersection of Alameda Blvd. / Driveway “C” demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions analyzed in this report. Therefore, no recommendations are made for the intersection of Alameda Blvd. / Driveway “C”.

#10 – Alameda Blvd. / Driveway “D” - Pages A-71 thru A-102

The results of the 2019 analyses of the unsignalized intersection of Alameda Blvd. / Driveway “D” are summarized in the following tables:

Intersection: 10 - Alameda Blvd. / Driveway "D"

2019 AM Peak Hour						2019 PM Peak Hour					
(EXIST. GEOM.)						(EXIST. GEOM.)					
NO BUILD			BUILD			NO BUILD			BUILD		
Lanes		LOS-Delay	Lanes	LOS-Delay		Lanes		LOS-Delay	Lanes	LOS-Delay	
EB	L		A - 0.0		A - 0.0	L		A - 0.0		A - 0.0	
	T	3	A - 0.0	3	A - 0.0	T	3	A - 0.0	3	A - 0.0	
	R	>	A - 0.0	>	A - 0.0	R	>	A - 0.0	>	A - 0.0	
WB	L		A - 0.0		A - 0.0	L		A - 0.0		A - 0.0	
	T	2	A - 0.0	2	A - 0.0	T	2	A - 0.0	2	A - 0.0	
	R		A - 0.0		A - 0.0	R		A - 0.0		A - 0.0	
NB	L		A - 0.0		A - 0.0	L		A - 0.0		A - 0.0	
	T	1	A - 0.0	1	A - 0.0	T	1	A - 0.0	1	A - 0.0	
	R	>	A - 0.0	>	B - 10.8	R	>	A - 0.0	>	B - 13.9	
Intersection:		u - 0.0		u - 0.1		u - 0.0		u - 0.1			
Note: ">" designates a shared right or left turn lane.											
No recommendation.											

The 2019 analysis of the intersection of Alameda Blvd. / Driveway “D” demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions analyzed in this report. Therefore, no recommendations are made for the intersection of Alameda Blvd. / Driveway “D”.

Analysis of Horizon Year Conditions

Traffic Projections

This study will next evaluate the NO BUILD and BUILD conditions for the horizon year of 2029. The trip generation rate assumptions, the trip distribution assumptions, and the trip assignments of the new trips generated by the project were the same as that of the implementation year analysis. The major difference is that the current turning movements volumes were grown to the year 2029 based on the Mid-Region Council of Governments’ Regional Transportation Model forecasts.

Traffic Analysis

A capacity analysis using existing traffic signal timing obtained from the City of Albuquerque Traffic Operations Division (see Appendix Pages A-103 thru A-134) was conducted for the Horizon Year (2029) AM and PM Peak Hour NO BUILD and BUILD Conditions. Analysis was conducted utilizing Trafficware's Synchro 10 software (version 10.3.15.0) which substantially complies with the methodology established in the Highway Capacity Manual, 6th Edition. A graphical summary of the Horizon Year conditions (i.e., Lane Geometry, 2029 NO BUILD and BUILD Volumes, and calculated levels-of-service associated with each lane group and each intersection) are displayed on the Lanes / Volumes / Analysis Maps at the end of the front-end text of this Study. The results are also summarized as follows:

#1 – Alameda Blvd. / San Pedro Dr. - Pages A-103 thru A-134

The results of the 2029 analyses of the signalized intersection of Alameda Blvd. / San Pedro Dr. are summarized in the following table:

Intersection: 1 - Alameda Blvd. / San Pedro Dr.

<u>2029 AM Peak Hour</u>						<u>2029 PM Peak Hour</u>					
(EXIST. GEOM.)						(EXIST. GEOM.)					
NO BUILD			BUILD			NO BUILD			BUILD		
Lanes		LOS-Delay	Lanes		LOS-Delay	Lanes		LOS-Delay	Lanes		LOS-Delay
EB	L	1	C - 24.1	1	C - 24.1	L	1	B - 16.5	1	B - 17.1	
	T	3	C - 22.0	3	C - 22.1	T	3	C - 29.4	3	C - 32.0	
	R	>	B - 13.6	>	B - 13.6	R	>	B - 17.4	>	B - 17.2	
WB	L	1	B - 16.9	1	B - 17.2	L	1	B - 19.4	1	C - 21.4	
	T	2	F - 95.5	2	F - 95.5	T	2	C - 22.3	2	C - 23.1	
	R	>	F - 95.7	>	F - 95.7	R	>	C - 22.3	>	C - 23.0	
NB	L	1	D - 37.1	1	D - 40.6	L	1	C - 25.2	1	C - 27.4	
	T	2	C - 22.4	2	C - 22.4	T	2	C - 22.9	2	C - 22.8	
	R	>	C - 22.5	>	C - 22.5	R	>	C - 23.0	>	C - 23.3	
SB	L	1	C - 25.6	1	C - 25.6	L	1	C - 23.4	1	C - 24.2	
	T	2	C - 30.3	2	C - 30.3	T	2	C - 28.7	2	C - 29.4	
	R	>	D - 45.1	>	D - 45.1	R	>	D - 39.3	>	D - 40.9	
Intersection:		E - 55.9		E - 55.9		C - 25.3		C - 26.7			
Note: ">" designates a shared right or left turn lane.											
No recommendation.											

The 2029 analysis of the intersection of Alameda Blvd. / San Pedro Dr. demonstrates that the level-of-service will be acceptable for the PM Peak Hour NO BUILD and BUILD conditions analyzed in this report. The 2029 AM Peak Hour analysis projects a long delay to occur for the

westbound thru and right turn movements. The overall intersection delay at this intersection for the AM Peak Hour is not significantly impacted by this project. The calculated increase in delay is 0.0 seconds for the 2029 AM Peak Hour and 1.4 seconds for the 2029 PM Peak Hour. Therefore, no recommendations are made for the intersection of Alameda Blvd. / San Pedro Dr.

#2 – Alameda Blvd. / I-25 E. Ramp - Pages A-103 thru A-134

The results of the 2029 analyses of the full access signalized intersection of Alameda Blvd. / I-25 E. Ramp are summarized in the following table:

Intersection: 2 - Alameda Blvd. / I-25 East Ramp

<u>2029 AM Peak Hour</u>						<u>2029 PM Peak Hour</u>					
		(EXIST. GEOM.)						(EXIST. GEOM.)			
		NO BUILD		BUILD				NO BUILD		BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay			Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	1	E - 61.0	1	E - 61.3	L	1	E - 62.9	1	E - 69.2	
	T	2	A - 0.5	2	A - 0.5	T	2	A - 0.6	2	A - 0.6	
WB	T	3	C - 30.5	3	C - 30.7	T	3	C - 32.0	3	C - 32.8	
	R	>	C - 31.0	>	C - 31.2	R	>	C - 33.2	>	C - 34.1	
NB	L	2	E - 58.4	2	E - 58.4	L	2	D - 45.7	2	D - 45.0	
	T	2	C - 31.9	2	C - 31.9	T	2	D - 36.8	2	D - 36.3	
	R	1	D - 36.4	1	D - 36.6	R	1	E - 76.4	1	E - 79.2	
Intersection:		C - 33.6		C - 33.7				C - 32.3		C - 33.3	

Note: ">" designates a shared right or left turn lane.

No Recommendation.

The 2029 analysis of the intersection of Alameda Blvd. / I-25 E. Ramp demonstrates that the overall intersection delays will be acceptable for all conditions analyzed in this report. There are some turning movements that are projected to operate at level-of-service "E" in 2029, but none at level-of-service "F". Additionally, it is demonstrated in the above table that the increase in overall intersection delay is increased by 0.1 seconds during that 2029 AM Peak Hour and 1.0 seconds during the 2029 PM Peak Hour as a result of the implementation of the Alameda / San Pedro Development. Thus, the impact of this proposed development is demonstrated to be minimal for this intersection. Therefore, no recommendations are made for the intersection of Alameda Blvd. / I-25 E. Ramp

It should be noted in the preceding table as well as the following queuing table that the existing geometric configuration of the northbound approach cannot be sufficiently represented due to limitations of the structures of the tables. The northbound intersection approach is comprised of

an exclusive left turn lane, a thru / left turn lane, an exclusive thru lane, and an exclusive right turn lane.

#3 – Alameda Blvd. / I-25 W. Ramp – Pages A-103 thru A-134

The results of the analysis of the signalized intersection of Alameda Blvd. / I-25 W. Ramp are summarized in the following table:

Intersection: 3 - Alameda Blvd. / I-25 West Ramp

2029 AM Peak Hour						2029 PM Peak Hour					
(EXIST. GEOM.)						(EXIST. GEOM.)					
NO BUILD			BUILD			NO BUILD			BUILD		
Lanes		LOS-Delay	Lanes		LOS-Delay	Lanes		LOS-Delay	Lanes		LOS-Delay
EB	T	2	A - 0.4	2	A - 0.5	T	2	D - 47.2	2	D - 47.8	
	R	1	A - 3.3	1	A - 3.7	R	1	F - 145	1	F - 148	
WB	L	2	D - 48.9	2	D - 49.0	L	2	E - 69.9	2	E - 70.2	
	T	2	A - 0.5	2	A - 0.6	T	2	A - 0.5	2	A - 0.5	
SB	L	2	D - 53.1	2	D - 52.7	L	2	F - 232	2	F - 232	
	T	2	E - 55.6	2	D - 54.3	T	2	F - 244	2	F - 244	
	R	1	E - 64.4	1	E - 66.3	R	1	E - 59.5	1	E - 59.5	
Intersection:		B - 13.6		B - 14.7		F - 106		F - 106			
Note: ">" designates a shared right or left turn lane.											
No recommendation.											

The 2029 analysis of the intersection of Alameda Blvd. / I-25 W. Ramp demonstrates that the delays will be acceptable for the 2029 AM Peak Hour Conditions, but not for the 2029 PM Peak Hour period. The southbound approach for the left turn and the thru movements are projected to operate at level-of-service "F". Implementation of the proposed Alameda / San Pedro Development does not significantly impact the delays at this signalized intersection. As a result of this proposed development, the 2029 AM Peak Hour intersection delay is increased by 1.1 seconds and the 2029 PM Peak Hour intersection delays is increased by 0.1 seconds (increase not indicated in table above since delays is rounded). Therefore, no recommendations are made for the intersection of Alameda Blvd. / I-25 W. Ramp.

It should be noted in the preceding level-of-service table that the existing geometric configuration of the southbound approach cannot be sufficiently represented due to limitations of the structure of the table. The southbound intersection approach is comprised of an exclusive left turn lane, a thru / left turn lane, an exclusive thru lane, and an exclusive right turn lane

#4 – Alameda Blvd. / San Mateo Blvd. – Pages A-103 thru A-134

The results of the analysis of the full access signalized intersection of Alameda Blvd. / San Mateo Blvd. are summarized in the following table:

Intersection: 4 - Alameda Blvd. / San Mateo Blvd.

<u>2029 AM Peak Hour</u>						<u>2029 PM Peak Hour</u>					
(EXIST. GEOM.)						(EXIST. GEOM.)					
NO BUILD			BUILD			NO BUILD			BUILD		
Lanes	LOS-Delay		Lanes	LOS-Delay		Lanes	LOS-Delay		Lanes	LOS-Delay	
EB	L	1	A - 7.8	1	A - 7.8	L	1	B - 14.0	1	B - 14.1	
	T	2	B - 13.1	2	B - 13.1	T	2	C - 25.1	2	C - 25.5	
	R	>	B - 13.0	>	B - 13.1	R	>	C - 25.0	>	C - 25.3	
WB	L	1	A - 8.7	1	A - 8.8	L	1	C - 20.7	1	C - 21.3	
	T	2	A - 3.4	2	A - 3.3	T	2	C - 28.3	2	C - 28.5	
	R	>	A - 5.4	>	A - 5.3	R	>	C - 28.4	>	C - 28.5	
NB	L	1	D - 51.0	1	D - 51.0	L	1	F - 109	1	F - 109	
	T	1	A - 0.0	1	A - 0.0	T	1	A - 0.0	1	A - 0.0	
	R	>	E - 56.5	>	E - 56.7	R	>	D - 49.3	>	D - 49.4	
SB	L	1	F - 177	1	F - 179	L	1	F - 367	1	F - 374	
	T	1	A - 0.0	1	A - 0.0	T	1	A - 0.0	1	A - 0.0	
	R	>	D - 46.8	>	D - 46.8	R	>	F - 162	>	F - 162	
Intersection:		B - 19.0		B - 19.1		E - 74.7		E - 75.3			

Note: ">" designates a shared right or left turn lane.
No recommendation.

The 2029 analysis of the intersection of Alameda Blvd. / San Mateo Blvd. demonstrates that the overall delays will be acceptable for the 2029 AM Peak Hour period, but marginal for the 2029 PM Peak Hour period. As a result of this proposed development, the 2029 AM Peak Hour intersection delay is increased by 0.1 seconds and the 2029 PM Peak Hour intersection delays is increased by 0.6 seconds. Thus, it can be concluded that the proposed Alameda / San Pedro Development has no significant impact on the operation of the intersection of Alameda Blvd. / San Mateo Blvd. Therefore, no recommendations are made for the intersection of Alameda Blvd. / San Mateo Blvd.

#5 – Alameda Blvd. / Louisiana Blvd. - Pages A-103 thru A-134

The results of the 2029 analyses of the signalized intersection of Alameda Blvd. / Louisiana Blvd. are summarized in the following table:

Intersection: 5 - Alameda Blvd. / Louisiana Blvd.

2029 AM Peak Hour						2029 PM Peak Hour					
(EXIST. GEOM.)						(EXIST. GEOM.)					
NO BUILD			BUILD			NO BUILD			BUILD		
Lanes	LOS-Delay		Lanes	LOS-Delay		Lanes	LOS-Delay		Lanes	LOS-Delay	
EB	L	1	B - 14.2	1	B - 14.2	L	1	A - 9.3	1	A - 9.3	
	T	2	C - 20.6	2	C - 20.8	T	2	C - 20.2	2	C - 21.0	
	R	>	C - 20.7	>	C - 20.9	R	>	C - 20.4	>	C - 21.2	
WB	L	1	B - 14.2	1	B - 14.3	L	1	B - 11.4	1	B - 11.9	
	T	2	C - 21.7	2	C - 21.7	T	2	B - 12.7	2	B - 12.8	
	R	>	C - 21.6	>	C - 21.7	R	>	B - 12.7	>	B - 12.8	
NB	L	1	B - 16.9	1	B - 17.0	L	1	C - 23.1	1	C - 23.4	
	T	2	B - 18.4	2	B - 18.5	T	2	C - 28.2	2	C - 28.5	
	R	>	B - 18.5	>	B - 18.6	R	>	C - 28.7	>	C - 29.0	
SB	L	1	B - 18.0	1	B - 18.1	L	1	C - 22.4	1	C - 22.7	
	T	2	C - 25.7	2	C - 25.8	T	2	C - 29.6	2	C - 30.0	
	R	>	C - 26.5	>	C - 26.6	R	>	C - 30.3	>	C - 30.8	
Intersection:		C - 20.7		C - 20.8			B - 19.4		B - 19.8		
Note: ">" designates a shared right or left turn lane.											
No Recommendation.											

The 2029 analysis of the intersection of Alameda Blvd. / Louisiana Blvd. demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions analyzed in this report. The implementation of the proposed development increases the delay at the intersection by 0.1 seconds during the AM Peak Hour and by 0.4 seconds during the PM Peak Hour. Therefore, no recommendations are made for the intersection of Alameda Blvd. / Louisiana Blvd.

#6 – Signal Ave. / San Pedro Rd. - Pages A-103 thru A-134

The results of the 2029 analyses of the unsignalized intersection of Signal Ave. / San Pedro Rd. are summarized in the following tables:

Intersection: 6 - Signal Ave. / San Pedro Dr.

<u>2029 AM Peak Hour</u>						<u>2029 PM Peak Hour</u>					
		(EXIST. GEOM.)						(EXIST. GEOM.)			
		NO BUILD		BUILD				NO BUILD		BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay			Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	>	C - 17.9	>	C - 18.9	L	>	C - 19.9	>	C - 22.7	
	T	1	C - 17.9	1	C - 18.9	T	1	C - 19.9	1	C - 22.7	
	R	>	C - 17.9	>	C - 18.9	R	>	C - 19.9	>	C - 22.7	
WB	L	>	B - 13.9	1	C - 18.8	L	>	C - 17.5	1	E - 36.8	
	T	1	B - 13.9	1	C - 18.8	T	1	C - 17.5	1	E - 36.8	
	R	>	B - 13.9	>	C - 18.8	R	>	C - 17.5	>	E - 36.8	
NB	L	>	A - 8.2	1	A - 8.2	L	>	A - 8.6	1	A - 8.6	
	T	1	A - 0.0	1	A - 0.0	T	1	A - 0.0	1	A - 0.0	
	R	>	A - 0.0	>	A - 0.0	R	>	A - 0.0	>	A - 0.0	
SB	L	>	A - 8.4	>	A - 8.5	L	>	A - 8.1	>	A - 8.4	
	T	1	A - 0.0	1	A - 0.0	T	1	A - 0.0	1	A - 0.0	
	R	1	A - 0.0	>	A - 0.0	R	1	A - 0.0	>	A - 0.0	
Intersection:		u - 1.5		u - 2.2		u - 2.7		u - 4.5			
Note: ">" designates a shared right or left turn lane.											
No Recommendation.											

The 2029 analysis of the intersection of Signal Ave. / San Pedro Rd. demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions analyzed in this report. The westbound approach is at level-of-service "E" with an average control delay of 36.8 seconds (only 1.8 seconds more than the upper threshold of level-of-service "D"). Therefore, no recommendations are made for the intersection of Signal Ave. / San Pedro Rd.

#7 – Signal Ave. / Driveway “A” - Pages A-103 thru A-134

The results of the 2029 analyses of the unsignalized intersection of Signal Ave. / Driveway “A” are summarized in the following tables:

Intersection: 7 - Signal Ave. / Driveway "A"

<u>2029 AM Peak Hour</u>						<u>2029 PM Peak Hour</u>					
(EXIST. GEOM.)						(EXIST. GEOM.)					
NO BUILD			BUILD			NO BUILD			BUILD		
Lanes		LOS-Delay	Lanes	LOS-Delay		Lanes		LOS-Delay	Lanes	LOS-Delay	
EB	L	>	A - 0.0	>	A - 7.4	L	>	A - 0.0	>	A - 7.4	
	T	1	A - 0.0	>	A - 0.0	T	1	A - 0.0	>	A - 0.0	
	R	>	A - 0.0	>	A - 0.0	R	>	A - 0.0	>	A - 0.0	
WB	L	>	A - 0.0	>	A - 0.0	L	>	A - 0.0	>	A - 0.0	
	T	1	A - 0.0	>	A - 0.0	T	1	A - 0.0	>	A - 0.0	
	R	>	A - 0.0	>	A - 0.0	R	>	A - 0.0	>	A - 0.0	
SB	L	>	A - 0.0	>	A - 8.8	L	>	A - 0.0	>	A - 9.0	
	T	1	A - 0.0	>	A - 0.0	T	1	A - 0.0	>	A - 0.0	
	R	>	A - 0.0	>	A - 8.8	R	>	A - 0.0	>	A - 9.0	
Intersection:		u - 0.0		u - 2.4		u - 0.0		u - 3.0			
Note: ">" designates a shared right or left turn lane.											
No Recommendation.											

Driveway “A” is proposed as a full access driveway on Signal Ave. The 2029 analysis of the intersection of Signal Ave. / Driveway “A” demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions analyzed in this report. Therefore, no recommendations are made for the intersection of Signal Ave. / Driveway “A”.

#8 – Driveway “B” / San Pedro Rd. - Pages A-103 thru A-134

The results of the 2029 analyses of the unsignalized intersection of Driveway “B” / San Pedro Rd. are summarized in the following tables:

Intersection: 8 - Driveway “B” / San Pedro Dr.

<u>2029 AM Peak Hour</u>						<u>2029 PM Peak Hour</u>					
(EXIST. GEOM.)						(EXIST. GEOM.)					
NO BUILD			BUILD			NO BUILD			BUILD		
Lanes	LOS-Delay		Lanes	LOS-Delay		Lanes	LOS-Delay		Lanes	LOS-Delay	
WB	L	>	A - 0.0	>	A - 0.0	L	>	A - 0.0	>	A - 0.0	
	T	1	A - 0.0	>	A - 0.0	T	1	A - 0.0	>	A - 0.0	
	R	>	A - 0.0	>	B - 11.6	R	>	A - 0.0	>	B - 10.8	
NB	L		A - 0.0	>	A - 0.0	L	0	A - 0.0	>	A - 0.0	
	T	1	A - 0.0	>	A - 0.0	T	1	A - 0.0	>	A - 0.0	
	R	>	A - 0.0	>	B - 11.4	R	>	A - 0.0	>	C - 15.2	
SB	L		A - 0.0	>	A - 0.0	L	0	A - 0.0	>	A - 0.0	
	T	1	A - 0.0	>	A - 0.0	T	1	A - 0.0	>	A - 0.0	
	R		A - 0.0	>	A - 0.0	R	0	A - 0.0	>	A - 0.0	
Intersection:		<u>u - 0.0</u>		<u>u - 0.1</u>		<u>u - 0.0</u>		<u>u - 0.1</u>			
Note: ">" designates a shared right or left turn lane.											
No recommendation.											

Driveway “B” is proposed as a right-in, right-out only driveway on San Pedro Dr. The 2029 analysis of the intersection of Driveway “B” / San Pedro Rd. demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions analyzed in this report.. Therefore, no recommendations are made for the intersection of Driveway “B” / San Pedro Rd.

#9 – Alameda Blvd. / Driveway “C” - Pages A-103 thru A-134

The results of the 2029 analyses of the unsignalized intersection of Alameda Blvd. / Driveway “C” are summarized in the following table:

Intersection: 9 - Alameda Blvd. / Driveway “C”

<u>2029 AM Peak Hour</u>						<u>2029 PM Peak Hour</u>					
(EXIST. GEOM.)						(EXIST. GEOM.)					
NO BUILD			BUILD			NO BUILD			BUILD		
Lanes		LOS-Delay	Lanes		LOS-Delay	Lanes		LOS-Delay	Lanes		LOS-Delay
EB	L		A - 0.0		A - 0.0	L		A - 0.0		A - 0.0	
	T	3	A - 0.0	3	A - 0.0	T	3	A - 0.0	3	A - 0.0	
	R	>	A - 0.0	>	A - 0.0	R	>	A - 0.0	>	A - 0.0	
WB	L		A - 0.0		A - 0.0	L		A - 0.0		A - 0.0	
	T	2	A - 0.0	2	A - 0.0	T	2	A - 0.0	2	A - 0.0	
	R		A - 0.0		A - 0.0	R		A - 0.0		A - 0.0	
NB	L		A - 0.0		A - 0.0	L		A - 0.0		A - 0.0	
	T	1	A - 0.0	1	A - 0.0	T	1	A - 0.0	1	A - 0.0	
	R	>	A - 0.0	>	B - 11.4	R	>	A - 0.0	>	C - 15.2	
Intersection:		u - 0.0		u - 0.0		u - 0.0		u - 0.1			
Note: ">" designates a shared right or left turn lane.											
No recommendation.											

The 2029 analysis of the intersection of Alameda Blvd. / Driveway “C” demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions analyzed in this report. Therefore, no recommendations are made for the intersection of Alameda Blvd. / Driveway “C”.

#10 – Alameda Blvd. / Driveway “D” - Pages A-103 thru A-134

The results of the 2029 analyses of the unsignalized intersection of Alameda Blvd. / Driveway “D” are summarized in the following tables:

Intersection: 10 - Alameda Blvd. / Driveway "D"

2029 AM Peak Hour						2029 PM Peak Hour					
(EXIST. GEOM.)						(EXIST. GEOM.)					
NO BUILD			BUILD			NO BUILD			BUILD		
Lanes		LOS-Delay	Lanes		LOS-Delay	Lanes		LOS-Delay	Lanes		LOS-Delay
EB	L		A - 0.0		A - 0.0	L		A - 0.0		A - 0.0	
	T	3	A - 0.0	3	A - 0.0	T	3	A - 0.0	3	A - 0.0	
	R	>	A - 0.0	>	A - 0.0	R	>	A - 0.0	>	A - 0.0	
WB	L		A - 0.0		A - 0.0	L		A - 0.0		A - 0.0	
	T	2	A - 0.0	2	A - 0.0	T	2	A - 0.0	2	A - 0.0	
	R		A - 0.0		A - 0.0	R		A - 0.0		A - 0.0	
NB	L		A - 0.0		A - 0.0	L		A - 0.0		A - 0.0	
	T	1	A - 0.0	1	A - 0.0	T	1	A - 0.0	1	A - 0.0	
	R	>	A - 0.0	>	B - 11.4	R	>	A - 0.0	>	C - 15.2	
Intersection:		u - 0.0		u - 0.0		u - 0.0		u - 0.1			
Note: ">" designates a shared right or left turn lane.											
No recommendation.											

The 2029 analysis of the intersection of Alameda Blvd. / Driveway “D” demonstrates that the level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions analyzed in this report. Therefore, no recommendations are made for the intersection of Alameda Blvd. / Driveway “D”.

Impact Assessment

The proposed development will have minimal adverse impact on the adjacent transportation system. All the levels-of-service were determined to be acceptable for the overall intersections.

Access Design Specifications

Sight distances at the proposed four driveways are adequate. There are no vertical or horizontal curves along this portion of Alameda Blvd., Signal Ave., or San Pedro Dr. and there are no structures that are blocking sight distance into and out of the driveway.

The project driveways will be governed by the City of Albuquerque’s Development Process Manual.

San Pedro Dr., Louisiana Blvd, & Alameda Blvd. are designated on the Futures 2040 Metropolitan Transportation Plan (2040 Long Range Bikeway System) as Proposed or Existing Bicycle Lanes. See Appendix page A-5 for a portion of the map.

Driveway “A” is located on Signal Ave., a major local roadway in the City of Albuquerque. Since Signal Ave. is not classified as a collector street or more, then no right turn or left turn deceleration lane is required.

Driveway “B” is a right-in, right-out driveway located on San Pedro Dr., a Major Collector Roadway with a posted speed limit of 35 MPH. The City of Albuquerque Development Process Manual stipulates that a classified roadway with a 35 MPH speed limit would warrant a right turn deceleration lane at a driveway if the right turn volume into the driveway was 40 vehicles per hour or more and a taper lane if the right turn volume into the driveway was 30 to 40 vehicles per hour. The projected northbound right turn volume into Driveway “B” will not exceed 23 vehicles per hour. Therefore, neither a northbound right turn deceleration lane nor a northbound right turn taper lane is warranted.

Driveways “C” and “D” are proposed right-in, right-out only driveways located on Alameda Blvd., a Regional Principal Arterial roadway with a posted speed limit of 35 MPH. The City of Albuquerque Development Process Manual stipulates that a classified roadway with a 35 MPH speed limit would warrant a right turn deceleration lane at a driveway if the right turn volume into the driveway was 40 vehicles per hour or more and a taper lane if the right turn volume into the driveway was 30 to 40 vehicles per hour. The projected northbound right turn volume into Driveway “B” will not exceed 24 vehicles per hour. Therefore, an eastbound right turn deceleration lane nor a eastbound right turn taper lane is warranted.

Summary of Deficiencies, Anticipated Impacts, and Recommendations

The existing 2019 analysis did not determine any significant deficiencies in the adjacent transportation system. The 2029 analysis yielded similar results. There was a minor issue for the northbound left turn queue at the intersection of Alameda Blvd. / San Pedro Dr. that should be addressed by this developer.

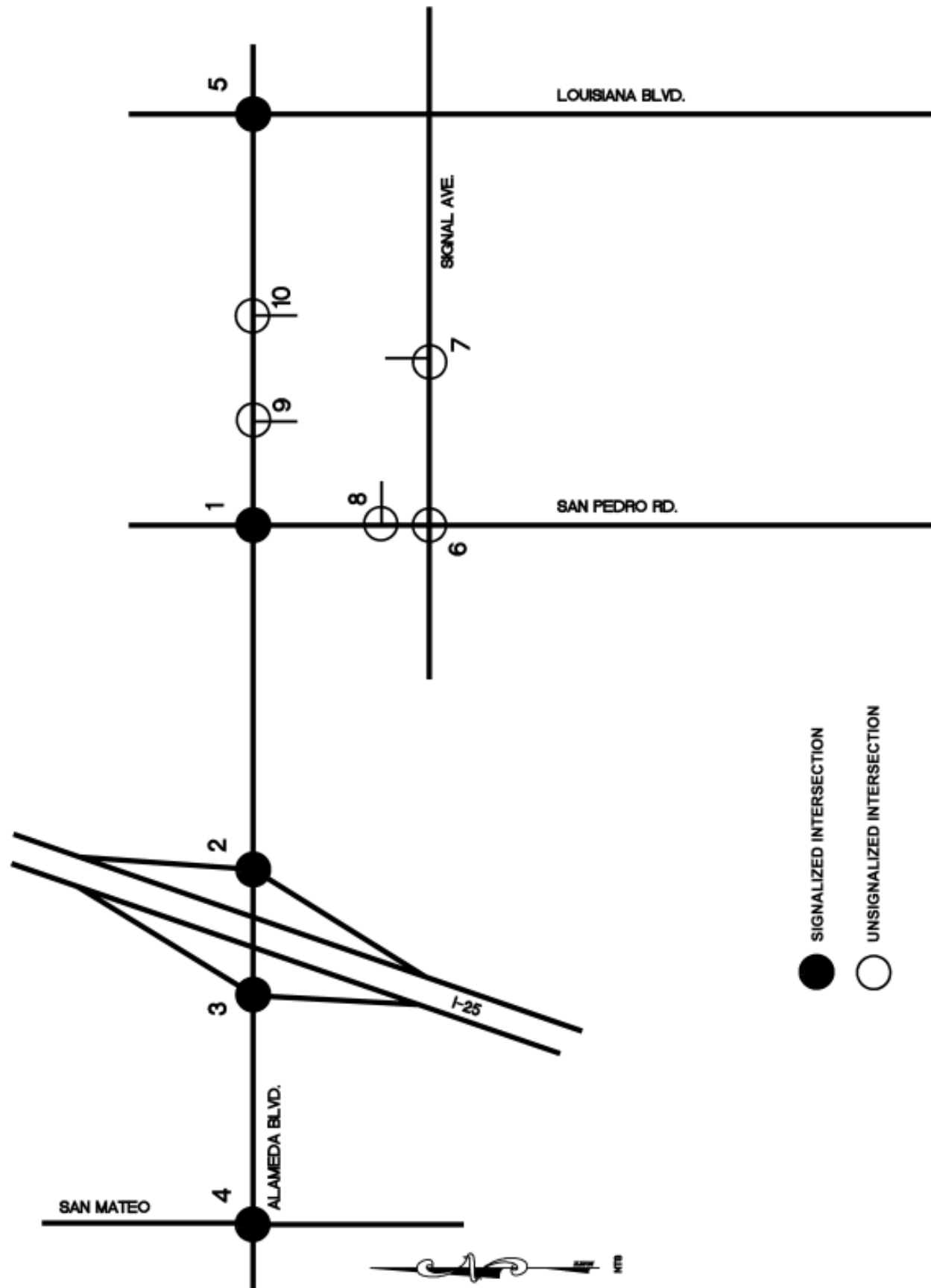
All of the other analyses in this Study demonstrated that the impact resulting from implementation of the proposed Alameda / San Pedro Development are not significant.

The following recommendations are made to mitigate the minor impact of the proposed Alameda / San Pedro Development on the adjacent transportation system:

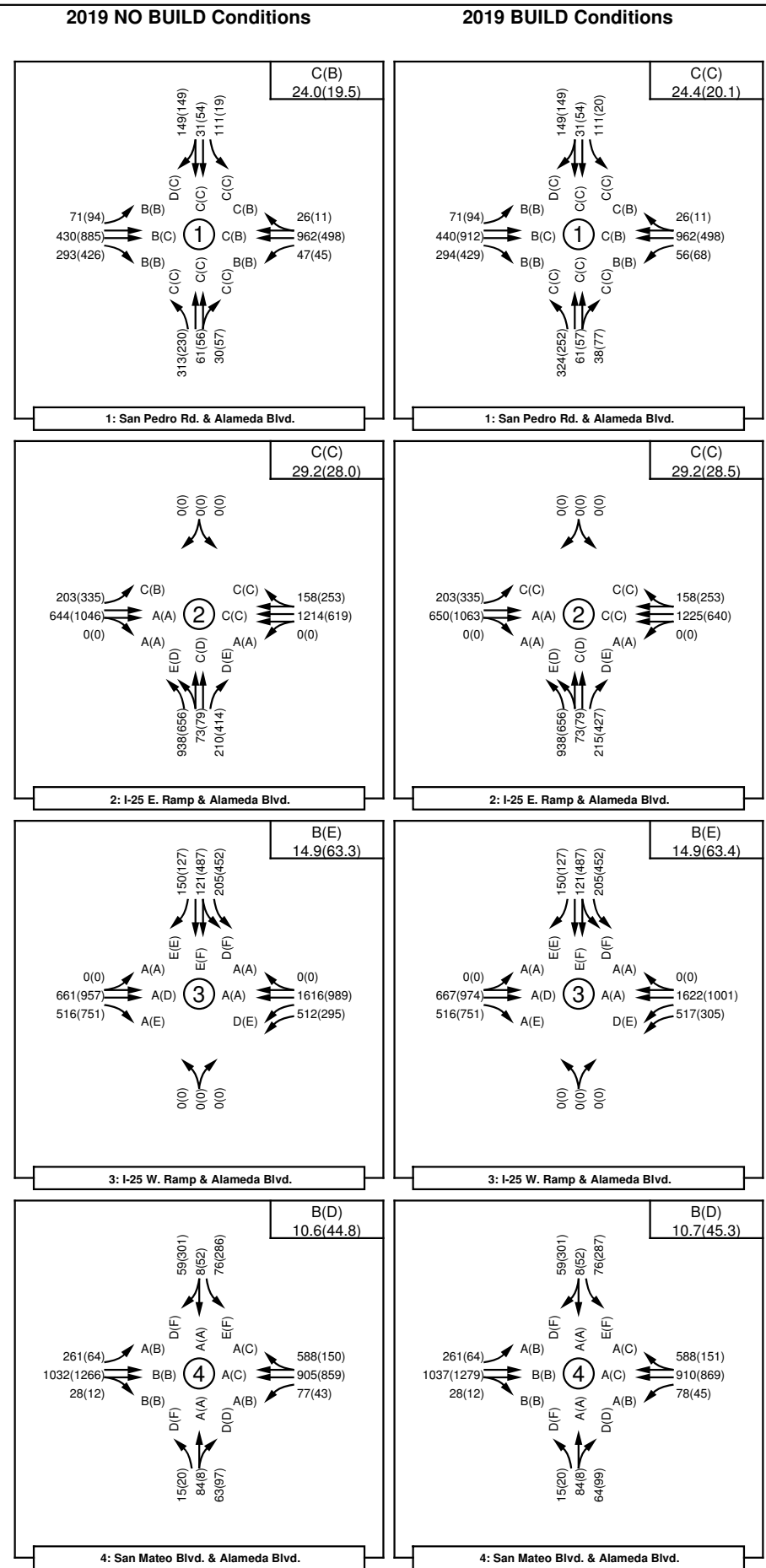
Recommendations:

- 4) Site improvements for the project shall maintain adequate site distances for the four driveways on the project as well as for the existing signalized intersection of Alameda Blvd. / San Pedro Dr.
- 5) Alameda Blvd. / San Pedro Dr. – the northbound left turn lane on San Pedro Dr. at Alameda Blvd. should be extended to the maximum length possible by narrowing the existing bulb in the raised median located approximately 150 feet south of the northbound stop bar on San Pedro Dr. at Alameda Blvd. In narrowing the bulb, the raised median should be maintained so that the width is approximately 4 feet to match the existing raised median to the north. This measure should extend the existing left turn lane length by at least 75 feet.
- 6) Driveway Guidelines:
 - a. Driveway “A” – a full access unsignalized driveway designed and constructed with one entering lane and one exiting lane minimum.
 - b. Driveway “B” – a right-in, right-out only unsignalized driveway designed and constructed with one entering lane and one exiting lane minimum.
 - c. Driveway “C” and Driveway “D” - right-in, right-out only unsignalized driveway designed and constructed with one entering lane and one exiting lane minimum.
 - d. All driveways should be designed and constructed to accommodate delivery trucks for commercial uses.

LOS / Volumes Analysis Maps

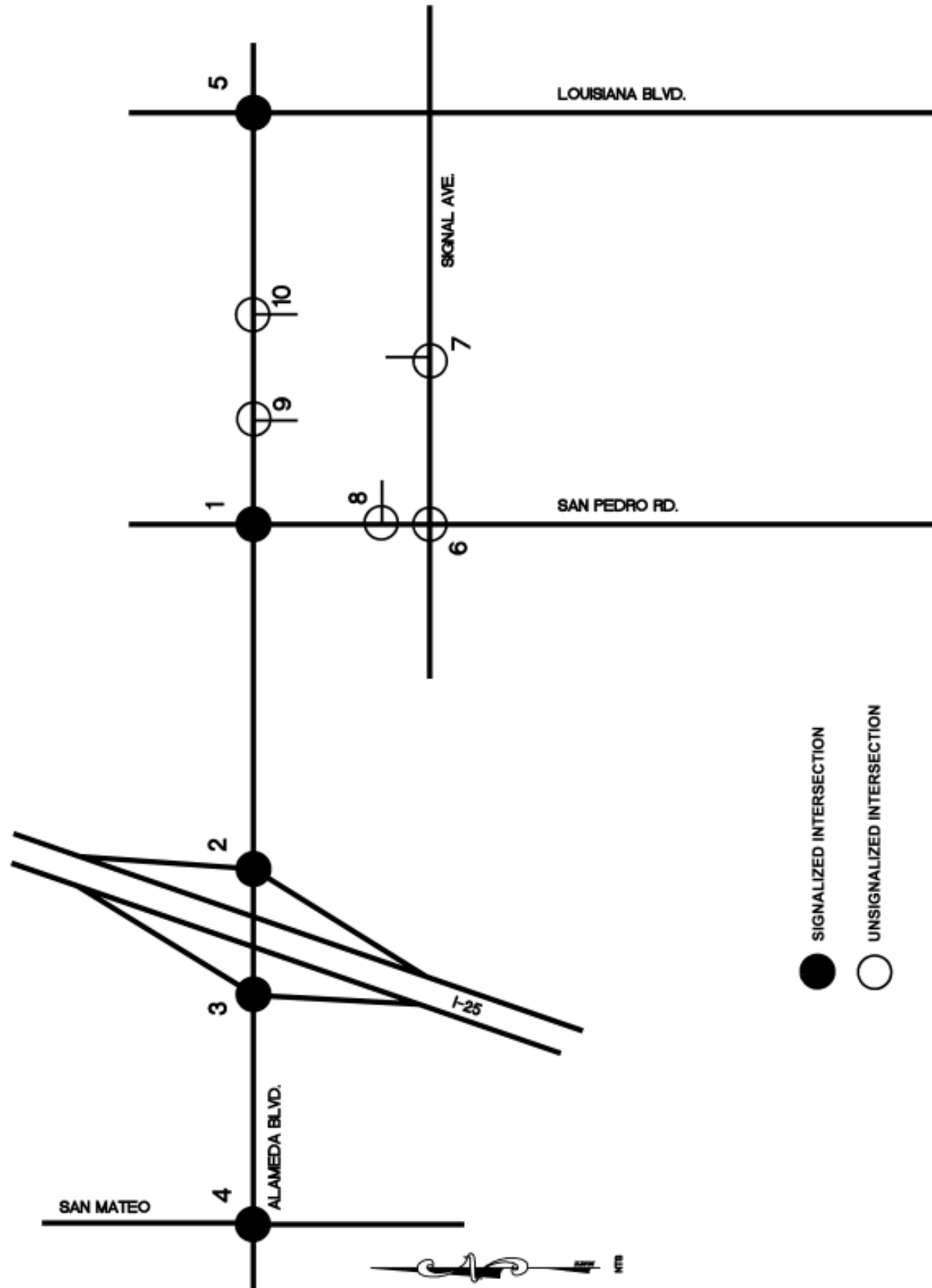


● SIGNALIZED INTERSECTION
○ UNSIGNALIZED INTERSECTION

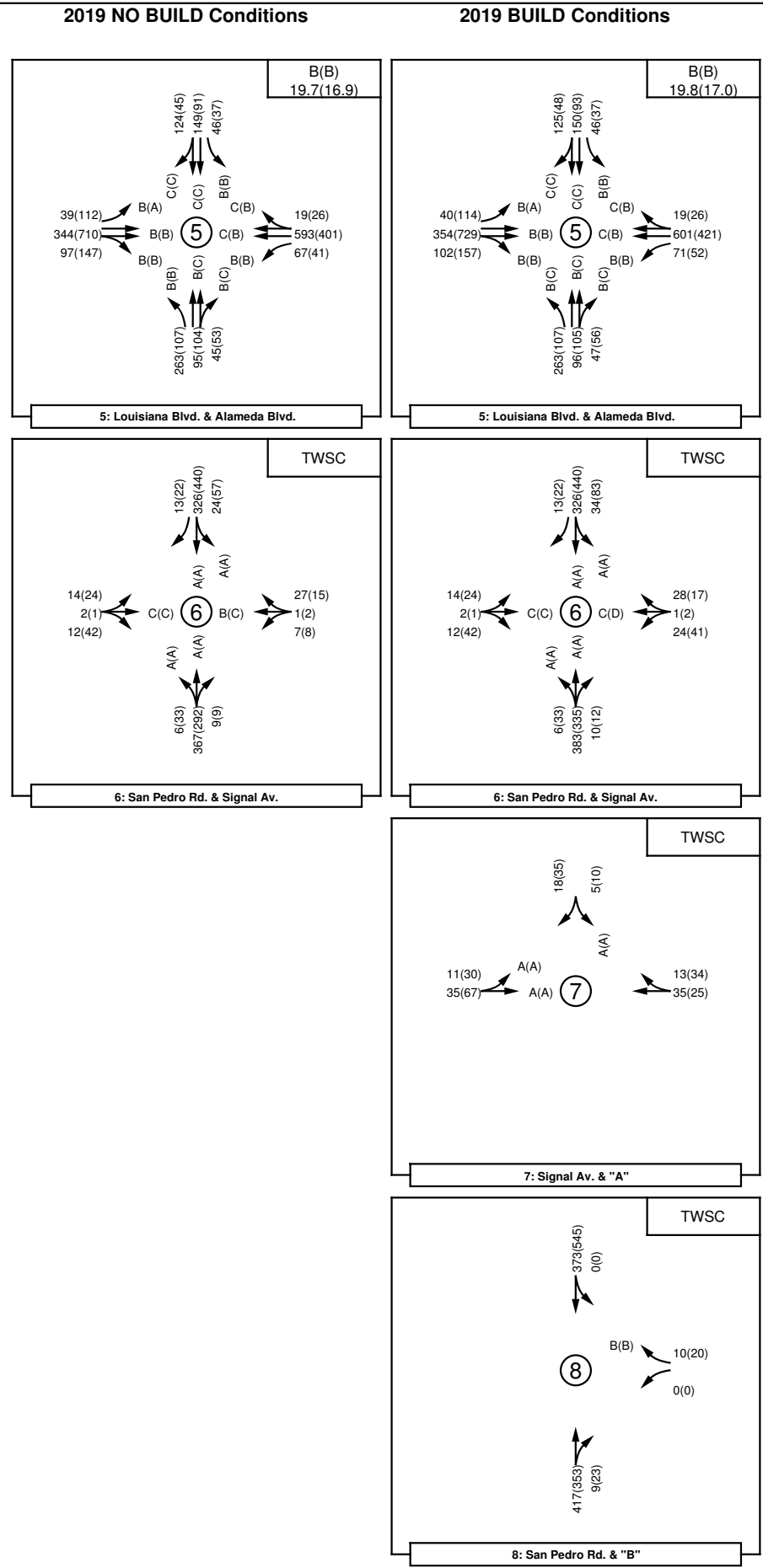


Alameda / San Pedro Development
(SE Corner of Alameda Blvd. / San Pedro Dr.)
LOS / Volume Analysis Map

AM(PM)



● SIGNALIZED INTERSECTION
○ UNSIGNALIZED INTERSECTION

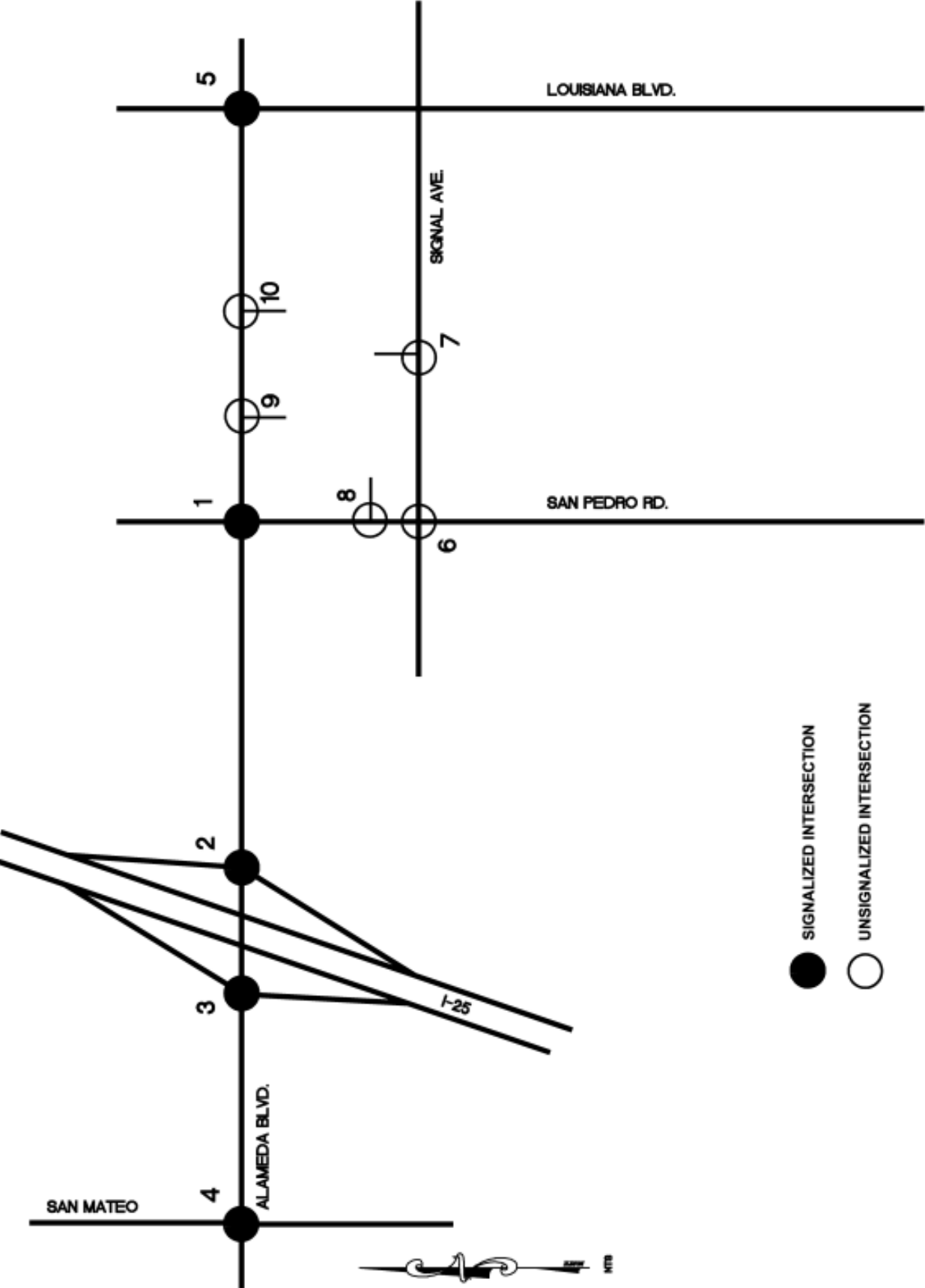


Alameda / San Pedro Development
(SE Corner of Alameda Blvd. / San Pedro Dr.)
LOS / Volume Analysis Map

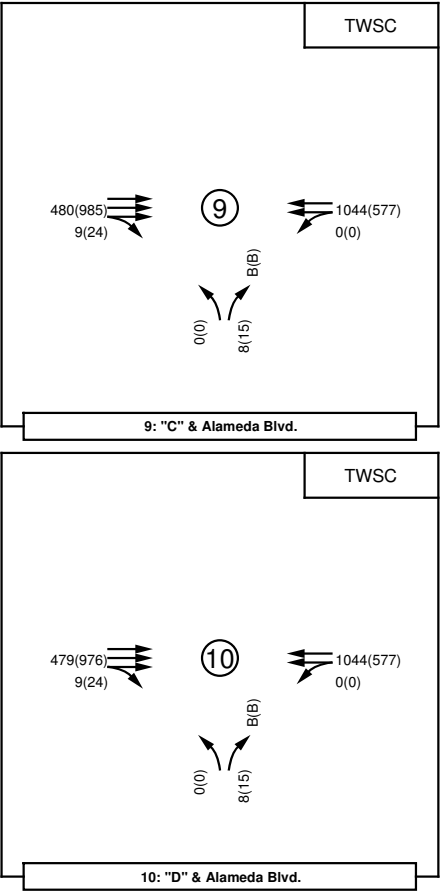
AM(PM)

2019 NO BUILD Conditions

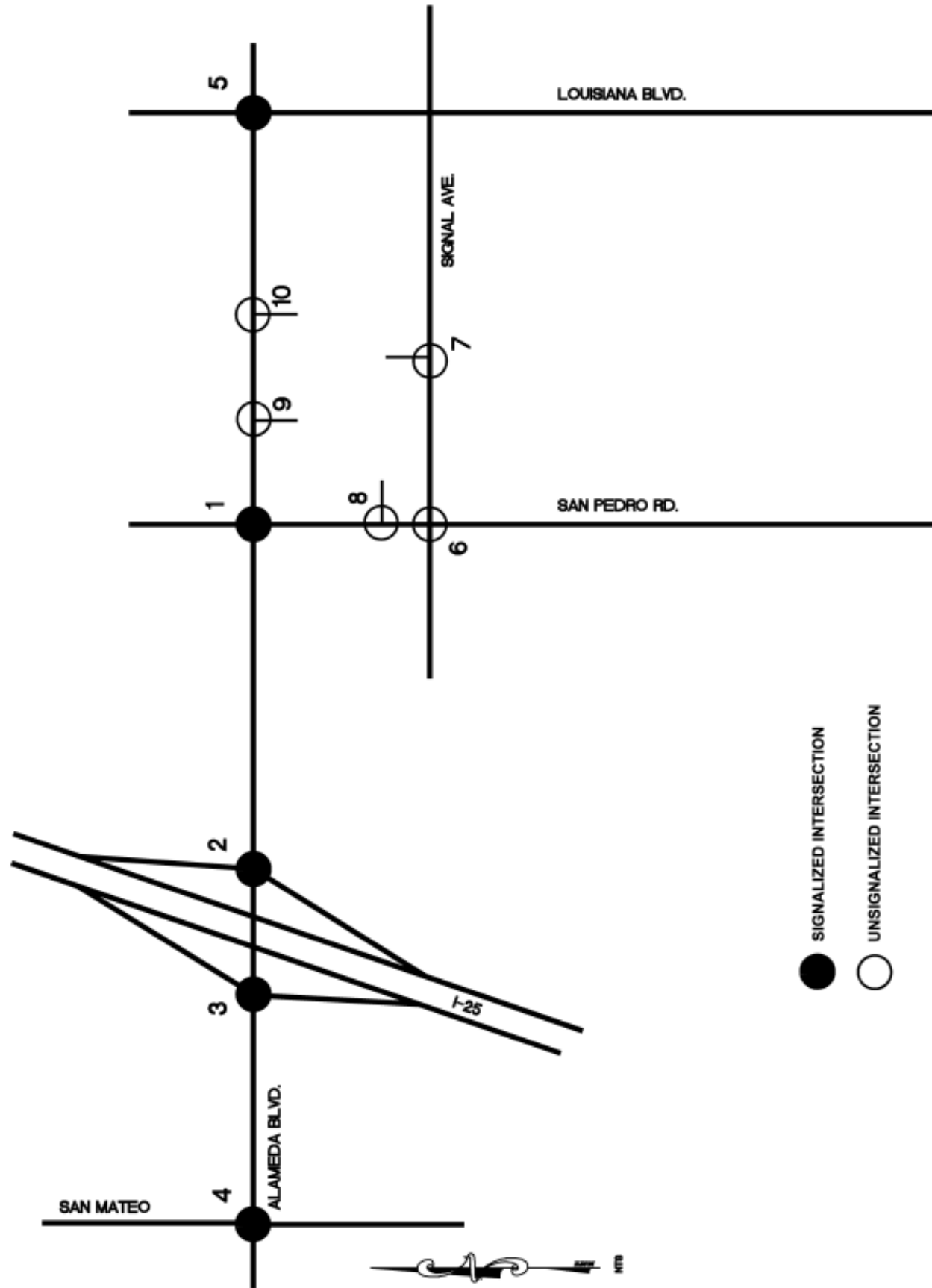
2019 BUILD Conditions



● SIGNALIZED INTERSECTION
○ UNSIGNALIZED INTERSECTION



Alameda / San Pedro Development
(SE Corner of Alameda Blvd. / San Pedro Dr.)
LOS / Volume Analysis Map

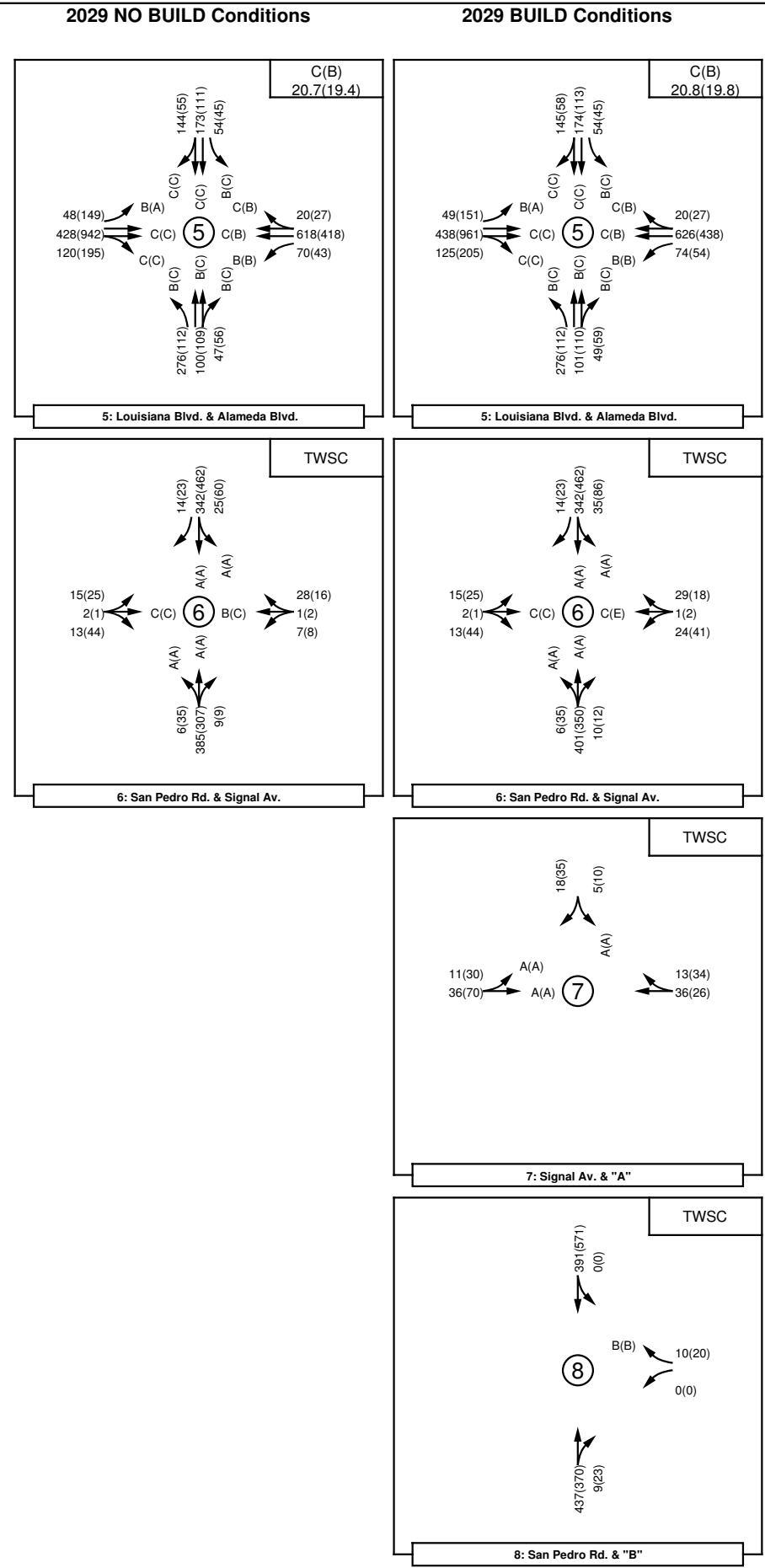
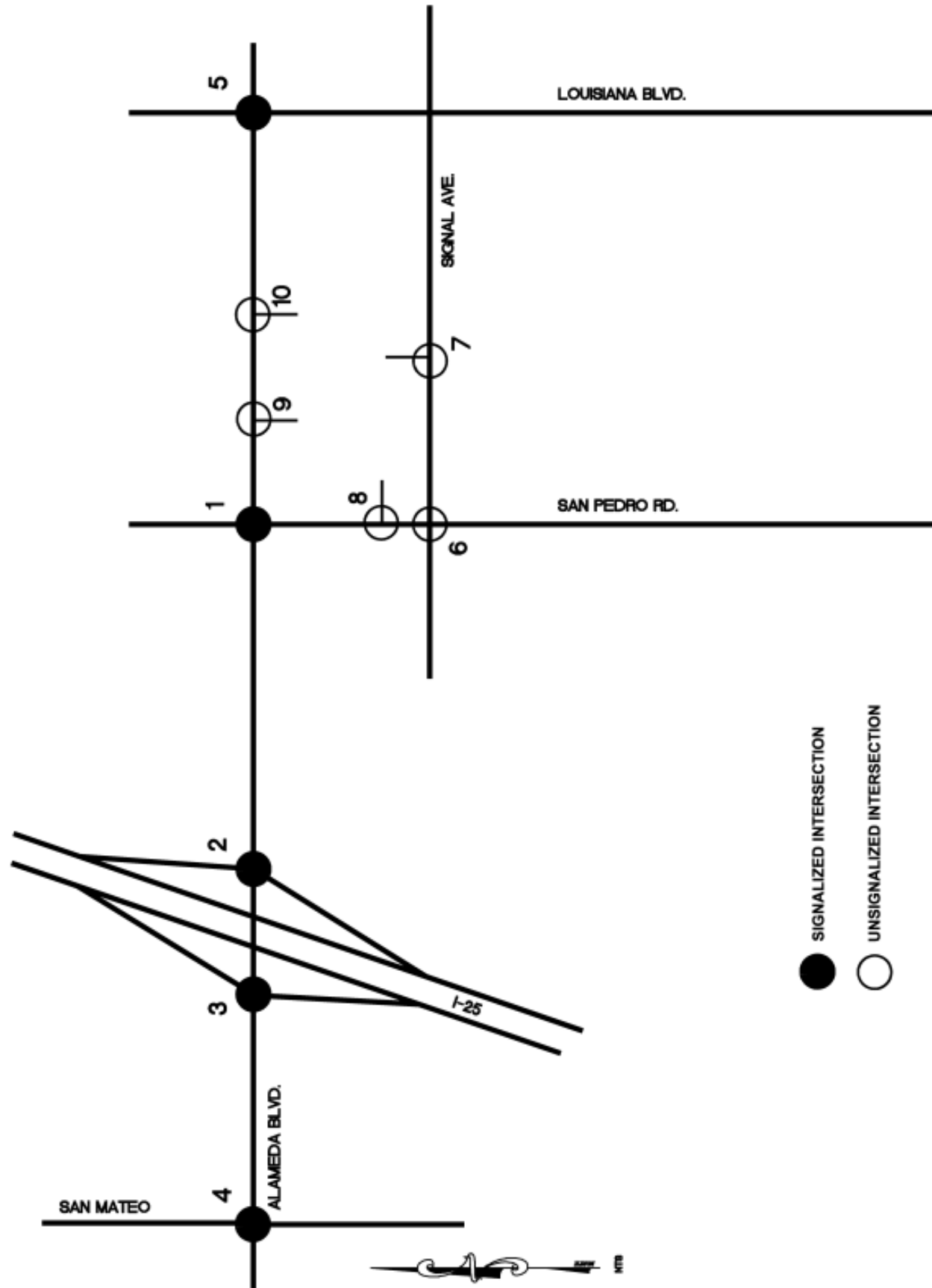


● SIGNALIZED INTERSECTION
○ UNSIGNALIZED INTERSECTION

2029 NO BUILD Conditions	2029 BUILD Conditions
1: San Pedro Rd. & Alameda Blvd. E(C) 55.9(25.3) 90(110) C(B) 543(1033) C(C) 370(497) B(B) 237(237) D(D) 50(86) C(C) 18(30) F(C) 36(15) F(C) 1307(677) B(B) 64(61) C(C) 328(242) D(C) 64(59) C(C) 32(60) C(C)	1: San Pedro Rd. & Alameda Blvd. E(C) 55.9(26.7) 90(110) C(B) 553(1060) C(C) 371(500) B(B) 237(237) D(D) 50(86) C(C) 18(31) F(C) 36(15) F(C) 1307(677) B(C) 73(84) C(C) 339(264) D(C) 64(60) C(C) 40(80) C(C)
2: I-25 E. Ramp & Alameda Blvd. C(C) 33.6(32.3) 256(423) E(F) 814(1323) A(A) 0(0) A(A) 196(303) C(C) 1508(741) C(C) 0(0) A(A) 984(689) E(D) 77(83) C(D) 220(435) D(E)	2: I-25 E. Ramp & Alameda Blvd. C(C) 33.7(33.3) 256(423) E(F) 820(1340) A(A) 0(0) A(A) 196(303) C(C) 1519(762) C(C) 0(0) A(A) 984(689) E(D) 77(83) C(D) 225(448) D(E)
3: I-25 W. Ramp & Alameda Blvd. B(F) 13.6(105.6) 0(0) A(A) 747(1211) A(D) 582(950) A(F) 150(153) E(E) 121(590) E(F) 169(548) D(F) 0(0) A(A) 1849(1052) A(A) 585(314) D(E) 0(0) A(A) 0(0) A(A) 0(0) A(A)	3: I-25 W. Ramp & Alameda Blvd. B(F) 14.7(105.7) 0(0) A(A) 753(1228) A(D) 582(950) A(F) 169(153) E(E) 136(590) E(F) 232(548) D(F) 0(0) A(A) 1855(1064) A(A) 590(324) D(E) 0(0) A(A) 0(0) A(A) 0(0) A(A)
4: San Mateo Blvd. & Alameda Blvd. B(E) 19.0(74.7) 274(80) A(B) 1083(1580) B(C) 30(15) B(C) 103(358) D(F) 15(62) A(A) 134(340) F(F) 658(157) A(C) 1013(902) A(C) 87(45) A(C) 23(30) D(F) 129(12) A(A) 97(144) E(D)	4: San Mateo Blvd. & Alameda Blvd. B(E) 19.1(75.3) 274(80) A(B) 1088(1593) B(C) 30(15) B(C) 103(358) D(F) 15(62) A(A) 134(341) F(F) 658(158) A(C) 1018(912) A(C) 88(47) A(C) 23(30) D(F) 129(12) A(A) 98(146) E(D)

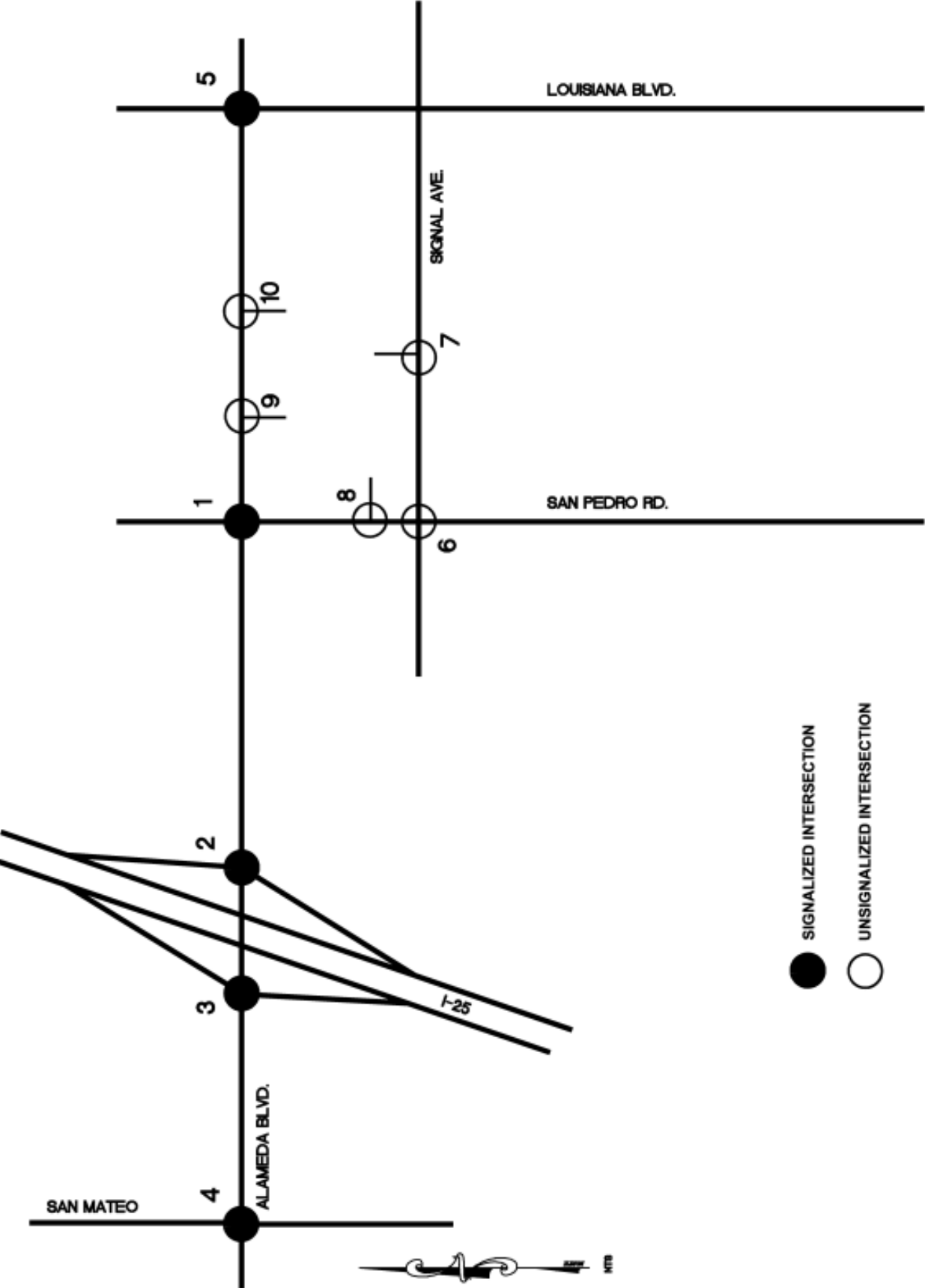
Alameda / San Pedro Development
(SE Corner of Alameda Blvd. / San Pedro Dr.)
LOS / Volume Analysis Map

AM(PM)

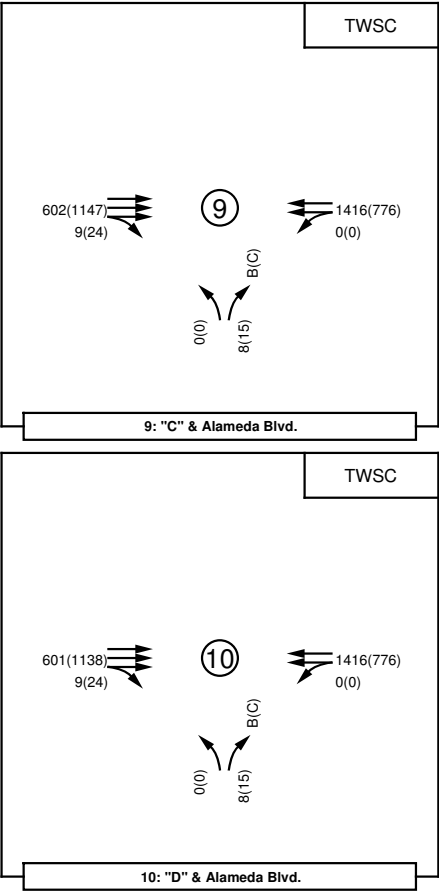


Alameda / San Pedro Development
(SE Corner of Alameda Blvd. / San Pedro Dr.)
LOS / Volume Analysis Map

AM(PM)



● SIGNALIZED INTERSECTION
○ UNSIGNALIZED INTERSECTION

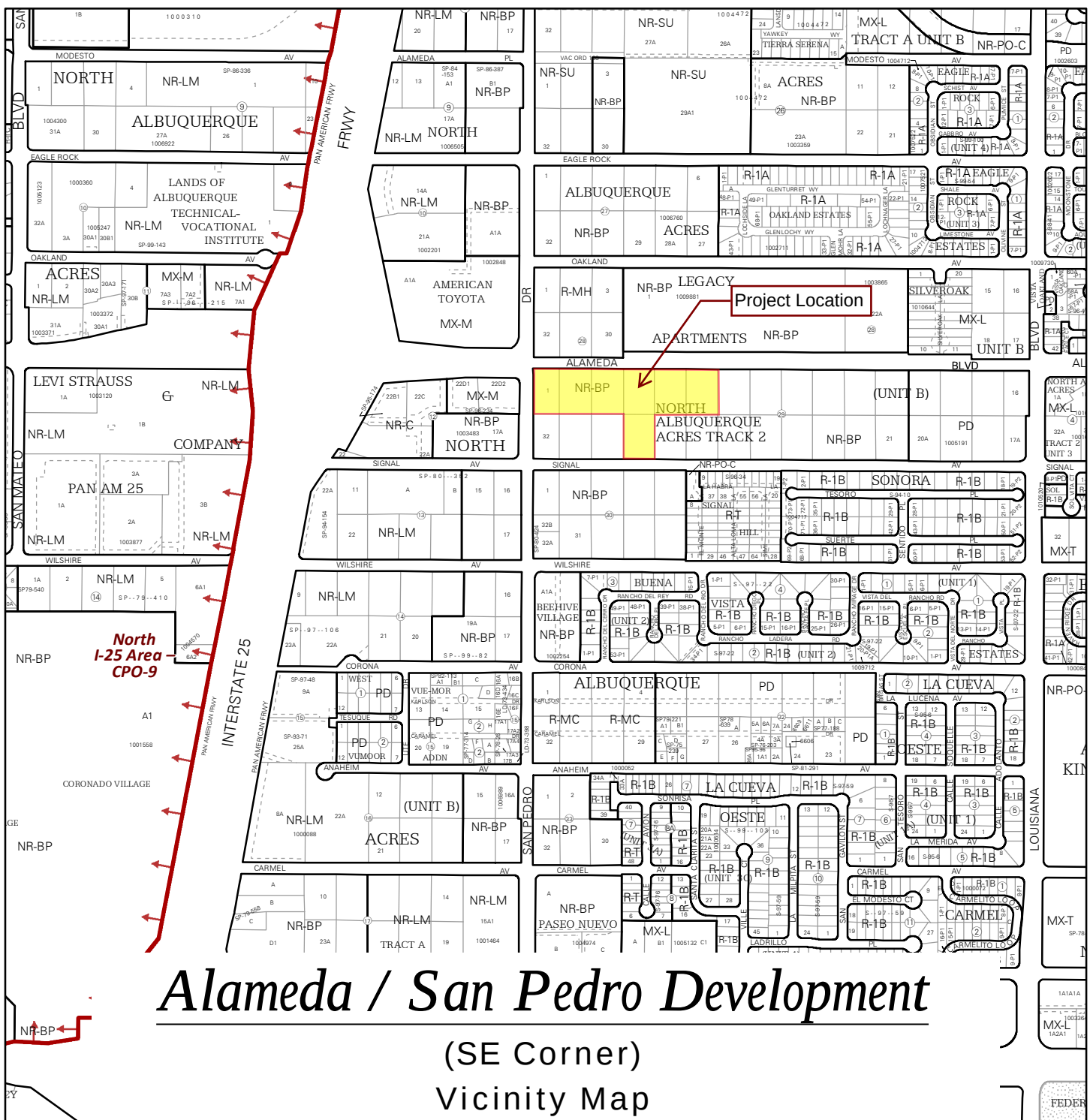


Alameda / San Pedro Development
(SE Corner of Alameda Blvd. / San Pedro Dr.)
LOS / Volume Analysis Map

Appendix

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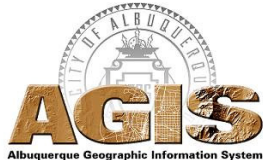
APPENDIX



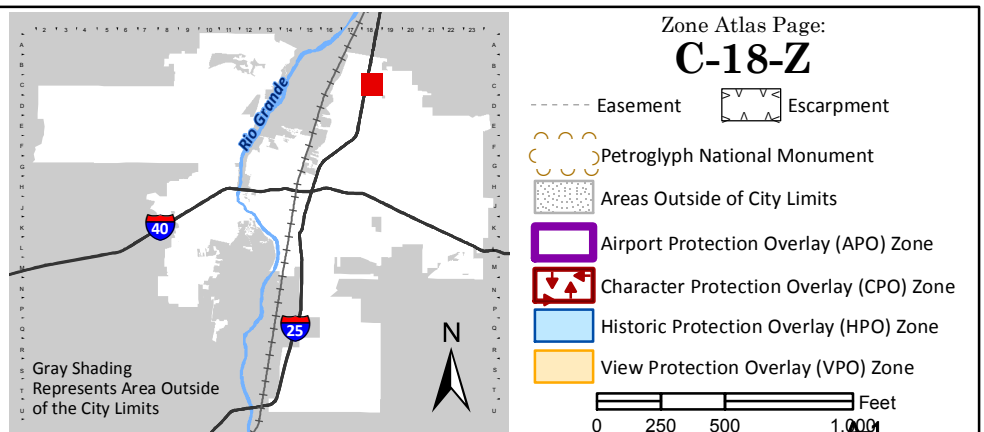
For more details about the Integrated Development Ordinance visit: <http://www.cabq.gov/planning/codes-policies-regulations/integrated-development-ordinance>

IDO Zone Atlas

May 2018



IDO Zoning information as of May 17, 2018
The Zone Districts and Overlay Zones
are established by the
Integrated Development Ordinance (IDO).





Alameda / San Pedro Development

(SE Corner)
Aerial Map

FIRE DATA:

CONSTRUCTION TYPE:	SEE PLAN
BUILDING AREAS:	SEE PLAN
FIRE FLOW REQUIREMENT:	2375 GPM
	IFC TABLE B105.1(2)
BUILDING 1	1500 X .25 = 375 GPM
BUILDING 2	2750 X .25 = 687.5 GPM
BUILDING 3	3500 X .25 = 875 GPM
BUILDING 4	1750 X .25 = 437.5 GPM
FIRE HYDRANTS REQUIRED:	3 FOR FIRE FLOW-3 FOR DISTANCE
	IFC TABLE C102.1
AVERAGE SPACING BTWN HYDRANTS:	450 FT
	IFC TABLE C102.1
FIRE HYDRANTS PROVIDED:	3 USEABLE INCLUDING 2 EXISTING AND 1 NEW
ALLOWABLE DISTANCE FROM HYDRANT TO FARTHEST POINT ON BLDG:	400 FT
	IFC 507.5.1

FIRE NOTES:

1. ALL APPROVED FIRE APPARATUS ACCESS ROADS SHALL HAVE AN ASPHALT, CONCRETE OR OTHER APPROVED DRIVING SURFACE CAPABLE OF SUPPORTING THE IMPOSED LOADS OF FIRE APPARATUS WEIGHING AT LEAST 75,000 LBS.
2. FIRE APPARATUS ROADS SHALL NOT EXCEED 10 PERCENT IN GRADE

SITE DATA

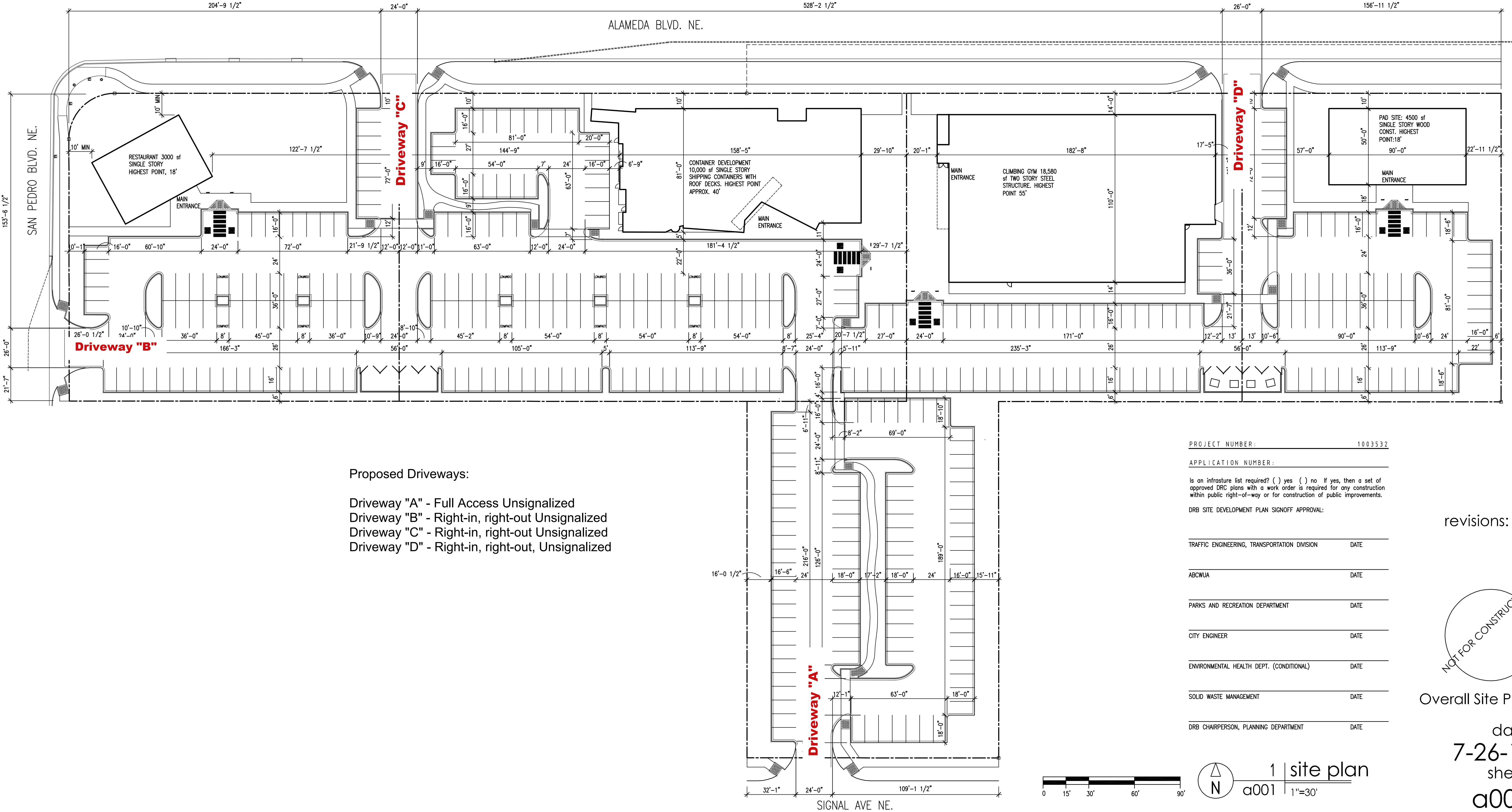
SITE LOCATION	SE CORNER SAN PEDRO AND ALAMEDA NE
	ALBUQUERQUE, NM
LEGAL DESCRIPTION:	LOTS 1,2,3,4,5,6,29, BLOCK 29, TR A, UNIT B
	NORTH ALBUQUERQUE ACRES
UPC NUMBER:	TBD PENDING REPLAT
ZONING:	NR-BP
ZONE ATLAS PAGE:	C18
PREVIOUS DRB APPROVAL:	NONE
LOT AREA:	228,394 SF, (5.2 AC)
GROSS BUILDING AREA:	42,500 SF
BUILDING 1: RESTAURANT	3000 SF
BUILDING 2: CONTAINER DEVELOPMENT	10,000 SF
BUILDING 3: CLIMBING GYM	25,000 SF
BUILDING 4: PAD SITE	4500 SF
BUILDING FOOTPRINT AREA:	34,550 SF
BUILDING 1: RESTAURANT	3000 SF
BUILDING 2: CONTAINER DEVELOPMENT	10,000 SF
BUILDING 3: CLIMBING GYM	18,580 SF
BUILDING 4: PAD SITE	4500 SF
NET LOT AREA (LOT AREA-BLD. FOOTPRINT):	193,844 SF
FLOOR AREA RATIO (LOT AREA/GROSS BLD. AREA):	18.6 %

VICINITY MAP



413 2nd st sw
albuq nm 87102
505 246 0870

A MIXED USE
DEVELOPMENT
at alameda and
san pedro ne.
abq, nm



Proposed Driveways:

- Driveway "A" - Full Access Unsignalized
- Driveway "B" - Right-in, right-out Unsignalized
- Driveway "C" - Right-in, right-out Unsignalized
- Driveway "D" - Right-in, right-out, Unsignalized

PROJECT NUMBER: 1003532

APPLICATION NUMBER:

Is an infrastructure list required? () yes () no If yes, then a set of approved ORC plans with a work order is required for any construction within public right-of-way or for construction of public improvements.

DRB SITE DEVELOPMENT PLAN SIGNOFF APPROVAL:

TRAFFIC ENGINEERING, TRANSPORTATION DIVISION DATE

ABCWUA DATE

PARKS AND RECREATION DEPARTMENT DATE

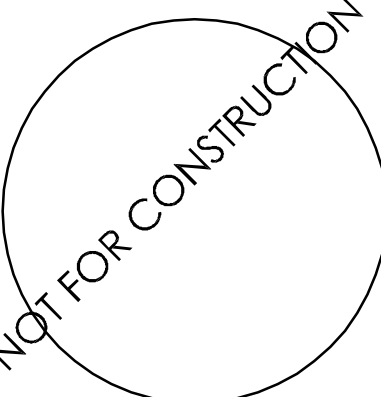
CITY ENGINEER DATE

ENVIRONMENTAL HEALTH DEPT. (CONDITIONAL) DATE

SOLID WASTE MANAGEMENT DATE

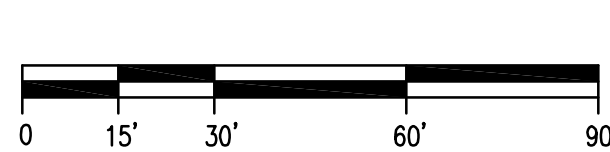
DRB CHAIRPERSON, PLANNING DEPARTMENT DATE

revisions:

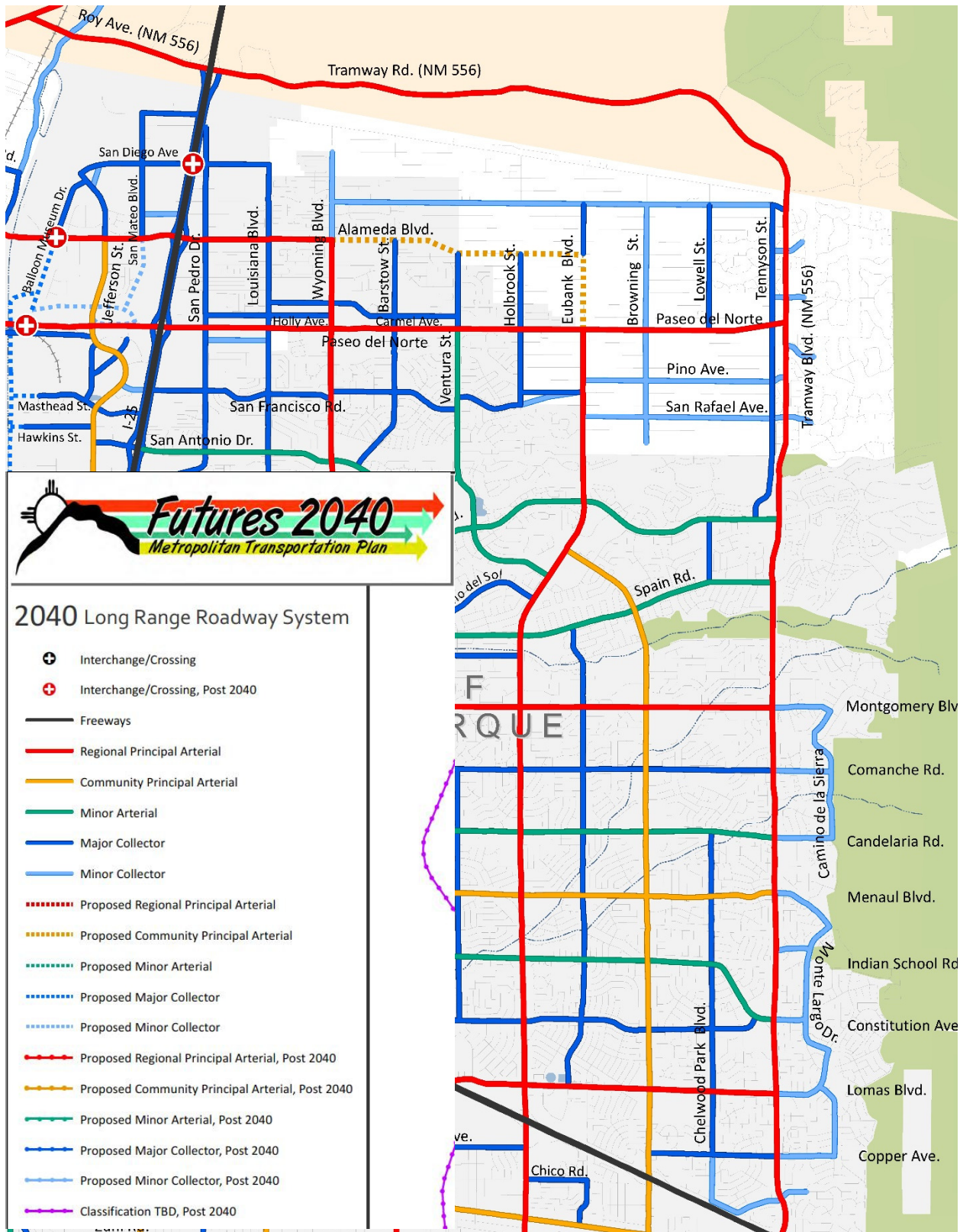


Overall Site Plan

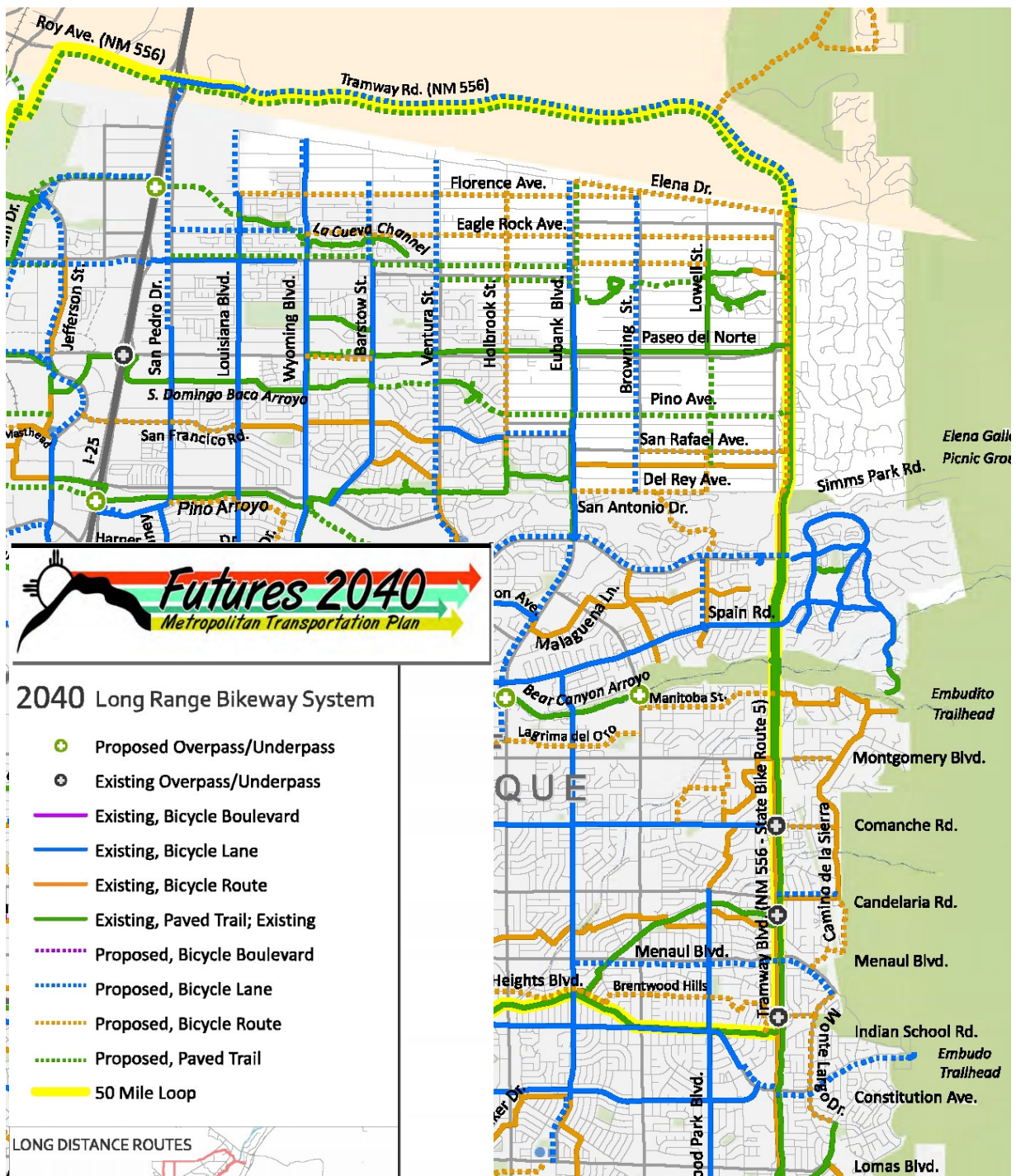
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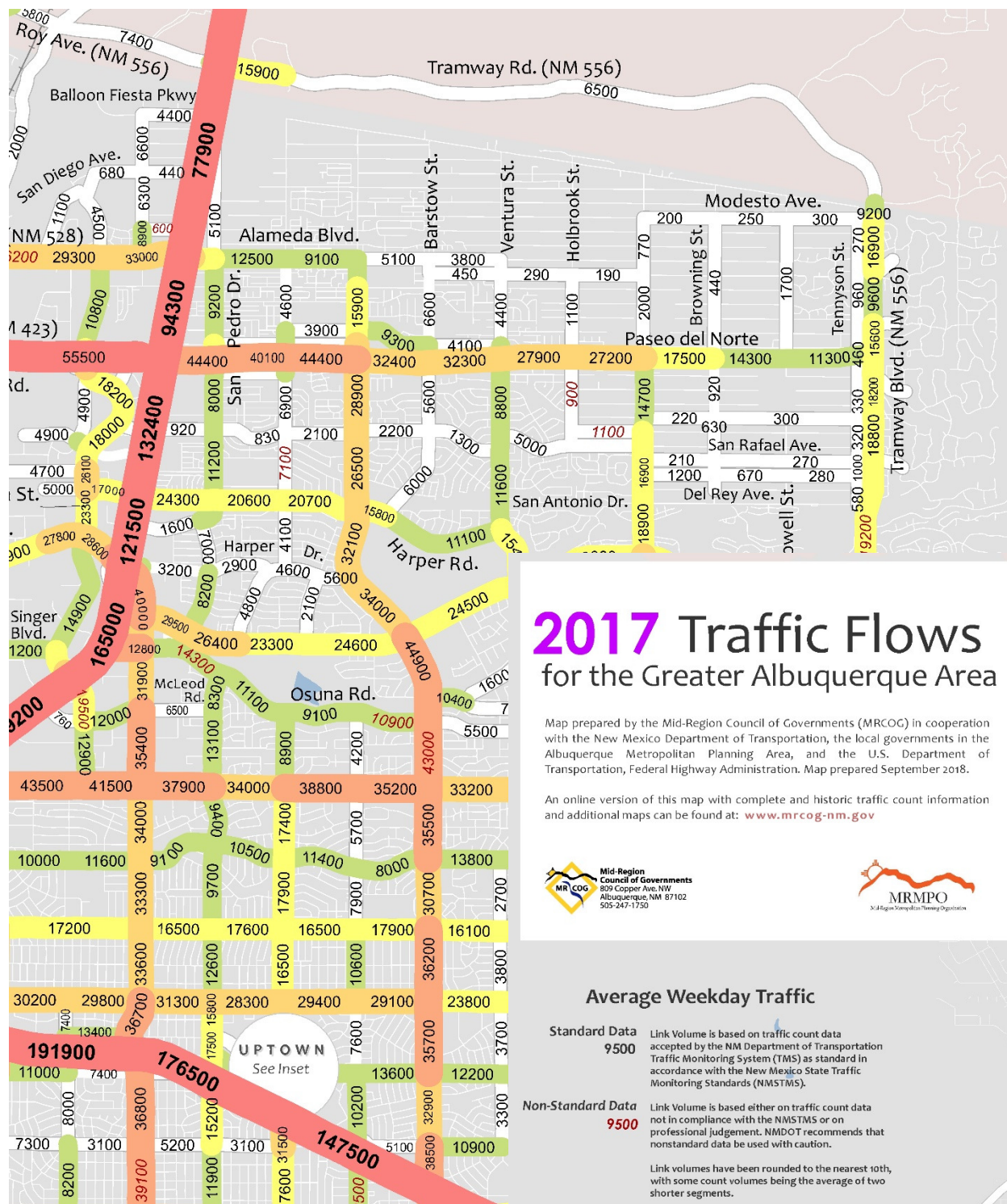
1 site plan
a001 1"=30'



Portion of Futures 2040 Long Range Roadway System Map



Portion of 2040 Futures Long Range Bikeway System Map



Portion of 2017 Traffic Flow Map
(From Mid-Region Council of Governments)

Alameda / San Pedro Development (SE Corner)

Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

USE (ITE CODE)	DESCRIPTION	24 HR VOL		A. M. PEAK HR.		P. M. PEAK HR.	
		GROSS		ENTER	EXIT	ENTER	EXIT
Summary Sheet		Units					
	High Turnover (Sit-Down) Restaurant (932)	3.00		16	13	18	11
	Variety Store (814)	14.50		26	20	52	48
	Rock Climbing Gym (Local Data)	25.00		8	15	65	37
	Subtotal	1,257		50	48	135	96

Alameda / San Pedro Development (SE Corner)
Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR	
		ENTER	EXIT	ENTER	EXIT
Units					
3.00					
1,000 S.F.					
High Turnover (Sit-Down) Restaurant (932)					
		337	16	13	18

ITE Trip Generation Equations:

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

$$T = \frac{112.18 (X) + 0}{50\% \text{ Enter, } 50\% \text{ Exit}}$$

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

$$T = \frac{9.94 (X) + 0}{55\% \text{ Enter, } 45\% \text{ Exit}}$$

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

$$T = \frac{9.77 (X) + 0}{62\% \text{ Enter, } 38\% \text{ Exit}}$$

Comments:

Tract No.

Based on ITE Trip Generation Manual - 10th Edition

Alameda / San Pedro Development (SE Corner)
Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR		
		ENTER	EXIT	ENTER	EXIT	
		GROSS				
Units						
Variety Store (814)		920	26	20	52	48
14.50						
1,000 S.F.						

ITE Trip Generation Equations:

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

$$T = \frac{63.47}{50\%} (X) + \frac{0}{50\% \text{ Enter, } 50\% \text{ Exit}}$$

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

$$T = \frac{3.18}{57\% \text{ Enter, } 43\% \text{ Exit}} (X) + \frac{0}{57\% \text{ Enter, } 43\% \text{ Exit}}$$

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

$$T = \frac{6.84}{52\% \text{ Enter, } 48\% \text{ Exit}} (X) + \frac{0}{52\% \text{ Enter, } 48\% \text{ Exit}}$$

Comments:

Tract No.

Based on ITE Trip Generation Manual - 10th Edition

Alameda / San Pedro Development (SE Corner)
Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR	
		ENTER	EXIT	ENTER	EXIT
Units					
Rock Climbing Gym (440)					
	-	12	23	23	18
		25.00			
		1,000 S.F.			

ITE Trip Generation Equations:

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

$$T = \frac{0}{50\%} \text{ Enter, } \frac{0}{50\%} \text{ Exit} + \frac{0}{50\%} \text{ Exit}$$

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

$$T = \frac{1.4}{33\%} \text{ Enter, } \frac{1.4}{33\%} \text{ Exit} + \frac{0}{67\%} \text{ Exit}$$

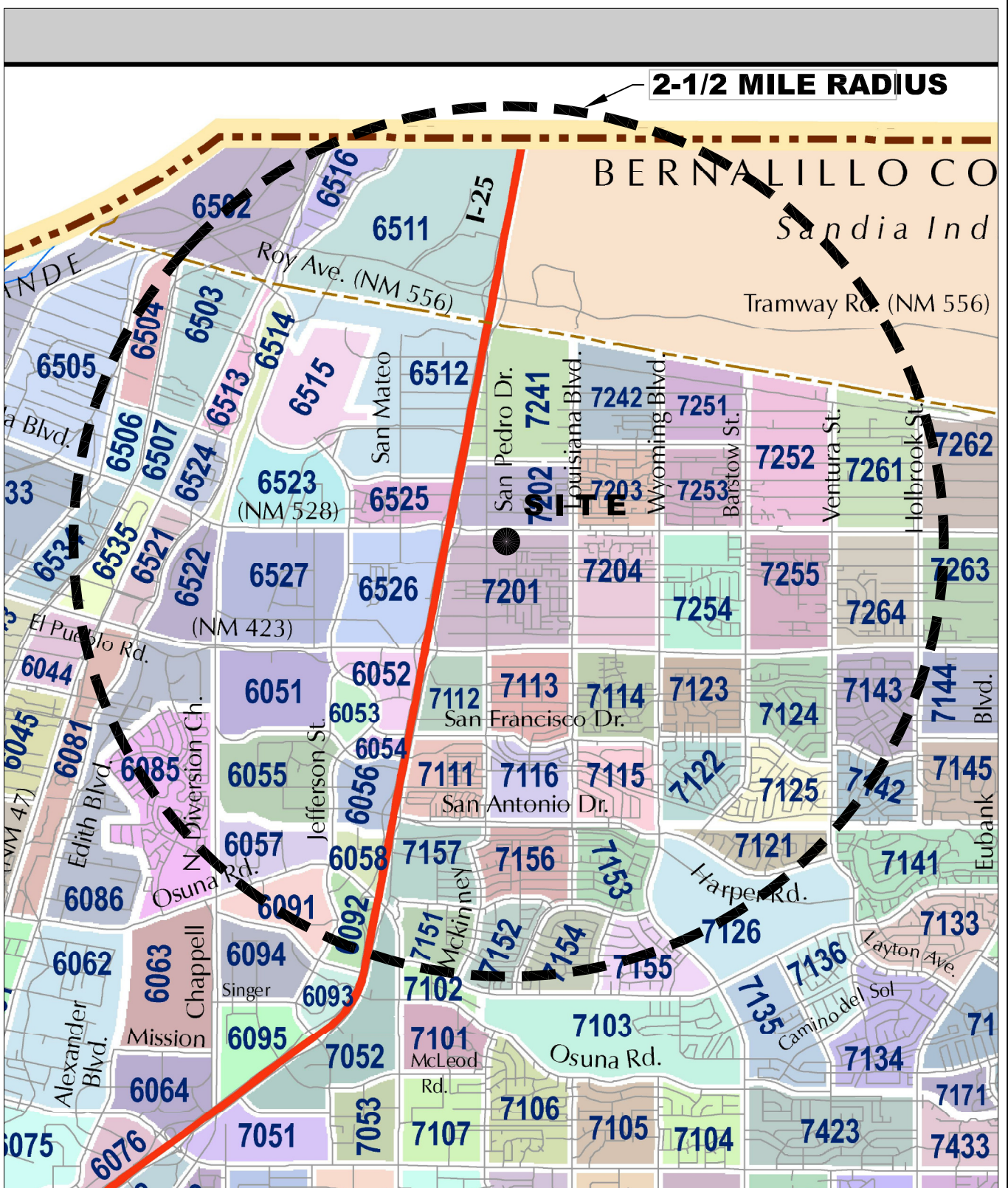
Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

$$T = \frac{1.64}{57\%} \text{ Enter, } \frac{1.64}{57\%} \text{ Exit} + \frac{0}{43\%} \text{ Exit}$$

Comments:

Tract No.

Based on ITE Trip Generation Manual - 10th Edition



DATA ANALYSIS SUBZONE (DASZ) MAP

Alameda / San Pedro Development

(SE Corner of Alameda Blvd. / San Pedro)

Trip Distribution Table
Alameda Blvd. / San Pedro Retail Development (SE Corner)

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

2012 and 2040 Data Taken from Mid-Region Council of Governments'
2040 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

							(AW)			(SN)			(SS)			(IN)			(IS)			(SPS)			(SPN)		
							Alameda West			San Mateo North			San Mateo South			I-25 North			I-25 South			San Pedro South			San Pedro North		
DASZ #	% Sub Area in Study	2012 Population	2040 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2012	2040	2020																							
Boundary Specified on DASZ Map																											
6051	100%	0	0	0	0	0.00%	30%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	40%	0.00%	0	30%	0.00%	0	0%	0.00%	0
6052	100%	0	394	113	113	0.25%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	60%	0.15%	68	40%	0.10%	45	0%	0.00%	0
6053	100%	0	0	0	0	0.00%	10%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	50%	0.00%	0	40%	0.00%	0	0%	0.00%	0
6054	100%	0	0	0	0	0.00%	50%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	20%	0.00%	0	30%	0.00%	0	0%	0.00%	0
6055	100%	0	362	103	103	0.23%	10%	0.02%	10	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	50%	0.12%	52	40%	0.09%	41	0%	0.00%	0
6056	100%	0	0	0	0	0.00%	20%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	40%	0.00%	0	40%	0.00%	0	0%	0.00%	0
6057	80%	0	0	0	0	0.00%	20%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	40%	0.00%	0	40%	0.00%	0	0%	0.00%	0
6058	100%	50	50	50	50	0.11%	20%	0.02%	10	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	40%	0.04%	20	40%	0.04%	20	0%	0.00%	0
6085	50%	3984	4428	4,111	2,056	4.60%	20%	0.92%	411	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	40%	1.84%	822	40%	1.84%	822	0%	0.00%	0
6086	35%	1024	1262	1,092	382	0.85%	20%	0.17%	76	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	40%	0.34%	153	40%	0.34%	153	0%	0.00%	0
6091	70%	0	0	0	0	0.00%	30%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	40%	0.00%	0	30%	0.00%	0	0%	0.00%	0
6092	50%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	100%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6502	50%	76	94	81	41	0.09%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	50%	0.05%	21	0%	0.00%	0	0%	0.00%	0	50%	0.05%	21
6503	100%	928	953	935	935	2.09%	100%	2.09%	935	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6504	80%	256	297	268	214	0.48%	100%	0.48%	214	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6506	100%	395	369	388	388	0.87%	100%	0.87%	388	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6507	100%	46	66	52	52	0.12%	100%	0.12%	52	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6511	100%	26	30	27	27	0.06%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	100%	0.06%	27	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6512	100%	0	0	0	0	0.00%	0%	0.00%	0	20%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	80%	0.00%	0
6513	100%	163	176	167	167	0.37%	100%	0.37%	167	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6514	100%	110	127	115	115	0.26%	100%	0.26%	115	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6515	100%	0	0	0	0	0.00%	100%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6516	100%	143	170	151	151	0.34%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	50%	0.17%	76	0%	0.00%	0	0%	0.00%	0	50%	0.17%	76
6521	100%	163	179	168	168	0.38%	100%	0.38%	168	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6522	100%	0	0	0	0	0.00%	100%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6523	100%	464	604	504	504	1.13%	100%	1.13%	504	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6524	100%	227	250	234	234	0.52%	100%	0.52%	234	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6525	100%	352	296	336	336	0.75%	0%	0.00%	0	100%	0.75%	336	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6526	100%	1014	2523	1,445	1,445	3.23%	50%	1.62%	723	0%	0.00%	0	50%	1.62%	723	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6527	100%	0	144	41	41	0.09%	50%	0.05%	21	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	20%	0.02%	8	30%	0.03%	12	0%	0.00%	0
6534	50%	416	515	444	222	0.50%	50%	0.25%	111	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	20%	0.10%	44	30%	0.15%	67	0%	0.00%	0
6535	90%	631	825	686	617	1.38%	50%	0.69%	309	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	20%	0.28%	123	30%	0.41%	185	0%	0.00%	0
7111	100%	1249	1135	1,216	1,216	2.72%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	30%	0.82%	365	70%	1.90%	851	0%	0.00%	0
7112	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	100%	0.00%	0	0%	0.00%	0
7113	100%	974	1282	1,062	1,062	2.38%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	80%	1.90%	850	0%	0.00%	0
7114	100%	1375	1546	1,424	1,424	3.19%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	50%	1.59%	712	0%	0.00%	0
7115	100%	1448	1465	1,453	1,453	3.25%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	50%	1.63%	727	0%	0.00%	0
7116	100%	728	2499	1,234	1,234	2.76%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	80%	2.21%	987	0%	0.00%	0
7121	95%	894	820	873	829	1.85%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	20%	0.37%	166	40%	0.74%	332	0%	0.00%	0
7122	100%	1218	1217	1,218	1,218	2.72%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	20%	0.54%	244	40%	1.09%	487	0%	0.00%	0
7123	100%	1241	1502	1,316	1,316	2.94%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	20%	0.59%	263	0%	0.00%	0
7124	100%	1414	1403	1,411	1,411	3.16%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	20%	0.63%	282	0%	0.00%	0
7125	100%	1244	1326	1,267	1,267	2.83%	0%																				

Trip Distribution Table
Alameda Blvd. / San Pedro Retail Development (SE Corner)

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

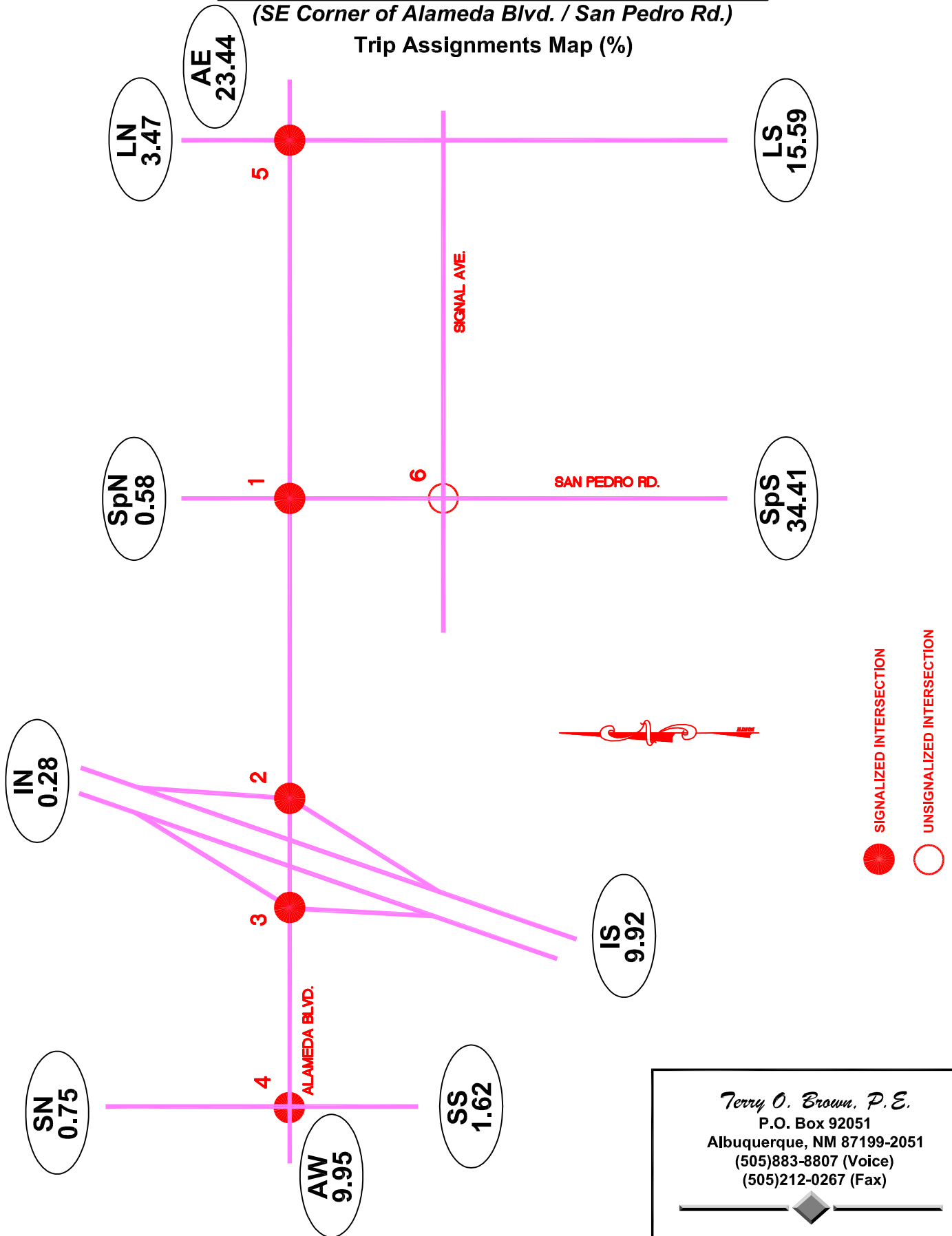
2012 and 2040 Data Taken from Mid-Region Council of Governments'
2040 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

							(AE) Alameda Blvd. East			(LN) Louisiana Blvd. North			(LS) Louisiana Blvd. South		
DASZ #	% Sub Area in Study	2012 Population	2040 Population	Interpolated Population for the Year 2020	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2012	2040	2020											
Boundary Specified on DASZ Map															
6051	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6052	100%	0	394	113	113	0.25%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6053	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6054	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6055	100%	0	362	103	103	0.23%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6056	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6057	80%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6058	100%	50	50	50	50	0.11%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6085	50%	3984	4428	4,111	2,056	4.60%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6086	35%	1024	1262	1,092	382	0.85%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6091	70%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6092	50%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6502	50%	76	94	81	41	0.09%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6503	100%	928	953	935	935	2.09%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6504	80%	256	297	268	214	0.48%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6506	100%	395	369	388	388	0.87%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6507	100%	46	66	52	52	0.12%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6511	100%	26	30	27	27	0.06%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6512	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6513	100%	163	176	167	167	0.37%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6514	100%	110	127	115	115	0.26%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6515	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6516	100%	143	170	151	151	0.34%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6521	100%	163	179	168	168	0.38%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6522	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6523	100%	464	604	504	504	1.13%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6524	100%	227	250	234	234	0.52%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6525	100%	352	296	336	336	0.75%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6526	100%	1014	2523	1,445	1,445	3.23%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6527	100%	0	144	41	41	0.09%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6534	50%	416	515	444	222	0.50%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6535	90%	631	825	686	617	1.38%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7111	100%	1249	1135	1,216	1,216	2.72%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7112	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7113	100%	974	1282	1,062	1,062	2.38%	0%	0.00%	0	0%	0.00%	0	20%	0.48%	212
7114	100%	1375	1546	1,424	1,424	3.19%	0%	0.00%	0	0%	0.00%	0	50%	1.59%	712
7115	100%	1448	1465	1,453	1,453	3.25%	0%	0.00%	0	0%	0.00%	0	50%	1.63%	727
7116	100%	728	2499	1,234	1,234	2.76%	0%	0.00%	0	0%	0.00%	0	20%	0.55%	247
7121	95%	894	820	873	829	1.85%	40%	0.74%	332	0%	0.00%	0	0%	0.00%	0
7122	100%	1218	1217	1,218	1,218	2.72%	40%	1.09%	487	0%	0.00%	0	0%	0.00%	0
7123	100%	1241	1502	1,316	1,316	2.94%	40%	1.18%	526	0%	0.00%	0	40%	1.18%	526
7124	100%	1414	1403	1,411	1,411	3.16%	40%	1.26%	564	0%	0.00%	0	40%	1.26%	564
7125	100%	1244	1326	1,267	1,267	2.83%	40%	1.13%	507	0%	0.00%	0	0%	0.00%	0
7126	50%	0	0	0	0	0.00%	100%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7142	40%	1328	1354	1,335	534	1.19%	50%	0.60%	267	0%	0.00%	0	25%	0.30%	134
7143	95%	1858	1757	1,829	1,738	3.89%	50%	1.94%	869	0%	0.00%	0	20%	0.78%	348
7151	100%	1081	1233	1,124	1,124	2.51%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7152	80%	1422	1450	1,430	1,144	2.56%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7153	100%	1319	1512	1,374	1,374	3.07%	0%	0.00%	0	0%	0.00%	0	50%	1.54%	687
7154	80%	1125	1175	1,139	911	2.04%	0%	0.00%	0	0%	0.00%	0	40%	0.82%	364
7155	45%	908	1049	948	427	0.96%	0%	0.00%	0	0%	0.00%	0	50%	0.48%	214
7156	100%	1511	1503	1,509	1,509	3.38%	0%	0.00%	0	0%	0.00%	0	40%	1.35%	604
7157	100%	703	819	736	736	1.65%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7201	100%	2165	2305	2,205	2,205	4.93%	0%	0.00%	0	0%	0.00%	0	30%	1.48%	662
7202	100%	422	845	543	543	1.21%	30%	0.36%	163	40%	0.49%	217	0%	0.00%	0
7203	100%	1989	2099	2,020	2,020	4.52%	60%	2.71%	1,212	40%	1.81%	808	0%	0.00%	0
7204	100%	1439	1631	1,494	1,494	3.34%	50%	1.67%	747	0%	0.00%	0	50%	1.67%	747
7241	100%	0	0	0	0	0.00%	0%	0.00%	0	50%	0.00%	0	0%	0.00%	0
7242	100%	410	561	453	453	1.01%	20%	0.20%	91	80%	0.81%	362	0%	0.00%	0
7251	100%	258	271	262	262	0.59%	90%	0.53%	236	10%	0.06%	26	0%	0.00%	0
7252	100%	726	1035	814	814	1.82%	100%	1.82%	814	0%	0.00%	0	0%	0.00%	0
7253	100%	1352	1463	1,384	1,384	3.10%	90%	2.79%	1,246	10%	0.31%	138	0%	0.00%	0
7254	100%	1642	1739	1,670	1,670	3.74%	40%	1.49%	668	0%	0.00%	0	0%	0.00%	0
7255	100%	1795	2227	1,918	1,918	4.29%	40%	1.72%	767	0%	0.00%	0	0%	0.00%	0
7261	100%	537	538	537	537	1.20%	100%	1.20%	537	0%	0.00%	0	0%	0.00%	0
7264	100%	1095	1155	1,112	1,112	2.49%	40%	1.00%	445	0%	0.00%	0	20%	0.50%	222
					49,821	44,700	100.00%				10,477	23.44%			
											1,552	3.47%			
														6,969	15.59%

Alameda / San Pedro Development

(SE Corner of Alameda Blvd. / San Pedro Rd.)

Trip Assignments Map (%)

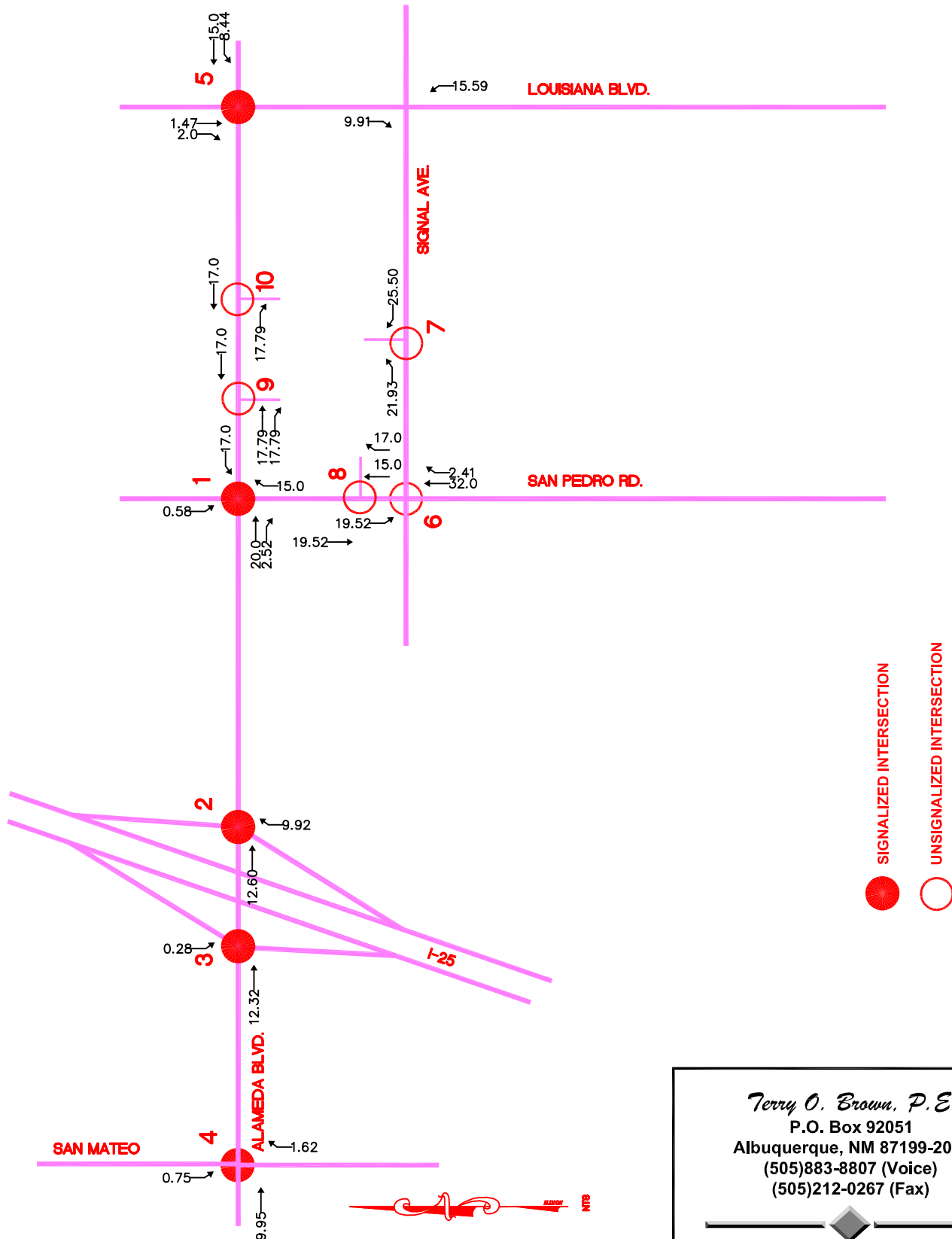


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(505)212-0267 (Fax)

Alameda / San Pedro Development

(SE Corner of Alameda Blvd. / San Pedro Rd.)

Trip Assignments (% Entering)

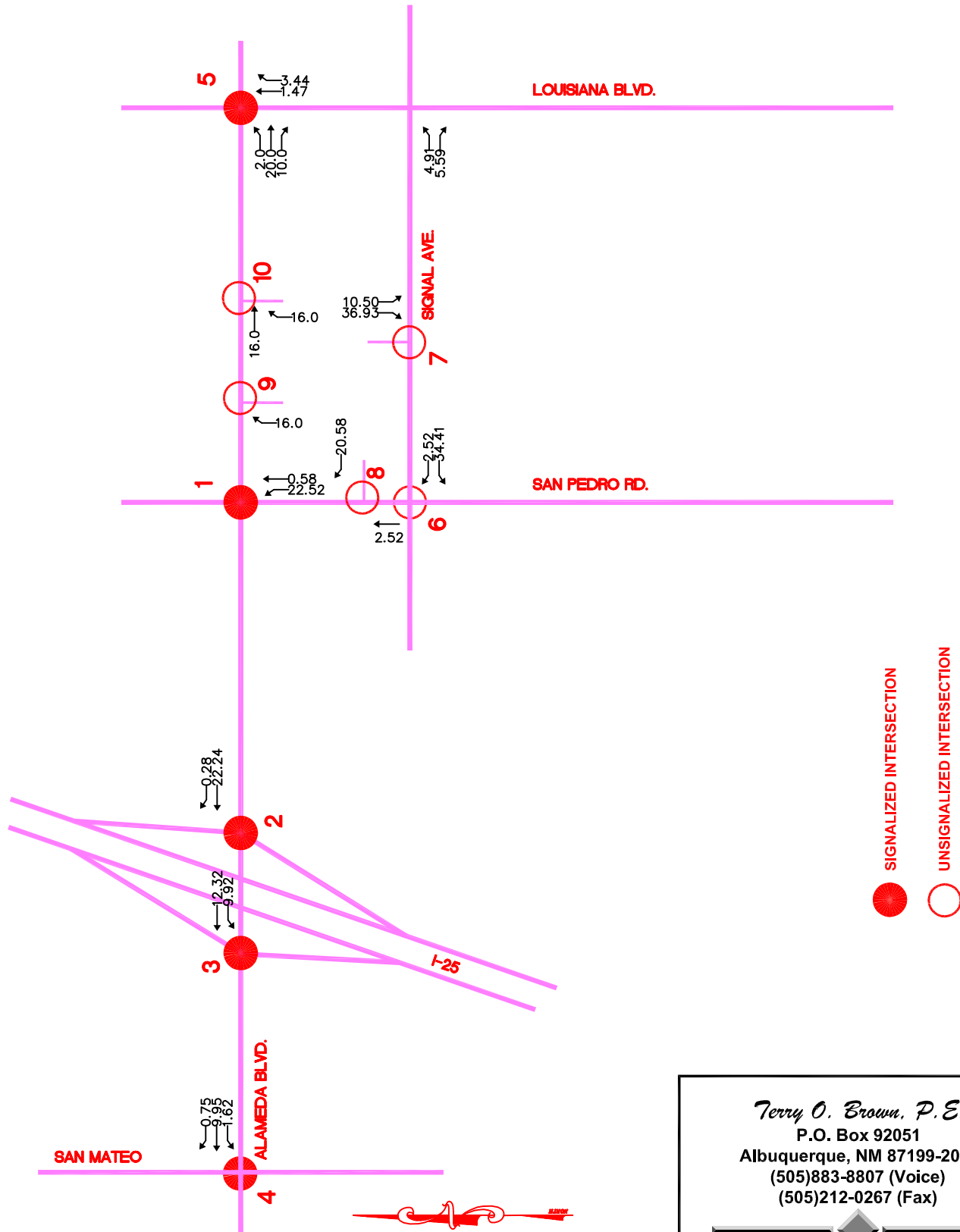


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Alameda / San Pedro Development

(SE Corner of Alameda Blvd. / San Pedro Rd.)

Trip Assignments (% Exiting)



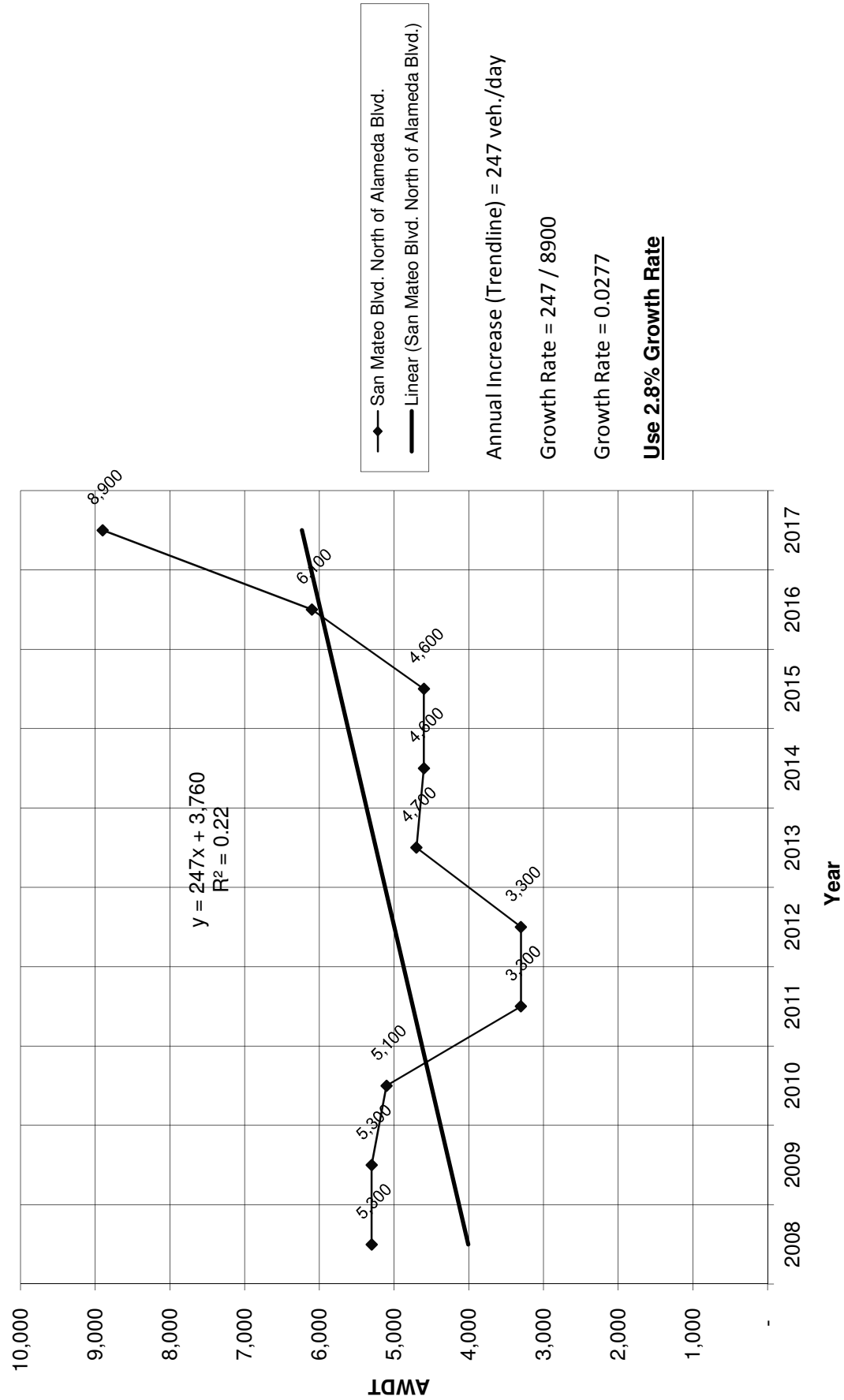
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Alameda / San Pedro Development (SE Corner)
Historic Growth Rate Table

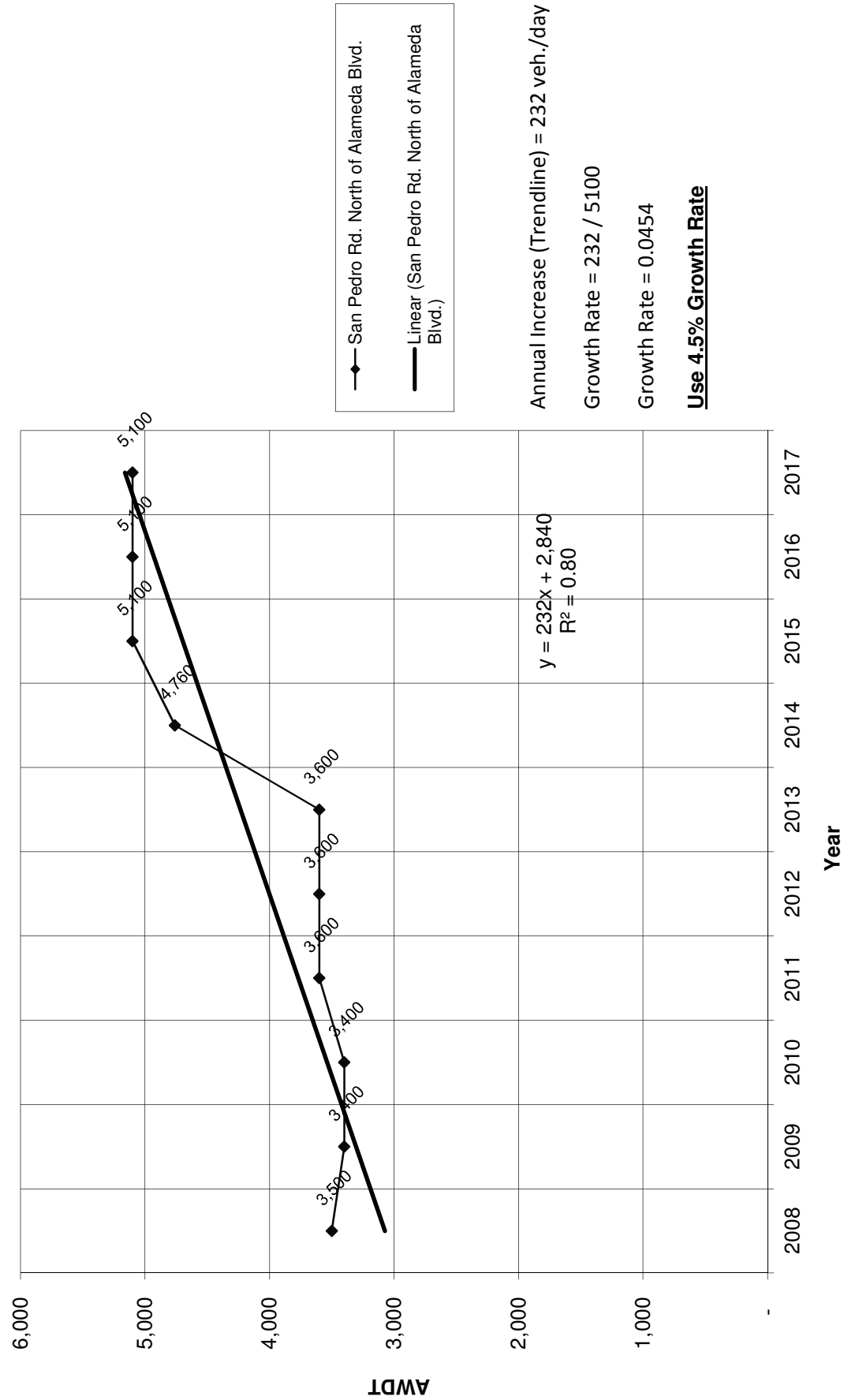
Traffic Flows from MRCOG Map

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
San Mateo Blvd. North of Alameda Blvd.	5,300	5,300	5,100	3,300	3,300	4,700	4,600	4,600	6,100	8,900
San Pedro Rd. North of Alameda Blvd.	3,500	3,400	3,400	3,600	3,600	3,600	4,760	5,100	5,100	5,100
Alameda btwn San Pedro & Louisiana	9,800	9,600	9,400	9,200	9,500	8,700	8,640	8,600	12,500	12,500
Alameda Blvd. East of Louisiana Blvd.	8,400	8,200	7,700	7,600	7,200	7,200	7,110	9,100	9,100	9,100
Louisiana Blvd. South of Signal Av.	11,100	11,000	6,600	6,500	6,500	12,000	11,850	11,800	4,600	4,600
San Pedro Rd. South of Signal Av.	11,500	13,900	13,700	13,400	16,900	16,900	16,750	16,700	9,200	9,200
Alameda Blvd. btwn I-25 & San Mateo	31,400	31,800	31,000	30,800	32,900	35,400	30,410	34,800	30,200	33,000

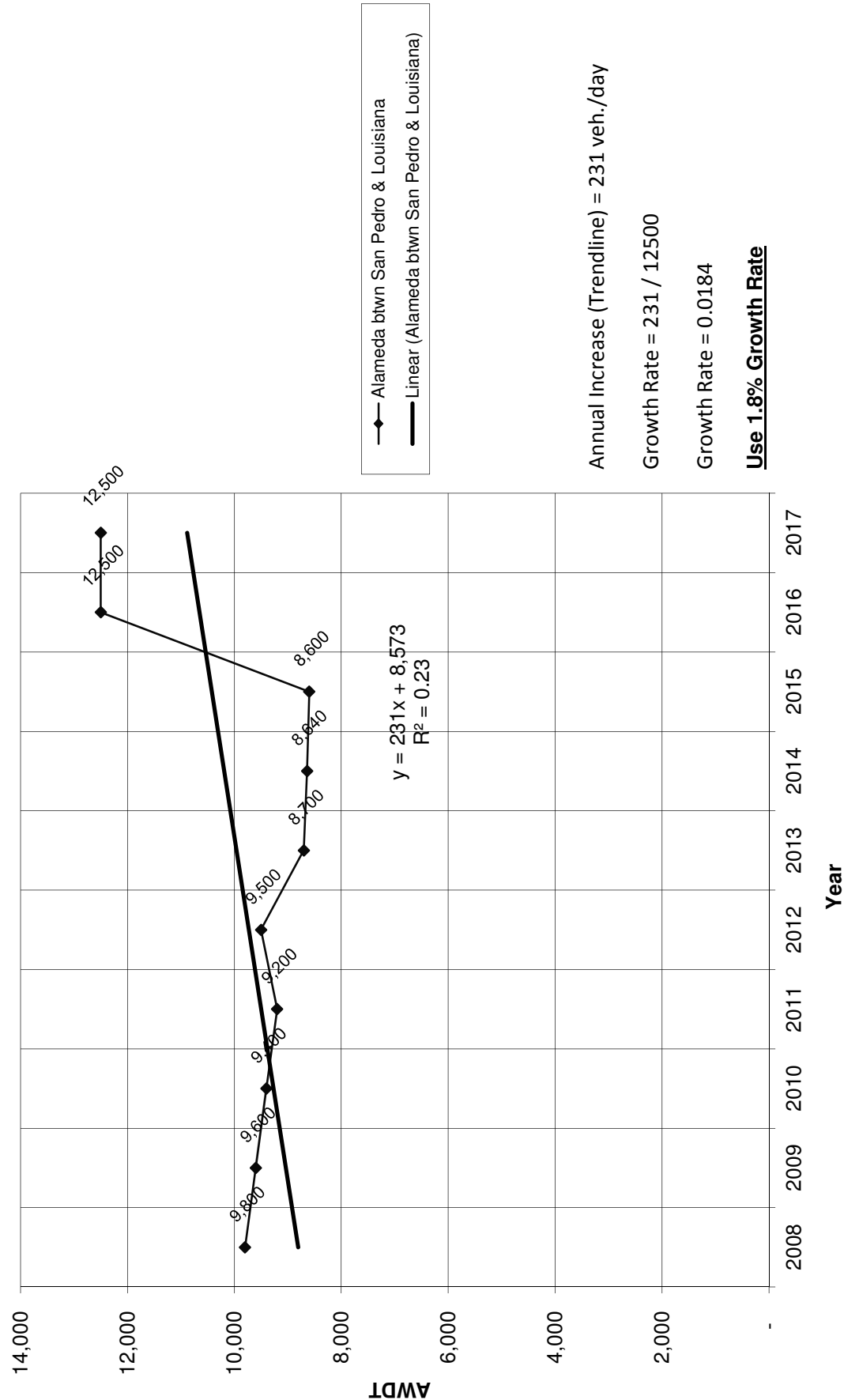
Historic Growth Chart San Mateo Blvd. North of Alameda Blvd. (2008-2017)



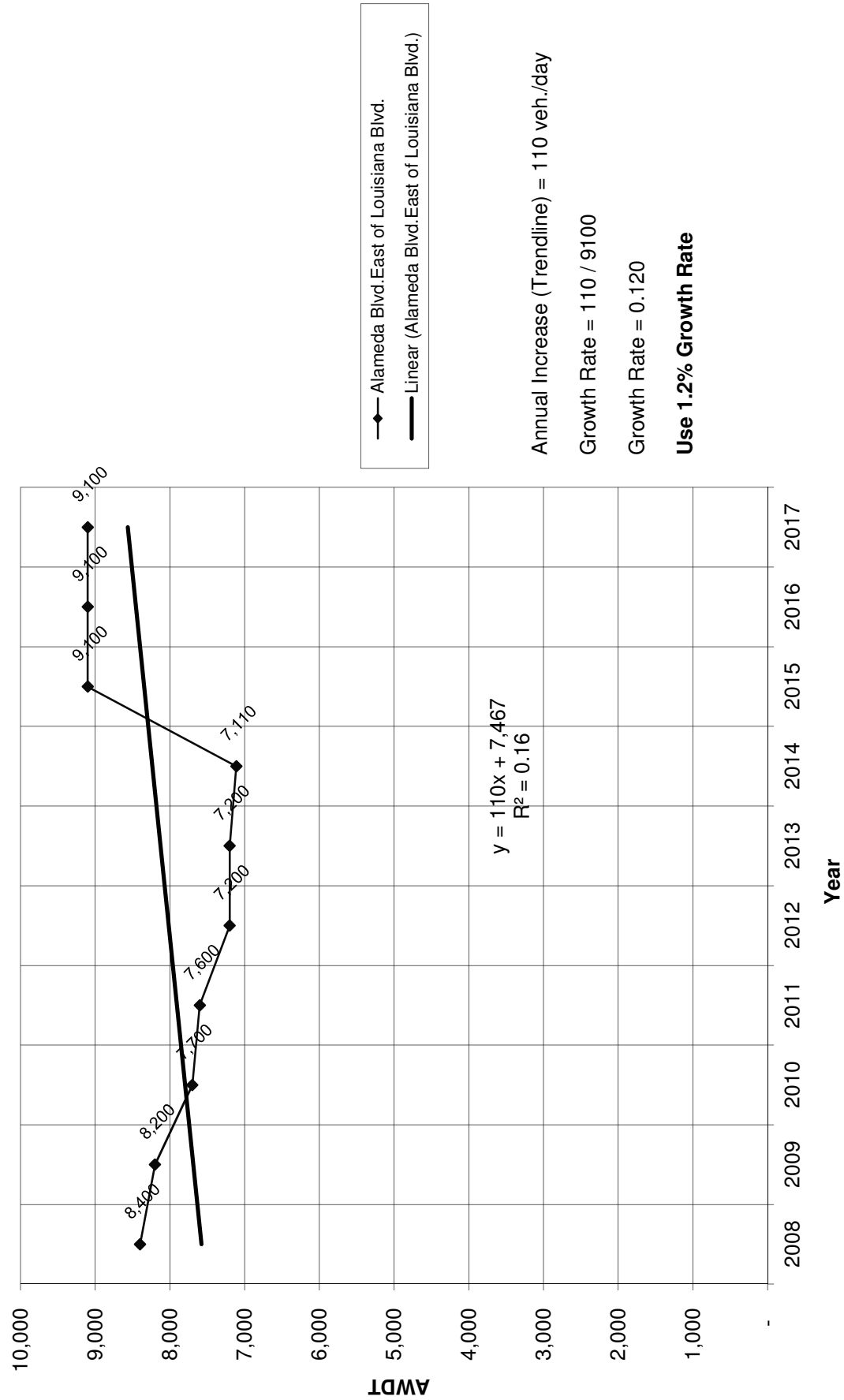
Historic Growth Chart San Pedro Rd. North of Alameda Blvd. (2008-2017)



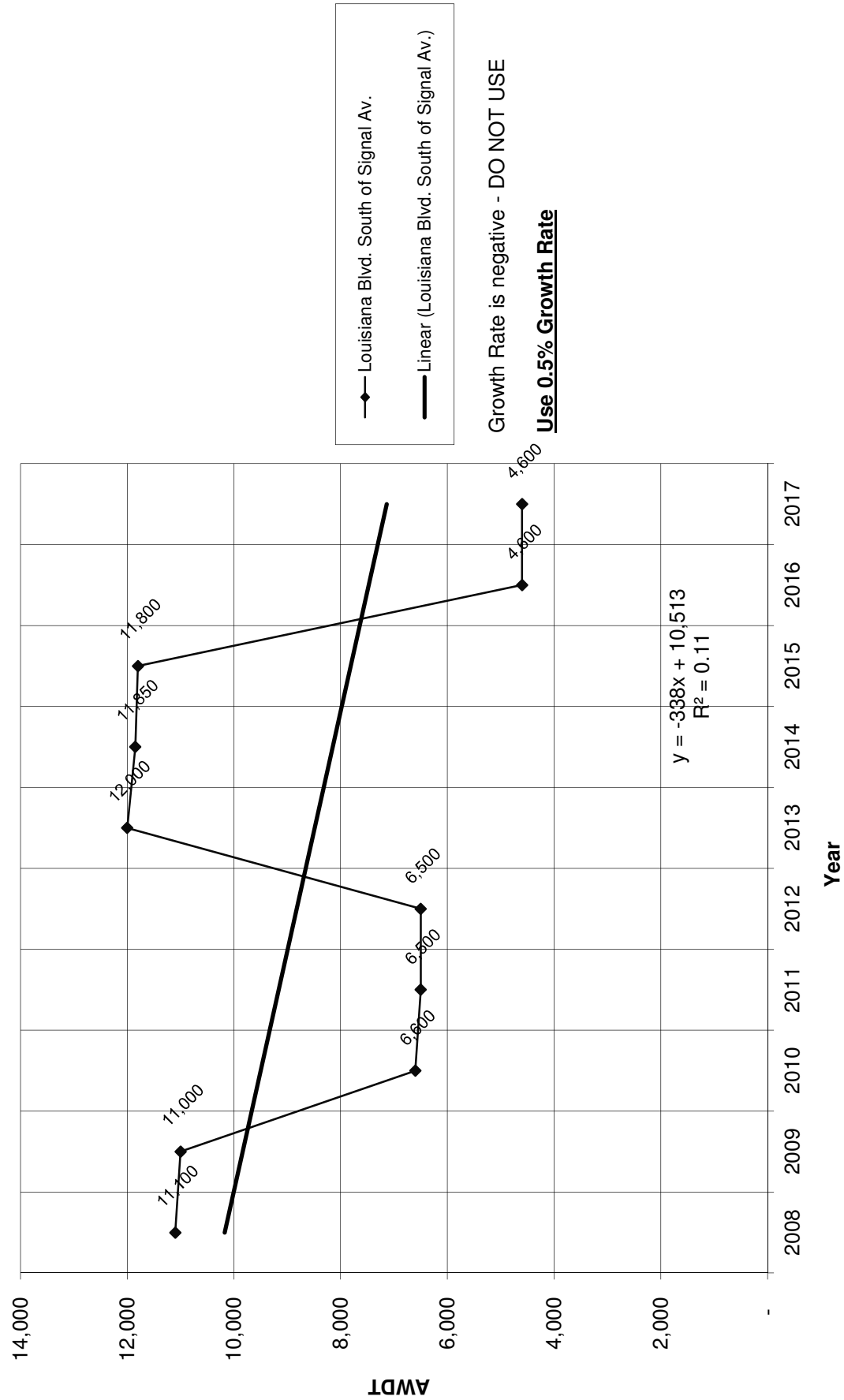
Historic Growth Chart Alameda btwn San Pedro & Louisiana (2008-2017)



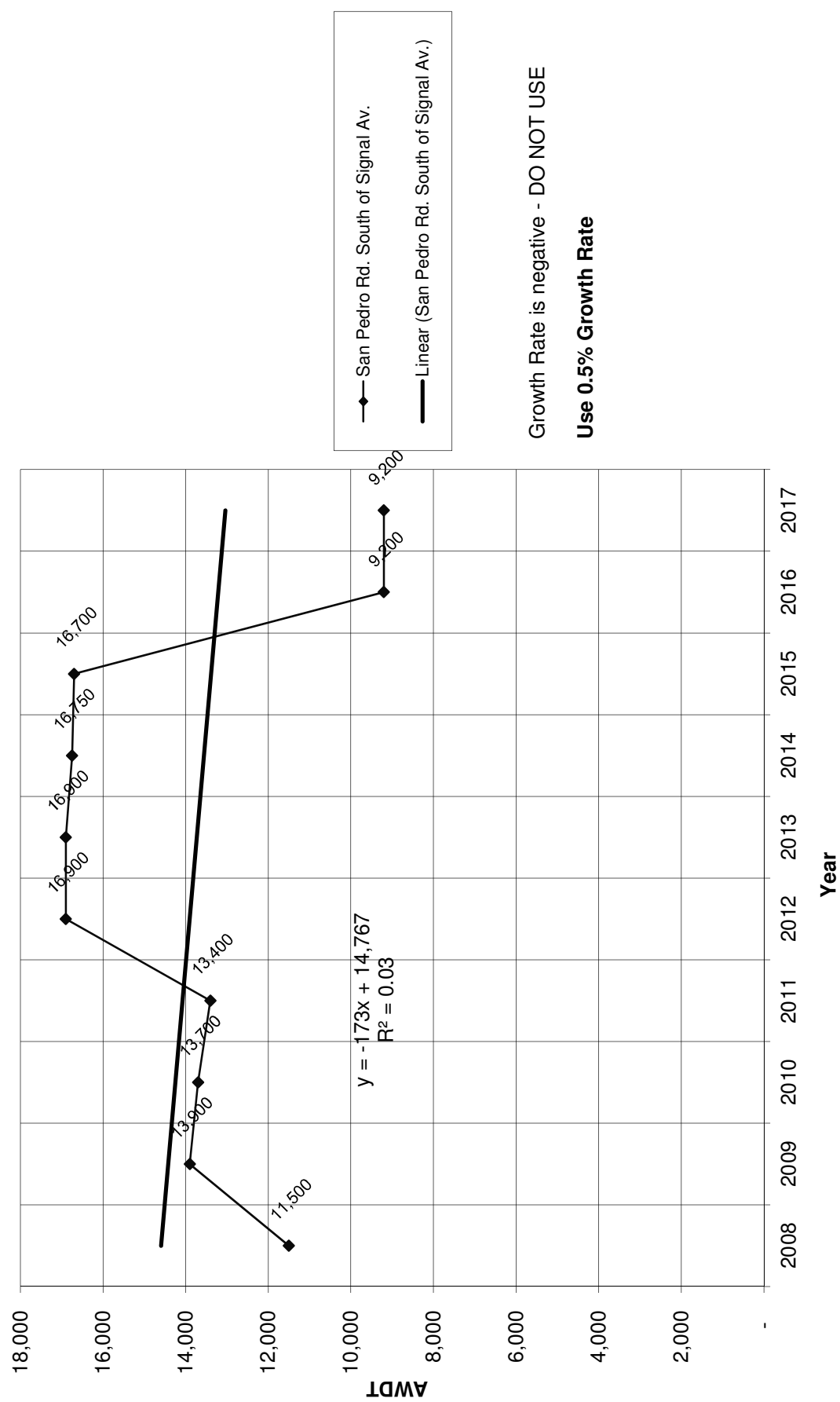
Historic Growth Chart Alameda Blvd. East of Louisiana Blvd. (2008-2017)



Historic Growth Chart Louisiana Blvd. South of Signal Av. (2008-2017)

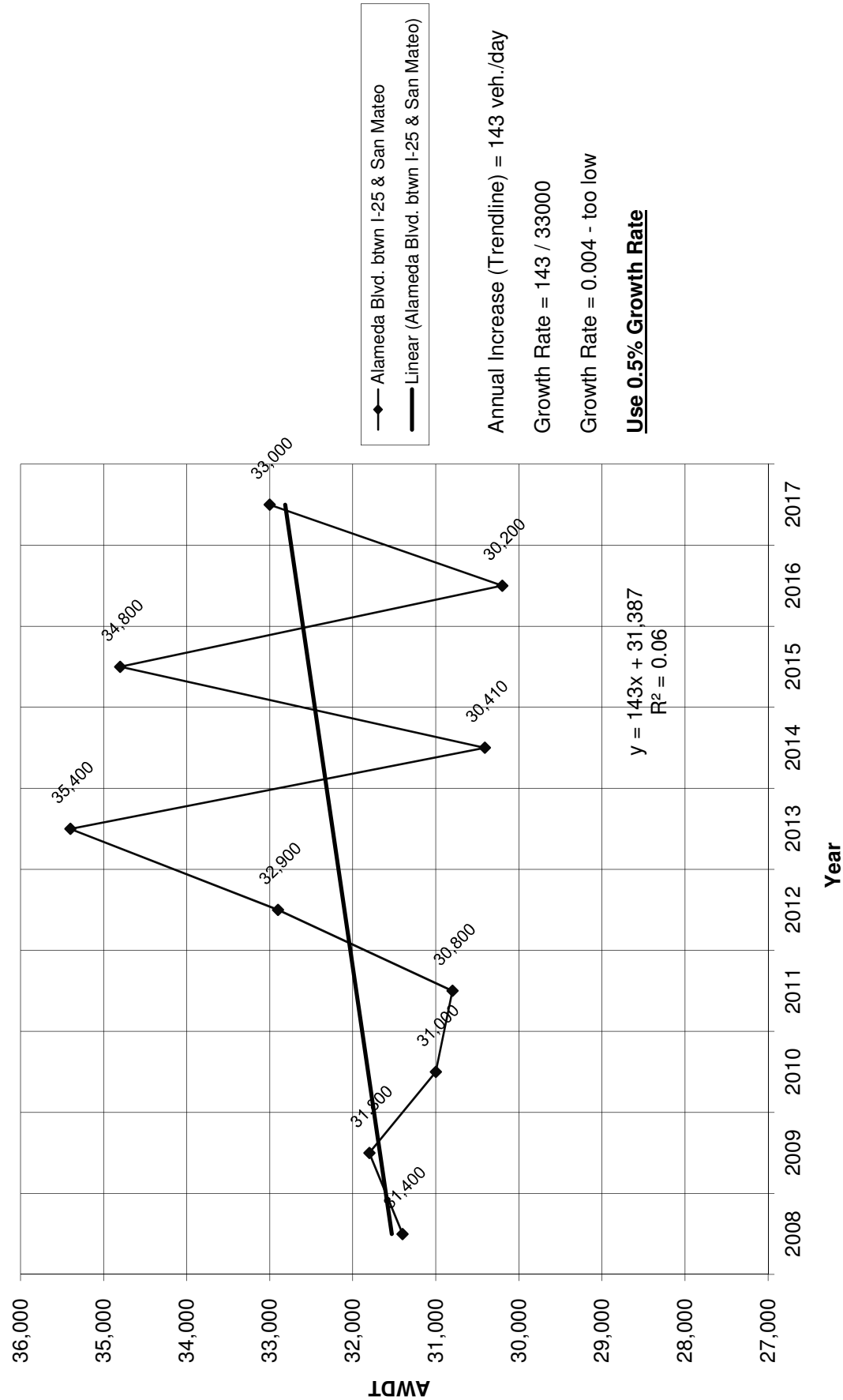


Historic Growth Chart San Pedro Rd. South of Signal Av. (2008-2017)



Growth Rate is negative - DO NOT USE
Use 0.5% Growth Rate

Historic Growth Chart University Blvd. South of Menaul Blvd. (2008-2017)



Alameda / San Pedro Development

Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2019) - 100% Development

INTERSECTION: Summary

Alameda Blvd. / San Pedro Dr.

(1)	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)			
13.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2019)	71	430	293	47	962	26	313	61	30	11	31	149	
2019 (NO BUILD - A.M.)	71	430	293	47	962	26	313	61	30	11	31	149	
2019 (BUILD - A.M.)	71	440	294	56	962	26	324	61	38	11	31	149	
	0.94			0.94			0.94			0.94			PHF
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2019)	94	885	426	45	498	11	230	56	57	19	54	149	
2019 (NO BUILD - P.M.)	94	885	426	45	498	11	230	56	57	19	54	149	
2019 (BUILD - P.M.)	94	912	429	68	498	11	252	57	77	20	54	149	

Alameda Blvd. / I-25 E. Ramp

(2)												
13.0% Truck Existing (2019) 2019 (NO BUILD - A.M.) 2019 (BUILD - A.M.)	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 E. Ramp)			Southbound (I-25 E. Ramp)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
	203	644	0	0	1,214	158	938	73	210	0	0	0
	203	644	0	0	1,214	158	938	73	210	0	0	0
	203	650	0	0	1,225	158	938	73	215	0	0	0
	0.92			0.92			0.92			0.92		
										PHF		
Existing (2019) 2019 (NO BUILD - P.M.) 2019 (BUILD - P.M.)	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 E. Ramp)			Southbound (I-25 E. Ramp)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
	335	1,046	0	0	619	253	656	79	414	0	0	0
	335	1,046	0	0	619	253	656	79	414	0	0	0
	335	1,063	0	0	640	253	656	79	427	0	0	0
	0.92			0.92			0.92			0.92		

Alameda Blvd. / I-25 W. Ramp

(3)	13.0% Truck											
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 W. Ramp)			Southbound (I-25 W. Ramp)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
	0	661	516	512	1,616	0	0	0	0	205	121	150
	0	661	516	512	1,616	0	0	0	0	205	121	150
	0	667	516	517	1,622	0	0	0	0	205	121	150
	0.86			0.86			0.86			0.86		
										PHF		
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 W. Ramp)			Southbound (I-25 W. Ramp)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)												
2019 (NO BUILD - A.M.)												
2019 (BUILD - A.M.)												

	13.0% Truck											
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 W. Ramp)			Southbound (I-25 W. Ramp)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
	0	957	751	295	989	0	0	0	0	452	487	127
	0	957	751	295	989	0	0	0	0	452	487	127
	0	974	751	305	1,001	0	0	0	0	452	487	127
	0.86			0.86			0.86			0.86		
										PHF		
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 W. Ramp)			Southbound (I-25 W. Ramp)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)												
2019 (NO BUILD - P.M.)												
2019 (BUILD - P.M.)												

Alameda Blvd. / San Mateo Blvd.

(4)	13.0% Truck											
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (San Mateo Blvd.)			Southbound (San Mateo Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
	261	1,032	28	77	905	588	15	84	63	76	8	59
	261	1,032	28	77	905	588	15	84	63	76	8	59
Existing (2019)												
2019 (NO BUILD - A.M.)												
2019 (BUILD - A.M.)	261	1,037	28	78	910	588	15	84	64	76	8	59
0.920.920.920.92PHF												
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (San Mateo Blvd.)			Southbound (San Mateo Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
	64	1,266	12	43	859	150	20	8	97	286	52	301
	64	1,266	12	43	859	150	20	8	97	286	52	301
	64	1,279	12	45	869	151	20	8	99	287	52	301
Existing (2019)												
2019 (NO BUILD - P.M.)												
2019 (BUILD - P.M.)												

Alameda / San Pedro Development

Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2019) - 100% Development

INTERSECTION: Summary

Alameda Blvd. / Louisiana Blvd.

(5)	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Louisiana Blvd.)			Southbound (Louisiana Blvd.)			
13.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2019)	39	344	97	67	593	19	263	95	45	46	149	124	
2019 (NO BUILD - A.M.)	39	344	97	67	593	19	263	95	45	46	149	124	
2019 (BUILD - A.M.)	40	354	102	71	601	19	263	96	47	46	150	125	
	0.97			0.97			0.97			0.97			PHF
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Louisiana Blvd.)			Southbound (Louisiana Blvd.)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2019)	112	710	147	41	401	26	107	104	53	37	91	45	
2019 (NO BUILD - P.M.)	112	710	147	41	401	26	107	104	53	37	91	45	
2019 (BUILD - P.M.)	114	729	157	52	421	26	107	105	56	37	93	48	

Signal Ave. / San Pedro Dr.

(6)	<table><tr><th colspan="3">Eastbound (Signal Ave.)</th><th colspan="3">Westbound (Signal Ave.)</th><th colspan="3">Northbound (San Pedro Dr.)</th><th colspan="3">Southbound (San Pedro Dr.)</th></tr><tr><th>Left</th><th>Thru</th><th>Right</th><th>Left</th><th>Thru</th><th>Right</th><th>Left</th><th>Thru</th><th>Right</th><th>Left</th><th>Thru</th><th>Right</th></tr><tr><td>14</td><td>2</td><td>12</td><td>7</td><td>1</td><td>27</td><td>6</td><td>367</td><td>9</td><td>24</td><td>326</td><td>13</td></tr><tr><td>14</td><td>2</td><td>12</td><td>7</td><td>1</td><td>27</td><td>6</td><td>367</td><td>9</td><td>24</td><td>326</td><td>13</td></tr><tr><td>14</td><td>2</td><td>12</td><td>24</td><td>1</td><td>28</td><td>6</td><td>383</td><td>10</td><td>34</td><td>326</td><td>13</td></tr><tr><td colspan="3">0.93</td><td colspan="3">0.93</td><td colspan="3">0.93</td><td colspan="3">0.93 PHF</td></tr><tr><th colspan="3">Eastbound (Signal Ave.)</th><th colspan="3">Westbound (Signal Ave.)</th><th colspan="3">Northbound (San Pedro Dr.)</th><th colspan="3">Southbound (San Pedro Dr.)</th></tr><tr><th>Left</th><th>Thru</th><th>Right</th><th>Left</th><th>Thru</th><th>Right</th><th>Left</th><th>Thru</th><th>Right</th><th>Left</th><th>Thru</th><th>Right</th></tr><tr><td>24</td><td>1</td><td>42</td><td>8</td><td>2</td><td>15</td><td>33</td><td>292</td><td>9</td><td>57</td><td>440</td><td>22</td></tr><tr><td>24</td><td>1</td><td>42</td><td>8</td><td>2</td><td>15</td><td>33</td><td>292</td><td>9</td><td>57</td><td>440</td><td>22</td></tr></table>												Eastbound (Signal Ave.)			Westbound (Signal Ave.)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	14	2	12	7	1	27	6	367	9	24	326	13	14	2	12	7	1	27	6	367	9	24	326	13	14	2	12	24	1	28	6	383	10	34	326	13	0.93			0.93			0.93			0.93 PHF			Eastbound (Signal Ave.)			Westbound (Signal Ave.)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	24	1	42	8	2	15	33	292	9	57	440	22	24	1	42	8	2	15	33	292	9	57	440	22
	Eastbound (Signal Ave.)			Westbound (Signal Ave.)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)																																																																																																																										
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right																																																																																																																								
	14	2	12	7	1	27	6	367	9	24	326	13																																																																																																																								
	14	2	12	7	1	27	6	367	9	24	326	13																																																																																																																								
	14	2	12	24	1	28	6	383	10	34	326	13																																																																																																																								
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	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right																																																																																																																								
	24	1	42	8	2	15	33	292	9	57	440	22																																																																																																																								
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13.0% Truck																																																																																																																																				
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2019 (BUILD - A.M.)																																																																																																																																				
Existing (2019)																																																																																																																																				
2019 (NO BUILD - P.M.)																																																																																																																																				
2019 (BUILD - P.M.)																																																																																																																																				

Signal Av. / Driveway "A"

(7)												
13.0% Truck												
Existing (2019)	Eastbound (Signal Av.)			Westbound (Signal Av.)			Northbound (Driveway "A")			Southbound (Driveway "A")		
2019 (NO BUILD - A.M.)	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2019 (BUILD - A.M.)	0	0	0	0	0	0	0	0	0	0	0	0
	0	35	0	0	35	0	0	0	0	0	0	0
	11	35	0	0	35	13	0	0	0	5	0	18
	0.93			0.93			0.93			0.93 PHF		
	Eastbound (Signal Av.)			Westbound (Signal Av.)			Northbound (Driveway "A")			Southbound (Driveway "A")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)	0	0	0	0	0	0	0	0	0	0	0	0
2019 (NO BUILD - P.M.)	0	67	0	0	25	0	0	0	0	0	0	0
2019 (BUILD - P.M.)	30	67	0	0	25	34	0	0	0	10	0	35

Driveway "B" / San Pedro Rd.

(8)	13.0% Truck												
	Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (San Pedro Rd.)			Southbound (San Pedro Rd.)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	408	0	0	363	0	
	0	0	0	0	0	10	0	417	9	0	373	0	
	0.93			0.93			0.93			0.93			PHF
Existing (2019)	Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (San Pedro Rd.)			Southbound (San Pedro Rd.)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	331	0	0	519	0	
	0	0	0	0	0	20	0	353	23	0	545	0	
	0.93			0.93			0.93			0.93			PHF

Alameda / San Pedro Development

Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2019) - 100% Development

INTERSECTION: Summary

Alameda Blvd. / Driveway "C"

(9)	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Driveway "C")			Southbound (Driveway "C")		
13.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)	0	0	0	0	0	0	0	0	0	0	0	0
2019 (NO BUILD - A.M.)	0	471	0	0	1,035	0	0	0	0	0	0	0
2019 (BUILD - A.M.)	0	480	9	0	1,044	0	0	0	8	0	0	0

	0.94			0.94			0.94			0.94			PHF
Existing (2019) 2019 (NO BUILD - P.M.) 2019 (BUILD - P.M.)	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Driveway "C")			Southbound (Driveway "C")			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	961	0	0	554	0	0	0	0	0	0	0	0
	0	985	24	0	577	0	0	0	15	0	0	0	0

Alameda Blvd. / Driveway "D"

(10)	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Driveway "D")			Southbound (Driveway "D")		
13.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)	0	0	0	0	0	0	0	0	0	0	0	0
2019 (NO BUILD - A.M.)	0	471	0	0	1,035	0	0	0	0	0	0	0
2019 (BUILD - A.M.)	0	479	9	0	1,044	0	0	0	8	0	0	0

	0.94			0.94			0.94			0.94			PHF
Existing (2019) 2019 (NO BUILD - P.M.) 2019 (BUILD - P.M.)	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Driveway "D")			Southbound (Driveway "D")			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	961	0	0	554	0	0	0	0	0	0	0	0
	0	976	24	0	577	0	0	0	15	0	0	0	0

Alameda / San Pedro Development

Projected Turning Movements Worksheet

Alameda Blvd. / San Pedro Dr.

INTERSECTION :

E-W Street: **Alameda Blvd.**

(1)

N-S Street: **San Pedro Dr.**

Year of Existing Counts

2018

Implementation Year

2019

Growth Rates

0.50%

1.80%

0.50%

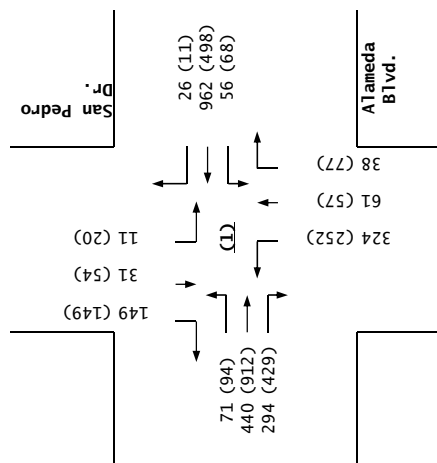
4.50%

	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	71	428	292	46	945	26	311	61	30	11	30	143
Background Traffic Growth	0	2	1	1	17	0	2	0	0	0	1	6
Subtotal (NO BUILD - A.M.)	71	430	293	47	962	26	313	61	30	11	31	149
Percent Commercial Trips Generated(Entering)	0.00%	20.00%	2.52%	17.00%	0.00%	0.00%	0.00%	0.00%	15.00%	0.58%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	22.52%	0.58%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	10	1	9	0	0	11	0	8	0	0	0
Total AM Peak Hour BUILD Volumes	71	440	294	56	962	26	324	61	38	11	31	149

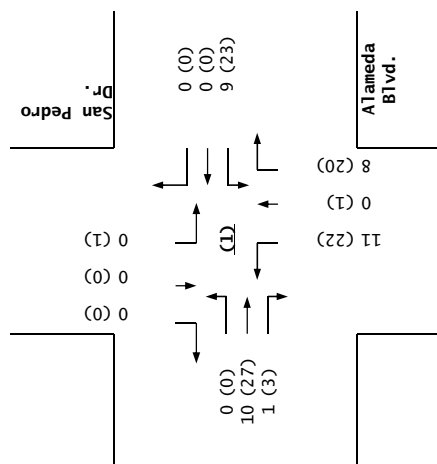
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	94	881	424	44	489	11	229	56	57	18	52	143
Background Traffic Growth	0	4	2	1	9	0	1	0	0	1	2	6
Subtotal (NO BUILD - P.M.)	94	885	426	45	498	11	230	56	57	19	54	149
Percent Commercial Trips Generated(Entering)	0.00%	20.00%	2.52%	17.00%	0.00%	0.00%	0.00%	0.00%	15.00%	0.58%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	22.52%	0.58%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	27	3	23	0	0	22	1	20	1	0	0
Total PM Peak Hour BUILD Volumes	94	912	429	68	498	11	252	57	77	20	54	149

Number of Commercial Trips Generated	Entering	Exiting	100% Commercial Development
	50	48	
	135	96	

2019
BUILD

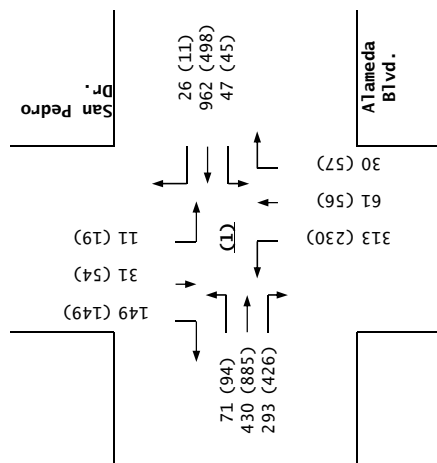


Trips



Alameda Blvd. / San Pedro Dr.

2019
NO BUILD



Alameda / San Pedro Development

Projected Turning Movements Worksheet

Alameda Blvd. / I-25 E. Ramp

INTERSECTION :

E-W Street: **Alameda Blvd.**

(2)

N-S Street: **I-25 E. Ramp**

Year of Existing Counts

2018

Implementation Year

2019

Growth Rates

0.50%

0.50%

0.50%

0.50%

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 (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 E. Ramp)			Southbound (I-25 E. Ramp)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
202	641	0	0	1,208	157	933	73	209	0	0	0
1	3	0	0	6	1	5	0	1	0	0	0
203	644	0	0	1,214	158	938	73	210	0	0	0
0.00%	12.60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9.92%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	22.24%	0.28%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	6	0	0	11	0	0	0	5	0	0	0
203	650	0	0	1,225	158	938	73	215	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

Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 E. Ramp)			Southbound (I-25 E. Ramp)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
333	1,041	0	0	616	252	653	79	412	0	0	0
2	5	0	0	3	1	3	0	2	0	0	0
335	1,046	0	0	619	253	656	79	414	0	0	0
0.00%	12.60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9.92%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	22.24%	0.28%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	17	0	0	21	0	0	0	13	0	0	0
335	1,063	0	0	640	253	656	79	427	0	0	0

Number of Commercial Trips Generated

Entering

Exiting

50

48

A.M.

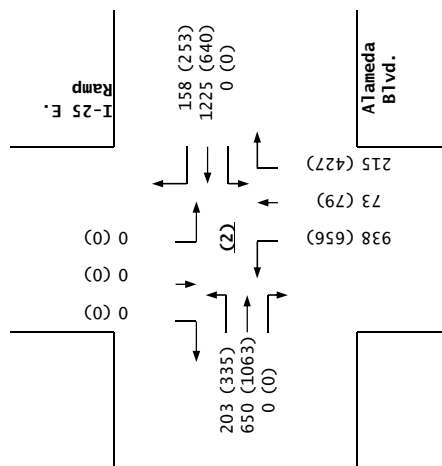
100% Commercial Development

135

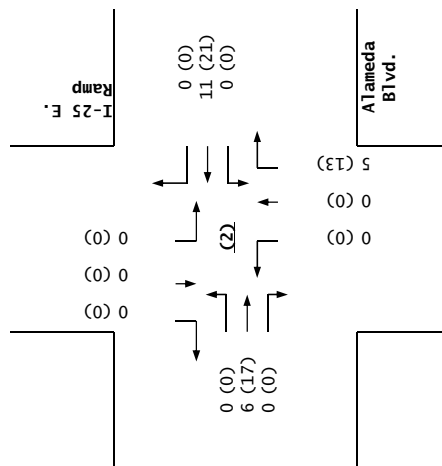
96

P.M.

2019
BUILD

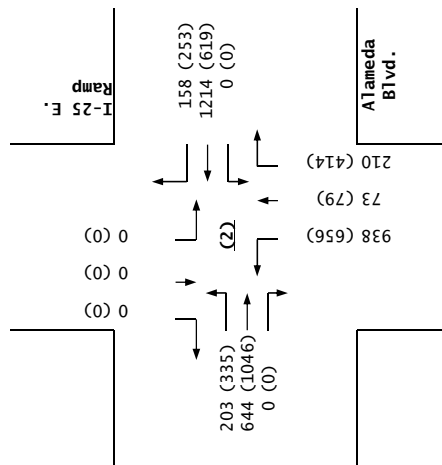


Trips



Alameda Blvd. / I-25 E. Ramp

2019
NO BUILD



Alameda / San Pedro Development

Projected Turning Movements Worksheet

Alameda Blvd. / I-25 W. Ramp

INTERSECTION :

 E-W Street: **Alameda Blvd.**

(3)

 N-S Street: **I-25 W. Ramp**

Year of Existing Counts

2018

Implementation Year

2019

Growth Rates

0.50%

0.50%

0.50%

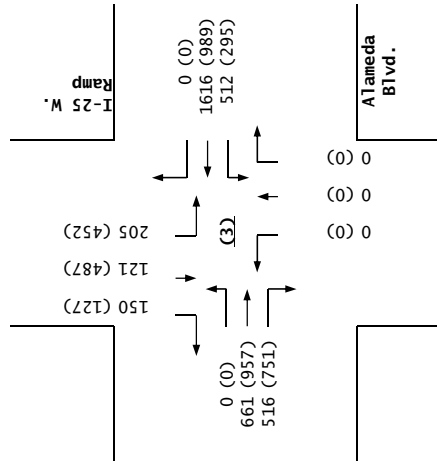
0.50%

	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 W. Ramp)			Southbound (I-25 W. Ramp)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	658	513	509	1,608	0	0	0	0	204	120	149
Background Traffic Growth	0	3	3	3	8	0	0	0	0	1	1	1
Subtotal (NO BUILD - A.M.)	0	661	516	512	1,616	0	0	0	0	205	121	150
Percent Commercial Trips Generated(Entering)	0.00%	12.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.28%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	9.92%	12.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	6	0	5	6	0	0	0	0	0	0	0
Total AM Peak Hour BUILD Volumes	0	667	516	517	1,622	0	0	0	0	205	121	150

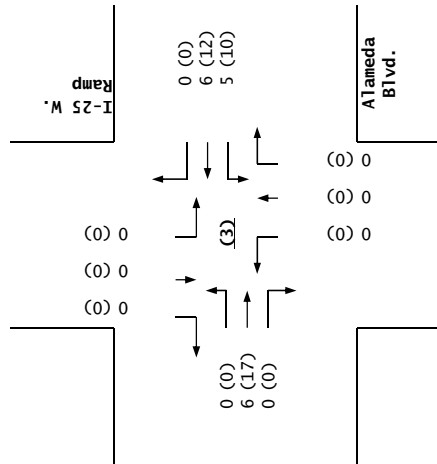
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 W. Ramp)			Southbound (I-25 W. Ramp)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	952	747	294	984	0	0	0	0	450	485	126
Background Traffic Growth	0	5	4	1	5	0	0	0	0	2	2	1
Subtotal (NO BUILD - P.M.)	0	957	751	295	989	0	0	0	0	452	487	127
Percent Commercial Trips Generated(Entering)	0.00%	12.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.28%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	9.92%	12.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	17	0	10	12	0	0	0	0	0	0	0
Total PM Peak Hour BUILD Volumes	0	974	751	305	1,001	0	0	0	0	452	487	127

Number of Commercial Trips Generated	Entering	Exiting	100% Commercial Development
	50	48	
	135	96	

2019
NO BUILD

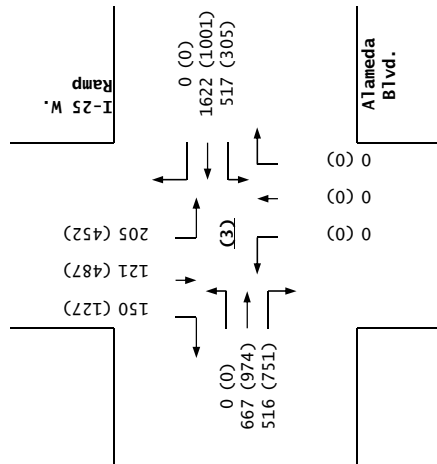


Trips



Alameda Blvd. / I-25 W. Ramp

2019
BUILD



Alameda / San Pedro Development

Projected Turning Movements Worksheet

Alameda Blvd. / San Mateo Blvd.

INTERSECTION :

E-W Street: **Alameda Blvd.** (4)
N-S Street: **San Mateo Blvd.**

Year of Existing Counts: 2018
Implementation Year: 2019

Growth Rates: 0.50% 0.50% 0.50% 2.80%

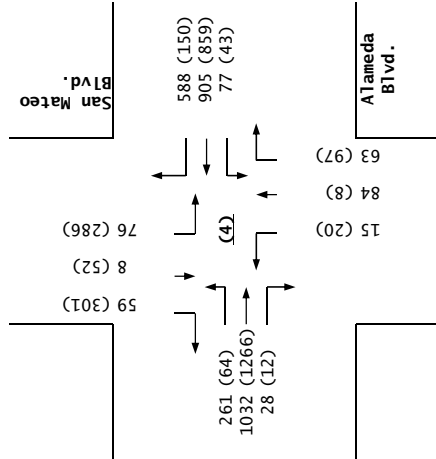
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (San Mateo Blvd.)			Southbound (San Mateo Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	260	1,027	28	77	900	585	15	84	63	74	8	57
Background Traffic Growth	1	5	0	0	5	3	0	0	0	2	0	2
Subtotal (NO BUILD - A.M.)	261	1,032	28	77	905	588	15	84	63	76	8	59
Percent Commercial Trips Generated(Entering)	0.00%	9.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.62%	0.75%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	1.62%	9.95%	0.75%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	5	0	1	5	0	0	0	1	0	0	0
Total AM Peak Hour BUILD Volumes	261	1,037	28	78	910	588	15	84	64	76	8	59

	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (San Mateo Blvd.)			Southbound (San Mateo Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	64	1,260	12	43	855	149	20	8	97	278	51	293
Background Traffic Growth	0	6	0	0	4	1	0	0	0	8	1	8
Subtotal (NO BUILD - P.M.)	64	1,266	12	43	859	150	20	8	97	286	52	301
Percent Commercial Trips Generated(Entering)	0.00%	9.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.62%	0.75%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	1.62%	9.95%	0.75%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	13	0	2	10	1	0	0	2	1	0	0
Total PM Peak Hour BUILD Volumes	64	1,279	12	45	869	151	20	8	99	287	52	301

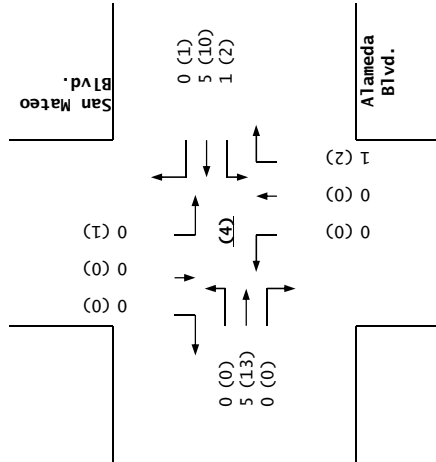
Number of Commercial Trips Generated

Entering	50	48	A.M.	100% Commercial Development
Exiting	135	96	P.M.	

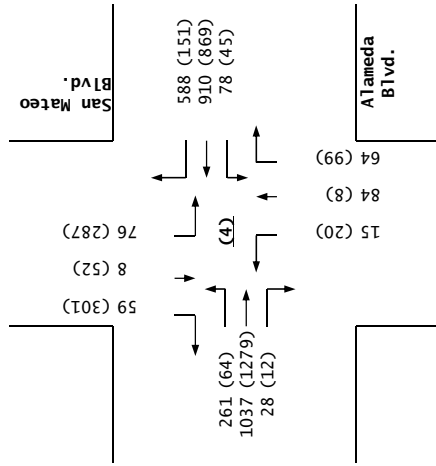
2019
NO BUILD



Trips



2019
BUILD



Alameda Blvd. / San Mateo Blvd.

Alameda / San Pedro Development

Projected Turning Movements Worksheet

Alameda Blvd. / Louisiana Blvd.

INTERSECTION :

E-W Street: **Alameda Blvd.**

(5)

N-S Street: **Louisiana Blvd.**

Year of Existing Counts

2018

Implementation Year

2019

Growth Rates

1.80%

1.20%

0.50%

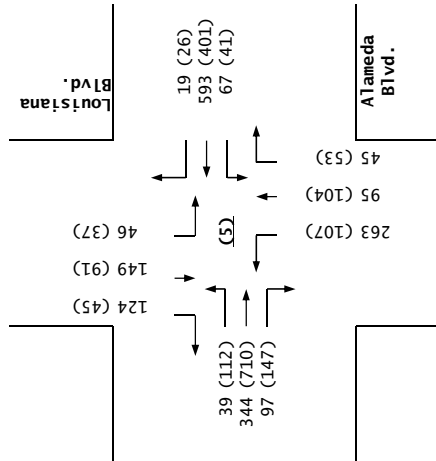
0.50%

	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Louisiana Blvd.)			Southbound (Louisiana Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	38	338	95	66	586	19	262	95	45	46	148	123
Background Traffic Growth	1	6	2	1	7	0	1	0	0	0	1	1
Subtotal (NO BUILD - A.M.)	39	344	97	67	593	19	263	95	45	46	149	124
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	8.44%	15.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.47%	2.00%
Percent Commercial Trips Generated(Exiting)	2.00%	20.00%	10.00%	0.00%	0.00%	0.00%	0.00%	1.47%	3.44%	0.00%	0.00%	0.00%
Total Trips Generated	1	10	5	4	8	0	0	1	2	0	1	1
Total AM Peak Hour BUILD Volumes	40	354	102	71	601	19	263	96	47	46	150	125

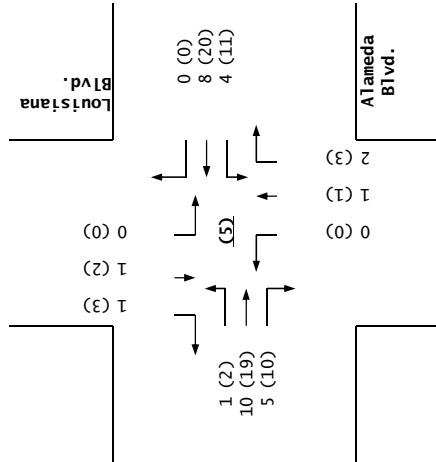
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Louisiana Blvd.)			Southbound (Louisiana Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	110	697	144	41	396	26	106	103	53	37	91	45
Background Traffic Growth	2	13	3	0	5	0	1	1	0	0	0	0
Subtotal (NO BUILD - P.M.)	112	710	147	41	401	26	107	104	53	37	91	45
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	8.44%	15.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.47%	2.00%
Percent Commercial Trips Generated(Exiting)	2.00%	20.00%	10.00%	0.00%	0.00%	0.00%	0.00%	1.47%	3.44%	0.00%	0.00%	0.00%
Total Trips Generated	2	19	10	11	20	0	0	1	3	0	2	3
Total PM Peak Hour BUILD Volumes	114	729	157	52	421	26	107	105	56	37	93	48

Number of Commercial Trips Generated	Entering	Exiting	A.M.	100% Commercial Development
	50	48		
	135	96	P.M.	

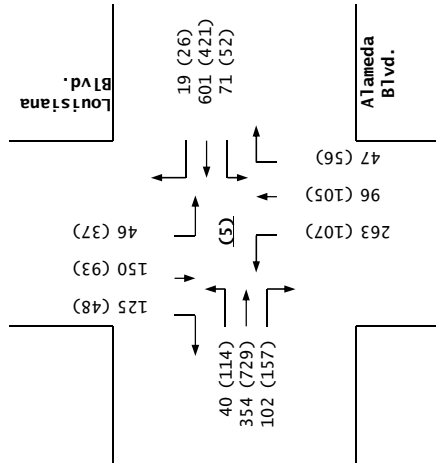
2019
NO BUILD



Trips



2019
BUILD



Alameda Blvd. / Louisiana Blvd.

Alameda / San Pedro Development

Projected Turning Movements Worksheet

Signal Ave. / San Pedro Dr.

INTERSECTION :

E-W Street: **Signal Ave.**
N-S Street: **San Pedro Dr.**

(6)

Year of Existing Counts
Implementation Year

2018

2019

Growth Rates

0.50%

0.50%

0.50%

0.50%

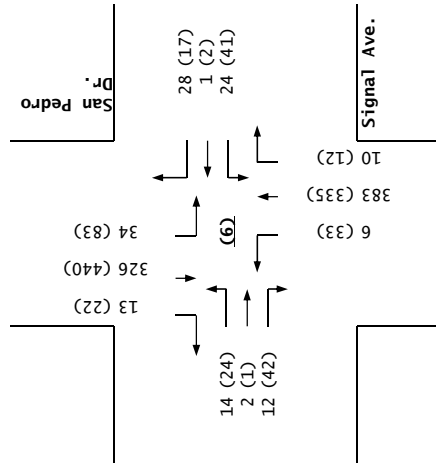
	Eastbound (Signal Ave.)			Westbound (Signal Ave.)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	14	2	12	7	1	27	6	365	9	24	324	13
Background Traffic Growth	0	0	0	0	0	0	0	2	0	0	2	0
Subtotal (NO BUILD - A.M.)	14	2	12	7	1	27	6	367	9	24	326	13
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	32.00%	2.41%	19.52%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	34.41%	0.00%	2.52%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	17	0	1	0	16	1	10	0	0
Total AM Peak Hour BUILD Volumes	14	2	12	24	1	28	6	383	10	34	326	13

	Eastbound (Signal Ave.)			Westbound (Signal Ave.)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	24	1	42	8	2	15	33	291	9	57	438	22
Background Traffic Growth	0	0	0	0	0	0	0	1	0	0	2	0
Subtotal (NO BUILD - P.M.)	24	1	42	8	2	15	33	292	9	57	440	22
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	32.00%	2.41%	19.52%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	34.41%	0.00%	2.52%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	33	0	2	0	43	3	26	0	0
Total PM Peak Hour BUILD Volumes	24	1	42	41	2	17	33	335	12	83	440	22

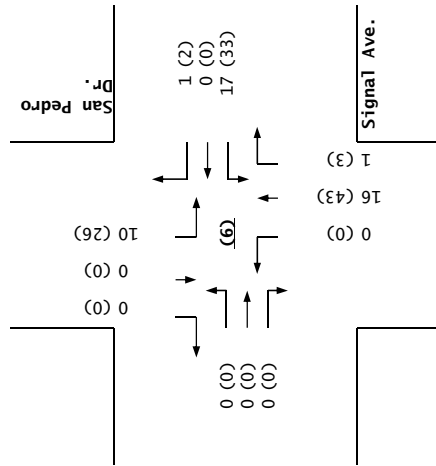
Number of Commercial Trips Generated

Entering	50	48	A.M.	100% Commercial Development
Exiting	135	96	P.M.	

2019
BUILD

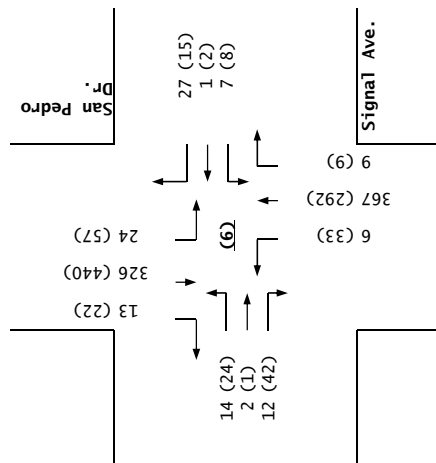


Trips



Signal Ave. / San Pedro Dr.

2019
NO BUILD



Alameda / San Pedro Development

Projected Turning Movements Worksheet

Signal Av. / Driveway "A"

INTERSECTION :

E-W Street: **Signal Av.**
N-S Street: **Driveway "A"**

(7)

Year of Existing Counts: 2018
Implementation Year: 2019

Growth Rates

0.50%

0.50%

0.50%

0.50%

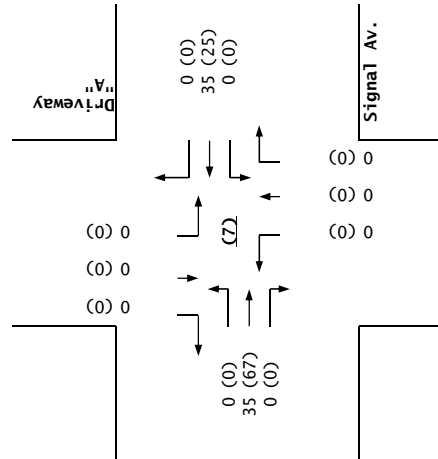
	Eastbound (Signal Av.)			Westbound (Signal Av.)			Northbound (Driveway "A")			Southbound (Driveway "A")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - A.M.)	0	35	0	0	35	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	21.93%	0.00%	0.00%	0.00%	0.00%	25.50%	0.00%	0.00%	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%	10.50%	0.00%	36.93%
Total Trips Generated	11	0	0	0	0	13	0	0	0	5	0	18
Total AM Peak Hour BUILD Volumes	11	35	0	0	35	13	0	0	0	5	0	18

	Eastbound (Signal Av.)			Westbound (Signal Av.)			Northbound (Driveway "A")			Southbound (Driveway "A")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - P.M.)	0	67	0	0	25	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	21.93%	0.00%	0.00%	0.00%	0.00%	25.50%	0.00%	0.00%	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%	10.50%	0.00%	36.93%
Total Trips Generated	30	0	0	0	0	34	0	0	0	10	0	35
Total PM Peak Hour BUILD Volumes	30	67	0	0	25	34	0	0	0	10	0	35

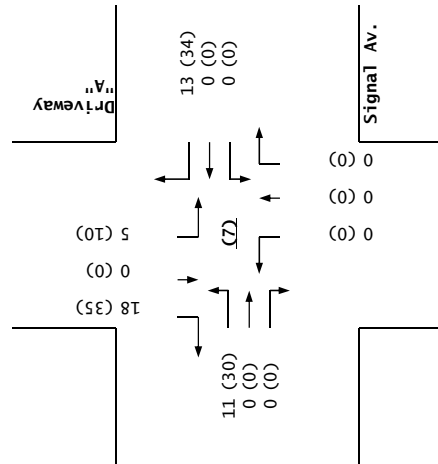
Number of Commercial Trips Generated

Entering	Exiting		
50	48	A.M.	100% Commercial Development
135	96	P.M.	

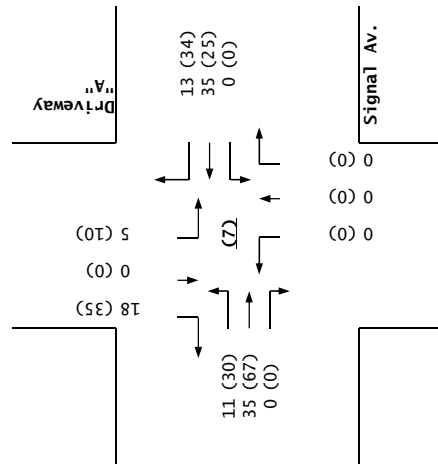
2019
NO BUILD



Trips



2019
BUILD



Signal Av. / Driveway "A"

Alameda / San Pedro Development

Projected Turning Movements Worksheet

Driveway "B" / San Pedro Rd.

INTERSECTION :

 E-W Street: **Driveway "B"**

(8)

 N-S Street: **San Pedro Rd.**

Year of Existing Counts

2018

Implementation Year

2019

Growth Rates

0.50%

0.50%

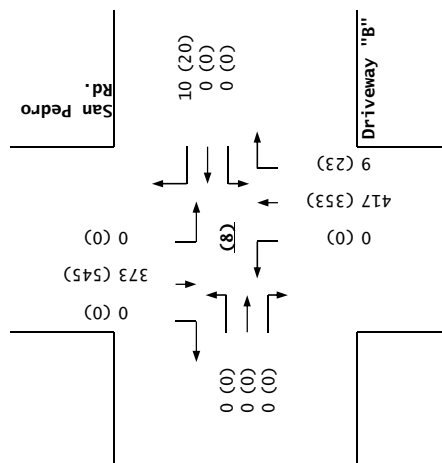
0.50%

0.50%

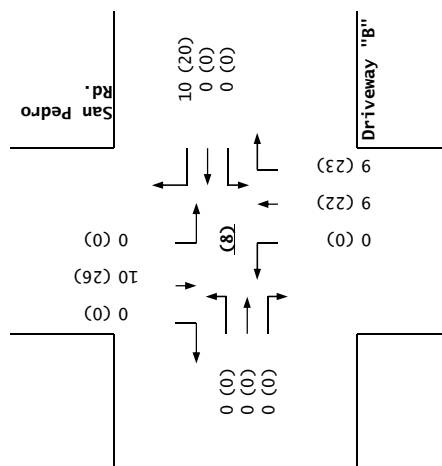
	Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (San Pedro Rd.)			Southbound (San Pedro Rd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - A.M.)	0	0	0	0	0	0	0	408	0	0	363	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	15.00%	17.00%	0.00%	19.52%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	20.58%	0.00%	2.52%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	0	0	10	0	9	9	0	10	0
Total AM Peak Hour BUILD Volumes	0	0	0	0	0	10	0	417	9	0	373	0

	Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (San Pedro Rd.)			Southbound (San Pedro Rd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - P.M.)	0	0	0	0	0	0	0	331	0	0	519	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	15.00%	17.00%	0.00%	19.52%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	20.58%	0.00%	2.52%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	0	0	20	0	22	23	0	26	0
Total PM Peak Hour BUILD Volumes	0	0	0	0	0	20	0	353	23	0	545	0

Number of Commercial Trips Generated	Entering	Exiting	100% Commercial Development
	50	48	
	135	96	
		A.M.	
		P.M.	

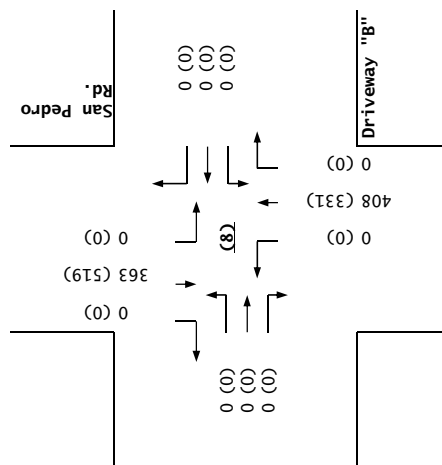


Trips



Driveway "B" / San Pedro Rd.

2019
NO BUILD



Alameda / San Pedro Development

Projected Turning Movements Worksheet

Alameda Blvd. / Driveway "C"

INTERSECTION :

E-W Street: **Alameda Blvd.**

(9)

N-S Street: **Driveway "C"**

Year of Existing Counts

2018

Implementation Year

2019

Growth Rates

0.50%

0.50%

0.50%

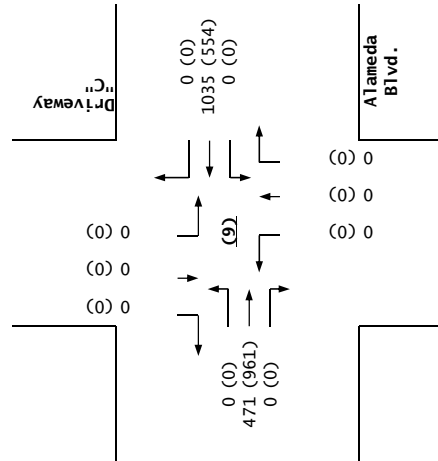
0.50%

	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Driveway "C")			Southbound (Driveway "C")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - A.M.)	0	471	0	0	1,035	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	0.00%	17.79%	17.79%	0.00%	17.00%	0.00%	0.00%	0.00%	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%	16.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	9	9	0	9	0	0	0	8	0	0	0
Total AM Peak Hour BUILD Volumes	0	480	9	0	1,044	0	0	0	8	0	0	0

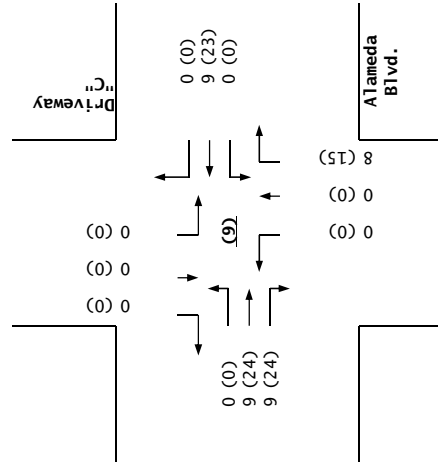
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Driveway "C")			Southbound (Driveway "C")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - P.M.)	0	961	0	0	554	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	0.00%	17.79%	17.79%	0.00%	17.00%	0.00%	0.00%	0.00%	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%	16.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	24	24	0	23	0	0	0	15	0	0	0
Total PM Peak Hour BUILD Volumes	0	985	24	0	577	0	0	0	15	0	0	0

Number of Commercial Trips Generated	Entering	Exiting	100% Commercial Development
	50	48	
	135	96	

2019
NO BUILD

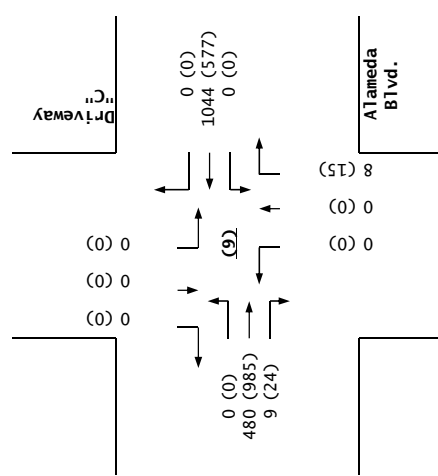


Trips



Alameda Blvd. / Driveway "C"

2019
BUILD



Alameda / San Pedro Development

Projected Turning Movements Worksheet

Alameda Blvd. / Driveway "D"

INTERSECTION :

E-W Street: **Alameda Blvd.**

(10)

N-S Street: **Driveway "D"**

Year of Existing Counts

2018

Implementation Year

2019

Growth Rates

0.50%

0.50%

0.50%

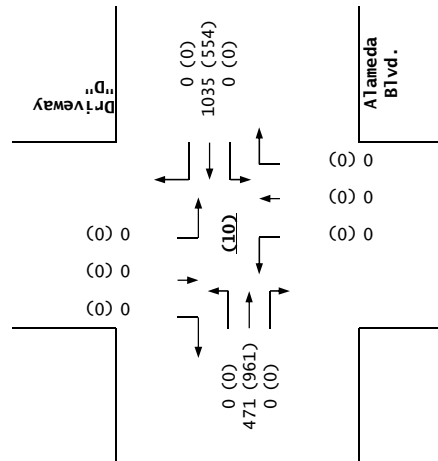
0.50%

	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Driveway "D")			Southbound (Driveway "D")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - A.M.)	0	471	0	0	1,035	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	17.79%	0.00%	17.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	16.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	8	9	0	9	0	0	0	8	0	0	0
Total AM Peak Hour BUILD Volumes	0	479	9	0	1,044	0	0	0	8	0	0	0

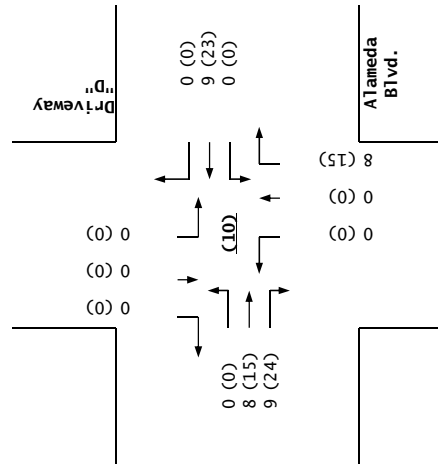
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Driveway "D")			Southbound (Driveway "D")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - P.M.)	0	961	0	0	554	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	17.79%	0.00%	17.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	16.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	15	24	0	23	0	0	0	15	0	0	0
Total PM Peak Hour BUILD Volumes	0	976	24	0	577	0	0	0	15	0	0	0

Number of Commercial Trips Generated	Entering	Exiting	100% Commercial Development
	50	48	
	135	96	
		A.M.	
		P.M.	

2019
NO BUILD

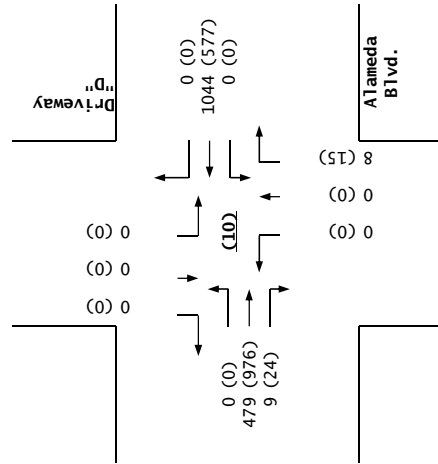


Trips



Alameda Blvd. / Driveway "D"

2019
BUILD



Alameda / San Pedro Development

Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2029) - 100% Development

INTERSECTION: Summary

Alameda Blvd. / San Pedro Dr.

(1)													
13.0% Truck	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)			
Existing (2019)	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2029 (NO BUILD - A.M.)	73	438	299	48	978	27	313	61	30	12	32	152	
2029 (BUILD - A.M.)	90	543	370	64	1,307	36	328	64	32	18	50	237	
	90	553	371	73	1,307	36	339	64	40	18	50	237	
	0.94			0.94			0.94			0.94			PHF
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2019)	95	895	431	46	506	11	230	56	57	19	55	152	
2029 (NO BUILD - P.M.)	110	1,033	497	61	677	15	242	59	60	30	86	237	
2029 (BUILD - P.M.)	110	1,060	500	84	677	15	264	60	80	31	86	237	

Alameda Blvd. / I-25 E. Ramp

(2)												
13.0% Truck	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 E. Ramp)			Southbound (I-25 E. Ramp)		
Existing (2019)	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2029 (NO BUILD - A.M.)	207	657	0	0	1,235	161	938	73	210	0	0	0
2029 (BUILD - A.M.)	256	814	0	0	1,508	196	984	77	220	0	0	0
	256	820	0	0	1,519	196	984	77	225	0	0	0
	0.92			0.92			0.92			0.92		
	PHF											
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 E. Ramp)			Southbound (I-25 E. Ramp)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)	341	1,067	0	0	627	257	656	79	414	0	0	0
2029 (NO BUILD - P.M.)	423	1,323	0	0	741	303	689	83	435	0	0	0
2029 (BUILD - P.M.)	423	1,340	0	0	762	303	689	83	448	0	0	0

Alameda Blvd. / I-25 W. Ramp

(3) 13.0% Truck Existing (2019) 2029 (NO BUILD - A.M.) 2029 (BUILD - A.M.)	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 W. Ramp)			Southbound (I-25 W. Ramp)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
	0	666	519	516	1,630	0	0	0	0	207	121	151
	0	747	582	585	1,849	0	0	0	0	232	136	169
	0	753	582	590	1,855	0	0	0	0	232	136	169
0.86			0.86			0.86			0.86			PHF
Existing (2019) 2029 (NO BUILD - P.M.) 2029 (BUILD - P.M.)	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 W. Ramp)			Southbound (I-25 W. Ramp)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
	0	976	765	296	990	0	0	0	0	459	495	128
	0	1,211	950	314	1,052	0	0	0	0	548	590	153
	0	1,228	950	324	1,064	0	0	0	0	548	590	153

Alameda Blvd. / San Mateo Blvd.

(4)	13.0% Truck											
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (San Mateo Blvd.)			Southbound (San Mateo Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
	261	1,032	28	78	910	592	16	88	66	79	9	61
	274	1,083	30	87	1,013	658	23	129	97	134	15	103
Existing (2019)	274			88			23			98		
2029 (NO BUILD - A.M.)	1,088			1,018			129			134		
2029 (BUILD - A.M.)	30			658			98			103		
0.92 0.92 0.92 0.92 PHF												
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (San Mateo Blvd.)			Southbound (San Mateo Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
	65	1,289	12	43	859	150	21	8	101	284	52	299
	80	1,580	15	45	902	157	30	12	144	340	62	358
	80	1,593	15	47	912	158	30	12	146	341	62	358
Existing (2019)	80			47			30			341		
2029 (NO BUILD - P.M.)	1,593			912			12			341		
2029 (BUILD - P.M.)	15			158			146			358		

Alameda / San Pedro Development

Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2029) - 100% Development

INTERSECTION: **Summary**

Alameda Blvd. / Louisiana Blvd.

(5) 13.0% Truck Existing (2019) 2029 (NO BUILD - A.M.) 2029 (BUILD - A.M.)	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Louisiana Blvd.)			Southbound (Louisiana Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
	39	346	97	66	589	19	263	95	45	47	150	125
	48	428	120	70	618	20	276	100	47	54	173	144
	49	438	125	74	626	20	276	101	49	54	174	145
	0.97			0.97			0.97			0.97		
Existing (2019) 2029 (NO BUILD - P.M.) 2029 (BUILD - P.M.)	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Louisiana Blvd.)			Southbound (Louisiana Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
	114	719	149	41	398	26	107	104	53	38	93	46
	149	942	195	43	418	27	112	109	56	45	111	55
	151	961	205	54	438	27	112	110	59	45	113	58
	0.97			0.97			0.97			0.97		

Signal Ave. / San Pedro Dr.

(6)													
13.0% Truck	Eastbound (Signal Ave.)			Westbound (Signal Ave.)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)			
Existing (2019)	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2029 (NO BUILD - A.M.)	14	2	12	7	1	27	6	367	9	24	326	13	
2029 (BUILD - A.M.)	15	2	13	7	1	28	6	385	9	25	342	14	
	15	2	13	24	1	29	6	401	10	35	342	14	
	0.93			0.93			0.93			0.93			PHF
	Eastbound (Signal Ave.)			Westbound (Signal Ave.)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2019)	24	1	42	8	2	15	33	292	9	57	440	22	
2029 (NO BUILD - P.M.)	25	1	44	8	2	16	35	307	9	60	462	23	
2029 (BUILD - P.M.)	25	1	44	41	2	18	35	350	12	86	462	23	

Signal Av. / Driveway "A"

(7)	13.0% Truck													
Existing (2019) 2029 (NO BUILD - A.M.) 2029 (BUILD - A.M.)	Eastbound (Signal Av.)			Westbound (Signal Av.)			Northbound (Driveway "A")			Southbound (Driveway "A")				
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	36	0	0	36	0	0	0	0	0	0	0	0	0
	11	36	0	0	36	13	0	0	0	5	0	0	18	
	0.93			0.93			0.93			0.93			PHF	
Existing (2019) 2029 (NO BUILD - P.M.) 2029 (BUILD - P.M.)	Eastbound (Signal Av.)			Westbound (Signal Av.)			Northbound (Driveway "A")			Southbound (Driveway "A")				
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	70	0	0	26	0	0	0	0	0	0	0	0	0
	30	70	0	0	26	34	0	0	0	10	0	0	35	

Driveway "B" / San Pedro Rd.

(8)	13.0% Truck												
	Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (San Pedro Rd.)			Southbound (San Pedro Rd.)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	428	0	0	381	0	
	0	0	0	0	0	10	0	437	9	0	391	0	
	0.93			0.93			0.93			0.93			PHF
Existing (2019)	Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (San Pedro Rd.)			Southbound (San Pedro Rd.)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	348	0	0	545	0	
	0	0	0	0	0	20	0	370	23	0	571	0	
	0.93			0.93			0.93			0.93			PHF
	0.93			0.93			0.93			0.93			PHF
Existing (2019)	Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (San Pedro Rd.)			Southbound (San Pedro Rd.)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
	0	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	348	0	0	545	0	
	0	0	0	0	0	20	0	370	23	0	571	0	
	0.93			0.93			0.93			0.93			PHF
	0.93			0.93			0.93			0.93			PHF

Alameda / San Pedro Development

Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2029) - 100% Development

INTERSECTION: Summary

Alameda Blvd. / Driveway "C"												
0.94			0.94			0.94			0.94			PHF
(9)	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Driveway "C")			Southbound (Driveway "C")		
13.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)	0	0	0	0	0	0	0	0	0	0	0	0
2029 (NO BUILD - A.M.)	0	593	0	0	1,407	0	0	0	0	0	0	0
2029 (BUILD - A.M.)	0	602	9	0	1,416	0	0	0	8	0	0	0
Alameda Blvd. / Driveway "C"												
0.94			0.94			0.94			0.94			PHF
Existing (2019)	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Driveway "C")			Southbound (Driveway "C")		
2029 (NO BUILD - P.M.)	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2029 (BUILD - P.M.)	0	0	0	0	0	0	0	0	0	0	0	0
	0	1,123	0	0	753	0	0	0	0	0	0	0
	0	1,147	24	0	776	0	0	0	15	0	0	0
Alameda Blvd. / Driveway "D"												
0.94			0.94			0.94			0.94			PHF
(10)	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Driveway "D")			Southbound (Driveway "D")		
13.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)	0	0	0	0	0	0	0	0	0	0	0	0
2029 (NO BUILD - A.M.)	0	593	0	0	1,407	0	0	0	0	0	0	0
2029 (BUILD - A.M.)	0	601	9	0	1,416	0	0	0	8	0	0	0
Alameda Blvd. / Driveway "D"												
0.94			0.94			0.94			0.94			PHF
Existing (2019)	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Driveway "D")			Southbound (Driveway "D")		
2029 (NO BUILD - P.M.)	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2029 (BUILD - P.M.)	0	0	0	0	0	0	0	0	0	0	0	0
	0	1,123	0	0	753	0	0	0	0	0	0	0
	0	1,138	24	0	776	0	0	0	15	0	0	0

Alameda / San Pedro Development

Projected Turning Movements Worksheet

Alameda Blvd. / San Pedro Dr.

INTERSECTION: E-W Street: **Alameda Blvd.** (1)
N-S Street: **San Pedro Dr.**

Year of Existing Counts: 2018
Horizon Year: 2029

Growth Rates: 2.44% 3.48% 0.50% 6.00%

	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	71	428	292	46	945	26	311	61	30	11	30	143
Background Traffic Growth	19	115	78	18	362	10	17	3	2	7	20	94
Subtotal (NO BUILD - A.M.)	90	543	370	64	1,307	36	328	64	32	18	50	237
Percent Commercial Trips Generated(Entering)	0.00%	20.00%	2.52%	17.00%	0.00%	0.00%	0.00%	0.00%	15.00%	0.58%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	22.52%	0.58%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	10	1	9	0	0	11	0	8	0	0	0
Total AM Peak Hour BUILD Volumes	90	553	371	73	1,307	36	339	64	40	18	50	237

	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	94	881	424	44	489	11	229	56	57	18	52	143
Background Traffic Growth	16	152	73	17	188	4	13	3	3	12	34	94
Subtotal (NO BUILD - P.M.)	110	1,033	497	61	677	15	242	59	60	30	86	237
Percent Commercial Trips Generated(Entering)	0.00%	20.00%	2.52%	17.00%	0.00%	0.00%	0.00%	0.00%	15.00%	0.58%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	22.52%	0.58%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	27	3	23	0	0	22	1	20	1	0	0
Total PM Peak Hour BUILD Volumes	110	1,060	500	84	677	15	264	60	80	31	86	237

Number of Commercial Trips Generated: Entering 50, Exiting 48, A.M. 100% Commercial Development
135, 96, P.M.

MRCOG Forecast Volumes Worksheet

Based on 2018 Traffic Count

2018 AM Link Volume: 791, 1,017, 402, 184
2018 PM Link Volume: 1,399, 544, 342, 213

Based on MRCOG Model (2040 Data Set)

2012 AM Link Volume: 1093, 980, 441, 11
2012 PM Link Volume: 1551, 957, 535, 50

2040 AM Link Volume: 1840, 1936, 421, 77
2040 PM Link Volume: 2233, 1896, 358, 284

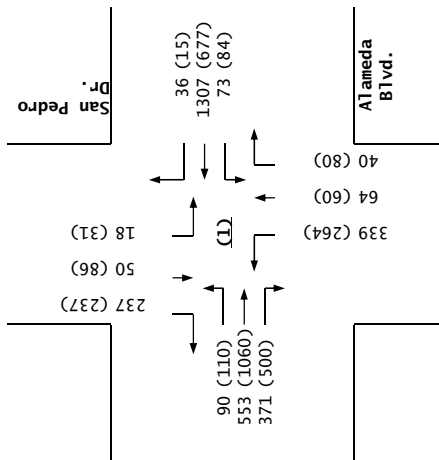
Growth Rate to Apply to Existing Counts to Match 2040 Forecasts

2018-2040 AM Growth Rates: 6.03%, 4.11%, 0.21%, -2.64%
2018-2040 PM Growth Rates: 2.71%, 11.30%, 0.21%, 1.52%

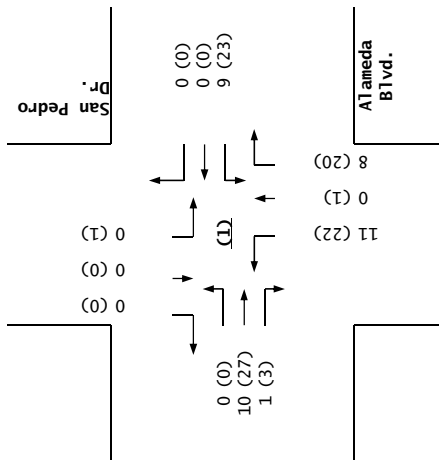
Growth Rate to Apply to 2012 Model Volumes to Match 2025 Forecasts

2012-2040 AM Growth Rates: 2.44%, 3.48%, -0.16%, 21.43%
2012-2040 PM Growth Rates: 1.57%, 3.50%, -1.18%, 16.71%

2029
BUILD

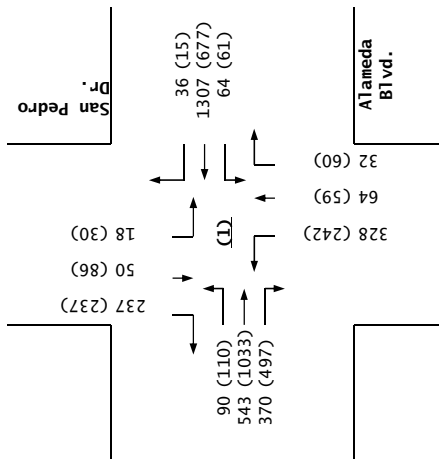


Trips



Alameda Blvd. / San Pedro Dr.

2029
NO BUILD



Alameda / San Pedro Development

Projected Turning Movements Worksheet

Alameda Blvd. / I-25 E. Ramp

INTERSECTION: E-W Street: **Alameda Blvd.** (2)

N-S Street: **I-25 E. Ramp**

Year of Existing Counts 2018

Horizon Year 2029

Growth Rates

	2.45%			2.26%			0.50%			0.50%		
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 E. Ramp)			Southbound (I-25 E. Ramp)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	202	641	0	0	1,208	157	933	73	209	0	0	0
Background Traffic Growth	54	173	0	0	300	39	51	4	11	0	0	0
Subtotal (NO BUILD - A.M.)	256	814	0	0	1,508	196	984	77	220	0	0	0
Percent Commercial Trips Generated(Entering)	0.00%	12.60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9.92%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	22.24%	0.28%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	6	0	0	11	0	0	0	5	0	0	0
Total AM Peak Hour BUILD Volumes	256	820	0	0	1,519	196	984	77	225	0	0	0

	2.46%			1.85%			0.50%			0.50%		
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 E. Ramp)			Southbound (I-25 E. Ramp)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	333	1,041	0	0	616	252	653	79	412	0	0	0
Background Traffic Growth	90	282	0	0	125	51	36	4	23	0	0	0
Subtotal (NO BUILD - P.M.)	423	1,323	0	0	741	303	689	83	435	0	0	0
Percent Commercial Trips Generated(Entering)	0.00%	12.60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9.92%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	22.24%	0.28%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	17	0	0	21	0	0	0	13	0	0	0
Total PM Peak Hour BUILD Volumes	423	1,340	0	0	762	303	689	83	448	0	0	0

Number of Commercial Trips Generated	Entering	Exiting	A.M.	100% Commercial Development
	50	48		
	135	96	P.M.	

MRCOG Forecast Volumes Worksheet

Based on 2018 Traffic Count

2018 AM Link Volume	843	1,365	1,215	0
2018 PM Link Volume	1,374	868	1,144	0

Based on MRCOG Model (2040 Data Set)

2012 AM Link Volume	975	1388	1203	0
2012 PM Link Volume	1285	1485	1213	0
2040 AM Link Volume	1644	2267	1305	0
2040 PM Link Volume	2170	2256	845	0

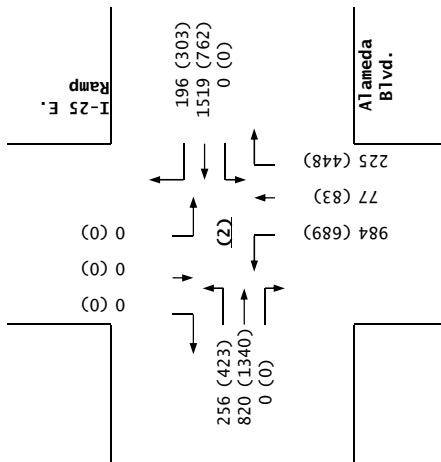
Growth Rate to Apply to Existing Counts to Match 2040 Forecasts

2018-2040 AM Growth Rates	4.32%	3.00%	0.34%	#DIV/0!
2018-2040 PM Growth Rates	2.63%	7.27%	-1.19%	#DIV/0!

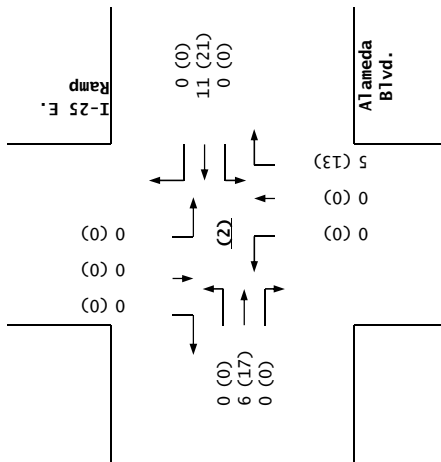
Growth Rate to Apply to 2012 Model Volumes to Match 2025 Forecasts

2012-2040 AM Growth Rates	2.45%	2.26%	0.30%	#DIV/0!
2012-2040 PM Growth Rates	2.46%	1.85%	-1.08%	#DIV/0!

2029
BUILD

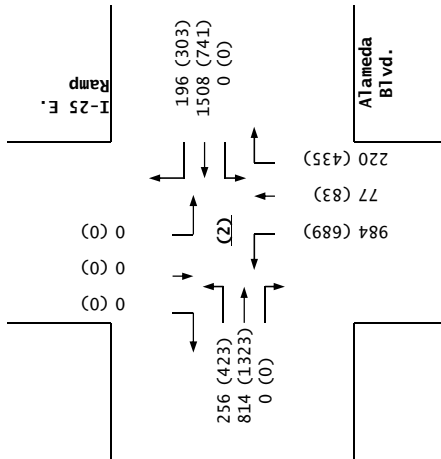


Trips



Alameda Blvd. / I-25 E. Ramp

2029
NO BUILD



Alameda / San Pedro Development

Projected Turning Movements Worksheet

Alameda Blvd. / I-25 W. Ramp

INTERSECTION: E-W Street: **Alameda Blvd.** (3)

N-S Street: **I-25 W. Ramp**

Year of Existing Counts 2018

Horizon Year 2029

Growth Rates

	1.23%			1.36%			0.50%			1.23%		
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 W. Ramp)			Southbound (I-25 W. Ramp)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	658	513	509	1,608	0	0	0	0	204	120	149
Background Traffic Growth	0	89	69	76	241	0	0	0	0	28	16	20
Subtotal (NO BUILD - A.M.)	0	747	582	585	1,849	0	0	0	0	232	136	169
Percent Commercial Trips Generated(Entering)	0.00%	12.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.28%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	9.92%	12.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	6	0	5	6	0	0	0	0	0	0	0
Total AM Peak Hour BUILD Volumes	0	753	582	590	1,855	0	0	0	0	232	136	169

	2.47%			0.63%			0.50%			1.97%		
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 W. Ramp)			Southbound (I-25 W. Ramp)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	952	747	294	984	0	0	0	0	450	485	126
Background Traffic Growth	0	259	203	20	68	0	0	0	0	98	105	27
Subtotal (NO BUILD - P.M.)	0	1,211	950	314	1,052	0	0	0	0	548	590	153
Percent Commercial Trips Generated(Entering)	0.00%	12.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.28%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	9.92%	12.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	17	0	10	12	0	0	0	0	0	0	0
Total PM Peak Hour BUILD Volumes	0	1,228	950	324	1,064	0	0	0	0	548	590	153

Number of Commercial Trips Generated

Entering	50	48	A.M.	100% Commercial Development
Exiting	135	96	P.M.	

MRCOG Forecast Volumes Worksheet

Based on 2018 Traffic Count

2018 AM Link Volume	1,171	2,117	0	473
2018 PM Link Volume	1,699	1,278	0	1,061

Based on MRCOG Model (2040 Data Set)

2012 AM Link Volume	1158	2148	0	505
2012 PM Link Volume	1575	1860	0	495
2040 AM Link Volume	1558	2967	0	679
2040 PM Link Volume	2663	2189	0	768

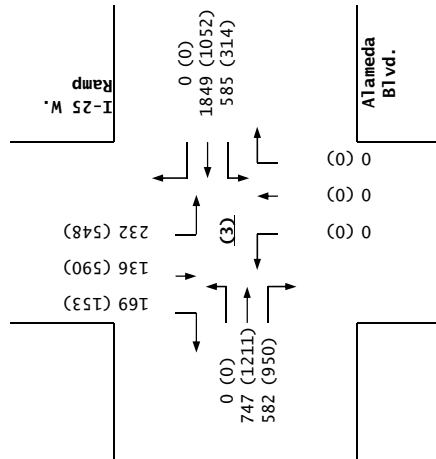
Growth Rate to Apply to Existing Counts to Match 2040 Forecasts

2018-2040 AM Growth Rates	1.50%	1.83%	#DIV/0!	1.98%
2018-2040 PM Growth Rates	2.58%	3.24%	#DIV/0!	-1.26%

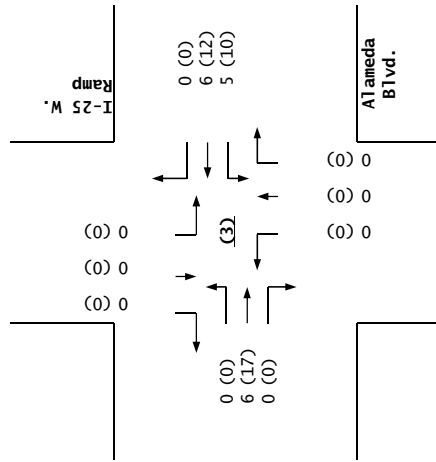
Growth Rate to Apply to 2012 Model Volumes to Match 2025 Forecasts

2012-2040 AM Growth Rates	1.23%	1.36%	#DIV/0!	1.23%
2012-2040 PM Growth Rates	2.47%	0.63%	#DIV/0!	1.97%

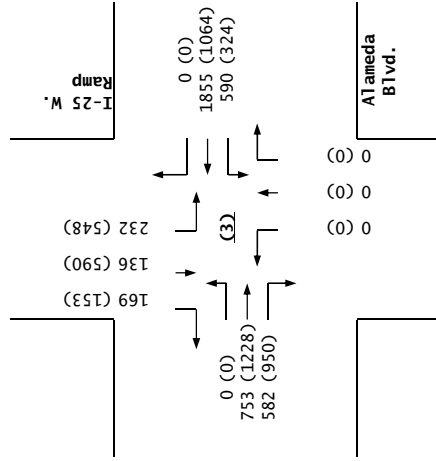
2029
NO BUILD



Trips



2029
BUILD



Alameda Blvd. / I-25 W. Ramp

Alameda / San Pedro Development

Projected Turning Movements Worksheet

Alameda Blvd. / San Mateo Blvd.

INTERSECTION: E-W Street: **Alameda Blvd.** (4)

N-S Street: **San Mateo Blvd.**

Year of Existing Counts 2018

Horizon Year 2029

Growth Rates

	0.50%			1.14%			4.90%			7.40%		
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (San Mateo Blvd.)			Southbound (San Mateo Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	260	1,027	28	77	900	585	15	84	63	74	8	57
Background Traffic Growth	14	56	2	10	113	73	8	45	34	60	7	46
Subtotal (NO BUILD - A.M.)	274	1,083	30	87	1,013	658	23	129	97	134	15	103
Percent Commercial Trips Generated(Entering)	0.00%	9.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.62%	0.75%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	1.62%	9.95%	0.75%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	5	0	1	5	0	0	0	1	0	0	0
Total AM Peak Hour BUILD Volumes	274	1,088	30	88	1,018	658	23	129	98	134	15	103

	2.31%			0.50%			4.37%			2.03%		
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (San Mateo Blvd.)			Southbound (San Mateo Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	64	1,260	12	43	855	149	20	8	97	278	51	293
Background Traffic Growth	16	320	3	2	47	8	10	4	47	62	11	65
Subtotal (NO BUILD - P.M.)	80	1,580	15	45	902	157	30	12	144	340	62	358
Percent Commercial Trips Generated(Entering)	0.00%	9.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.62%	0.75%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	1.62%	9.95%	0.75%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	13	0	2	10	1	0	0	2	1	0	0
Total PM Peak Hour BUILD Volumes	80	1,593	15	47	912	158	30	12	146	341	62	358

Number of Commercial Trips Generated

Entering	50	48	A.M.	100% Commercial Development
Exiting	135	96	P.M.	

MRCOG Forecast Volumes Worksheet

Based on 2018 Traffic Count

2018 AM Link Volume	1,315	1,562	162	139
2018 PM Link Volume	1,336	1,047	125	622

Based on MRCOG Model (2040 Data Set)

2012 AM Link Volume	1127	1571	116	56
2012 PM Link Volume	1171	1405	134	323
2040 AM Link Volume	1190	2071	275	172
2040 PM Link Volume	1927	1584	298	509

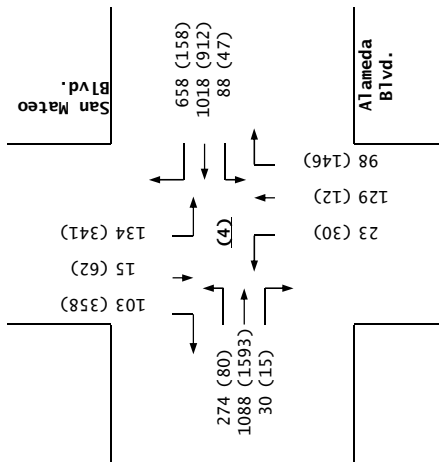
Growth Rate to Apply to Existing Counts to Match 2040 Forecasts

2018-2040 AM Growth Rates	-0.43%	1.48%	3.17%	1.08%
2018-2040 PM Growth Rates	2.01%	2.33%	6.29%	-0.83%

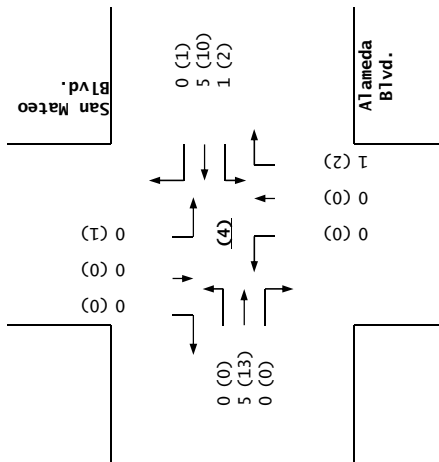
Growth Rate to Apply to 2012 Model Volumes to Match 2025 Forecasts

2012-2040 AM Growth Rates	0.20%	1.14%	4.90%	7.40%
2012-2040 PM Growth Rates	2.31%	0.46%	4.37%	2.06%

2029
BUILD

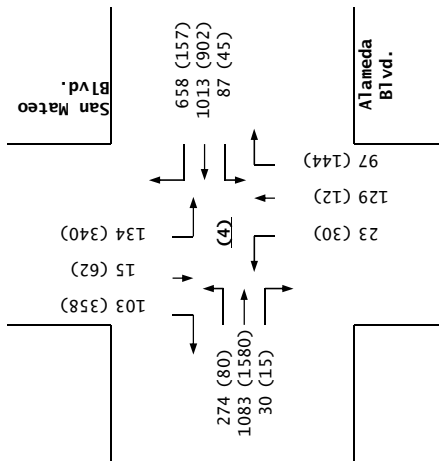


Trips



Alameda Blvd. / San Mateo Blvd.

2029
NO BUILD



Alameda / San Pedro Development

Projected Turning Movements Worksheet

Alameda Blvd. / Louisiana Blvd.

INTERSECTION: E-W Street: **Alameda Blvd.** (5)

N-S Street: **Louisiana Blvd.**

Year of Existing Counts 2018

Horizon Year 2029

Growth Rates

	2.42%			0.50%			0.50%			1.54%		
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Louisiana Blvd.)			Southbound (Louisiana Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	38	338	95	66	586	19	262	95	45	46	148	123
Background Traffic Growth	10	90	25	4	32	1	14	5	2	8	25	21
Subtotal (NO BUILD - A.M.)	48	428	120	70	618	20	276	100	47	54	173	144
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	8.44%	15.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.47%	2.00%
Percent Commercial Trips Generated(Exiting)	2.00%	20.00%	10.00%	0.00%	0.00%	0.00%	0.00%	1.47%	3.44%	0.00%	0.00%	0.00%
Total Trips Generated	1	10	5	4	8	0	0	1	2	0	1	1
Total AM Peak Hour BUILD Volumes	49	438	125	74	626	20	276	101	49	54	174	145

	3.20%			0.50%			0.50%			2.00%		
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Louisiana Blvd.)			Southbound (Louisiana Blvd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	110	697	144	41	396	26	106	103	53	37	91	45
Background Traffic Growth	39	245	51	2	22	1	6	6	3	8	20	10
Subtotal (NO BUILD - P.M.)	149	942	195	43	418	27	112	109	56	45	111	55
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	8.44%	15.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.47%	2.00%
Percent Commercial Trips Generated(Exiting)	2.00%	20.00%	10.00%	0.00%	0.00%	0.00%	0.00%	1.47%	3.44%	0.00%	0.00%	0.00%
Total Trips Generated	2	19	10	11	20	0	0	1	3	0	2	3
Total PM Peak Hour BUILD Volumes	151	961	205	54	438	27	112	110	59	45	113	58

Number of Commercial Trips Generated	Entering	Exiting	A.M.	100% Commercial Development
	50	48		
	135	96	P.M.	

MRCOG Forecast Volumes Worksheet

Based on 2018 Traffic Count

2018 AM Link Volume	471	671	402	317
2018 PM Link Volume	951	463	262	173

Based on MRCOG Model (2040 Data Set)

2012 AM Link Volume	800	935	148	51
2012 PM Link Volume	969	821	237	34
2040 AM Link Volume	1343	1023	821	73
2040 PM Link Volume	1836	796	1063	53

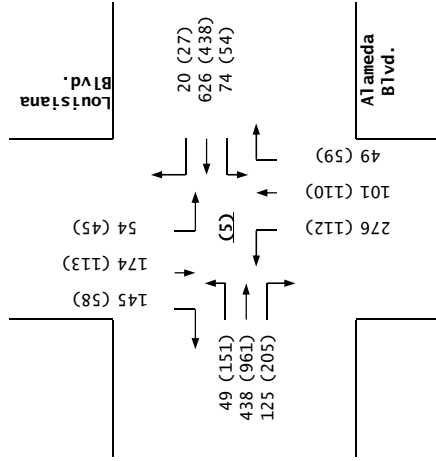
Growth Rate to Apply to Existing Counts to Match 2040 Forecasts

2018-2040 AM Growth Rates	8.42%	2.38%	4.74%	-3.50%
2018-2040 PM Growth Rates	4.23%	3.27%	13.90%	-3.15%

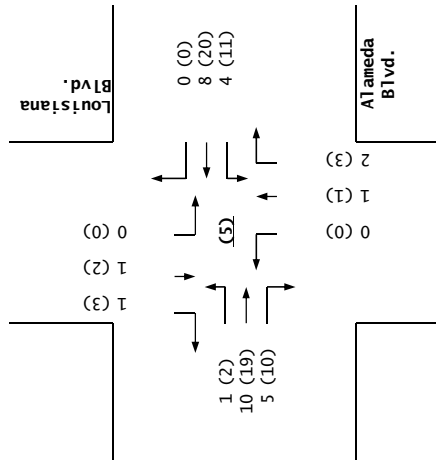
Growth Rate to Apply to 2012 Model Volumes to Match 2025 Forecasts

2012-2040 AM Growth Rates	2.42%	0.34%	16.24%	1.54%
2012-2040 PM Growth Rates	3.20%	-0.11%	12.45%	2.00%

2029
BUILD

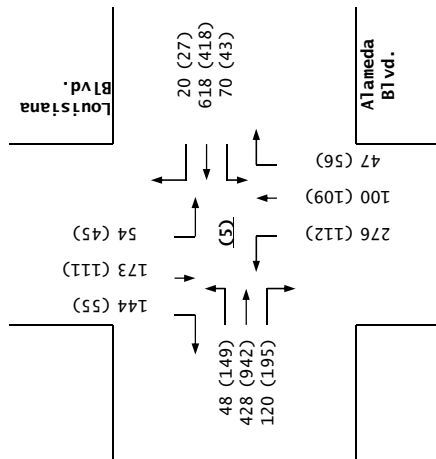


Trips



Alameda Blvd. / Louisiana Blvd.

2029
NO BUILD



Alameda / San Pedro Development

Projected Turning Movements Worksheet

Signal Ave. / San Pedro Dr.

INTERSECTION: E-W Street: **Signal Ave.** (6)
N-S Street: **San Pedro Dr.**

Year of Existing Counts: 2018
Horizon Year: 2029

Growth Rates: 0.50% 0.50% 0.50% 0.50%

	Eastbound (Signal Ave.)			Westbound (Signal Ave.)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	14	2	12	7	1	27	6	365	9	24	324	13
Background Traffic Growth	1	0	1	0	0	1	0	20	0	1	18	1
Subtotal (NO BUILD - A.M.)	15	2	13	7	1	28	6	385	9	25	342	14
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	32.00%	2.41%	19.52%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	34.41%	0.00%	2.52%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	17	0	1	0	16	1	10	0	0
Total AM Peak Hour BUILD Volumes	15	2	13	24	1	29	6	401	10	35	342	14

	Eastbound (Signal Ave.)			Westbound (Signal Ave.)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	24	1	42	8	2	15	33	291	9	57	438	22
Background Traffic Growth	1	0	2	0	0	1	2	16	0	3	24	1
Subtotal (NO BUILD - P.M.)	25	1	44	8	2	16	35	307	9	60	462	23
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	32.00%	2.41%	19.52%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	34.41%	0.00%	2.52%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	33	0	2	0	43	3	26	0	0
Total PM Peak Hour BUILD Volumes	25	1	44	41	2	18	35	350	12	86	462	23

Number of Commercial Trips Generated: Entering 50, Exiting 48, A.M. 100% Commercial Development
135, 96, P.M.

MRCOG Forecast Volumes Worksheet

Based on 2018 Traffic Count

2018 AM Link Volume: 28, 35, 380, 361
2018 PM Link Volume: 67, 25, 333, 517

Based on MRCOG Model (2040 Data Set)

2012 AM Link Volume: 370, 327, 1248, 1049
2012 PM Link Volume: 313, 1024, 1058, 1246
2040 AM Link Volume: 1468, 848, 1609, 777
2040 PM Link Volume: 923, 1753, 1389, 1534

Growth Rate to Apply to Existing Counts to Match 2040 Forecasts

2018-2040 AM Growth Rates: 233.77%, 105.58%, 14.70%, 5.24%
2018-2040 PM Growth Rates: 58.07%, 314.18%, 14.41%, 8.94%

Growth Rate to Apply to 2012 Model Volumes to Match 2025 Forecasts

2012-2040 AM Growth Rates: 10.60%, 5.69%, 1.03%, -0.93%
2012-2040 PM Growth Rates: 6.96%, 2.54%, 1.12%, 0.83%

Pass-by Trip Calculations:

AM Pass-by Trips

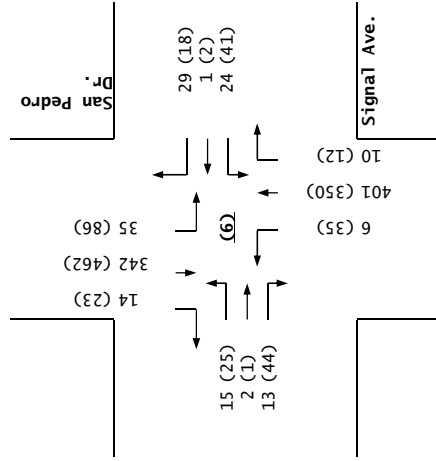
	Eastbound (Signal Ave.)			Westbound (Signal Ave.)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)		
Percent Entering	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Entering	0	0	0	0	0	0	0	0	0	0	0	0
Percent Exiting	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Net AM Passby Trips	0	0	0	0	0	0	0	0	0	0	0	0

PM Pass-by Trips

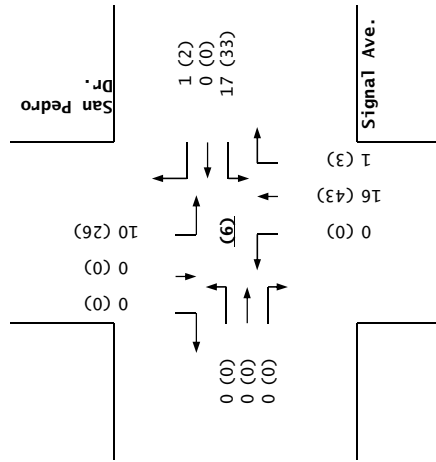
	Eastbound (Signal Ave.)			Westbound (Signal Ave.)			Northbound (San Pedro Dr.)			Southbound (San Pedro Dr.)		
Percent Entering	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Entering	0	0	0	0	0	0	0	0	0	0	0	0
Percent Exiting	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Net PM Passby Trips	0	0	0	0	0	0	0	0	0	0	0	0

Pass-by Trips: Entering 0, Exiting 0, AM 0, PM 0

2029
BUILD

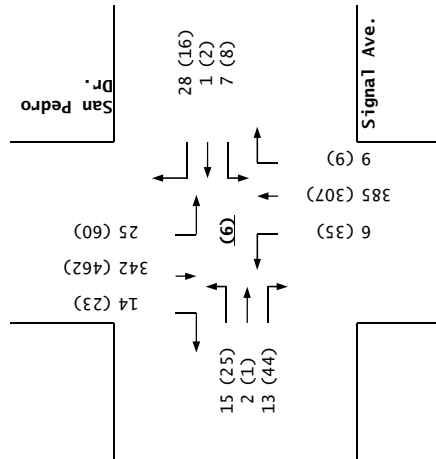


Trips



Signal Ave. / San Pedro Dr.

2029
NO BUILD



Alameda / San Pedro Development

Projected Turning Movements Worksheet

Signal Av. / Driveway "A"

INTERSECTION: E-W Street: **Signal Av.** (7)
N-S Street: **Driveway "A"**

Year of Existing Counts: 2018
Horizon Year: 2029

Growth Rates

	0.50%			0.50%			0.50%			0.50%		
	Eastbound (Signal Av.)			Westbound (Signal Av.)			Northbound (Driveway "A")			Southbound (Driveway "A")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - A.M.)	0	36	0	0	36	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	21.93%	0.00%	0.00%	0.00%	0.00%	25.50%	0.00%	0.00%	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%	10.50%	0.00%	36.93%
Total Trips Generated	11	0	0	0	0	13	0	0	0	5	0	18
Total AM Peak Hour BUILD Volumes	11	36	0	0	36	13	0	0	0	5	0	18

	0.50%			0.50%			0.50%			0.50%		
	Eastbound (Signal Av.)			Westbound (Signal Av.)			Northbound (Driveway "A")			Southbound (Driveway "A")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - P.M.)	0	70	0	0	26	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	21.93%	0.00%	0.00%	0.00%	0.00%	25.50%	0.00%	0.00%	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%	10.50%	0.00%	36.93%
Total Trips Generated	30	0	0	0	0	34	0	0	0	10	0	35
Total PM Peak Hour BUILD Volumes	30	70	0	0	26	34	0	0	0	10	0	35

Number of Commercial Trips Generated
 Entering: 50, Exiting: 48, A.M.
 135, 96, P.M.
 100% Commercial Development

MRCOG Forecast Volumes Worksheet

Based on 2018 Traffic Count

2018 AM Link Volume: 0, 0, 0, 0
 2018 PM Link Volume: 0, 0, 0, 0

Based on MRCOG Model (2040 Data Set)

2012 AM Link Volume: 370, 327, 1248, 1049
 2012 PM Link Volume: 313, 1024, 1058, 1246
 2040 AM Link Volume: 1468, 848, 1609, 777
 2040 PM Link Volume: 923, 1753, 1389, 1534

Growth Rate to Apply to Existing Counts to Match 2040 Forecasts

2018-2040 AM Growth Rates: #DIV/0!, #DIV/0!, #DIV/0!, #DIV/0!
 2018-2040 PM Growth Rates: #DIV/0!, #DIV/0!, #DIV/0!, #DIV/0!

Growth Rate to Apply to 2012 Model Volumes to Match 2025 Forecasts

2012-2040 AM Growth Rates: 10.60%, 5.69%, 1.03%, -0.93%
 2012-2040 PM Growth Rates: 6.96%, 2.54%, 1.12%, 0.83%

Pass-by Trip Calculations:

AM Pass-by Trips

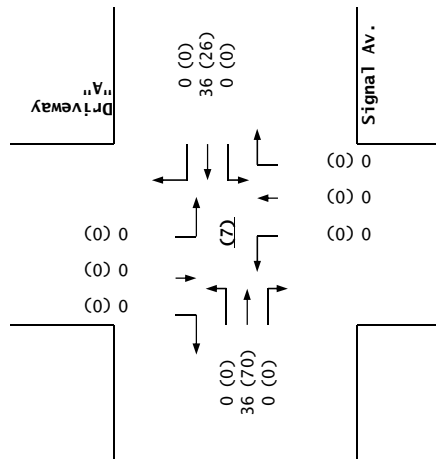
	Eastbound (Signal Av.)			Westbound (Signal Av.)			Northbound (Driveway "A")			Southbound (Driveway "A")		
Percent Entering	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Entering	0	0	0	0	0	0	0	0	0	0	0	0
Percent Exiting	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Net AM Passby Trips	0	0	0	0	0	0	0	0	0	0	0	0

PM Pass-by Trips

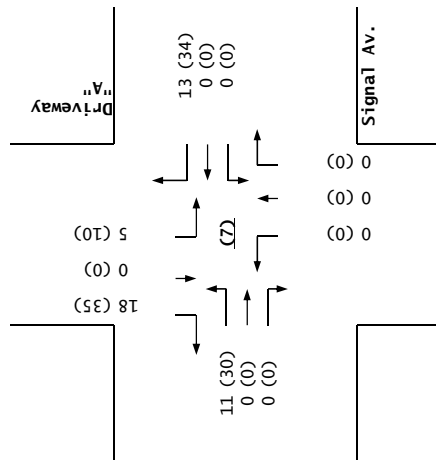
	Eastbound (Signal Av.)			Westbound (Signal Av.)			Northbound (Driveway "A")			Southbound (Driveway "A")		
Percent Entering	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Entering	0	0	0	0	0	0	0	0	0	0	0	0
Percent Exiting	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Net PM Passby Trips	0	0	0	0	0	0	0	0	0	0	0	0

Pass-by Trips
 Entering: 0, Exiting: 0 AM
 0, 0 PM

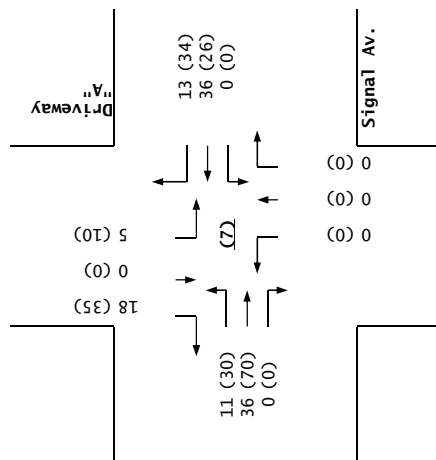
2029
NO BUILD



Trips



2029
BUILD



Signal Av. / Driveway "A"

Alameda / San Pedro Development

Projected Turning Movements Worksheet

Driveway "B" / San Pedro Rd.

INTERSECTION: E-W Street: **Driveway "B"** (8)
N-S Street: **San Pedro Rd.**

Year of Existing Counts: 2018
Horizon Year: 2029

Growth Rates: 0.50% 0.50% 0.50% 0.50%

	Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (San Pedro Rd.)			Southbound (San Pedro Rd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - A.M.)	0	0	0	0	0	0	0	428	0	0	381	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	15.00%	17.00%	0.00%	19.52%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	20.58%	0.00%	2.52%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	0	0	10	0	9	9	0	10	0
Total AM Peak Hour BUILD Volumes	0	0	0	0	0	10	0	437	9	0	391	0

	Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (San Pedro Rd.)			Southbound (San Pedro Rd.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - P.M.)	0	0	0	0	0	0	0	348	0	0	545	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	15.00%	17.00%	0.00%	19.52%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	20.58%	0.00%	2.52%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	0	0	20	0	22	23	0	26	0
Total PM Peak Hour BUILD Volumes	0	0	0	0	0	20	0	370	23	0	571	0

Number of Commercial Trips Generated: Entering 50, Exiting 48, A.M. 100% Commercial Development
135, 96, P.M.

MRCOG Forecast Volumes Worksheet

Based on 2018 Traffic Count

2018 AM Link Volume: 0, 0, 0, 0
2018 PM Link Volume: 0, 0, 0, 0

Based on MRCOG Model (2040 Data Set)

2012 AM Link Volume: 370, 327, 1248, 1049
2012 PM Link Volume: 313, 1024, 1058, 1246
2040 AM Link Volume: 1468, 848, 1609, 777
2040 PM Link Volume: 923, 1753, 1389, 1534

Growth Rate to Apply to Existing Counts to Match 2040 Forecasts

2018-2040 AM Growth Rates: #DIV/0!, #DIV/0!, #DIV/0!, #DIV/0!
2018-2040 PM Growth Rates: #DIV/0!, #DIV/0!, #DIV/0!, #DIV/0!

Growth Rate to Apply to 2012 Model Volumes to Match 2025 Forecasts

2012-2040 AM Growth Rates: 10.60%, 5.69%, 1.03%, -0.93%
2012-2040 PM Growth Rates: 6.96%, 2.54%, 1.12%, 0.83%

Pass-by Trip Calculations:

AM Pass-by Trips

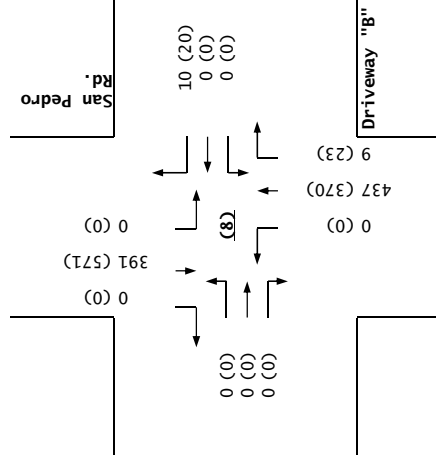
	Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (San Pedro Rd.)			Southbound (San Pedro Rd.)		
	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Entering	0	0	0	0	0	0	0	0	0	0	0	0
Volume Entering	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Volume Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Net AM Passby Trips	0	0	0	0	0	0	0	0	0	0	0	0

PM Pass-by Trips

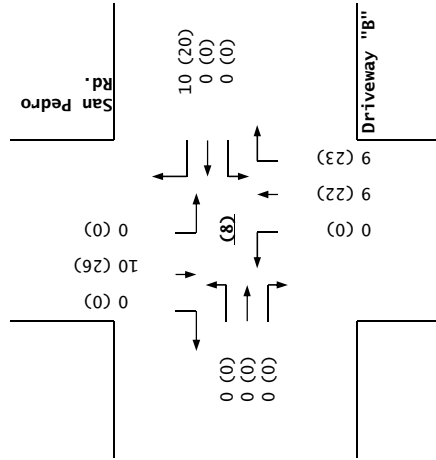
	Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (San Pedro Rd.)			Southbound (San Pedro Rd.)		
	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Entering	0	0	0	0	0	0	0	0	0	0	0	0
Volume Entering	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Volume Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Net PM Passby Trips	0	0	0	0	0	0	0	0	0	0	0	0

Pass-by Trips: Entering 0, Exiting 0 AM
0, 0 PM

2029
BUILD

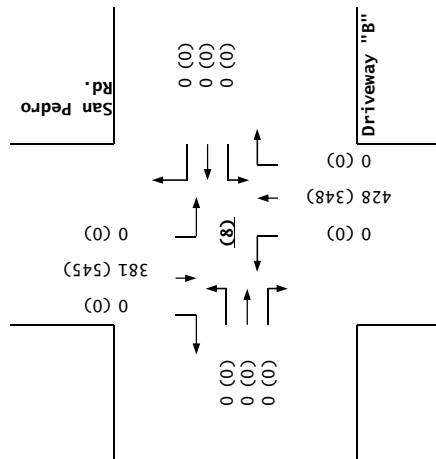


Trips



Driveway "B" / San Pedro Rd.

2029
NO BUILD



Alameda / San Pedro Development

Projected Turning Movements Worksheet

Alameda Blvd. / Driveway "C"

INTERSECTION : E-W Street: **Alameda Blvd.** (9)
N-S Street: **Driveway "C"**

Year of Existing Counts 2018
Horizon Year 2029

Growth Rates

	3.48%			3.48%			3.48%			3.48%		
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Driveway "C")			Southbound (Driveway "C")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - A.M.)	0	593	0	0	1,407	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	0.00%	17.79%	17.79%	0.00%	17.00%	0.00%	0.00%	0.00%	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%	16.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	9	9	0	9	0	0	0	8	0	0	0
Total AM Peak Hour BUILD Volumes	0	602	9	0	1,416	0	0	0	8	0	0	0

	3.50%			3.50%			3.50%			3.50%		
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Driveway "C")			Southbound (Driveway "C")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - P.M.)	0	1,123	0	0	753	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	0.00%	17.79%	17.79%	0.00%	17.00%	0.00%	0.00%	0.00%	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%	16.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	24	24	0	23	0	0	0	15	0	0	0
Total PM Peak Hour BUILD Volumes	0	1,147	24	0	776	0	0	0	15	0	0	0

Number of Commercial Trips Generated

Entering	50	48	A.M.	100% Commercial Development
Exiting	135	96	P.M.	

MRCOG Forecast Volumes Worksheet

Based on 2018 Traffic Count

2018 AM Link Volume	0	0	0	0
2018 PM Link Volume	0	0	0	0

Based on MRCOG Model (2040 Data Set)

2012 AM Link Volume	370	327	1248	1049
2012 PM Link Volume	313	1024	1058	1246
2040 AM Link Volume	1468	848	1609	777
2040 PM Link Volume	923	1753	1389	1534

Growth Rate to Apply to Existing Counts to Match 2040 Forecasts

2018-2040 AM Growth Rates	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2018-2040 PM Growth Rates	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Growth Rate to Apply to 2012 Model Volumes to Match 2025 Forecasts

2012-2040 AM Growth Rates	10.60%	5.69%	1.03%	-0.93%
2012-2040 PM Growth Rates	6.96%	2.54%	1.12%	0.83%

Pass-by Trip Calculations:

AM Pass-by Trips

Percent Entering	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Entering	0	0	0	0	0	0	0	0	0	0	0	0
Percent Exiting	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Net AM Passby Trips	0	0	0	0	0	0	0	0	0	0	0	0

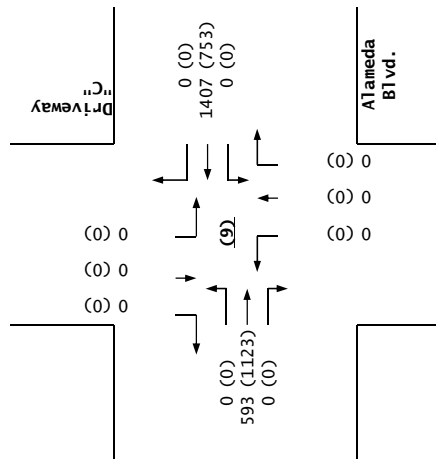
PM Pass-by Trips

Percent Entering	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Entering	0	0	0	0	0	0	0	0	0	0	0	0
Percent Exiting	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Net PM Passby Trips	0	0	0	0	0	0	0	0	0	0	0	0

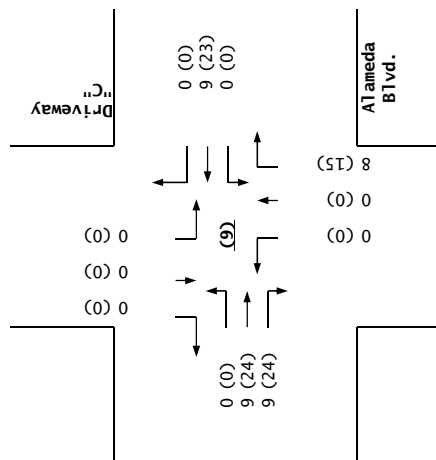
Pass-by Trips

Entering	0	0	AM
Exiting	0	0	PM

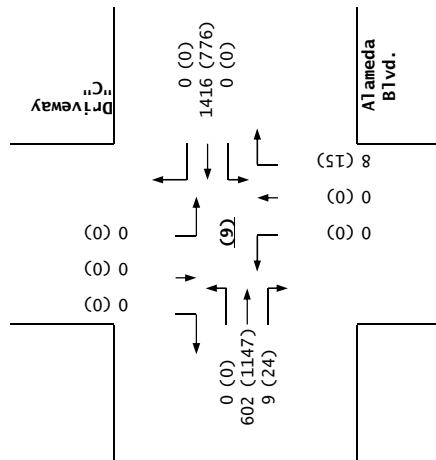
2029
NO BUILD



Trips



2029
BUILD



Alameda Blvd. / Driveway "C"

Alameda / San Pedro Development

Projected Turning Movements Worksheet

Alameda Blvd. / Driveway "D"

INTERSECTION : E-W Street: **Alameda Blvd.** (10)
N-S Street: **Driveway "D"**

Year of Existing Counts 2018
Horizon Year 2029

Growth Rates

	3.48%			3.48%			3.48%			3.48%		
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Driveway "D")			Southbound (Driveway "D")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - A.M.)	0	593	0	0	1,407	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	17.79%	0.00%	17.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	16.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	8	9	0	9	0	0	0	8	0	0	0
Total AM Peak Hour BUILD Volumes	0	601	9	0	1,416	0	0	0	8	0	0	0

	3.50%			3.50%			3.50%			3.00%		
	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Driveway "D")			Southbound (Driveway "D")		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal (NO BUILD - P.M.)	0	1,123	0	0	753	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	17.79%	0.00%	17.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	16.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	16.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	15	24	0	23	0	0	0	15	0	0	0
Total PM Peak Hour BUILD Volumes	0	1,138	24	0	776	0	0	0	15	0	0	0

Number of Commercial Trips Generated

Entering	50	48	A.M.	100% Commercial Development
Exiting	135	96	P.M.	

MRCOG Forecast Volumes Worksheet

Based on 2018 Traffic Count

2018 AM Link Volume	0	0	0	0
2018 PM Link Volume	0	0	0	0

Based on MRCOG Model (2040 Data Set)

2012 AM Link Volume	370	327	1248	1049
2012 PM Link Volume	313	1024	1058	1246
2040 AM Link Volume	1468	848	1609	777
2040 PM Link Volume	923	1753	1389	1534

Growth Rate to Apply to Existing Counts to Match 2040 Forecasts

2018-2040 AM Growth Rates	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
2018-2040 PM Growth Rates	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Growth Rate to Apply to 2012 Model Volumes to Match 2025 Forecasts

2012-2040 AM Growth Rates	10.60%	5.69%	1.03%	-0.93%
2012-2040 PM Growth Rates	6.96%	2.54%	1.12%	0.83%

Pass-by Trip Calculations:

AM Pass-by Trips

Percent Entering	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Entering	0	0	0	0	0	0	0	0	0	0	0	0
Percent Exiting	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Net AM Passby Trips	0	0	0	0	0	0	0	0	0	0	0	0

PM Pass-by Trips

Percent Entering	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Entering	0	0	0	0	0	0	0	0	0	0	0	0
Percent Exiting	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Volume Exiting	0	0	0	0	0	0	0	0	0	0	0	0
Net PM Passby Trips	0	0	0	0	0	0	0	0	0	0	0	0

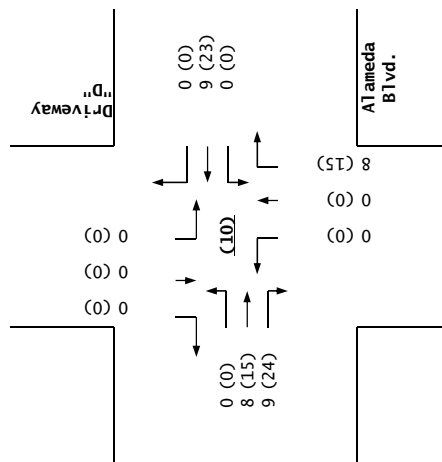
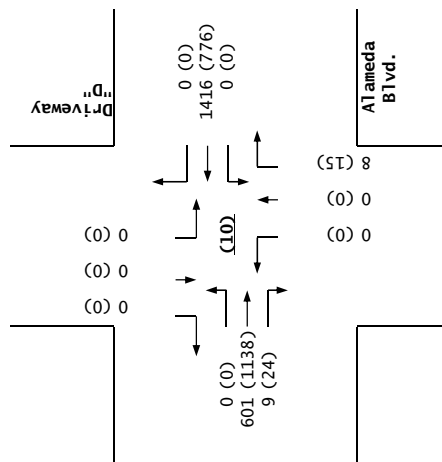
Pass-by Trips

Entering	0	0	AM
Exiting	0	0	PM

2029
BUILD

Trips

2029
NO BUILD



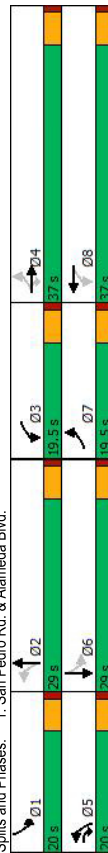
Alameda Blvd. / Driveway "D"

Timings
1: San Pedro Rd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	71	430	293	47	962	313	61	111	31
Future Volume (vph)	71	430	293	47	962	313	61	111	31
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4	4	4	8	8	2	6	6	6
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase	5.0	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	10.0	21.0	10.0	10.0	10.0	21.0
Minimum Split (s)	19.5	37.0	20.0	19.5	37.0	20.0	29.0	20.0	29.0
Total Split (%)	18.5%	35.1%	19.0%	18.5%	35.1%	19.0%	27.5%	19.0%	27.5%
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	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min	Min	Min
Recall Mode	Min	33.1	52.7	38.3	31.8	25.7	11.9	16.2	6.8
Act Effct Green (s)	0.51	0.41	0.65	0.47	0.39	0.32	0.15	0.20	0.08
Actuated g/C Ratio	0.29	0.32	0.28	0.10	0.77	0.82	0.19	0.38	0.48
Control Delay	11.9	17.5	1.5	9.7	26.6	41.9	23.6	24.6	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.9	17.5	1.5	9.7	26.6	41.9	23.6	24.6	13.9
LOS	B	B	A	A	C	D	C	C	B
Approach Delay	11.1				25.8		37.8		18.0
Approach LOS	B				C		D		B
Intersection Summary									
Cycle Length: 105.5									
Actuated Cycle Length: 81.1									
Natural Cycle: 65									
Control Type: Actuated-Uncoordinated									
Maximum v/c Ratio: 0.82									
Intersection Signal Delay: 22.2									
Intersection Capacity Utilization 71.3%									
Analysis Period (min) 15									

Splits and Phases: 1: San Pedro Rd. & Alameda Blvd.



2019 AM Peak NOBUILD Conditions

Synchro 10 Report
2019ANX.syn

HCM 6th Signalized Intersection Summary
1: San Pedro Rd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

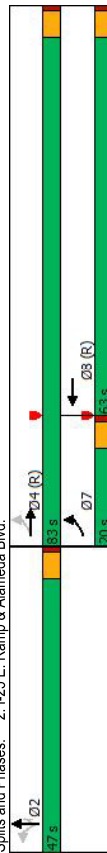
Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	71	430	293	47	962	313	61	111	31
Future Volume (veh/h)	71	430	293	47	962	313	61	111	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	76	457	312	50	1023	28	333	65	118
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3
Cap, veh/h	258	1250	842	390	1243	34	460	545	251
Arrive On Green	0.07	0.35	0.35	0.07	0.35	0.18	0.23	0.23	0.08
Sat Flow, veh/h	1767	3526	1572	1767	3505	96	1767	2344	1080
Gp Volume(v), veh/h	76	457	312	50	514	333	48	118	33
Gp Sat Flow(s), veh/h/ln	1767	1763	1572	1767	1763	1838	1767	1763	1763
Q Served(g, s), s	2.0	7.3	8.7	1.3	20.2	20.2	11.6	1.8	4.2
Cycle Q Clear(g, c), s	2.0	7.3	8.7	1.3	20.2	20.2	11.6	1.8	4.2
Prop In Lane	1.00	1.00	1.00	1.00	1.00	0.05	1.00	0.65	1.00
Lane Gp Cap(c), veh/h	258	1250	842	390	625	652	460	410	386
V/C Ratio(X)	0.29	0.37	0.37	0.13	0.82	0.82	0.72	0.12	0.13
Avail Cap(c, a), veh/h	479	1484	946	611	742	774	489	556	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.5	18.2	10.2	13.5	22.4	22.4	21.0	23.0	23.1
Incr Delay (d2), s/veh	0.6	0.2	0.3	0.1	6.4	6.2	4.9	0.1	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.8	2.8	2.7	0.5	8.9	9.3	5.1	0.7	1.8
Unsig. Movement Delay, s/veh									
LnGrp Delay(d), s/veh	17.1	18.4	10.5	13.7	28.8	28.6	26.0	23.2	25.2
LnGrp LOS	B	B	B	B	C	C	C	C	C
Approach Vol, veh/h	845				1101			430	310
Approach Delay, s/veh	15.4				28.0			25.3	31.5
Approach LOS	B				C			C	C
Timer - Assigned Phs	1	2	3	4	5	6	7	8	
Phs Duration (G+Y+Rc), s	11.4	22.7	10.0	32.0	18.8	15.3	10.0	32.0	
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Max Green Setting (Gmax), s	15.0	24.0	14.5	32.0	15.0	14.5	14.5	32.0	
Max Q Clear Time (g, c+11), s	6.2	3.8	3.3	10.7	13.6	9.4	4.0	22.2	
Green Ext Time (p, c), s	0.2	0.4	0.1	4.2	0.2	0.9	0.1	4.7	
Intersection Summary									
HCM 6th Ctrl Delay						24.0			
HCM 6th LOS						C			

2019 AM Peak NOBUILD Conditions

Synchro 10 Report
2019ANX.syn

Timings Terry O. Brown, PE
2: I-25 E. Ramp & Alameda Blvd. 11/24/2018

	EBL	EBT	WBT	NBL	NBT	NBR	
Lane Group							
Lane Configurations	EBL	EBT	WBT	NBL	NBT	NBR	
Traffic Volume (vph)	203	644	1214	938	73	210	
Future Volume (vph)	203	644	1214	938	73	210	
Turn Type	pm+pt	NA	NA	Perm	NA	Perm	
Protected Phases	7	4	8		2		
Permitted Phases	4			2	2	2	
Detector Phase	7	4	8	2	2	2	
Switch Phase							
Minimum Initial (s)	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	
Total Split (s)	20.0	83.0	63.0	47.0	47.0	47.0	
Total Split (%)	15.4%	63.8%	48.5%	36.2%	36.2%	36.2%	
Yellow Time (s)	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	
Lost Time Adjust (s)	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	
Lead/Lag	Lead	Lag					
Lead-Lag Optimize?							
Recall Mode	Min	C-Max	C-Max	Min	Min	Min	
Act Effct Green (s)	78.0	78.0	59.4	42.0	42.0	42.0	
Actuated g/C Ratio	0.60	0.60	0.46	0.32	0.32	0.32	
v/c Ratio	0.83	0.33	0.85	0.98	0.94	0.34	
Control Delay	55.8	16.6	28.7	78.5	38.9	5.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	55.8	16.6	28.7	78.5	38.9	5.4	
LOS	E	B	C	E	D	A	
Approach Delay		26.0	28.7		48.4		
Approach LOS		C	C		D		
Intersection Summary							
Cycle Length: 130							
Actuated Cycle Length: 130							
Offset: 94.9 (73%), Referenced to phase 4:EBTL and 8:WBT, Start of Green							
Natural Cycle: 65							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 0.98							
Intersection Signal Delay: 35.0							
Intersection Capacity Utilization 70.3%							
Analysis Period (min) 15							
dl Delact Left Lane. Recode with 1 though lane as a left lane.							



HCM 6th Signalized Intersection Summary Terry O. Brown, PE
2: I-25 E. Ramp & Alameda Blvd. 11/24/2018

	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Movement									
Lane Configurations	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (veh/h)	203	644	0	1214	158	938	73	210	0
Future Volume (veh/h)	203	644	0	1214	158	938	73	210	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/in	1856	1856	0	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	218	692	0	1305	170	1009	78	226	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	0	3	3	3	3	3	3
Cap, veh/h	299	2167	0	2257	294	1090	572	485	0
Arrive On Green	0.16	1.00	0.00	0.00	0.50	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1767	3618	0	4702	591	3534	1856	1572	0
Gp Volume(v), veh/h	218	692	0	972	503	1009	78	226	0
Gp Sat Flow(s), veh/h/in	1767	1763	0	1689	1749	1767	1856	1572	0
Q Serve(g, s), s	8.0	0.0	0.0	26.4	26.4	35.9	3.9	15.1	0
Cycle Q Clear(g, c), s	8.0	0.0	0.0	26.4	26.4	35.9	3.9	15.1	0
Prop In Lane	1.00	0.00	0.00	0.34	1.00	1.00	1.00	1.00	0
Lane Gp Cap(c), veh/h	299	2167	0	1680	870	1090	572	485	0
V/C Ratio(X)	0.73	0.32	0.00	0.58	0.53	0.93	0.14	0.47	0
Avail Cap(c, a), veh/h	364	2167	0	1680	870	1142	599	508	0
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0
Upstream Filter(I)	0.93	0.93	0.00	0.53	0.53	1.00	1.00	1.00	0
Uniform Delay (d), s/veh	17.9	0.0	0.0	23.0	43.5	32.5	36.3	0.0	0
Incr Delay (d2), s/veh	5.3	0.4	0.0	0.8	1.5	12.3	0.1	0.7	0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
%ile BackOfQ(50%), veh/h	3.1	0.1	0.0	10.6	11.2	17.5	1.8	5.9	0
Unsig. Movement Delay, s/veh	23.2	0.4	0.0	23.8	24.5	55.8	32.6	37.0	0
LnGrp Delay(d), s/veh	23.2	0.4	0.0	23.8	24.5	55.8	32.6	37.0	0
LnGrp LOS	C	A	A	C	C	E	C	D	0
Approach Vol, veh/h	910		1475		1313				
Approach Delay, s/veh	5.8		24.1		51.2				
Approach LOS	A		C		D				
Timer - Assigned Phs	2	4	4	7	8				
Phs Duration (G+Y+Rc), s	45.1	84.9		15.2	69.7				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0				
Max Green Setting (Gmax), s	42.0	78.0		15.0	58.0				
Max Q Clear Time (g, c+H1), s	37.9	2.0		10.0	28.4				
Green Ext Time (p, c), s	2.2	5.8		0.3	13.0				
Intersection Summary									
HCM 6th Ctrl Delay	29.2								
HCM 6th LOS	C								
Notes									
User approved volume balancing among the lanes for turning movement.									

Timings
4: San Mateo Blvd. & Alameda Blvd.

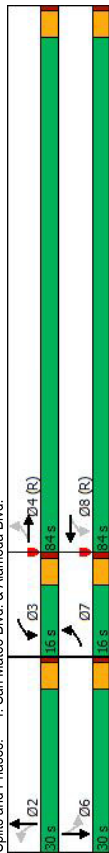
Terry O. Brown, PE
11/24/2018

HCM 6th Signalized Intersection Summary
4: San Mateo Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	261	1032	77	905	15	84	76	8
Future Volume (vph)	261	1032	77	905	15	84	76	8
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8	2	2	6	6
Permitted Phases	4	4	3	8	2	2	6	6
Detector Phase	7	4	3	8	2	2	6	6
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	21.0	21.0	21.0	21.0
Minimum Split (s)	16.0	84.0	16.0	84.0	30.0	30.0	30.0	30.0
Total Split (s)	12.3%	64.6%	12.3%	64.6%	23.1%	23.1%	23.1%	23.1%
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	C-Max	Min	C-Max	Min	C-Max	Min	C-Max
Recall Mode	100.7	92.2	97.3	90.4	16.0	16.0	16.0	16.0
Act Effct Green (s)	0.77	0.71	0.75	0.70	0.12	0.12	0.12	0.12
Actuated g/C Ratio	0.54	0.45	0.21	0.67	0.10	0.66	0.83	0.28
v/c Ratio	12.9	9.5	5.5	12.2	48.7	57.4	108.7	16.5
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	12.9	9.5	5.5	12.2	48.7	57.4	108.7	16.5
Total Delay	B	A	A	B	D	E	F	B
Approach Delay	9.9	11.9	56.6	65.7				
Approach LOS	A	B	E	E				
Intersection Summary								
Cycle Length: 130								
Actuated Cycle Length: 130								
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green								
Natural Cycle: 65								
Control Type: Actuated-Coordinated								
Maximum v/c Ratio: 0.83								
Intersection Signal Delay: 15.9								
Intersection Capacity Utilization 80.2%								
Analysis Period (min) 15								

Splits and Phases: 4: San Mateo Blvd. & Alameda Blvd.



2019 AM Peak NOBUILD Conditions

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2019 AM Peak NOBUILD Conditions

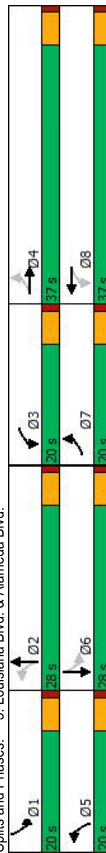
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Timings
5: Louisiana Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	39	344	67	593	263	95	46	149
Future Volume (vph)	39	344	67	593	263	95	46	149
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4	4	3	8	2	5	2	1
Detector Phase	7	4	3	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
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0
Total Split (s)	20.0	37.0	20.0	37.0	20.0	28.0	20.0	28.0
Total Split (%)	19.0%	35.2%	19.0%	35.2%	19.0%	26.7%	19.0%	26.7%
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)	24.8	18.0	25.5	18.4	27.1	15.4	15.8	8.9
Actuated g/C Ratio	0.37	0.27	0.38	0.27	0.40	0.23	0.23	0.13
v/c Ratio	0.13	0.49	0.17	0.66	0.56	0.18	0.14	0.52
Control Delay	12.5	21.7	12.8	26.0	20.2	16.6	15.8	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.5	21.7	12.8	26.0	20.2	16.6	15.8	19.8
LOS	B	C	B	C	C	B	B	B
Approach Delay		20.9		24.7		18.9		19.2
Approach LOS		C		C		B		B
Intersection Summary								
Cycle Length: 105								
Actuated Cycle Length: 67.9								
Natural Cycle: 65								
Control Type: Actuated-Uncoordinated								
Maximum v/c Ratio: 0.66								
Intersection Signal Delay: 21.6								
Intersection Capacity Utilization 60.5%								
Analysis Period (min) 15								

Splits and Phases: 5: Louisiana Blvd. & Alameda Blvd.



2019 AM Peak NOBUILD Conditions

Synchro 10 Report
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HCM 6th Signalized Intersection Summary
5: Louisiana Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	39	344	97	67	593	19	263	95	45	46	149	124
Future Volume (veh/h)	39	344	97	67	593	19	263	95	45	46	149	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	40	351	99	68	605	19	268	97	46	47	152	127
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	362	703	195	417	900	28	479	513	230	456	267	208
Arrive On Green	0.09	0.26	0.26	0.09	0.26	0.26	0.16	0.22	0.22	0.09	0.14	0.14
Sat Flow, veh/h	1767	2724	758	1767	3489	109	1767	2367	1060	1767	1885	1469
Gp Volume(v), veh/h	40	225	225	68	305	319	268	71	72	47	141	138
Gp Sat Flow(s), veh/h/ln	1767	1763	1719	1767	1763	1836	1767	1763	1665	1767	1763	1591
Q Serve(g, s), s	0.9	6.2	6.4	1.5	8.9	8.9	6.9	1.9	2.0	1.2	4.3	4.6
Cycle Q Clear(g, c), s	0.9	6.2	6.4	1.5	8.9	8.9	6.9	1.9	2.0	1.2	4.3	4.6
Prop In Lane	1.00	0.44	1.00	1.00	0.06	1.00	0.64	1.00	0.64	1.00	0.92	0.92
Lane Gp Cap(c), veh/h	362	455	443	417	455	474	479	382	361	456	250	225
V/C Ratio(X)	0.11	0.50	0.51	0.16	0.67	0.67	0.56	0.19	0.20	0.10	0.57	0.61
Avail Cap(c,a), veh/h	671	988	963	727	988	1029	656	710	671	765	710	641
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.2	18.0	18.1	13.1	19.0	19.0	15.7	18.3	18.3	17.4	22.9	23.0
Incr Delay (d2), s/veh	0.1	0.8	0.9	0.2	1.7	1.7	1.0	0.2	0.3	0.1	2.0	2.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.3	2.4	2.4	0.5	3.5	3.6	2.6	0.7	0.7	0.5	1.8	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.4	18.9	19.0	13.3	20.7	20.7	16.7	18.5	18.6	17.5	24.9	25.7
LnGrp LOS	B	B	B	B	C	C	B	B	B	B	C	C
Approach Vol, veh/h		490			692			411			326	
Approach Delay, s/veh		18.5			20.0			17.3			24.2	
Approach LOS		B			B			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	17.4	10.0	19.7	14.3	13.1	10.0	19.7				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	15.0	23.0	15.0	32.0	15.0	23.0	15.0	32.0				
Max Q Clear Time (g, c+11), s	3.2	4.0	3.5	8.4	8.9	6.6	2.9	10.9				
Green Ext Time (p, c), s	0.1	0.7	0.1	2.8	0.4	1.4	0.0	3.8				
Intersection Summary												
HCM 6th Ctrl Delay		19.7										
HCM 6th LOS		B										

2019 AM Peak NOBUILD Conditions

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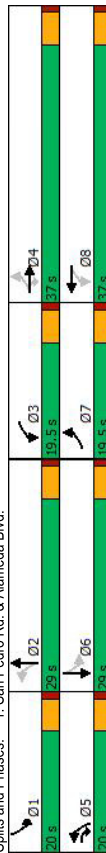
Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	↗
Traffic Vol, veh/h	14	2	12	7	1	27	6	367	9	24	326	13
Future Vol, veh/h	14	2	12	7	1	27	6	367	9	24	326	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	240
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	16	2	14	8	1	31	7	427	10	28	379	15
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	897	886	379	897	896	432	394	0	0	437	0	0
Stage 1	435	435	-	446	446	-	-	-	-	-	-	-
Stage 2	462	451	-	451	450	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	260	282	666	260	279	621	1159	-	-	1117	-	-
Stage 1	598	579	-	590	572	-	-	-	-	-	-	-
Stage 2	578	569	-	586	570	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	239	271	666	245	268	621	1159	-	-	1117	-	-
Mov Cap-2 Maneuver	239	271	-	245	268	-	-	-	-	-	-	-
Stage 1	593	560	-	585	567	-	-	-	-	-	-	-
Stage 2	543	564	-	553	552	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	17		13.5		0.1		0.5					
HCM LOS	C		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1159	-	-	333	462	1117	-	-				
HCM Lane V/C Ratio	0.006	-	-	0.098	0.088	0.025	-	-				
HCM Control Delay (s)	8.1	0	-	17	13.5	8.3	0	-				
HCM Lane LOS	A	A	-	C	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.3	0.3	0.1	-	-				

Timings
1: San Pedro Rd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	71	440	294	56	962	324	61	111	31
Future Volume (vph)	71	440	294	56	962	324	61	111	31
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4	4	4	8	8	2	6	6	6
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase	5.0	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	10.0	21.0	10.0	10.0	10.0	21.0
Minimum Split (s)	19.5	37.0	20.0	19.5	37.0	20.0	29.0	20.0	29.0
Total Split (%)	18.5%	35.1%	19.0%	18.5%	35.1%	19.0%	27.5%	19.0%	27.5%
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	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min	Min	Min
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	40.9	32.9	52.6	38.6	31.8	25.9	12.0	16.2	6.8
Actuated g/C Ratio	0.50	0.41	0.65	0.48	0.39	0.32	0.15	0.20	0.08
v/c Ratio	0.29	0.33	0.28	0.13	0.77	0.84	0.20	0.38	0.48
Control Delay	12.0	17.7	1.5	9.8	26.6	44.5	22.2	24.6	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.0	17.7	1.5	9.8	26.6	44.5	22.2	24.6	13.9
LOS	B	B	A	A	C	D	C	C	B
Approach Delay	11.3				25.7		39.3		18.0
Approach LOS	B				C		D		B
Intersection Summary									
Cycle Length: 105.5									
Actuated Cycle Length: 81.2									
Natural Cycle: 65									
Control Type: Actuated-Uncoordinated									
Maximum v/c Ratio: 0.84									
Intersection Signal Delay: 22.6									
Intersection Capacity Utilization 71.9%									
Analysis Period (min) 15									

Splits and Phases: 1: San Pedro Rd. & Alameda Blvd.



2019 AM Peak BUILD Conditions

Synchro 10 Report
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HCM 6th Signalized Intersection Summary
1: San Pedro Rd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

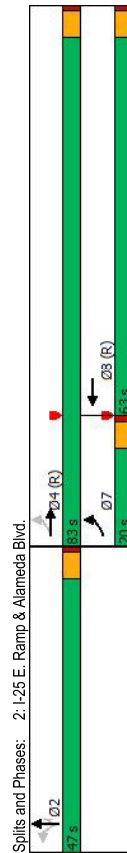
Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	71	440	294	56	962	324	61	111	31
Future Volume (veh/h)	71	440	294	56	962	324	61	111	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	76	468	313	60	1023	28	345	65	40
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3
Cap, veh/h	255	1245	848	383	1238	34	467	513	292
Arrive On Green	0.07	0.35	0.35	0.07	0.35	0.19	0.24	0.24	0.08
Sat Flow, veh/h	1767	3526	1572	1767	3505	96	1767	2167	1763
Gp Volume(v), veh/h	76	468	313	60	514	537	345	52	53
Gp Sat Flow(s), veh/h/ln	1767	1763	1572	1767	1763	1838	1767	1763	1763
Q Serve(g, s), s	2.0	7.6	8.8	1.6	20.5	20.5	12.2	1.8	2.0
Cycle Q Clear(g, c), s	2.0	7.6	8.8	1.6	20.5	20.5	12.2	1.8	2.0
Prop In Lane	1.00	1.00	1.00	1.00	1.00	0.05	1.00	0.75	1.00
Lane Gp Cap(c), veh/h	255	1245	848	383	623	649	467	418	387
V/C Ratio(X)	0.30	0.38	0.37	0.16	0.83	0.83	0.74	0.12	0.14
Avail Cap(c, a), veh/h	474	1470	948	602	735	766	484	551	612
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	18.5	10.2	13.9	22.7	22.7	21.1	23.0	23.1
Incr Delay (d2), s/veh	0.6	0.2	0.3	0.2	6.7	6.5	5.7	0.1	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.8	3.0	2.8	0.6	9.1	9.4	5.5	0.7	0.8
Unsig. Movement Delay, s/veh									
LnGrp Delay(d), s/veh	17.4	18.7	10.4	14.0	29.4	29.1	26.8	23.2	25.4
LnGrp LOS	B	B	B	B	C	C	C	C	C
Approach Vol, veh/h	857				1111			450	310
Approach Delay, s/veh	15.6				28.4			26.0	31.9
Approach LOS	B				C			C	C
Timer - Assigned Phs	1	2	3	4	5	6	7	8	
Phs Duration (G+Y+Rc), s	11.5	23.2	10.0	32.1	19.3	15.4	10.0	32.1	
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Max Green Setting (Gmax), s	15.0	24.0	14.5	32.0	15.0	24.0	14.5	32.0	
Max Q Clear Time (g, c+11), s	6.3	4.0	3.6	10.8	14.2	9.5	4.0	22.5	
Green Ext Time (p, c), s	0.2	0.5	0.1	4.3	0.1	0.9	0.1	4.7	
Intersection Summary									
HCM 6th Ctrl Delay									
HCM 6th LOS									

2019 AM Peak BUILD Conditions

Synchro 10 Report
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Timings Terry O. Brown, PE
2: I-25 E. Ramp & Alameda Blvd. 11/24/2018

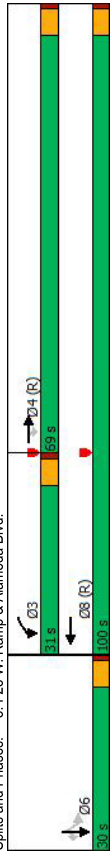
	EBL	EBT	WBT	NBL	NBT	NBR	
Lane Group							
Lane Configurations	EBL	EBT	WBT	NBL	NBT	NBR	
Traffic Volume (vph)	203	650	1225	938	73	215	
Future Volume (vph)	203	650	1225	938	73	215	
Turn Type	pm+pt	NA	NA	Perm	NA	Perm	
Protected Phases	7	4	8		2		
Permitted Phases	4			2	2	2	
Detector Phase	7	4	8	2	2	2	
Switch Phase							
Minimum Initial (s)	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	
Total Split (s)	20.0	83.0	63.0	47.0	47.0	47.0	
Total Split (%)	15.4%	63.8%	48.5%	36.2%	36.2%	36.2%	
Yellow Time (s)	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	
Lost Time Adjust (s)	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	
Lead/Lag	Lead	Lag					
Lead-Lag Optimize?							
Recall Mode	Min	C-Max	Min	Min	Min	Min	
Act Effct Green (s)	78.0	59.4	42.0	42.0	42.0	42.0	
Actuated g/C Ratio	0.60	0.60	0.46	0.32	0.32	0.32	
v/c Ratio	0.83	0.33	0.85	0.98	0.94	0.35	
Control Delay	56.4	16.7	28.8	78.5	38.9	5.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	56.4	16.7	28.8	78.5	38.9	5.4	
LOS	E	B	C	E	D	A	
Approach Delay		26.2	28.8		48.2		
Approach LOS		C	C		D		
Intersection Summary							
Cycle Length: 130							
Actuated Cycle Length: 130							
Offset: 94.9 (73%), Referenced to phase 4:EBTL and 8:WBT, Start of Green							
Natural Cycle: 65							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 0.98							
Intersection Signal Delay: 35.0							
Intersection Capacity Utilization 70.5%							
ICU Level of Service C							
Analysis Period (min) 15							
dl Delact Left Lane: Recode with 1 though lane as a left lane.							



HCM 6th Signalized Intersection Summary Terry O. Brown, PE
2: I-25 E. Ramp & Alameda Blvd. 11/24/2018

	EBL	EBT	WBT	NBL	NBT	NBR	
Movement							
Lane Configurations	EBL	EBT	WBT	NBL	NBT	NBR	
Traffic Volume (veh/h)	203	650	0	1225	158	938	
Future Volume (veh/h)	203	650	0	1225	158	938	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No	No	No	No	No	No	
Adj Sat Flow, veh/h/ln	1856	1856	0	1856	1856	1856	
Adj Flow Rate, veh/h	218	699	0	1317	170	1009	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	
Percent Heavy Veh, %	3	3	0	3	3	3	
Cap, veh/h	297	2167	0	2259	292	1090	
Arrive On Green	0.16	1.00	0.00	0.50	0.50	0.31	
Sat Flow, veh/h	1767	3618	0	4708	586	3534	
Gp Volume(v), veh/h	218	699	0	979	508	1009	
Gp Sat Flow(s), veh/h/ln	1767	1763	0	1689	1750	1767	
Q Serve(g, s), s	8.0	0.0	0.0	26.7	35.9	3.9	
Cycle Q Clear(g, c), s	8.0	0.0	0.0	26.7	35.9	3.9	
Prop In Lane	1.00	0.00	0.00	0.33	1.00	1.00	
Lane Gp Cap(c), veh/h	297	2167	0	1680	871	1090	
V/C Ratio(X)	0.73	0.32	0.00	0.58	0.53	0.14	
Avail Cap(c, a), veh/h	362	2167	0	1680	871	1142	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(l)	0.93	0.93	0.00	0.52	0.52	1.00	
Uniform Delay (d), s/veh	18.1	0.0	0.0	23.1	43.5	32.4	
Incr Delay (d2), s/veh	5.6	0.4	0.0	0.8	1.5	12.3	
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%), veh/ln	3.1	0.1	0.0	10.7	11.3	17.5	
Unsig. Movement Delay, s/veh	23.7	0.4	0.0	23.9	24.6	55.8	
LnGrp Delay(d), s/veh							
LnGrp LOS	C	A	A	C	C	D	
Approach Vol, veh/h	917		1487		1318		
Approach Delay, s/veh	5.9		24.1		51.1		
Approach LOS	A	A	C		D		
Timer - Assigned Phs	2	4	4	7	8		
Phs Duration (G+Y+Rc), s	45.1	84.9		15.2	69.7		
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0		
Max Green Setting (Gmax), s	42.0	78.0		15.0	58.0		
Max Q Clear Time (g, c+11), s	37.9	2.0		10.0	28.7		
Green Ext Time (p, c), s	2.2	5.8		0.3	13.1		
Intersection Summary							
HCM 6th Ctrl Delay		29.2					
HCM 6th LOS		C					
Notes							
User approved volume balancing among the lanes for turning movement.							

	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔
Traffic Volume (vph)	667	516	517	1622	205	121	150
Future Volume (vph)	667	516	517	1622	205	121	150
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	4	3	8	6	6	6	6
Permitted Phases	4	4	3	8	6	6	6
Detector Phase	4	4	3	8	6	6	6
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	21.0	21.0	10.0	21.0	21.0	21.0	21.0
Minimum Split (s)	69.0	69.0	31.0	100.0	30.0	30.0	30.0
Total Split (s)	53.1%	53.1%	23.8%	76.9%	23.1%	23.1%	23.1%
Total Lost Time (s)	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
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	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
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	C-Max	C-Max	Min	C-Max	Min	Min	Min
Recall Mode	73.9	73.9	25.3	104.2	15.8	15.8	15.8
Act Effct Green (s)	0.57	0.57	0.19	0.80	0.12	0.12	0.12
Actuated g/C Ratio	0.35	0.55	0.82	0.61	0.58	0.58	0.85
v/c Ratio	13.7	8.7	68.5	3.5	65.0	59.2	46.0
Control Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Queue Delay	13.7	8.7	68.5	3.7	65.0	59.2	46.0
Total Delay	B	A	E	A	E	E	D
LOS	B	A	E	A	E	E	D
Approach Delay	11.5	A	E	19.3	B	E	56.3
Approach LOS	B	B	B	B	E	E	E
Intersection Summary							
Cycle Length: 130							
Actuated Cycle Length: 130							
Offset: 0 (0%), Referenced to phase 4:EBT and 6:WBT, Start of Green							
Natural Cycle: 60							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 0.82							
Intersection Signal Delay: 21.5							
Intersection Capacity Utilization 70.5%							
Analysis Period (min) 15							
Splits and Phases: 3: I-25 W. Ramp & Alameda Blvd.							



	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔
Traffic Volume (veh/h)	0	667	516	517	1622	0	0	0	0	205	121	150
Future Volume (veh/h)	0	667	516	517	1622	0	0	0	0	205	121	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0	0	0	0	1856	1856	1856
Adj Flow Rate, veh/h	0	702	543	544	1707	0	0	0	0	216	127	158
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	3	3	3	3	0	0	0	0	3	3	3
Cap, veh/h	0	2065	921	596	2814	0	0	0	0	441	232	196
Arrive On Green	0.00	1.00	1.00	0.35	1.00	0.00	0.00	0.00	0.00	0.12	0.12	0.12
Sat Flow, veh/h	0	3618	1572	3428	3618	0	0	0	0	3534	1856	1572
Gp Volume(v), veh/h	0	702	543	544	1707	0	0	0	0	216	127	158
Gp Sat Flow(s), veh/h/ln	0	1763	1572	1714	1763	0	0	0	0	1767	1856	1572
Q Serve(g, s), s	0.0	0.0	0.0	19.7	0.0	0.0	0.0	0.0	0.0	7.4	8.4	12.7
Cycle Q Clear(g, c), s	0.0	0.0	0.0	19.7	0.0	0.0	0.0	0.0	0.0	7.4	8.4	12.7
Prop In Lane	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00
V/C Ratio(X)	0	2065	921	596	2814	0	0	0	0	441	232	196
Avail Cap(c, a), veh/h	0	0.34	0.59	0.91	0.61	0.00	0.00	0.00	0.00	0.49	0.55	0.80
HCM Platoon Ratio	1.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	0.87	0.87	0.60	0.60	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	41.4	0.0	0.0	0.0	0.0	0.0	53.0	53.4	55.3
Incr Delay (d2), s/veh	0.0	0.4	2.4	10.2	0.6	0.0	0.0	0.0	0.0	0.8	2.0	8.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), s/veh	0.0	0.1	0.6	7.9	0.2	0.0	0.0	0.0	0.0	3.4	4.0	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.4	2.4	51.6	0.6	0.0	0.0	0.0	0.0	53.9	55.5	64.0
LnGrp LOS	A	A	A	D	A	A	A	A	A	D	E	E
Approach Vol, veh/h	1245				2251					501		
Approach Delay, s/veh	1.3				12.9					57.5		
Approach LOS	A	A	A	B	B					E		
Timer - Assigned Phs		3	4		6			8				
Phs Duration (G+Y+Rc), s		27.6	81.2		21.2			108.8				
Change Period (Y+Rc), s		5.0	5.0		5.0			5.0				
Max Green Setting (Gmax), s		26.0	64.0		25.0			95.0				
Max Q Clear Time (g, c+H1), s		21.7	2.0		14.7			2.0				
Green Ext Time (p, c), s		0.9	9.0		1.5			27.0				
Intersection Summary												
HCM 6th Ctrl Delay		14.9										
HCM 6th LOS		B										
Notes												
User approved volume balancing among the lanes for turning movement.												

Timings
4: San Mateo Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	261	1037	78	910	15	84	76	8
Future Volume (vph)	261	1037	78	910	15	84	76	8
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8	2	2	6	6
Permitted Phases	4	8	8	8	2	2	6	6
Detector Phase	7	4	3	8	2	2	6	6
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	21.0	21.0	21.0	21.0
Minimum Split (s)	16.0	84.0	16.0	84.0	30.0	30.0	30.0	30.0
Total Split (s)	12.3%	64.6%	12.3%	64.6%	23.1%	23.1%	23.1%	23.1%
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	C-Max	Min	C-Max	Min	C-Max	Min	C-Max
Recall Mode	100.7	92.1	97.2	90.4	16.0	16.0	16.0	16.0
Act Effct Green (s)	0.77	0.71	0.75	0.70	0.12	0.12	0.12	0.12
Actuated g/C Ratio	0.54	0.45	0.22	0.67	0.10	0.66	0.84	0.28
v/c Ratio	13.3	9.6	5.6	12.2	48.6	57.5	110.3	16.5
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	13.3	9.6	5.6	12.2	48.6	57.5	110.3	16.5
Total Delay	B	A	A	B	D	E	F	B
Approach Delay	10.0	11.9	11.9	56.7	56.7	66.5	66.5	66.5
Approach LOS	A	B	B	E	E	E	E	E
Intersection Summary								
Cycle Length: 130								
Actuated Cycle Length: 130								
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green								
Natural Cycle: 65								
Control Type: Actuated-Coordinated								
Maximum v/c Ratio: 0.84								
Intersection Signal Delay: 16.0								
Intersection Capacity Utilization 80.4%								
Analysis Period (min) 15								
Splits and Phases:	4: San Mateo Blvd. & Alameda Blvd.							
	02	03	04	05	06	07	08	09
	30 s	16 s	16 s	16 s	16 s	16 s	16 s	16 s

2019 AM Peak BUILD Conditions
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HCM 6th Signalized Intersection Summary
4: San Mateo Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	261	1037	28	78	910	588	15	84	64	76	8	59
Future Volume (veh/h)	261	1037	28	78	910	588	15	84	64	76	8	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	137	1092	29	82	958	619	16	88	67	80	8	62
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	346	2393	64	392	1422	882	221	160	122	155	30	232
Arrive On Green	0.04	0.68	0.68	0.08	1.00	1.00	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1767	3508	93	1767	2090	1295	1320	977	744	1222	183	1417
Grip Volume(v), veh/h	137	549	572	82	802	775	16	0	155	80	0	70
Grip Sat Flow(s), veh/h/ln	1767	1763	1839	1767	1763	1622	1320	0	1722	1222	0	1600
Q Serve(g, s), s	3.1	18.7	18.7	1.8	0.0	0.0	1.4	0.0	10.8	8.4	0.0	5.0
Cycle Q Clear(g, c), s	3.1	18.7	18.7	1.8	0.0	0.0	6.4	0.0	10.8	19.1	0.0	5.0
Prop In Lane	1.00	0.05	1.00	0.80	1.00	0.80	1.00	0.43	1.00	0.89	0.89	0.89
Lane Grip Cap(c), veh/h	346	1203	1254	392	1200	1104	221	0	282	155	0	262
V/C Ratio(X)	0.40	0.46	0.46	0.21	0.67	0.70	0.07	0.00	0.55	0.52	0.00	0.27
Avail Cap(c, a), veh/h	424	1203	1254	473	1200	1104	259	0	331	189	0	308
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.76	0.76	0.76	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.5	9.5	9.5	6.7	0.0	0.0	50.3	0.0	49.9	58.7	0.0	47.5
Incr Delay (d2), s/veh	0.7	1.2	1.2	0.2	2.3	2.9	0.1	0.0	1.7	2.7	0.0	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.1	7.3	7.6	0.6	0.8	0.9	0.5	0.0	4.8	2.7	0.0	2.0
Unsig. Movement Delay, s/veh	6.2	10.8	10.7	6.9	2.3	2.9	50.4	0.0	51.6	61.4	0.0	48.1
LnGrp Delay(d), s/veh	A	B	B	A	A	A	D	A	D	E	A	D
LnGrp LOS	A	B	B	A	A	A	D	A	D	E	A	D
Approach Vol, veh/h	1258	10.3	1659	2.8	1659	2.8	171	51.5	150	85.2	150	150
Approach Delay, s/veh	B	B	A	A	A	A	D	D	E	E	E	E
Approach LOS	B	B	A	A	A	A	D	D	E	E	E	E
Timer - Assigned Phs	2	3	4	6	7	8	8	8	8	8	8	8
Phs Duration (G+Y+Rc), s	26.3	10.0	93.7	26.3	10.2	93.5	10.2	93.5	10.2	93.5	10.2	93.5
Change Period (Y+Rc), 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
Max Green Setting (Gmax), s	25.0	11.0	79.0	25.0	11.0	79.0	25.0	11.0	79.0	25.0	11.0	79.0
Max Q Clear Time (g, c+H1), s	12.8	3.8	20.7	12.8	3.8	20.7	12.8	3.8	20.7	12.8	3.8	20.7
Green Ext Time (p, c), s	0.7	0.1	10.0	0.2	0.2	21.5	0.2	21.5	0.2	21.5	0.2	21.5
Intersection Summary												
HCM 6th Ctrl Delay	10.7											
HCM 6th LOS	B											

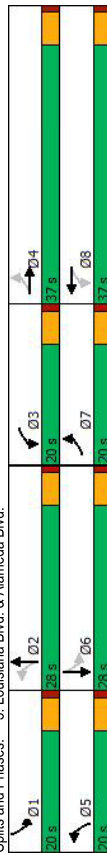
2019 AM Peak BUILD Conditions
Synchro 10 Report
2019ABX.syn

Timings
5: Louisiana Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	40	354	71	601	263	96	46	150
Future Volume (vph)	40	354	71	601	263	96	46	150
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4	4	3	8	2	5	2	1
Detector Phase	7	4	3	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)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0
Minimum Split (s)	20.0	37.0	20.0	37.0	20.0	28.0	20.0	28.0
Total Split (%)	19.0%	35.2%	19.0%	35.2%	19.0%	26.7%	19.0%	26.7%
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	25.0	18.2	25.8	18.6	27.2	15.5	15.9	9.0
Act Effct Green (s)	0.37	0.27	0.38	0.27	0.40	0.23	0.23	0.13
Actuated g/C Ratio	0.13	0.50	0.19	0.66	0.56	0.18	0.14	0.52
v/c Ratio	12.6	21.9	12.9	26.1	20.4	16.6	16.0	19.8
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	12.6	21.9	12.9	26.1	20.4	16.6	16.0	19.8
LOS	B	C	B	C	C	B	B	B
Approach Delay	21.2	24.7	24.7	19.0	19.0	19.3		
Approach LOS	C	C	C	C	B	B		
Intersection Summary								
Cycle Length: 105								
Actuated Cycle Length: 88.3								
Natural Cycle: 65								
Control Type: Actuated-Uncoordinated								
Maximum v/c Ratio: 0.66								
Intersection Signal Delay: 21.7								
Intersection Capacity Utilization 60.8%								
Analysis Period (min) 15								

Splits and Phases: 5: Louisiana Blvd. & Alameda Blvd.



2019 AM Peak BUILD Conditions

Synchro 10 Report
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HCM 6th Signalized Intersection Summary
5: Louisiana Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	40	354	102	71	601	19	263	96	47	46	150	125
Future Volume (veh/h)	40	354	102	71	601	19	263	96	47	46	150	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	41	361	104	72	613	19	268	98	48	47	153	128
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	360	705	200	412	908	28	478	509	235	454	288	209
Arrive On Green	0.09	0.26	0.26	0.09	0.26	0.26	0.16	0.22	0.22	0.09	0.14	0.14
Sat Flow, veh/h	1767	2709	770	1767	3491	108	1767	2342	1082	1767	1884	1470
Gp Volume(v), veh/h	41	233	232	72	309	323	268	72	74	47	142	139
Gp Sat Flow(s), veh/h/ln	1767	1763	1717	1767	1763	1836	1767	1763	1661	1767	1763	1591
Q Serve(g, s), s	0.9	6.5	6.6	1.6	9.0	9.1	6.9	1.9	2.1	1.2	4.3	4.7
Cycle Q Clear(g, c), s	0.9	6.5	6.6	1.6	9.0	9.1	6.9	1.9	2.1	1.2	4.3	4.7
Prop In Lane	1.00	0.45	0.45	1.00	0.06	1.00	0.65	1.00	0.65	1.00	0.92	0.92
Lane Gp Cap(c), veh/h	360	459	447	412	459	478	478	383	361	454	250	226
V/C Ratio(X)	0.11	0.51	0.52	0.17	0.67	0.68	0.56	0.19	0.20	0.10	0.57	0.61
Avail Cap(c, a), veh/h	668	983	957	720	983	1023	653	706	665	762	706	637
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.3	18.1	18.2	13.2	19.1	19.1	15.7	18.3	18.4	17.5	23.0	23.1
Incr Delay (d2), s/veh	0.1	0.9	0.9	0.2	1.7	1.7	1.0	0.2	0.3	0.1	2.0	2.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.3	2.5	2.5	0.6	3.6	3.7	2.6	0.7	0.8	0.5	1.8	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.4	19.0	19.1	13.4	20.8	20.7	16.8	18.6	18.7	17.6	25.0	25.8
LnGrp LOS	B	B	B	B	C	C	B	B	B	B	C	C
Approach Vol, veh/h		506			704			414			328	
Approach Delay, s/veh		18.6			20.0			17.4			24.3	
Approach LOS		B			C			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	17.5	10.0	19.9	14.3	13.2	10.0	19.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	15.0	23.0	15.0	32.0	15.0	23.0	15.0	32.0				
Max Q Clear Time (g, c+11), s	3.2	4.1	3.6	8.6	8.9	6.7	2.9	11.1				
Green Ext Time (p, c), s	0.1	0.7	0.1	2.9	0.4	1.5	0.0	3.9				
Intersection Summary												
HCM 6th Ctrl Delay		19.8										
HCM 6th LOS		B										

2019 AM Peak BUILD Conditions

Synchro 10 Report
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Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	↕
Traffic Vol, veh/h	14	2	12	24	1	28	6	383	10	34	326	13
Future Vol, veh/h	14	2	12	24	1	28	6	383	10	34	326	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	240
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	16	2	14	28	1	33	7	445	12	40	379	15

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	941	930	379	940	939	451	394	0	0	457	0	0
Stage 1	459	459	-	465	465	-	-	-	-	-	-	-
Stage 2	482	471	-	475	474	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	242	266	666	243	263	606	1159	-	-	1099	-	-
Stage 1	580	565	-	576	561	-	-	-	-	-	-	-
Stage 2	564	558	-	569	556	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	219	251	666	226	249	606	1159	-	-	1099	-	-
Mov Cap-2 Maneuver	219	251	-	226	249	-	-	-	-	-	-	-
Stage 1	575	538	-	571	557	-	-	-	-	-	-	-
Stage 2	528	554	-	529	530	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	17.9		18		0.1		0.8	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1159	-	-	311 339	1099	-	-
HCM Lane V/C Ratio	0.006	-	-	0.105 0.182	0.036	-	-
HCM Control Delay (s)	8.1	0	-	17.9 18	8.4	0	-
HCM Lane LOS	A	A	-	C C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3 0.7	0.1	-	-

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	35	35	13	5	18
Future Vol, veh/h	11	35	35	13	5	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	13	41	41	15	6	21
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	56	0	-	0	116	49
Stage 1	-	-	-	-	49	-
Stage 2	-	-	-	-	67	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1542	-	-	-	878	1017
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	953	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1542	-	-	-	870	1017
Mov Cap-2 Maneuver	-	-	-	-	870	-
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	953	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.8	0		8.8		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1542	-	-	-	981	
HCM Lane V/C Ratio	0.008	-	-	-	0.027	
HCM Control Delay (s)	7.4	0	-	-	8.8	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	10	417	9	0	373
Future Vol, veh/h	0	10	417	9	0	373
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	12	485	10	0	434
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	490	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.23	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.327	-	-	-	-
Pot Cap-1 Maneuver	0	576	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	576	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.4	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	576		-		
HCM Lane V/C Ratio	-	0.02		-		
HCM Control Delay (s)	-	11.4		-		
HCM Lane LOS	-	B		-		
HCM 95th %tile Q(veh)	-	0.1		-		

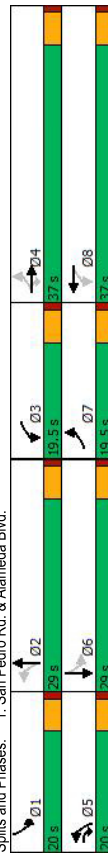
Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↗
Traffic Vol, veh/h	480	9	0	1044	0	8
Future Vol, veh/h	480	9	0	1044	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	511	10	0	1111	0	9
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	261
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.93
Pot Cap-1 Maneuver	-	-	0	-	0	626
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	626
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		10.8	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	626	-	-	-		
HCM Lane V/C Ratio	0.014	-	-	-		
HCM Control Delay (s)	10.8	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0	-	-	-		

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↗
Traffic Vol, veh/h	479	9	0	1044	0	8
Future Vol, veh/h	479	9	0	1044	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	510	10	0	1111	0	9
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	260
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.93
Pot Cap-1 Maneuver	-	-	0	-	0	627
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	627
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		10.8	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	627	-	-	-		
HCM Lane V/C Ratio	0.014	-	-	-		
HCM Control Delay (s)	10.8	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0	-	-	-		

Timings Terry O. Brown, PE
1: San Pedro Rd. & Alameda Blvd. 11/24/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	94	885	426	45	498	230	56	19	54
Future Volume (vph)	94	885	426	45	498	230	56	19	54
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4	4	4	8	8	2	6	6	6
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase	5.0	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	10.0	21.0	10.0	10.0	10.0	21.0
Minimum Split (s)	19.5	37.0	20.0	19.5	37.0	20.0	29.0	20.0	29.0
Total Split (%)	18.5%	35.1%	19.0%	18.5%	35.1%	19.0%	27.5%	19.0%	27.5%
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	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min	Min	Min
Recall Mode	35.2	45.9	32.6	26.0	25.6	14.5	13.4	7.2	7.2
Act Effct Green (s)	0.47	0.36	0.61	0.44	0.35	0.34	0.19	0.18	0.10
Actuated g/C Ratio	0.24	0.74	0.40	0.18	0.45	0.58	0.18	0.08	0.49
v/c Ratio	11.1	25.0	1.9	11.4	20.6	25.8	15.6	19.5	15.2
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	11.1	25.0	1.9	11.4	20.6	25.8	15.6	19.5	15.2
Total Delay	B	C	A	B	C	C	B	B	B
LOS	B	C	A	B	C	C	B	B	B
Approach Delay	17.1			19.8			22.4		15.5
Approach LOS	B			B			C		B
Intersection Summary									
Cycle Length: 105.5									
Actuated Cycle Length: 74.9									
Natural Cycle: 65									
Control Type: Actuated-Uncoordinated									
Maximum v/c Ratio: 0.74									
Intersection Signal Delay: 18.3									
Intersection Capacity Utilization 64.3%									
Analysis Period (min) 15									

Splits and Phases: 1: San Pedro Rd. & Alameda Blvd.



2019 PM Peak NOBUILD Conditions Synchro 10 Report
2019PNX.syn

HCM 6th Signalized Intersection Summary Terry O. Brown, PE
1: San Pedro Rd. & Alameda Blvd. 11/24/2018

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	94	885	426	45	498	11	230	56	19
Future Volume (veh/h)	94	885	426	45	498	11	230	56	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	100	941	453	48	530	12	245	60	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3
Cap, veh/h	440	1272	793	277	1272	29	407	375	405
Arrive On Green	0.07	0.36	0.36	0.07	0.36	0.36	0.14	0.21	0.07
Sat Flow, veh/h	1767	3526	1572	1767	3524	80	1767	1572	1767
Grip Volume(v), veh/h	100	941	453	48	265	277	245	60	20
Grip Sat Flow(s), veh/h/ln	1767	1763	1572	1767	1763	1841	1767	1763	1572
Q Serve(g, s), s	2.4	16.4	14.1	1.1	8.0	8.0	7.8	2.0	0.6
Cycle Q Clear(g, c), s	2.4	16.4	14.1	1.1	8.0	8.0	7.8	2.0	0.6
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grip Cap(c), veh/h	440	1272	793	277	636	664	407	375	405
V/C Ratio(X)	0.23	0.74	0.57	0.17	0.42	0.42	0.80	0.16	0.05
Avail Cap(c, a), veh/h	679	1603	941	516	801	837	529	601	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.6	19.6	12.1	13.9	16.9	16.9	20.0	22.6	22.1
Incr Delay (d2), s/veh	0.3	1.4	0.6	0.3	0.4	0.4	1.4	0.2	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.9	6.4	4.5	0.4	3.1	3.2	3.2	0.8	0.3
Unsig. Movement Delay, s/veh	12.8	21.0	12.8	14.1	17.4	17.3	21.5	22.8	22.2
LnGrp Delay(d), s/veh	B	C	B	B	B	B	C	C	C
LnGrp LOS	B	C	B	B	B	B	C	C	C
Approach Vol, veh/h	1494				590		366		236
Approach Delay, s/veh	18.0				17.1		21.9		31.0
Approach LOS	B				B		C		C
Timer - Assigned Phs	1	2	3	4	5	6	7	8	
Phs Duration (G+Y+Rc), s	10.0	20.0	10.0	30.4	15.1	14.9	10.0	30.4	
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Max Green Setting (Gmax), s	15.0	24.0	14.5	32.0	15.0	24.0	14.5	32.0	
Max Q Clear Time (g, c+11), s	2.6	4.2	3.1	18.4	9.8	8.8	4.4	10.0	
Green Ext Time (p, c), s	0.0	0.6	0.1	7.0	0.3	1.1	0.1	3.3	
Intersection Summary									
HCM 6th Ctrl Delay							19.5		
HCM 6th LOS							B		

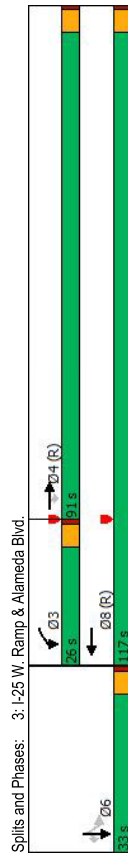
2019 PM Peak NOBUILD Conditions Synchro 10 Report
2019PNX.syn

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Configurations	335	1046	619	656	79	414
Traffic Volume (vph)	335	1046	619	656	79	414
Future Volume (vph)	335	1046	619	656	79	414
Turn Type	pm+pt	NA	NA	Perm	NA	Perm
Protected Phases	7	4	8	2	2	2
Permitted Phases	4	4	8	2	2	2
Detector Phase	7	4	8	2	2	2
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	10.0	21.0	21.0	21.0	21.0	21.0
Minimum Split (s)	27.0	96.0	69.0	54.0	54.0	54.0
Total Split (%)	18.0%	64.0%	46.0%	36.0%	36.0%	36.0%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lead	Lag				
Lead-Lag Optimize?	Min	C-Max	C-Max	Min	Min	Min
Recall Mode	96.3	71.8	43.7	43.7	43.7	43.7
Act Effct Green (s)	0.64	0.64	0.48	0.29	0.29	0.29
Actuated g/C Ratio	0.84	0.51	0.40	0.77	0.47	0.87
v/c Ratio	40.1	11.5	24.6	59.5	44.7	56.6
Control Delay	0.0	0.2	0.0	0.0	0.0	0.0
Queue Delay	40.1	11.7	24.6	59.5	44.7	56.6
Total Delay	D	B	C	E	D	E
Approach Delay	18.6	24.6		53.2		
Approach LOS	B	C		D		
Intersection Summary						
Cycle Length: 150						
Actuated Cycle Length: 150						
Offset: 22.5 (15%), Referenced to phase 4:EBTL and 8:WBT, Start of Green						
Natural Cycle: 60						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 0.87						
Intersection Signal Delay: 31.8						
Intersection Capacity Utilization 85.1%						
ICU Level of Service E						
Analysis Period (min) 15						
Splits and Phases: 2: I-25 E. Ramp & Alameda Blvd.						

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	335	1046	0	0	619	253	656	79	414	0	0	0
Traffic Volume (veh/h)	335	1046	0	0	619	253	656	79	414	0	0	0
Future Volume (veh/h)	335	1046	0	0	619	253	656	79	414	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	364	1137	0	0	673	275	713	86	450	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3	3	3	3
Cap, veh/h	476	2205	0	0	1632	656	1088	571	484	0	0	0
Arrive On Green	0.26	1.00	0.00	0.00	0.46	0.46	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1767	3618	0	0	3716	1427	3534	1856	1572	0	0	0
Gp Volume(v), veh/h	364	1137	0	0	640	308	713	86	450	0	0	0
Gp Sat Flow(s), veh/h/ln	1767	1763	0	0	1689	1599	1767	1856	1572	0	0	0
Q Serve(g, s), s	17.6	0.0	0.0	0.0	18.9	19.3	26.2	5.0	41.6	0	0	0
Cycle Q Clear(g, c), s	17.6	0.0	0.0	0.0	18.9	19.3	26.2	5.0	41.6	0	0	0
Prop In Lane	1.00	0.00	0.00	0.00	0.89	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Lane Gp Cap(c), veh/h	476	2205	0	0	1553	735	1088	571	484	0	0	0
V/C Ratio(X)	0.76	0.52	0.00	0.00	0.41	0.42	0.66	0.15	0.93	0.00	0.00	0.00
Avail Cap(c, a), veh/h	501	2205	0	0	1553	735	1155	606	514	0	0	0
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.65	0.65	0.00	0.00	0.87	0.87	1.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d), s/veh	15.5	0.0	0.0	0.0	27.0	27.1	45.0	37.7	50.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	4.4	0.6	0.0	0.0	0.7	1.5	1.2	0.1	23.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	5.6	0.2	0.0	0.0	7.9	7.8	11.8	2.4	19.4	0.0	0.0	0.0
Unsig. Movement Delay, s/veh	19.9	0.6	0.0	0.0	27.7	28.6	46.3	37.8	73.3	0.0	0.0	0.0
LnGrp Delay(d), s/veh	B	A	A	A	C	C	D	D	E			
LnGrp LOS	B	A	A	A	C	C	D	D	E			
Approach Vol, veh/h	1501				948				1249			
Approach Delay, s/veh	5.3				28.0				55.4			
Approach LOS	A				C				E			
Timer - Assigned Phs	2	4	4	4	7	8						
Phs Duration (G+Y+Rc), s	51.2	98.8			24.9	74.0						
Change Period (Y+Rc), s	5.0	5.0			5.0	5.0						
Max Green Setting (Gmax), s	49.0	91.0			22.0	64.0						
Max Q Clear Time (g, c+H1), s	43.6	2.0			19.6	21.3						
Green Ext Time (p, c), s	2.5	11.9			0.3	8.1						
Intersection Summary												
HCM 6th Ctrl Delay	28.0											
HCM 6th LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

Timings Terry O. Brown, PE
3: I-25 W. Ramp & Alameda Blvd. 11/24/2018

	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔
Traffic Volume (vph)	957	751	295	989	452	487	127
Future Volume (vph)	957	751	295	989	452	487	127
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	4		3	8	6	6	6
Permitted Phases	4	4	3	8	6	6	6
Detector Phase	4	4	3	8	6	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	10.0	21.0	21.0	21.0	21.0
Total Split (s)	91.0	91.0	26.0	117.0	33.0	33.0	33.0
Total Split (%)	60.7%	60.7%	17.3%	78.0%	22.0%	22.0%	22.0%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	Min	C-Max	Min	Min	Min
Act Effct Green (s)	87.8	87.8	19.2	112.0	28.0	28.0	28.0
Actuated g/C Ratio	0.59	0.59	0.13	0.75	0.19	0.19	0.19
v/c Ratio	0.54	0.93	0.79	0.44	1.19	1.20	0.41
Control Delay	30.4	54.4	61.7	11.8	163.1	153.8	28.0
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Total Delay	30.4	54.4	61.7	12.1	163.1	153.8	28.0
LOS	C	D	E	B	F	F	C
Approach Delay	40.9			23.5			141.5
Approach LOS	D			C			F
Intersection Summary							
Cycle Length: 150							
Actuated Cycle Length: 150							
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green							
Natural Cycle: 90							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 1.20							
Intersection Signal Delay: 61.8							
Intersection Capacity Utilization 85.1%							
Analysis Period (min) 15							



HCM 6th Signalized Intersection Summary Terry O. Brown, PE
3: I-25 W. Ramp & Alameda Blvd. 11/24/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔
Traffic Volume (veh/h)	0	957	751	295	989	0	0	0	0	452	487	127
Future Volume (veh/h)	0	957	751	295	989	0	0	0	0	452	487	127
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0	0	0	0	1856	1856	1856
Adj Flow Rate, veh/h	0	1113	873	343	1150	0	0	0	0	364	793	148
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	3	3	3	3	0	0	0	0	3	3	3
Cap, veh/h	0	2115	943	389	2632	0	0	0	0	330	693	294
Arrive On Green	0.00	0.20	0.20	0.23	1.00	0.00	0.00	0.00	0.00	0.19	0.19	0.19
Sat Flow, veh/h	0	3618	1572	3428	3618	0	0	0	0	1767	3711	1572
Grp Volume(v), veh/h	0	1113	873	343	1150	0	0	0	0	364	793	148
Grp Sat Flow(s), veh/h/ln	0	1763	1572	1714	1763	0	0	0	0	1767	1856	1572
Q Serve(g, s), s	0.0	42.4	81.8	14.5	0.0	0.0	0.0	0.0	0.0	28.0	28.0	12.7
Cycle Q Clear(g, c), s	0.0	42.4	81.8	14.5	0.0	0.0	0.0	0.0	0.0	28.0	28.0	12.7
Prop In Lane	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	2115	943	389	2632	0	0	0	0	330	693	294
V/C Ratio(X)	0.00	0.53	0.93	0.88	0.44	0.00	0.00	0.00	0.00	1.10	1.14	0.50
Avail Cap(c, a), veh/h	0	2115	943	480	2632	0	0	0	0	330	693	294
HCM Platoon Ratio	1.00	0.33	0.33	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	0.61	0.61	0.86	0.86	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	41.1	56.9	57.0	0.0	0.0	0.0	0.0	0.0	61.0	61.0	54.8
Incr Delay (d2), s/veh	0.0	0.6	10.9	13.1	0.5	0.0	0.0	0.0	0.0	80.3	81.5	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.0	20.4	37.6	6.4	0.2	0.0	0.0	0.0	0.0	19.9	21.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	41.6	67.8	70.1	0.5	0.0	0.0	0.0	0.0	141.3	142.5	56.1
LnGrp LOS	A	D	E	E	A	A	A	A	A	F	F	E
Approach Vol, veh/h		1986			1493					1305		
Approach Delay, s/veh		53.1			16.5					132.4		
Approach LOS		D			B					F		
Timer - Assigned Phs			3	4	6	8						
Phs Duration (G+Y+Rc), s			22.0	95.0	33.0	117.0						
Change Period (Y+Rc), s			5.0	5.0	5.0	5.0						
Max Green Setting (Gmax), s			21.0	86.0	28.0	112.0						
Max Q Clear Time (g, c+H1), s			16.5	83.8	30.0	2.0						
Green Ext Time (p, c), s			0.5	1.9	0.0	12.2						
Intersection Summary												
HCM 6th Ctrl Delay			63.3									
HCM 6th LOS			E									
Notes												
User approved volume balancing among the lanes for turning movement.												

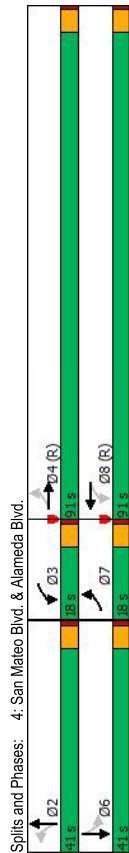
Timings
4: San Mateo Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

HCM 6th Signalized Intersection Summary
4: San Mateo Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	64	1266	43	859	20	8	286	52
Future Volume (vph)	64	1266	43	859	20	8	286	52
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8	2	2	6	6
Permitted Phases	4	4	3	8	2	2	6	6
Detector Phase	7	4	3	8	2	2	6	6
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	21.0	21.0	21.0	21.0
Minimum Split (s)	18.0	91.0	18.0	91.0	41.0	41.0	41.0	41.0
Total Split (%)	12.0%	60.7%	12.0%	60.7%	27.3%	27.3%	27.3%	27.3%
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	C-Max	Min	C-Max	Min	C-Max	Min	C-Max
Recall Mode	98.7	92.3	99.3	92.6	36.0	36.0	36.0	36.0
Act Effct Green (s)	0.66	0.62	0.66	0.62	0.24	0.24	0.24	0.24
Actuated g/C Ratio	0.12	0.64	0.22	0.52	0.33	0.25	1.11	0.73
v/c Ratio	8.2	20.3	18.9	37.2	63.2	10.9	139.1	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Length	8.2	20.3	18.9	37.2	63.2	10.9	139.1	36.4
LOS	A	C	B	D	E	B	F	D
Approach Delay	20.0	36.4	36.4	36.4	19.3	19.3	82.4	82.4
Approach LOS	B	B	D	D	B	B	F	F
Intersection Summary								
Cycle Length: 150								
Actuated Cycle Length: 150								
Offset: 69 (46%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green								
Natural Cycle: 70								
Control Type: Actuated-Coordinated								
Maximum v/c Ratio: 1.11								
Intersection Signal Delay: 38.2								
Intersection Capacity Utilization 66.6%								
Analysis Period (min) 15								



2019 PM Peak NOBUILD Conditions

Synchro 10 Report
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Movement	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	64	1266	43	859	150	20	8	286
Future Volume (veh/h)	64	1266	43	859	150	20	8	286
Initial Q (Qb), veh	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	35	1376	13	47	934	163	22	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3
Cap, veh/h	310	2242	21	259	1880	328	50	30
Arrive On Green	0.03	0.63	0.02	0.42	0.42	0.24	0.24	0.24
Sat Flow, veh/h	1767	3578	34	1767	3001	523	991	126
Gp Volume(v), veh/h	35	678	711	47	548	22	0	114
Gp Sat Flow(s), veh/h/ln	1767	1763	1849	1767	1763	1761	991	0
Q Serve(g, s), s	1.0	35.0	35.0	1.4	34.2	34.2	0.3	0.0
Cycle Q Clear(g, c), s	1.0	35.0	35.0	1.4	34.2	34.2	0.3	0.0
Prop In Lane	1.00	0.02	1.00	0.30	0.30	1.00	0.92	1.00
Lane Gp Cap(c), veh/h	310	1105	1159	259	1105	1104	50	0
V/C Ratio(X)	0.11	0.61	0.18	0.50	0.50	0.44	0.00	0.30
Avail Cap(c, a), veh/h	404	1105	1159	353	1105	1104	50	0
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.90	0.90	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.0	17.0	17.0	13.7	26.2	26.2	75.0	0.0
Incr Delay (d2), s/veh	0.2	2.5	2.4	0.3	1.4	1.4	6.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.4	14.7	15.4	0.6	15.8	15.9	0.9	0.0
Unsig. Movement Delay, s/veh	13.2	19.5	19.4	14.0	27.6	27.6	81.0	0.0
LnGrp Delay(d), s/veh	13.2	19.5	19.4	14.0	27.6	27.6	81.0	0.0
LnGrp LOS	B	B	B	C	C	C	F	A
Approach Vol, veh/h	1424	1424	1424	1144	1144	136	695	124.5
Approach Delay, s/veh	19.3	19.3	19.3	27.1	27.1	52.6	124.5	F
Approach LOS	B	B	B	C	C	D	F	F
Timer - Assigned Phs	2	3	4	6	7	8		
Phs Duration (G+Y+Rc), s	41.0	10.0	99.0	41.0	10.0	99.0		
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0		
Max Green Setting (Gmax), s	38.0	13.0	86.0	38.0	13.0	86.0		
Max Q Clear Time (g, c+H1), s	38.0	3.4	37.0	38.0	3.0	36.2		
Green Ext Time (p, c), s	0.0	0.0	14.3	0.0	0.0	9.8		
Intersection Summary								
HCM 6th Ctrl Delay	44.8							
HCM 6th LOS	D							

2019 PM Peak NOBUILD Conditions

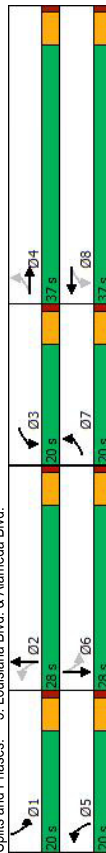
Synchro 10 Report
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Timings
5: Louisiana Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	112	710	41	401	107	104	37	91
Future Volume (vph)	112	710	41	401	107	104	37	91
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4	4	3	8	2	5	2	1
Detector Phase	7	4	3	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
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0
Total Split (s)	20.0	37.0	20.0	37.0	20.0	28.0	20.0	28.0
Total Split (%)	19.0%	35.2%	19.0%	35.2%	19.0%	26.7%	19.0%	26.7%
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)	32.8	24.7	29.3	22.9	19.2	10.0	14.3	7.5
Actuated g/C Ratio	0.48	0.36	0.43	0.34	0.28	0.15	0.21	0.11
v/c Ratio	0.23	0.71	0.14	0.38	0.30	0.30	0.12	0.34
Control Delay	9.8	21.9	9.8	18.4	20.5	20.3	19.2	23.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.8	21.9	9.8	18.4	20.5	20.3	19.2	23.8
LOS	A	C	A	B	C	C	B	C
Approach Delay	20.5	17.7	20.4	20.4	20.4	20.4	20.4	22.8
Approach LOS	C	B	B	C	C	C	C	C
Intersection Summary								
Cycle Length: 105								
Actuated Cycle Length: 88.2								
Natural Cycle: 65								
Control Type: Actuated-Uncoordinated								
Maximum v/c Ratio: 0.71								
Intersection Signal Delay: 20.0								
Intersection Capacity Utilization 55.2%								
Analysis Period (min) 15								

Splits and Phases: 5: Louisiana Blvd. & Alameda Blvd.



2019 PM Peak NOBUILD Conditions

Synchro 10 Report
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HCM 6th Signalized Intersection Summary
5: Louisiana Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	112	710	147	41	401	26	107	104	53	37	91	45
Future Volume (veh/h)	112	710	147	41	401	26	107	104	53	37	91	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	115	732	152	42	413	27	110	107	55	38	94	46
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	542	1033	214	379	1194	78	364	224	109	354	223	103
Arrive On Green	0.09	0.36	0.36	0.09	0.36	0.36	0.09	0.10	0.10	0.09	0.10	0.10
Sat Flow, veh/h	1767	2906	603	1767	3360	219	1767	2302	1115	1767	2343	1080
Gp Volume(v), veh/h	115	444	440	42	216	224	110	80	82	38	69	71
Gp Sat Flow(s), veh/h/ln	1767	1763	1747	1767	1763	1816	1767	1763	1655	1767	1763	1661
Q Served(g, s), s	2.1	11.9	11.9	0.7	4.9	5.0	3.0	2.4	2.6	1.0	2.0	2.2
Cycle Q Clear(g, c), s	2.1	11.9	11.9	0.7	4.9	5.0	3.0	2.4	2.6	1.0	2.0	2.2
Prop In Lane	1.00	0.35	1.00	0.12	1.00	0.12	1.00	0.67	1.00	0.67	1.00	0.65
Lane Gp Cap(c), veh/h	542	627	621	379	627	646	364	172	161	354	168	158
V/C Ratio(X)	0.21	0.71	0.71	0.11	0.34	0.35	0.30	0.47	0.51	0.11	0.41	0.45
Avail Cap(c, a), veh/h	864	1029	1019	701	1029	1060	683	739	694	676	739	697
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.2	15.2	15.2	10.0	13.0	13.0	19.3	23.4	23.5	18.6	23.4	23.4
Incr Delay (d2), s/veh	0.2	1.5	1.5	0.1	0.3	0.3	0.3	2.0	2.4	0.1	1.6	2.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.7	4.4	4.3	0.3	1.8	1.8	1.2	1.0	1.0	0.4	0.9	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.4	16.7	16.7	10.1	13.3	13.3	19.8	25.4	25.9	18.7	25.0	25.4
LnGrp LOS	A	B	B	B	B	B	B	C	C	B	C	C
Approach Vol, veh/h	999				482			272			178	
Approach Delay, s/veh	15.9				13.0			23.3			23.8	
Approach LOS	B				B			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	10.3	10.0	24.5	10.1	10.2	10.0	24.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	15.0	23.0	15.0	32.0	15.0	23.0	15.0	32.0				
Max Q Clear Time (g, c+11), s	3.0	4.6	2.7	13.9	5.0	4.2	4.1	7.0				
Green Ext Time (p, c), s	0.0	0.8	0.0	5.6	0.2	0.7	0.2	2.7				
Intersection Summary												
HCM 6th Ctrl Delay												
HCM 6th LOS												

2019 PM Peak NOBUILD Conditions

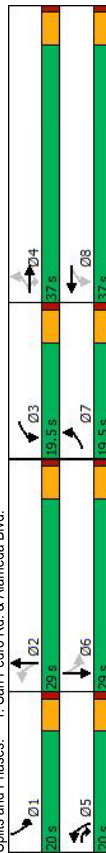
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Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	↗
Traffic Vol, veh/h	24	1	42	8	2	15	33	292	9	57	440	22
Future Vol, veh/h	24	1	42	8	2	15	33	292	9	57	440	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	240
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	26	1	45	9	2	16	35	314	10	61	473	24
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	993	989	473	1019	1008	319	497	0	0	324	0	0
Stage 1	595	595	-	389	389	-	-	-	-	-	-	-
Stage 2	398	394	-	630	619	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	223	246	589	214	240	719	1062	-	-	1230	-	-
Stage 1	489	491	-	633	607	-	-	-	-	-	-	-
Stage 2	626	603	-	468	479	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	199	220	589	181	215	719	1062	-	-	1230	-	-
Mov Cap-2 Maneuver	199	220	-	181	215	-	-	-	-	-	-	-
Stage 1	469	457	-	608	583	-	-	-	-	-	-	-
Stage 2	585	579	-	401	446	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	18.4		16.6			0.8			0.9			
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1062	-	-	341	336	1230	-	-				
HCM Lane V/C Ratio	0.033	-	-	0.211	0.08	0.05	-	-				
HCM Control Delay (s)	8.5	0	-	18.4	16.6	8.1	0	-				
HCM Lane LOS	A	A	-	C	C	A	A	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.3	0.2	-	-				

Timings Terry O. Brown, PE
1: San Pedro Rd. & Alameda Blvd. 11/24/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	94	912	429	68	498	252	57	20	54
Future Volume (vph)	94	912	429	68	498	252	57	20	54
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4	4	4	8	8	2	6	6	6
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase	5.0	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	10.0	21.0	10.0	10.0	10.0	21.0
Minimum Split (s)	19.5	37.0	20.0	19.5	37.0	20.0	29.0	20.0	29.0
Total Split (%)	18.5%	35.1%	19.0%	18.5%	35.1%	19.0%	27.5%	19.0%	27.5%
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	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min	Min	Min
Recall Mode	36.3	28.4	47.4	34.7	27.7	26.2	14.9	13.5	7.2
Act Effct Green (s)	0.47	0.37	0.62	0.45	0.36	0.34	0.19	0.18	0.09
Actuated g/C Ratio	0.23	0.75	0.40	0.28	0.43	0.63	0.21	0.08	0.49
Control Delay	11.0	25.7	1.9	12.5	20.2	28.1	14.1	20.1	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	25.7	1.9	12.5	20.2	28.1	14.1	20.1	15.5
LOS	B	C	A	B	C	C	B	C	B
Approach Delay	17.6				19.3		23.2		15.9
Approach LOS	B				B		C		B
Intersection Summary									
Cycle Length: 105.5									
Actuated Cycle Length: 76.9									
Natural Cycle: 65									
Control Type: Actuated-Uncoordinated									
Maximum v/c Ratio: 0.75									
Intersection Signal Delay: 18.7									
Intersection Capacity Utilization 86.3%									
Analysis Period (min) 15									

Splits and Phases: 1: San Pedro Rd. & Alameda Blvd.



2019 PM Peak BUILD Conditions Synchro 10 Report
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HCM 6th Signalized Intersection Summary Terry O. Brown, PE
1: San Pedro Rd. & Alameda Blvd. 11/24/2018

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	94	912	429	68	498	11	252	57	77
Future Volume (veh/h)	94	912	429	68	498	11	252	57	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	100	970	456	72	530	12	268	61	82
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3
Cap, veh/h	435	1280	812	266	1279	29	419	394	352
Arrive On Green	0.07	0.36	0.36	0.07	0.36	0.15	0.22	0.22	0.07
Sat Flow, veh/h	1767	3526	1572	1767	3524	80	1767	1767	1767
Gp Volume(v), veh/h	100	970	456	72	265	277	268	61	82
Gp Sat Flow(s), veh/h/ln	1767	1763	1572	1767	1763	1841	1767	1763	1572
Q Serve(g, s), s	2.5	17.5	14.3	1.8	8.2	8.2	8.8	2.0	3.1
Cycle Q Clear(g, c), s	2.5	17.5	14.3	1.8	8.2	8.2	8.8	2.0	3.1
Prop In Lane	1.00	1.00	1.00	1.00	1.00	0.04	1.00	1.00	1.00
Lane Gp Cap(c), veh/h	435	1280	812	266	640	668	419	394	352
V/C Ratio(X)	0.23	0.76	0.56	0.27	0.41	0.41	0.64	0.15	0.23
Avail Cap(c, a), veh/h	667	1555	935	498	777	812	513	583	520
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.9	20.3	11.9	14.8	17.3	20.5	22.7	23.1	23.0
Incr Delay (d2), s/veh	0.3	1.8	0.6	0.5	0.4	0.4	1.9	0.2	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), s/veh	0.9	7.0	4.5	0.7	3.2	3.3	3.6	0.8	1.1
Unsig. Movement Delay, s/veh									
LnGrp Delay(d), s/veh	13.2	22.1	12.6	15.4	17.8	17.7	22.4	22.8	23.1
LnGrp LOS	B	C	B	B	B	B	C	C	C
Approach Vol, veh/h	1526				614				237
Approach Delay, s/veh	18.7				17.5				32.0
Approach LOS	B				B				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8	
Phs Duration (G+Y+Rc), s	10.0	21.2	10.0	31.3	16.1	15.1	10.0	31.3	
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Max Green Setting (Gmax), s	15.0	24.0	14.5	32.0	15.0	24.0	14.5	32.0	
Max Q Clear Time (g, c+11), s	2.7	5.1	3.8	19.5	10.8	9.0	4.5	10.2	
Green Ext Time (p, c), s	0.0	0.7	0.1	6.8	0.3	1.1	0.1	3.3	
Intersection Summary									
HCM 6th Ctrl Delay	20.1								
HCM 6th LOS	C								

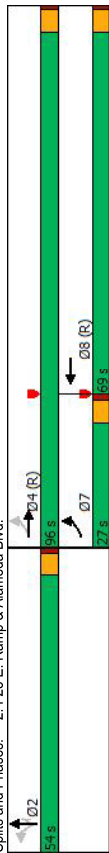
2019 PM Peak BUILD Conditions Synchro 10 Report
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Timings
2: I-25 E. Ramp & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	335	1063	640	656	79	427
Future Volume (vph)	335	1063	640	656	79	427
Turn Type	pm+pt	NA	NA	Perm	NA	Perm
Protected Phases	7	4	8	2	2	2
Permitted Phases	4	4	8	2	2	2
Detector Phase	7	4	8	2	2	2
Switch Phase						
Minimum Initial (s)	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
Total Split (s)	27.0	96.0	69.0	54.0	54.0	54.0
Total Split (%)	18.0%	64.0%	46.0%	36.0%	36.0%	36.0%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lead	Lag				
Lead-Lag Optimize?						
Recall Mode	Min	C-Max	C-Max	Min	Min	Min
Act Effct Green (s)	95.3	70.4	44.7	44.7	44.7	44.7
Actuated g/C Ratio	0.64	0.64	0.47	0.30	0.30	0.30
v/c Ratio	0.86	0.52	0.42	0.75	0.46	0.88
Control Delay	44.1	11.8	25.6	57.5	43.8	58.4
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0
Total Delay	44.1	12.0	25.6	57.5	43.8	58.4
LOS	D	B	C	E	D	E
Approach Delay		19.7	25.6		53.1	
Approach LOS		B	C		D	
Intersection Summary						
Cycle Length: 150						
Actuated Cycle Length: 150						
Offset: 22.5 (15%), Referenced to phase 4:EBTL and 8:WBT, Start of Green						
Natural Cycle: 60						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 0.88						
Intersection Signal Delay: 32.4						
Intersection Capacity Utilization 85.4%						
ICU Level of Service E						
Analysis Period (min) 15						

Splits and Phases: 2: I-25 E. Ramp & Alameda Blvd.



2019 PM Peak BUILD Conditions

Synchro 10 Report
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HCM 6th Signalized Intersection Summary
2: I-25 E. Ramp & Alameda Blvd.

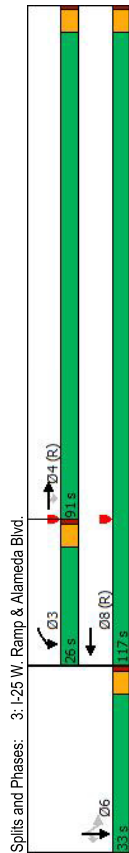
Terry O. Brown, PE
11/24/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	335	1063	0	0	640	253	656	79	427	0	0	0
Future Volume (veh/h)	335	1063	0	0	640	253	656	79	427	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No	No	No	No	No	No	No	No	No			
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	364	1155	0	0	696	275	713	86	464			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	467	2184	0	0	1621	631	1110	583	494			
Arrive On Green	0.27	1.00	0.00	0.00	0.45	0.45	0.31	0.31	0.31			
Sat Flow, veh/h	1767	3618	0	0	3752	1396	3534	1856	1572			
Grip Volume(v), veh/h	364	1155	0	0	655	316	713	86	464			
Grip Sat Flow(s), veh/h/ln	1767	1763	0	0	1689	1604	1767	1856	1572			
Q Serve(g, s), s	17.8	0.0	0.0	0.0	19.8	20.2	26.0	5.0	43.1			
Cycle Q Clear(g, c), s	17.8	0.0	0.0	0.0	19.8	20.2	26.0	5.0	43.1			
Prop In Lane	1.00	0.00	0.00	0.00	0.87	1.00	1.00	1.00	1.00			
Lane Grip Cap(c), veh/h	467	2184	0	0	1527	725	1110	583	494			
V/C Ratio(X)	0.78	0.53	0.00	0.00	0.43	0.44	0.64	0.15	0.94			
Avail Cap(c, a), veh/h	490	2184	0	0	1527	725	1155	606	514			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.65	0.65	0.00	0.00	0.86	0.86	1.00	1.00	1.00			
Uniform Delay (d), s/veh	16.2	0.0	0.0	0.0	27.9	28.0	44.2	37.0	50.1			
Incr Delay (d2), s/veh	5.0	0.6	0.0	0.0	0.8	1.6	1.2	0.1	25.1			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%), veh/ln	5.8	0.2	0.0	0.0	8.3	8.2	11.7	2.3	20.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	21.2	0.6	0.0	0.0	28.7	29.7	45.4	37.1	75.2			
LnGrp LOS	C	A	A	A	C	C	D	D	E			
Approach Vol, veh/h		1519			971			1263				
Approach Delay, s/veh		5.5			29.0			55.8				
Approach LOS		A			C			E				
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		52.1		97.9			25.1	72.8				
Change Period (Y+Rc), s		5.0		5.0			5.0	5.0				
Max Green Setting (Gmax), s		49.0		91.0			22.0	64.0				
Max Q Clear Time (g, c+H1), s		45.1		2.0			19.8	22.2				
Green Ext Time (p, c), s		2.0		12.2			0.3	8.3				
Intersection Summary												
HCM 6th Ctrl Delay				28.5								
HCM 6th LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												

2019 PM Peak BUILD Conditions

Synchro 10 Report
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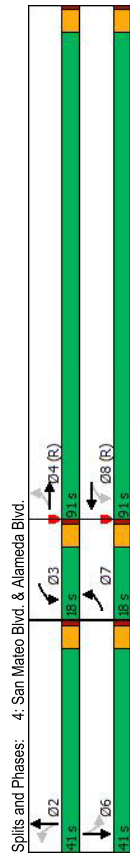
	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔
Traffic Volume (vph)	974	751	305	1001	452	487	127
Future Volume (vph)	974	751	305	1001	452	487	127
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	4		3	8	6	6	6
Permitted Phases	4	4	3	8	6	6	6
Detector Phase	4	4	3	8	6	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	10.0	21.0	21.0	21.0	21.0
Total Split (s)	91.0	91.0	26.0	117.0	33.0	33.0	33.0
Total Split (%)	60.7%	60.7%	17.3%	78.0%	22.0%	22.0%	22.0%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	Min	C-Max	Min	Min	Min
Act Effct Green (s)	87.5	87.5	19.5	112.0	28.0	28.0	28.0
Actuated g/C Ratio	0.58	0.58	0.13	0.75	0.19	0.19	0.19
v/c Ratio	0.35	0.35	0.30	0.44	1.19	1.20	0.41
Control Delay	30.8	54.9	63.0	11.6	163.1	153.8	28.0
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Total Delay	30.8	54.9	63.0	12.0	163.1	153.8	28.0
LOS	C	D	E	B	F	F	C
Approach Delay	41.3			23.9			141.5
Approach LOS	D			C			F



	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔
Traffic Volume (veh/h)	0	974	751	305	1001	0	0	0	0	452	487	127
Future Volume (veh/h)	0	974	751	305	1001	0	0	0	0	452	487	127
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0	0	0	0	1856	1856	1856
Adj Flow Rate, veh/h	0	1133	873	355	1164	0	0	0	0	364	793	148
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	3	3	3	3	0	0	0	0	3	3	3
Cap, veh/h	0	2103	938	400	2632	0	0	0	0	330	693	294
Arrive On Green	0.00	0.20	0.20	0.23	1.00	0.00	0.00	0.00	0.00	0.19	0.19	0.19
Sat Flow, veh/h	0	3618	1572	3428	3618	0	0	0	0	1767	3711	1572
Gp Volume(v), veh/h	0	1133	873	355	1164	0	0	0	0	364	793	148
Gp Sat Flow(s), veh/h/ln	0	1763	1572	1714	1763	0	0	0	0	1767	1856	1572
Q Serve(g, s), s	0.0	43.3	81.9	15.0	0.0	0.0	0.0	0.0	0.0	28.0	28.0	12.7
Cycle Q Clear(g, c), s	0.0	43.3	81.9	15.0	0.0	0.0	0.0	0.0	0.0	28.0	28.0	12.7
Prop In Lane	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00
V/C Ratio(X)	0.00	0.54	0.93	0.89	0.44	0.00	0.00	0.00	0.00	1.10	1.14	0.50
Avail Cap(c, a), veh/h	0	2103	938	480	2632	0	0	0	0	330	693	294
HCM Platoon Ratio	1.00	0.33	0.33	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	0.60	0.60	0.85	0.85	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	41.7	57.2	56.5	0.0	0.0	0.0	0.0	0.0	61.0	61.0	54.8
Incr Delay (d2), s/veh	0.0	0.6	11.3	13.9	0.5	0.0	0.0	0.0	0.0	80.3	81.5	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.0	20.8	37.7	6.6	0.2	0.0	0.0	0.0	0.0	19.9	21.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	42.3	68.5	70.5	0.5	0.0	0.0	0.0	0.0	141.3	142.5	56.1
LnGrp LOS	A	D	E	E	A	A	A	A	A	F	F	E
Approach Vol, veh/h		2006			1519					1305		
Approach Delay, s/veh		53.7			16.8					132.4		
Approach LOS		D			B					F		
Timer - Assigned Phs			3	4	6			8				
Phs Duration (G+Y+Rc), s			22.5	94.5	33.0			117.0				
Change Period (Y+Rc), s			5.0	5.0	5.0			5.0				
Max Green Setting (Gmax), s			21.0	86.0	28.0			112.0				
Max Q Clear Time (g, c+H1), s			17.0	83.9	30.0			2.0				
Green Ext Time (p, c), s			0.5	1.8	0.0			12.5				
Intersection Summary												
HCM 6th Ctrl Delay			63.4									
HCM 6th LOS			E									
Notes												
User approved volume balancing among the lanes for turning movement.												

Timings Terry O. Brown, PE
4: San Mateo Blvd. & Alameda Blvd. 11/24/2018

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	64	1279	45	869	20	8	287	52
Future Volume (vph)	64	1279	45	869	20	8	287	52
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8	2	2	6	6
Permitted Phases	4	8	8	8	2	2	6	6
Detector Phase	7	4	3	8	2	2	6	6
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	21.0	21.0	21.0	21.0
Minimum Split (s)	18.0	91.0	18.0	91.0	41.0	41.0	41.0	41.0
Total Split (%)	12.0%	60.7%	12.0%	60.7%	27.3%	27.3%	27.3%	27.3%
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	C-Max	Min	C-Max	Min	C-Max	Min	C-Max
Recall Mode	98.6	92.2	99.4	92.6	36.0	36.0	36.0	36.0
Act Effct Green (s)	0.66	0.61	0.66	0.62	0.24	0.24	0.24	0.24
Actuated g/C Ratio	0.12	0.85	0.23	0.52	0.33	0.25	1.13	0.73
v/c Ratio	8.2	20.5	18.8	36.8	63.2	10.8	142.9	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.2	20.5	18.8	36.8	63.2	10.8	142.9	36.4
LOS	A	C	B	D	E	B	F	D
Approach Delay	20.2	36.0			19.1		84.1	
Approach LOS	C	D	D	D	B	B	F	F
Intersection Summary								
Cycle Length: 150								
Actuated Cycle Length: 150								
Offset: 69 (46%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green								
Natural Cycle: 75								
Control Type: Actuated-Coordinated								
Maximum v/c Ratio: 1.13								
Intersection Signal Delay: 38.5								
Intersection Capacity Utilization 68.3%								
Analysis Period (min) 15								



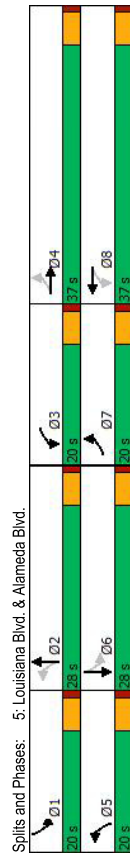
HCM 6th Signalized Intersection Summary Terry O. Brown, PE
4: San Mateo Blvd. & Alameda Blvd. 11/24/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	64	1279	12	45	869	151	20	8	99	287	52	301
Future Volume (veh/h)	64	1279	12	45	869	151	20	8	99	287	52	301
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	35	1390	13	49	945	164	22	9	108	312	57	327
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3	3	3
Cap. veh/h	306	2243	21	255	1882	326	50	29	353	275	57	329
Arrive On Green	0.03	0.63	0.63	0.02	0.42	0.42	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1767	3579	33	1767	3004	521	991	122	1469	1265	239	1370
Grip Volume(v), veh/h	35	684	719	49	554	555	22	0	117	312	0	384
Grip Sat Flow(s), veh/h/ln	1767	1763	1850	1767	1763	1762	991	0	1591	1265	0	1609
Q Serve(g, s), s	1.0	35.5	35.6	1.5	34.7	34.7	0.3	0.0	9.0	27.0	0.0	35.7
Cycle Q Clear(g, c), s	1.0	35.5	35.6	1.5	34.7	34.7	0.3	0.0	9.0	27.0	0.0	35.7
Prop In Lane	1.00	0.02	1.00	0.02	1.00	0.30	1.00	0.92	1.00	1.00	0.85	
Lane Grip Cap(c), veh/h	306	1105	1159	255	1105	1104	50	0	382	275	0	386
V/C Ratio(X)	0.11	0.62	0.62	0.19	0.50	0.50	0.44	0.00	0.31	1.13	0.00	0.99
Avail Cap(c, a), veh/h	400	1105	1159	350	1105	1104	50	0	382	275	0	386
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.90	0.90	0.90	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.2	17.1	17.1	13.9	26.3	26.3	75.0	0.0	46.8	63.9	0.0	56.9
Incr Delay (d2), s/veh	0.2	2.6	2.5	0.3	1.5	1.5	6.1	0.0	0.4	95.1	0.0	44.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.4	15.0	15.7	0.6	16.1	16.1	0.9	0.0	3.7	17.9	0.0	19.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.3	19.7	19.6	14.3	27.8	27.8	81.0	0.0	47.2	158.9	0.0	101.1
LnGrp LOS	B	B	B	B	C	C	F	A	D	F	A	F
Approach Vol, veh/h	1438				1158			139		696		
Approach Delay, s/veh	19.5				27.2			52.6		127.1		
Approach LOS	B	B	B	B	C	C	D	D		F		
Timer - Assigned Phs	2	3	4	6	7	8						
Phs Duration (G+Y+Rc), s	41.0	10.0	99.0	41.0	10.0	99.0						
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0						
Max Green Setting (Gmax), s	38.0	13.0	86.0	38.0	13.0	86.0						
Max Q Clear Time (g, c+11), s	38.0	3.5	37.6	38.0	3.0	36.7						
Green Ext Time (p, c), s	0.0	0.0	14.5	0.0	0.0	0.0						
Intersection Summary												
HCM 6th Ctrl Delay	45.3											
HCM 6th LOS	D											

Timings
5: Louisiana Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	114	729	52	421	107	105	37	93
Future Volume (vph)	114	729	52	421	107	105	37	93
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4	4	3	8	2	5	2	1
Detector Phase	7	4	3	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)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0
Minimum Split (s)	20.0	37.0	20.0	37.0	20.0	28.0	20.0	28.0
Total Split (%)	19.0%	35.2%	19.0%	35.2%	19.0%	26.7%	19.0%	26.7%
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	34.2	26.0	31.1	24.4	19.4	10.1	14.3	7.6
Act Effct Green (s)	0.49	0.37	0.44	0.35	0.28	0.14	0.20	0.11
Actuated g/C Ratio	0.24	0.71	0.19	0.38	0.30	0.31	0.13	0.36
v/c Ratio	9.8	22.0	10.1	18.3	21.4	20.6	19.9	24.2
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	9.8	22.0	10.1	18.3	21.4	20.6	19.9	24.2
Total Delay	A	C	B	B	C	C	B	C
LOS	A	C	B	B	C	C	B	C
Approach Delay	20.6	17.4	17.4	20.9	20.9	23.3	20.9	23.3
Approach LOS	C	C	B	B	C	C	C	C
Intersection Summary								
Cycle Length: 105								
Actuated Cycle Length: 69.9								
Natural Cycle: 65								
Control Type: Actuated-Uncoordinated								
Maximum v/c Ratio: 0.71								
Intersection Signal Delay: 20.1								
Intersection Capacity Utilization 56.1%								
Analysis Period (min) 15								



2019 PM Peak BUILD Conditions

Synchro 10 Report
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HCM 6th Signalized Intersection Summary
5: Louisiana Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	114	729	157	52	421	26	107	105	56	37	93	48
Future Volume (veh/h)	114	729	157	52	421	26	107	105	56	37	93	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	118	752	162	54	434	27	110	108	58	38	96	49
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	536	1048	226	372	1225	76	359	223	113	349	220	106
Arrive On Green	0.09	0.36	0.36	0.09	0.36	0.36	0.09	0.10	0.10	0.09	0.10	0.10
Sat Flow, veh/h	1767	2885	621	1767	3372	209	1767	2267	1145	1767	2310	1109
Grip Volume(v), veh/h	118	459	455	54	226	235	110	82	84	38	72	73
Grip Sat Flow(s), veh/h/ln	1767	1763	1744	1767	1763	1818	1767	1763	1649	1767	1763	1656
Q Serve(g, s), s	2.2	12.5	12.5	1.0	5.2	5.3	3.0	2.5	2.7	1.0	2.1	2.3
Cycle Q Clear(g, c), s	2.2	12.5	12.5	1.0	5.2	5.3	3.0	2.5	2.7	1.0	2.1	2.3
Prop In Lane	1.00	0.36	1.00	1.00	0.12	1.00	0.69	1.00	0.69	1.00	0.67	0.67
Lane Grip Cap(c), veh/h	536	640	634	372	640	660	359	173	162	349	168	158
V/C Ratio(X)	0.22	0.72	0.72	0.15	0.35	0.36	0.31	0.48	0.51	0.11	0.43	0.46
Avail Cap(c, a), veh/h	853	1012	1001	689	1012	1044	671	728	681	666	728	683
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.2	15.3	15.3	10.1	13.0	13.0	19.6	23.8	23.9	19.0	23.8	23.9
Incr Delay (d2), s/veh	0.2	1.5	1.5	0.2	0.3	0.3	0.3	2.0	2.5	0.1	1.7	2.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%) veh/ln	0.7	4.6	4.6	0.3	1.9	1.9	1.2	1.1	1.1	0.4	0.9	0.9
Unsig. Movement Delay, s/veh	9.4	16.8	16.8	10.3	13.3	13.3	20.1	25.8	26.4	19.1	25.5	26.0
LnGrp Delay(d), s/veh	A	B	B	B	B	B	C	C	C	B	C	C
LnGrp LOS	A	B	B	B	B	B	C	C	C	B	C	C
Approach Vol, veh/h	1032	16.0	13.0	515	13.0	23.7	24.4	183	24.4	183	24.4	183
Approach Delay, s/veh	1032	16.0	13.0	515	13.0	23.7	24.4	183	24.4	183	24.4	183
Approach LOS	B	B	B	B	B	B	C	C	C	B	C	C
Timer - Assigned Phs	1	2	3	4	5	6	7	8	8	8	8	8
Phs Duration (G+Y+Rc), s	10.0	10.5	10.0	25.2	10.2	10.3	10.0	25.2	10.0	25.2	10.0	25.2
Change Period (Y+Rc), 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
Max Green Setting (Gmax), s	15.0	23.0	15.0	32.0	15.0	23.0	15.0	32.0	15.0	23.0	15.0	32.0
Max Q Clear Time (g, c+11), s	3.0	4.7	3.0	14.5	5.0	4.3	4.2	7.3	4.2	7.3	4.2	7.3
Green Ext Time (p, c), s	0.0	0.8	0.1	5.7	0.2	0.7	0.2	2.8	0.2	2.8	0.2	2.8
Intersection Summary												
HCM 6th Ctrl Delay	17.0											
HCM 6th LOS	B											

2019 PM Peak BUILD Conditions

Synchro 10 Report
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Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	↔
Traffic Vol, veh/h	24	1	42	41	2	17	33	335	12	83	440	22
Future Vol, veh/h	24	1	42	41	2	17	33	335	12	83	440	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	240
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	26	1	45	44	2	18	35	360	13	89	473	24

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1098	1094	473	1123	1112	367	497	0	0	373	0	0
Stage 1	651	651	-	437	437	-	-	-	-	-	-	-
Stage 2	447	443	-	686	675	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	189	213	589	182	208	676	1062	-	-	1180	-	-
Stage 1	456	463	-	596	578	-	-	-	-	-	-	-
Stage 2	589	574	-	436	452	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	162	183	589	149	178	676	1062	-	-	1180	-	-
Mov Cap-2 Maneuver	162	183	-	149	178	-	-	-	-	-	-	-
Stage 1	437	414	-	571	554	-	-	-	-	-	-	-
Stage 2	547	550	-	359	405	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	20.9		32.7		0.7		1.3	
HCM LOS	C		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1062	-	-	298	193	1180	-
HCM Lane V/C Ratio	0.033	-	-	0.242	0.334	0.076	-
HCM Control Delay (s)	8.5	0	-	20.9	32.7	8.3	0
HCM Lane LOS	A	A	-	C	D	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.9	1.4	0.2	-

Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	67	25	34	10	35
Future Vol, veh/h	30	67	25	34	10	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	32	72	27	37	11	38
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	64	0	-	0	182	46
Stage 1	-	-	-	-	46	-
Stage 2	-	-	-	-	136	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1532	-	-	-	805	1021
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	888	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1532	-	-	-	787	1021
Mov Cap-2 Maneuver	-	-	-	-	787	-
Stage 1	-	-	-	-	953	-
Stage 2	-	-	-	-	888	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.3	0		9		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1532	-	-	-	958	
HCM Lane V/C Ratio	0.021	-	-	-	0.051	
HCM Control Delay (s)	7.4	0	-	-	9	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	20	353	23	0	545
Future Vol, veh/h	0	20	353	23	0	545
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	22	380	25	0	586
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	393	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.23	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.327	-	-	-	-
Pot Cap-1 Maneuver	0	654	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	654	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10.7	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	654		-		
HCM Lane V/C Ratio	-	0.033		-		
HCM Control Delay (s)	-	10.7		-		
HCM Lane LOS	-	B		-		
HCM 95th %tile Q(veh)	-	0.1		-		

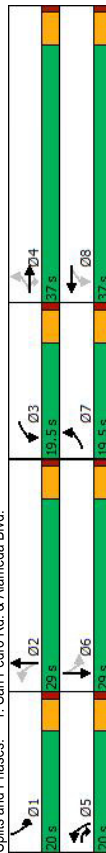
Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↗
Traffic Vol, veh/h	985	24	0	577	0	15
Future Vol, veh/h	985	24	0	577	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1048	26	0	614	0	16
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	537
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.93
Pot Cap-1 Maneuver	-	-	0	-	0	416
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	416
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		14	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	416	-	-	-		
HCM Lane V/C Ratio	0.038	-	-	-		
HCM Control Delay (s)	14	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0.1	-	-	-		

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↗
Traffic Vol, veh/h	976	24	0	577	0	15
Future Vol, veh/h	976	24	0	577	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1038	26	0	614	0	16
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	532
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.93
Pot Cap-1 Maneuver	-	-	0	-	0	419
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	419
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		13.9	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	419	-	-	-		
HCM Lane V/C Ratio	0.038	-	-	-		
HCM Control Delay (s)	13.9	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0.1	-	-	-		

Timings Terry O. Brown, PE
1: San Pedro Rd. & Alameda Blvd.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	90	543	370	64	1307	328	64	18	50
Future Volume (vph)	90	543	370	64	1307	328	64	18	50
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4	4	4	8	8	2	6	6	6
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase	5.0	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	10.0	21.0	10.0	10.0	10.0	21.0
Minimum Split (s)	19.5	37.0	20.0	19.5	37.0	20.0	29.0	20.0	29.0
Total Split (%)	18.5%	35.1%	19.0%	18.5%	35.1%	19.0%	27.5%	19.0%	27.5%
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	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min	Min	Min
Recall Mode	42.0	33.6	53.5	39.0	32.1	27.3	16.2	13.6	7.4
Act Effct Green (s)	0.51	0.41	0.65	0.47	0.39	0.33	0.20	0.16	0.09
Actuated g/C Ratio	0.36	0.41	0.34	0.16	1.06	0.86	0.15	0.08	0.61
Control Delay	13.4	19.1	1.7	10.5	68.0	47.0	20.2	20.9	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	19.1	1.7	10.5	68.0	47.0	20.2	20.9	14.0
LOS	B	B	A	B	E	D	C	C	B
Approach Delay	12.2				65.4		40.9		14.4
Approach LOS	B				E		D		B
Intersection Summary									
Cycle Length: 105.5									
Actuated Cycle Length: 82.9									
Natural Cycle: 90									
Control Type: Actuated-Uncoordinated									
Maximum v/c Ratio: 1.06									
Intersection Signal Delay: 40.1									
Intersection Capacity Utilization 86.2%									
Analysis Period (min) 15									

Splits and Phases: 1: San Pedro Rd. & Alameda Blvd.



2029 AM Peak NOBUILD Conditions

Synchro 10 Report
2029ANX.syn

HCM 6th Signalized Intersection Summary
1: San Pedro Rd. & Alameda Blvd.

Terry O. Brown, PE
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	90	543	370	64	1307	36	328	64	32	18
Future Volume (veh/h)	90	543	370	64	1307	36	328	64	32	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	96	578	394	68	1390	38	349	68	34	19
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	182	1272	832	315	1260	34	416	705	330	424
Arrive On Green	0.06	0.36	0.36	0.06	0.36	0.36	0.17	0.30	0.30	0.06
Sat Flow, veh/h	1767	3526	1572	1767	3505	96	1767	2331	1081	1767
Grip Volume(v), veh/h	96	578	394	68	1390	38	349	68	34	19
Grip Sat Flow(s), veh/h/ln	1767	1763	1572	1767	1763	1838	1767	1763	1659	1763
Q Serve(g, s), s	3.0	11.2	14.0	2.1	32.0	32.0	13.6	1.8	2.0	0.7
Cycle Q Clear(g, c), s	3.0	11.2	14.0	2.1	32.0	32.0	13.6	1.8	2.0	0.7
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grip Cap(c), veh/h	182	1272	832	315	634	661	416	533	502	424
V/C Ratio(X)	0.53	0.45	0.47	0.22	1.10	1.10	0.84	0.09	0.10	0.04
Avail Cap(c, a), veh/h	369	1272	832	504	634	661	416	533	502	424
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	21.8	13.2	16.6	28.5	23.1	22.3	22.4	25.6	30.1
Incr Delay (d2), s/veh	2.3	0.3	0.4	0.3	67.0	67.2	14.0	0.1	0.1	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.3	4.5	4.7	0.8	24.6	25.7	7.0	0.8	0.8	0.3
Unsig. Movement Delay, s/veh										
LnGrp Delay(d), s/veh	24.1	22.0	13.6	16.9	95.5	95.7	37.1	22.4	22.5	25.6
LnGrp LOS	C	C	B	B	F	F	D	C	C	C
Approach Vol, veh/h	1068				1496			451		324
Approach Delay, s/veh	19.1				92.0			33.8		41.5
Approach LOS	B				F		C	D		D
Timer - Assigned Phs	1	2	3	4	5	6	7	8		
Phs Duration (G+Y+Rc), s	10.0	31.9	10.0	37.1	20.0	21.9	10.1	37.0		
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		
Max Green Setting (Gmax), s	15.0	24.0	14.5	32.0	15.0	24.0	14.5	32.0		
Max Q Clear Time (g, c+11), s	2.7	4.0	4.1	16.0	15.6	15.8	5.0	34.0		
Green Ext Time (p, c), s	0.0	0.4	0.1	5.0	0.0	1.2	0.1	0.0		
Intersection Summary										
HCM 6th Ctrl Delay										
HCM 6th LOS										

2029 AM Peak NOBUILD Conditions

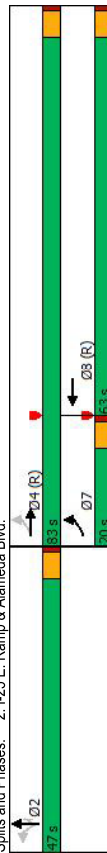
Synchro 10 Report
2029ANX.syn

Timings

2: I-25 E. Ramp & Alameda Blvd.

Terry O. Brown, PE

	EBL	EBT	WBT	NBL	NBT	NBR	
Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	
Lane Configurations	256	814	1508	984	77	220	
Traffic Volume (vph)	256	814	1508	984	77	220	
Future Volume (vph)	pm+pt	NA	NA	Perm	NA	Perm	
Turn Type	7	4	8	2	2	2	
Protected Phases	4	4	8	2	2	2	
Permitted Phases	7	4	8	2	2	2	
Detector Phase	7	4	8	2	2	2	
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Initial (s)	10.0	21.0	21.0	21.0	21.0	21.0	
Minimum Split (s)	20.0	83.0	63.0	47.0	47.0	47.0	
Total Split (s)	15.4%	63.8%	48.5%	36.2%	36.2%	36.2%	
Total Split (%)	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	
All-Red Time (s)	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	
Total Lost Time (s)	Lead	Lag					
Lead/Lag	Min	C-Max	C-Min	Min	Min	Min	
Lead-Lag Optimize?	78.0	78.0	58.0	42.0	42.0	42.0	
Recall Mode	0.60	0.60	0.45	0.32	0.32	0.32	
Act Effct Green (s)	1.07	0.42	0.83	1.03	0.99	0.39	
Actuated g/C Ratio	107.5	17.3	35.1	90.1	39.6	13.1	
Control Delay	0.0	0.5	0.0	0.0	0.0	0.0	
Queue Delay	107.5	17.8	35.1	90.1	39.6	13.1	
Total Delay	F	B	D	F	D	B	
LOS	39.2	35.1	54.4				
Approach Delay	D	D	D				
Approach LOS							
Intersection Summary							
Cycle Length: 130							
Actuated Cycle Length: 130							
Offset: 94.9 (73%), Referenced to phase 4:EBTL and 8:WBT, Start of Green							
Natural Cycle: 90							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 1.07							
Intersection Signal Delay: 42.3							
Intersection Capacity Utilization 80.7%							
Analysis Period (min) 15							
dl Delactio Left Lane - Recode with 1 though lane as a left lane.							



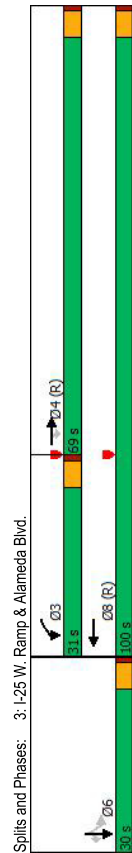
HCM 6th Signalized Intersection Summary

2: I-25 E. Ramp & Alameda Blvd.

Terry O. Brown, PE

	EBL	EBT	WBT	NBL	NBT	NBR	
Movement	EBL	EBT	WBT	NBL	NBT	NBR	
Lane Configurations	256	814	1508	984	77	220	
Traffic Volume (veh/h)	256	814	1508	984	77	220	
Future Volume (veh/h)	0	0	0	0	0	0	
Initial Q (Qb), veh	1.00	1.00	1.00	1.00	1.00	1.00	
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	
Parking Bus Adj	No	No	No	No	No	No	
Work Zone On Approach	1856	1856	0	1856	1856	1856	
Adj Sat Flow, veh/h/ln	275	875	0	1622	211	1058	
Adj Flow Rate, veh/h	0.93	0.93	0.93	0.93	0.93	0.93	
Peak Hour Factor	3	3	0	3	3	3	
Percent Heavy Veh, %	294	2137	0	2060	267	1120	
Cap, veh/h	0.23	1.00	0.00	0.45	0.45	0.32	
Arrive On Green	1767	3618	0	4705	589	3534	
Sat Flow, veh/h	275	875	0	1206	627	1058	
Grip Volume(v), veh/h	1767	1763	0	1689	1750	1767	
Grip Sat Flow(s), veh/h/ln	12.8	0.0	0.0	39.4	39.7	37.9	
Q Serve(g, s), s	12.8	0.0	0.0	39.4	39.7	37.9	
Cycle Q Clear(g, c), s	1.00	0.00	0.00	0.34	1.00	1.00	
Prop In Lane	294	2137	0	1533	794	1120	
Lane Grip Cap(c), veh/h	0.94	0.41	0.00	0.79	0.79	0.94	
V/C Ratio(X)	297	2137	0	1533	794	1142	
Avail Cap(c, a), veh/h	2.00	2.00	1.00	1.00	1.00	1.00	
HCM Platoon Ratio	0.91	0.91	0.00	0.09	0.09	1.00	
Upstream Filter(I)	27.7	0.0	0.0	30.2	43.3	31.7	
Uniform Delay (d), s/veh	33.3	0.5	0.0	0.4	15.1	0.1	
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
Initial Q Delay(d3), s/veh	10.3	0.2	0.0	15.9	16.6	18.8	
%ile BackOfQ(50%), veh/ln	61.0	0.5	0.0	31.0	58.4	31.9	
Unsig. Movement Delay, s/veh	E	A	A	C	C	D	
LnGrp Delay(d), s/veh	1150	15.0	30.7	1833	53.0	1378	
LnGrp LOS	B	B	C	D	D	D	
Approach Vol, veh/h	2	2	4	7	8	8	
Approach Delay, s/veh	46.2	5.0	5.0	19.8	64.0	5.0	
Approach LOS	5.0	5.0	5.0	5.0	5.0	5.0	
Timer - Assigned Phs	42.0	78.0	15.0	42.0	58.0	41.7	
Phs Duration (G+Y+Rc), s	39.9	2.0	7.9	0.0	11.5	11.5	
Change Period (Y+Rc), s	1.3						
Max Green Setting (Gmax), s							
Max Q Clear Time (g, c+11), s							
Green Ext Time (p, c), s							
Intersection Summary							
HCM 6th Ctrl Delay	33.6						
HCM 6th LOS	C						
Notes							
User approved volume balancing among the lanes for turning movement.							

Timings
3: 1-25 W. Ramp & Alameda Blvd.

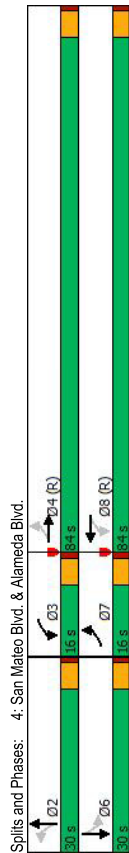
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HCM 6th Signalized Intersection Summary
3: I-25 W. Ramp & Alameda Blvd.

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Timings Terry O. Brown, PE
4: San Mateo Blvd. & Alameda Blvd.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	274	1083	87	1013	23	129	134	15
Future Volume (vph)	274	1083	87	1013	23	129	134	15
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8	2	2	6	6
Permitted Phases	4	4	3	8	2	2	6	6
Detector Phase	7	4	3	8	2	2	6	6
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	21.0	21.0	21.0	21.0
Minimum Split (s)	16.0	84.0	16.0	84.0	30.0	30.0	30.0	30.0
Total Split (%)	12.3%	64.6%	12.3%	64.6%	23.1%	23.1%	23.1%	23.1%
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	C-Max	Min	C-Max	Min	C-Max	Min	C-Max
Recall Mode	92.5	82.6	87.5	80.1	25.0	25.0	25.0	25.0
Act Effct Green (s)	0.71	0.64	0.67	0.62	0.19	0.19	0.19	0.19
Actuated g/C Ratio	0.74	0.53	0.29	0.83	0.11	0.67	1.17	0.31
v/c Ratio	49.2	14.2	7.4	17.8	45.1	53.8	179.0	13.1
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	49.2	14.2	7.4	17.8	45.1	53.8	179.0	13.1
Total Delay	D	B	A	B	D	D	F	B
LOS	D	B	A	B	D	D	F	B
Approach Delay	18.0	17.3	53.0	101.4				
Approach LOS	B	B	D	D				
Intersection Summary								
Cycle Length: 130								
Actuated Cycle Length: 130								
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green								
Natural Cycle: 80								
Control Type: Actuated-Coordinated								
Maximum v/c Ratio: 1.17								
Intersection Signal Delay: 26.1								
Intersection Capacity Utilization 93.5%								
ICU Level of Service F								
Analysis Period (min) 15								



HCM 6th Signalized Intersection Summary Terry O. Brown, PE
4: San Mateo Blvd. & Alameda Blvd.

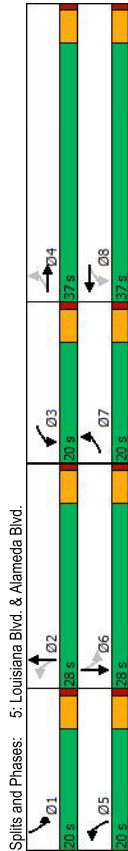
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	274	1083	30	87	1013	658	23	129	97	134	15	103
Future Volume (veh/h)	274	1083	30	87	1013	658	23	129	97	134	15	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	144	1140	32	92	1066	693	24	136	102	141	16	108
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	308	2290	64	355	1368	829	212	189	142	127	40	269
Arrive On Green	0.04	0.65	0.08	1.00	1.00	1.00	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1767	3502	98	1767	2110	1279	1257	984	738	1133	207	1397
Gp Volume(v), veh/h	144	574	598	92	878	881	24	0	238	141	0	124
Gp Sat Flow(s), veh/h/ln	1767	1763	1838	1767	1763	1625	1257	0	1723	1133	0	1604
Q Serve(g, s), s	3.5	21.7	21.7	2.3	0.0	0.0	2.2	0.0	16.8	8.2	0.0	8.8
Cycle Q Clear(g, c), s	3.5	21.7	21.7	2.3	0.0	0.0	11.0	0.0	16.8	25.0	0.0	8.8
Prop In Lane	1.00	0.05	1.00	0.79	1.00	0.43	1.00	0.87	0.43	1.00	0.87	0.87
Lane Gp Cap(c), veh/h	308	1153	1202	355	1143	1054	212	0	331	127	0	308
V/C Ratio(X)	0.47	0.50	0.50	0.26	0.77	0.84	0.11	0.00	0.72	1.11	0.00	0.40
Avail Cap(c, a), veh/h	380	1153	1202	436	1143	1054	212	0	331	127	0	308
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.67	0.67	0.67	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.7	11.5	11.5	8.5	0.0	0.0	50.8	0.0	49.2	62.7	0.0	46.0
Incr Delay (d2), s/veh	1.1	1.5	1.5	0.3	3.4	5.4	0.0	0.0	7.3	113.9	0.0	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.4	8.7	9.0	0.8	1.1	1.6	0.7	0.0	7.9	8.2	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	7.8	13.1	13.0	8.7	3.4	5.4	51.0	0.0	56.5	176.6	0.0	46.8
LnGrp LOS	A	B	B	A	A	A	D	A	E	F	A	D
Approach Vol, veh/h	1316			1851			262				265	
Approach Delay, s/veh	12.5			4.6			56.0				115.9	
Approach LOS	B			A			E				F	
Timer - Assigned Phs	2	3	4	6	7	8						
Phs Duration (G+Y+Rc), s	30.0	10.0	90.0	30.0	10.7	89.3						
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0						
Max Green Setting (Gmax), s	25.0	11.0	79.0	25.0	11.0	79.0						
Max Q Clear Time (g, c+11), s	18.8	4.3	23.7	27.0	5.5	2.0						
Green Ext Time (p, c), s	0.7	0.1	10.8	0.0	0.2	27.8						
Intersection Summary												
HCM 6th Ctrl Delay	19.0											
HCM 6th LOS	B											

Timings

5: Louisiana Blvd. & Alameda Blvd.

Terry O. Brown, PE

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	48	428	70	618	276	100	54	173
Future Volume (vph)	48	428	70	618	276	100	54	173
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4	4	3	8	2	5	2	1
Detector Phase	7	4	3	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)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0
Minimum Split (s)	20.0	37.0	20.0	37.0	20.0	28.0	20.0	28.0
Total Split (%)	19.0%	35.2%	19.0%	35.2%	19.0%	26.7%	19.0%	26.7%
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	26.2	19.2	26.7	19.5	28.3	16.2	16.8	9.7
Act Effct Green (s)	0.37	0.27	0.38	0.28	0.40	0.23	0.24	0.14
Actuated g/C Ratio	0.16	0.59	0.21	0.67	0.61	0.19	0.16	0.56
v/c Ratio	13.0	23.8	13.3	26.7	22.2	17.1	16.5	20.4
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	13.0	23.8	13.3	26.7	22.2	17.1	16.5	20.4
Total Delay	B	C	B	C	C	B	B	C
LOS	B	C	B	C	C	B	B	C
Approach Delay	22.9	25.3	20.4	19.8				
Approach LOS	C	C	C	C	B			
Intersection Summary								
Cycle Length: 105								
Actuated Cycle Length: 70.3								
Natural Cycle: 65								
Control Type: Actuated-Uncoordinated								
Maximum v/c Ratio: 0.67								
Intersection Signal Delay: 22.7								
Intersection Capacity Utilization 63.2%								
Analysis Period (min) 15								



HCM 6th Signalized Intersection Summary

5: Louisiana Blvd. & Alameda Blvd.

Terry O. Brown, PE

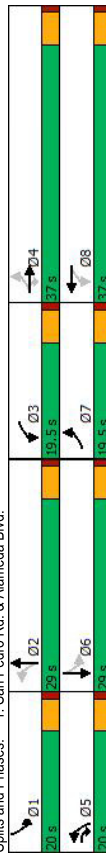
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	48	428	120	70	618	20	276	100	47	54	173	144
Future Volume (veh/h)	48	428	120	70	618	20	276	100	47	54	173	144
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	49	437	122	71	631	20	282	102	48	55	177	147
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	345	717	198	370	917	29	474	559	249	459	292	228
Arrive On Green	0.08	0.26	0.26	0.08	0.26	0.26	0.16	0.24	0.24	0.08	0.16	0.16
Sat Flow, veh/h	1767	2727	755	1767	3488	110	1767	2373	1056	1767	1883	1471
Gp Sat Flow(s), veh/h/ln	49	281	77	319	332	282	74	76	55	165	159	159
Gp Sat Flow(s), veh/h/ln	1767	1763	1720	1767	1763	1836	1767	1763	1666	1767	1763	1591
Q Served (g, s), s	1.1	8.4	8.5	1.6	9.7	9.7	7.4	2.0	2.2	1.5	5.2	5.6
Cycle Q Clear(g, c), s	1.1	8.4	8.5	1.6	9.7	9.7	7.4	2.0	2.2	1.5	5.2	5.6
Prop In Lane	1.00	0.44	1.00	1.00	0.06	1.00	0.63	1.00	0.63	1.00	0.92	0.92
Lane Gp Cap(c), veh/h	345	463	452	370	463	483	474	415	392	459	274	247
V/C Ratio(X)	0.14	0.61	0.61	0.19	0.69	0.69	0.59	0.18	0.19	0.12	0.60	0.64
Avail Cap(c, a), veh/h	641	943	920	665	943	982	628	678	640	754	678	612
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.0	19.3	19.4	14.0	19.8	19.8	15.7	18.2	18.3	17.9	23.5	23.7
Incr Delay (d2), s/veh	0.2	1.3	1.4	0.2	1.8	1.8	1.2	0.2	0.2	0.1	2.1	2.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.4	3.3	3.3	0.6	3.9	4.0	2.8	0.8	0.8	0.6	2.2	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.2	20.6	20.7	14.2	21.7	21.6	16.9	18.4	18.5	18.0	25.7	26.5
LnGrp LOS	B	C	C	B	C	C	B	B	B	B	C	C
Approach Vol, veh/h	608			722			432				379	
Approach Delay, s/veh	20.2			20.9			17.4				24.9	
Approach LOS	C			C			B				C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	19.1	10.0	20.7	14.8	14.3	10.0	20.7				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	15.0	23.0	15.0	32.0	15.0	23.0	15.0	32.0				
Max Q Clear Time (g, c+11), s	3.5	4.2	3.6	10.5	9.4	7.6	3.1	11.7				
Green Ext Time (p, c), s	0.1	0.7	0.1	3.5	0.4	1.7	0.1	4.0				
Intersection Summary												
HCM 6th Ctrl Delay	20.7											
HCM 6th LOS	C											

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	↗
Traffic Vol, veh/h	15	2	13	7	1	28	6	385	9	25	342	14
Future Vol, veh/h	15	2	13	7	1	28	6	385	9	25	342	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	240
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	17	2	15	8	1	33	7	448	10	29	398	16
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	940	928	398	940	939	453	414	0	0	458	0	0
Stage 1	456	456	-	467	467	-	-	-	-	-	-	-
Stage 2	484	472	-	473	472	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	243	267	649	243	263	605	1140	-	-	1098	-	-
Stage 1	582	566	-	574	560	-	-	-	-	-	-	-
Stage 2	562	557	-	570	557	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	222	256	649	228	252	605	1140	-	-	1098	-	-
Mov Cap-2 Maneuver	222	256	-	228	252	-	-	-	-	-	-	-
Stage 1	577	547	-	569	556	-	-	-	-	-	-	-
Stage 2	526	553	-	536	538	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	17.9		13.9		0.1		0.5					
HCM LOS	C		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1140	-	-	314	445	1098	-	-				
HCM Lane V/C Ratio	0.006	-	-	0.111	0.094	0.026	-	-				
HCM Control Delay (s)	8.2	0	-	17.9	13.9	8.4	0	-				
HCM Lane LOS	A	A	-	C	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.4	0.3	0.1	-	-				

Timings Terry O. Brown, PE
1: San Pedro Rd. & Alameda Blvd. 11/24/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	90	553	371	73	1307	339	64	18	50
Future Volume (vph)	90	553	371	73	1307	339	64	18	50
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4	4	4	8	8	5	2	6	6
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase	5.0	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	10.0	21.0	10.0	21.0	10.0	21.0
Minimum Split (s)	19.5	37.0	20.0	19.5	37.0	20.0	29.0	20.0	29.0
Total Split (%)	18.5%	35.1%	19.0%	18.5%	35.1%	19.0%	27.5%	19.0%	27.5%
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	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min	Min	Min
Recall Mode	41.7	33.3	53.3	39.3	32.1	27.5	16.3	13.6	7.4
Act Effct Green (s)	0.50	0.40	0.64	0.47	0.39	0.33	0.20	0.16	0.09
Actuated g/C Ratio	0.36	0.42	0.34	0.19	1.06	0.89	0.16	0.08	0.61
v/c Ratio	13.4	19.5	1.7	10.7	68.4	50.3	18.8	20.9	14.0
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	13.4	19.5	1.7	10.7	68.4	50.3	18.8	20.9	14.0
Total Delay	B	B	A	B	E	D	B	C	B
LOS	B	B	A	B	E	D	B	C	B
Approach Delay	12.4				65.4		42.9		14.4
Approach LOS	B				E		D		B
Intersection Summary									
Cycle Length: 105.5									
Actuated Cycle Length: 83									
Natural Cycle: 90									
Control Type: Actuated-Uncoordinated									
Maximum v/c Ratio: 1.06									
Intersection Signal Delay: 40.5									
Intersection Capacity Utilization 86.8%									
Analysis Period (min) 15									

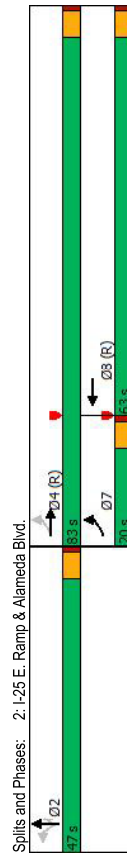
Splits and Phases: 1: San Pedro Rd. & Alameda Blvd.



HCM 6th Signalized Intersection Summary Terry O. Brown, PE
1: San Pedro Rd. & Alameda Blvd. 11/24/2018

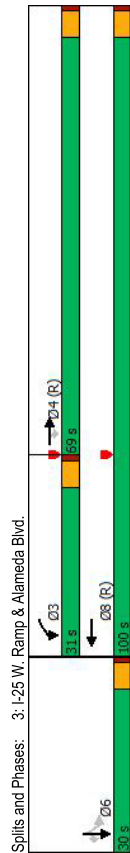
Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	90	553	371	73	1307	339	64	40	18	50	237
Future Volume (veh/h)	90	553	371	73	1307	339	64	40	18	50	237
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	96	588	395	78	1390	38	361	68	43	19	53
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	182	1272	832	312	1260	34	416	648	378	422	335
Arrive On Green	0.06	0.36	0.36	0.06	0.36	0.36	0.17	0.30	0.30	0.06	0.19
Sat Flow, veh/h	1767	3526	1572	1767	3505	96	1767	2144	1250	1767	1763
Grip Volume(v), veh/h	96	588	395	78	698	730	361	55	19	53	252
Grip Sat Flow(s), veh/h/ln	1767	1763	1572	1767	1763	1838	1767	1763	1631	1767	1763
Q Serve(g, s), s	3.0	11.4	14.1	2.4	32.0	32.0	14.1	2.0	2.2	0.7	2.2
Cycle Q Clear(g, c), s	3.0	11.4	14.1	2.4	32.0	32.0	14.1	2.0	2.2	0.7	2.2
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.77	1.00	1.00	1.00
Lane Grip Cap(c), veh/h	182	1272	832	312	634	661	416	533	493	422	335
V/C Ratio(X)	0.53	0.46	0.47	0.25	1.10	1.10	0.87	0.10	0.11	0.05	0.16
Avail Cap(c, a), veh/h	369	1272	832	501	634	661	416	533	493	422	335
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	21.8	13.2	16.7	28.5	28.5	23.3	22.4	22.4	25.6	30.1
Incr Delay (d2), s/veh	2.3	0.3	0.4	0.4	67.0	67.2	17.3	0.1	0.1	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.3	4.6	4.7	1.0	24.6	25.7	7.6	0.8	0.8	0.3	1.0
Unsig. Movement Delay, s/veh											
LnGrp Delay(d), s/veh	24.1	22.1	13.6	17.2	95.5	95.7	40.6	22.4	22.5	25.6	30.3
LnGrp LOS	C	C	B	B	F	F	D	C	C	C	D
Approach Vol, veh/h	1079				1506			472			324
Approach Delay, s/veh	19.2				91.5			36.3			41.5
Approach LOS	B				F			D			D
Timer - Assigned Phs	1	2	3	4	5	6	7	8			
Phs Duration (G+Y+Rc), s	10.0	31.9	10.0	37.1	20.0	21.9	10.1	37.0			
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			
Max Green Setting (Gmax), s	15.0	24.0	14.5	32.0	15.0	24.0	14.5	32.0			
Max Q Clear Time (g, c+11), s	2.7	4.2	4.4	16.1	16.1	15.8	5.0	34.0			
Green Ext Time (p, c), s	0.0	0.5	0.1	5.0	0.0	1.2	0.1	0.0			
Intersection Summary											
HCM 6th Ctrl Delay											
HCM 6th LOS											

Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	256	820	1519	984	77	225
Future Volume (vph)	256	820	1519	984	77	225
Turn Type	pm+pt	NA	NA	Perm	NA	Perm
Protected Phases	7	4	8	2	2	
Permitted Phases	4	4	8	2	2	2
Detector Phase	7	4	8	2	2	2
Switch Phase						
Minimum Initial (s)	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
Total Split (s)	20.0	83.0	63.0	47.0	47.0	47.0
Total Split (%)	15.4%	63.8%	48.5%	36.2%	36.2%	36.2%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lead	Lag				
Lead-Lag Optimize?						
Recall Mode	Min	C-Max	C-Max	Min	Min	Min
Act Effct Green (s)	78.0	78.0	58.0	42.0	42.0	42.0
Actuated g/C Ratio	0.60	0.60	0.45	0.32	0.32	0.32
v/c Ratio	1.07	0.42	0.83	1.03	0.99	0.39
Control Delay	106.2	17.2	35.3	90.1	39.6	13.9
Queue Delay	0.0	0.5	0.0	0.0	0.0	0.0
Total Delay	106.2	17.7	35.3	90.1	39.6	13.9
LOS	F	B	D	F	D	B
Approach Delay		38.8	35.3		54.4	
Approach LOS		D	D		D	
Intersection Summary						
Cycle Length: 130						
Actuated Cycle Length: 130						
Offset: 94.9 (73%), Referenced to phase 4:EBTL and 8:WBT, Start of Green						
Natural Cycle: 90						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 1.07						
Intersection Signal Delay: 42.3						
Intersection Capacity Utilization 80.9%						
Analysis Period (min) 15						
dl Delactio Left Lane - Recode with 1 though lane as a left lane.						



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	256	820	0	0	1519	196	984	77	225	0	0	0
Future Volume (veh/h)	256	820	0	0	1519	196	984	77	225	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No	No	No	No	No	No	No	No	No			
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856			
Adj Flow Rate, veh/h	275	882	0	0	1633	211	1058	83	242			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	294	2137	0	0	2058	265	1120	588	498			
Arrive On Green	0.23	1.00	0.00	0.00	0.45	0.45	0.32	0.32	0.32			
Sat Flow, veh/h	1767	3618	0	0	4709	585	3534	1856	1572			
Gp Volume(v), veh/h	275	882	0	0	1213	631	1058	83	242			
Gp Sat Flow(s), veh/h/ln	1767	1763	0	0	1689	1750	1767	1856	1572			
Q Serve(g, s), s	12.9	0.0	0.0	0.0	39.8	40.1	37.9	4.2	16.2			
Cycle Q Clear(g, c), s	12.9	0.0	0.0	0.0	39.8	40.1	37.9	4.2	16.2			
Prop In Lane	1.00	0.00	0.00	0.00	0.33	0.33	1.00	1.00	1.00			
Lane Gp Cap(c), veh/h	294	2137	0	0	1530	793	1120	588	498			
V/C Ratio(X)	0.94	0.41	0.00	0.00	0.79	0.80	0.94	0.14	0.49			
Avail Cap(c, a), veh/h	295	2137	0	0	1530	793	1142	599	508			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.90	0.90	0.00	0.00	0.09	0.09	1.00	1.00	1.00			
Uniform Delay (d), s/veh	27.9	0.0	0.0	0.0	30.3	30.4	43.3	31.7	35.8			
Incr Delay (d2), s/veh	33.3	0.5	0.0	0.0	0.4	0.8	15.1	0.1	0.7			
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%), veh/ln	10.3	0.2	0.0	0.0	16.0	16.8	18.8	1.9	6.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	61.3	0.5	0.0	0.0	30.7	31.2	58.4	31.9	36.6			
LnGrp LOS	E	A	A	A	C	C	E	C	D			
Approach Vol, veh/h	1157				1844			1383				
Approach Delay, s/veh	15.0				30.9			53.0				
Approach LOS	B				C			D				
Timer - Assigned Phs	2			4			7	8				
Phs Duration (G+Y+Rc), s	46.2			83.8			19.9	63.9				
Change Period (Y+Rc), s	5.0			5.0			5.0	5.0				
Max Green Setting (Gmax), s	42.0			78.0			15.0	58.0				
Max Q Clear Time (g, c+11), s	39.9			2.0			14.9	42.1				
Green Ext Time (p, c), s	1.3			8.0			0.0	11.3				
Intersection Summary												
HCM 6th Ctrl Delay				33.7								
HCM 6th LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												

	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔
Traffic Volume (vph)	753	582	590	1855	232	136	169
Future Volume (vph)	753	582	590	1855	232	136	169
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	4		3	8	6	6	
Permitted Phases	4	4	3	8	6	6	6
Detector Phase	4	4	3	8	6	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	10.0	21.0	21.0	21.0	21.0
Total Split (s)	69.0	69.0	31.0	100.0	30.0	30.0	30.0
Total Split (%)	53.1%	53.1%	23.8%	76.9%	23.1%	23.1%	23.1%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	Min	C-Max	Min	Min	Min
Act Effct Green (s)	70.0	70.0	27.6	102.6	17.4	17.4	17.4
Actuated g/C Ratio	0.54	0.54	0.21	0.79	0.13	0.13	0.13
v/c Ratio	0.42	0.65	0.86	0.71	0.60	0.59	0.68
Control Delay	15.0	11.7	68.3	3.9	63.6	57.8	48.2
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Total Delay	15.0	11.7	68.3	4.2	63.6	57.8	48.2
LOS	B	B	E	A	E	E	D
Approach Delay	13.6			19.7			56.1
Approach LOS	B			B			E
Intersection Summary							
Cycle Length: 130							
Actuated Cycle Length: 130							
Offset: 0 (0%), Referenced to phase 4:EBT and 6:WBT, Start of Green							
Natural Cycle: 70							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 0.86							
Intersection Signal Delay: 22.3							
Intersection Capacity Utilization 80.9%							
Analysis Period (min) 15							



	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔
Traffic Volume (veh/h)	0	753	582	590	1855	0	0	0	0	232	136	169
Future Volume (veh/h)	0	753	582	590	1855	0	0	0	0	232	136	169
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	1856	0	0	0	0	1856	1856	1856
Adj Flow Rate, veh/h	0	793	613	621	1953	0	0	0	0	244	143	178
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	3	3	3	3	0	0	0	0	3	3	3
Cap, veh/h	0	1953	871	661	2769	0	0	0	0	487	256	217
Arrive On Green	0.00	1.00	1.00	0.39	1.00	0.00	0.00	0.00	0.00	0.14	0.14	0.14
Sat Flow, veh/h	0	3618	1572	3428	3618	0	0	0	0	3534	1856	1572
Grp Volume(v), veh/h	0	793	613	621	1953	0	0	0	0	244	143	178
Grp Sat Flow(s), veh/h/ln	0	1763	1572	1714	1763	0	0	0	0	1767	1856	1572
Q Serve(g, s), s	0.0	0.0	0.0	22.7	0.0	0.0	0.0	0.0	0.0	8.3	9.4	14.3
Cycle Q Clear(g, c), s	0.0	0.0	0.0	22.7	0.0	0.0	0.0	0.0	0.0	8.3	9.4	14.3
Prop In Lane	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00
V/C Ratio(X)	0	1953	871	661	2769	0	0	0	0	487	256	217
Avail Cap(c, a), veh/h	0	0.41	0.70	0.94	0.71	0.00	0.00	0.00	0.00	0.50	0.56	0.82
HCM Platoon Ratio	1.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.00	0.77	0.77	0.37	0.37	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	39.2	0.0	0.0	0.0	0.0	0.0	51.9	52.4	54.5
Incr Delay (d2), s/veh	0.0	0.5	3.7	9.8	0.6	0.0	0.0	0.0	0.0	0.8	1.9	11.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.0	0.1	0.9	8.9	0.2	0.0	0.0	0.0	0.0	3.8	4.5	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.5	3.7	49.0	0.6	0.0	0.0	0.0	0.0	52.7	54.3	66.3
LnGrp LOS	A	A	A	D	A	A	A	A	A	D	D	E
Approach Vol, veh/h		1406			2574					565		
Approach Delay, s/veh		1.9			12.3					57.4		
Approach LOS		A			B					E		
Timer - Assigned Phs			3	4	6	8						
Phs Duration (G+Y+Rc), s			30.1	77.0	22.9	107.1						
Change Period (Y+Rc), s			5.0	5.0	5.0	5.0						
Max Green Setting (Gmax), s			26.0	64.0	25.0	95.0						
Max Q Clear Time (g, c+H1), s			24.7	2.0	16.3	2.0						
Green Ext Time (p, c), s			0.4	11.0	1.6	37.1						
Intersection Summary												
HCM 6th Ctrl Delay			14.7									
HCM 6th LOS			B									
Notes												
User approved volume balancing among the lanes for turning movement.												

Terry O. Brown, PE
11/24/2018

HCM 6th Signalized Intersection Summary
4: San Mateo Blvd. & Alameda Blvd.

[illegible]

Spills and Phases: 4; San Mateo Blvd. & Alameda Blvd.

2029 AM Peak BUILD Conditions

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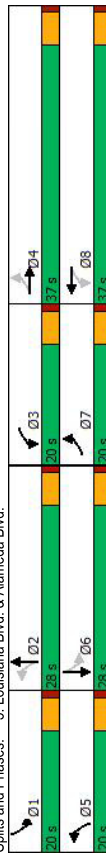
2029 AM Peak BUILD Conditions

Timings
5: Louisiana Blvd. & Alameda Blvd.

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11/24/2018

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	49	438	74	626	276	101	54	174
Future Volume (vph)	49	438	74	626	276	101	54	174
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4	8	8	8	2	5	2	1
Detector Phase	7	4	3	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
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0
Total Split (s)	20.0	37.0	20.0	37.0	20.0	28.0	20.0	28.0
Total Split (%)	19.0%	35.2%	19.0%	35.2%	19.0%	26.7%	19.0%	26.7%
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)	26.3	19.3	27.0	19.7	28.3	16.3	16.8	9.7
Actuated g/C Ratio	0.37	0.27	0.38	0.28	0.40	0.23	0.24	0.14
v/c Ratio	0.16	0.60	0.22	0.68	0.61	0.19	0.16	0.57
Control Delay	13.1	24.1	13.5	26.7	22.4	17.1	16.6	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.1	24.1	13.5	26.7	22.4	17.1	16.6	20.4
LOS	B	C	B	C	C	B	B	C
Approach Delay	23.2	25.3	25.3	20.5	20.5	19.9		
Approach LOS	C	C	C	C	C	B		
Intersection Summary								
Cycle Length: 105								
Actuated Cycle Length: 70.5								
Natural Cycle: 65								
Control Type: Actuated-Uncoordinated								
Maximum v/c Ratio: 0.68								
Intersection Signal Delay: 22.8								
Intersection Capacity Utilization 63.5%								
Analysis Period (min) 15								

Splits and Phases: 5: Louisiana Blvd. & Alameda Blvd.



2029 AM Peak BUILD Conditions

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HCM 6th Signalized Intersection Summary
5: Louisiana Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	49	438	125	74	626	20	276	101	49	54	174	145
Future Volume (veh/h)	49	438	125	74	626	20	276	101	49	54	174	145
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	50	447	128	76	639	20	282	103	50	55	178	148
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	344	718	204	365	925	29	473	555	254	457	293	229
Arrive On Green	0.08	0.27	0.27	0.08	0.27	0.27	0.16	0.24	0.24	0.08	0.16	0.16
Sat Flow, veh/h	1767	2710	770	1767	3489	109	1767	2348	1076	1767	1882	1472
Gp Volume(v), veh/h	50	289	286	76	323	336	282	76	77	55	166	160
Gp Sat Flow(s), veh/h/ln	1767	1763	1717	1767	1763	1836	1767	1763	1662	1767	1763	1591
Q Serve(g, s), s	1.1	8.7	8.8	1.8	9.9	9.9	7.4	2.1	2.2	1.5	5.3	5.7
Cycle Q Clear(g, c), s	1.1	8.7	8.8	1.8	9.9	9.9	7.4	2.1	2.2	1.5	5.3	5.7
Prop In Lane	1.00	0.45	1.00	1.00	0.06	1.00	0.06	1.00	0.65	1.00	0.93	0.93
Lane Gp Cap(c), veh/h	344	467	455	365	467	487	473	416	392	457	274	248
V/C Ratio(X)	0.15	0.62	0.63	0.21	0.69	0.69	0.80	0.18	0.20	0.12	0.61	0.65
Avail Cap(c, a), veh/h	637	938	914	659	938	977	625	674	635	751	674	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.0	19.4	19.5	14.1	19.9	19.9	15.8	18.3	18.4	18.0	23.7	23.8
Incr Delay (d2), s/veh	0.2	1.3	1.4	0.3	1.8	1.8	1.2	0.2	0.2	0.1	2.1	2.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.4	3.4	3.4	0.7	3.9	4.1	2.8	0.8	0.8	0.6	2.2	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.2	20.8	20.9	14.3	21.7	21.7	17.0	18.5	18.6	18.1	25.8	26.6
LnGrp LOS	B	C	C	B	C	C	B	B	B	B	C	C
Approach Vol, veh/h	625				735			435			381	
Approach Delay, s/veh	20.3				20.9			17.5			25.0	
Approach LOS	C				C			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	19.2	10.0	20.9	14.8	14.4	10.0	20.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	15.0	23.0	15.0	32.0	15.0	23.0	15.0	32.0				
Max Q Clear Time (g, c+11), s	3.5	4.2	3.8	10.8	9.4	7.7	3.1	11.9				
Green Ext Time (p, c), s	0.1	0.7	0.1	3.6	0.4	1.7	0.1	4.0				
Intersection Summary												
HCM 6th Ctrl Delay	20.8											
HCM 6th LOS	C											

2029 AM Peak BUILD Conditions

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Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	↔
Traffic Vol, veh/h	15	2	13	24	1	29	6	401	10	35	342	14
Future Vol, veh/h	15	2	13	24	1	29	6	401	10	35	342	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	240
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	17	2	15	28	1	34	7	466	12	41	398	16

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	984	972	398	983	982	472	414	0	0	478	0	0
Stage 1	480	480	-	486	486	-	-	-	-	-	-	-
Stage 2	504	492	-	497	496	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	227	251	649	227	248	590	1140	-	-	1079	-	-
Stage 1	565	553	-	561	549	-	-	-	-	-	-	-
Stage 2	548	546	-	553	544	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	204	237	649	211	234	590	1140	-	-	1079	-	-
Mov Cap-2 Maneuver	204	237	-	211	234	-	-	-	-	-	-	-
Stage 1	560	526	-	557	545	-	-	-	-	-	-	-
Stage 2	511	542	-	511	517	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	18.9		18.8		0.1		0.8	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1140	-	-	294	323	1079	-
HCM Lane V/C Ratio	0.006	-	-	0.119	0.194	0.038	-
HCM Control Delay (s)	8.2	0	-	18.9	18.8	8.5	0
HCM Lane LOS	A	A	-	C	C	A	A
HCM 95th %tile Q(veh)	0	-	-	0.4	0.7	0.1	-

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	36	36	13	5	18
Future Vol, veh/h	11	36	36	13	5	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	13	42	42	15	6	21
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	57	0	-	0	118	50
Stage 1	-	-	-	-	50	-
Stage 2	-	-	-	-	68	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1541	-	-	-	875	1015
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	952	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1541	-	-	-	867	1015
Mov Cap-2 Maneuver	-	-	-	-	867	-
Stage 1	-	-	-	-	961	-
Stage 2	-	-	-	-	952	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.7	0		8.8		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1541	-	-	-	979	
HCM Lane V/C Ratio	0.008	-	-	-	0.027	
HCM Control Delay (s)	7.4	0	-	-	8.8	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	10	437	9	0	391
Future Vol, veh/h	0	10	437	9	0	391
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	12	508	10	0	455
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	513	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.23	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.327	-	-	-	-
Pot Cap-1 Maneuver	0	559	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	559	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.6	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	- 559		-		
HCM Lane V/C Ratio	-	- 0.021		-		
HCM Control Delay (s)	-	- 11.6		-		
HCM Lane LOS	-	- B		-		
HCM 95th %tile Q(veh)	-	- 0.1		-		

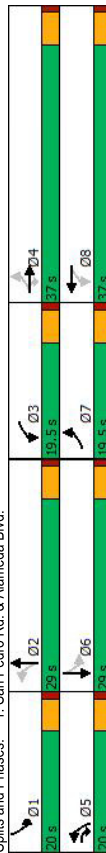
Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↗
Traffic Vol, veh/h	602	9	0	1416	0	8
Future Vol, veh/h	602	9	0	1416	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	640	10	0	1506	0	9
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	325
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.93
Pot Cap-1 Maneuver	-	-	0	-	0	570
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	570
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		11.4	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	570	-	-	-		
HCM Lane V/C Ratio	0.015	-	-	-		
HCM Control Delay (s)	11.4	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0	-	-	-		

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↗
Traffic Vol, veh/h	601	9	0	1416	0	8
Future Vol, veh/h	601	9	0	1416	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	639	10	0	1506	0	9
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	325
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.93
Pot Cap-1 Maneuver	-	-	0	-	0	570
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	570
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		11.4	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	570	-	-	-		
HCM Lane V/C Ratio	0.015	-	-	-		
HCM Control Delay (s)	11.4	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile Q(veh)	0	-	-	-		

Timings Terry O. Brown, PE
1: San Pedro Rd. & Alameda Blvd. 11/24/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	110	1033	497	61	677	242	59	30	86
Future Volume (vph)	110	1033	497	61	677	242	59	30	86
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4	4	4	8	8	2	6	6	6
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase	5.0	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	10.0	21.0	10.0	10.0	10.0	21.0
Minimum Split (s)	19.5	37.0	20.0	19.5	37.0	20.0	29.0	20.0	29.0
Total Split (%)	18.5%	35.1%	19.0%	18.5%	35.1%	19.0%	27.5%	19.0%	27.5%
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	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min	Min	Min
Recall Mode	41.0	32.6	51.4	38.2	31.3	27.2	15.6	15.0	8.4
Act Effct Green (s)	0.50	0.40	0.63	0.47	0.38	0.33	0.19	0.18	0.10
Actuated g/C Ratio	0.32	0.79	0.45	0.27	0.55	0.57	0.19	0.12	0.63
Control Delay	12.6	27.6	2.1	13.3	22.7	30.7	15.9	20.6	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.6	27.6	2.1	13.3	22.7	30.7	15.9	20.6	16.0
LOS	B	C	A	B	C	C	B	C	B
Approach Delay	18.8				22.0		25.8		16.4
Approach LOS	B				C		C		B
Intersection Summary									
Cycle Length: 105.5									
Actuated Cycle Length: 81.9									
Natural Cycle: 70									
Control Type: Actuated-Uncoordinated									
Maximum v/c Ratio: 0.79									
Intersection Signal Delay: 20.1									
Intersection Capacity Utilization 72.8%									
Analysis Period (min) 15									

Splits and Phases: 1: San Pedro Rd. & Alameda Blvd.



2029 PM Peak NOBUILD Conditions

Synchro 10 Report
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HCM 6th Signalized Intersection Summary Terry O. Brown, PE
1: San Pedro Rd. & Alameda Blvd. 11/24/2018

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	110	1033	497	61	677	15	242	59	60	30	86
Future Volume (veh/h)	110	1033	497	61	677	15	242	59	60	30	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	117	1099	529	65	720	16	257	63	64	32	91
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3	3
Cap. veh/h	345	1289	790	218	1266	28	372	479	427	438	344
Arrive On Green	0.07	0.37	0.37	0.06	0.36	0.36	0.14	0.27	0.27	0.06	0.20
Sat Flow, veh/h	1767	3526	1572	1767	3526	78	1767	1763	1767	1763	1572
Gp Volume(v), veh/h	117	1099	529	65	360	376	257	63	64	32	91
Gp Sat Flow(s), veh/h/ln	1767	1763	1572	1767	1763	1841	1767	1763	1767	1763	1572
Q Served(g, s), s	3.4	23.8	20.9	1.8	13.6	13.6	9.1	2.2	2.6	1.1	3.6
Cycle Q Clear(g, c), s	3.4	23.8	20.9	1.8	13.6	13.6	9.1	2.2	2.6	1.1	3.6
Prop In Lane	1.00	1.00	1.00	1.00	1.00	0.04	1.00	1.00	1.00	1.00	1.00
Lane Gp Cap(c), veh/h	345	1289	790	218	633	661	372	479	427	438	344
V/C Ratio(X)	0.34	0.85	0.67	0.30	0.57	0.57	0.69	0.13	0.15	0.07	0.26
Avail Cap(c, a), veh/h	536	1364	824	421	682	712	450	512	456	652	512
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.9	24.2	15.4	18.6	21.3	21.3	21.8	22.7	22.9	23.3	31.9
Incr Delay (d2), s/veh	0.6	5.2	2.0	0.8	1.0	0.9	3.5	0.1	0.2	0.1	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.3	10.3	7.2	0.7	5.5	5.8	3.9	0.9	0.9	0.5	1.5
Unsig. Movement Delay, s/veh											
LnGrp Delay(d), s/veh	16.5	29.4	17.4	19.4	22.3	22.3	25.2	22.9	23.0	23.4	39.3
LnGrp LOS	B	C	B	B	C	C	C	C	C	C	D
Approach Vol, veh/h	1745				801			384			375
Approach Delay, s/veh	24.9				22.1			24.5			35.4
Approach LOS	C				C			C			D
Timer - Assigned Phs	1	2	3	4	5	6	7	8			
Phs Duration (G+Y+Rc), s	10.0	27.5	10.0	35.2	16.3	21.1	10.5	34.7			
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			
Max Green Setting (Gmax), s	15.0	24.0	14.5	32.0	15.0	24.0	14.5	32.0			
Max Q Clear Time (g, c+11), s	3.1	4.6	3.8	25.8	11.1	14.7	5.4	15.6			
Green Ext Time (p, c), s	0.0	0.6	0.1	4.5	0.3	1.4	0.2	4.2			
Intersection Summary											
HCM 6th Ctrl Delay	25.3										
HCM 6th LOS	C										

2029 PM Peak NOBUILD Conditions

Synchro 10 Report
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Timings Terry O. Brown, PE
2: I-25 E. Ramp & Alameda Blvd. 11/24/2018

	EBL	EBT	WBT	NBL	NBT	NBR	
Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	
Lane Configurations	423	1323	741	689	83	435	
Traffic Volume (vph)	423	1323	741	689	83	435	
Future Volume (vph)	423	1323	741	689	83	435	
Turn Type	pm+pt	NA	NA	Perm	NA	Perm	
Protected Phases	7	4	8	2	2	2	
Permitted Phases	4	4	8	2	2	2	
Detector Phase	7	4	8	2	2	2	
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Initial (s)	10.0	21.0	21.0	21.0	21.0	21.0	
Minimum Split (s)	27.0	96.0	69.0	54.0	54.0	54.0	
Total Split (%)	18.0%	64.0%	46.0%	36.0%	36.0%	36.0%	
Yellow Time (s)	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	
Lost Time Adjust (s)	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	
Lead/Lag	Lead	Lag					
Lead-Lag Optimize?							
Recall Mode	Min	C-Max	C-Max	Min	Min	Min	
Act Effct Green (s)	93.4	64.0	46.6	46.6	46.6	46.6	
Actuated g/C Ratio	0.62	0.62	0.43	0.31	0.31	0.31	
v/c Ratio	1.12	0.66	0.54	0.76	0.46	0.91	
Control Delay	106.8	13.0	30.5	57.0	43.0	66.0	
Queue Delay	0.0	0.6	0.0	0.0	0.0	0.0	
Total Delay	106.8	13.6	30.5	57.0	43.0	66.0	
LOS	F	B	C	E	D	E	
Approach Delay		36.2	30.5		55.3		
Approach LOS		D	C		E		
Intersection Summary							
Cycle Length: 150							
Actuated Cycle Length: 150							
Offset: 22.5 (15%), Referenced to phase 4:EBTL and 8:WBT, Start of Green							
Natural Cycle: 60							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 1.12							
Intersection Signal Delay: 40.5							
Intersection Capacity Utilization 101.8%							
Analysis Period (min) 15							
Splits and Phases: 2: I-25 E. Ramp & Alameda Blvd.							
	02	04 (R)	07	08 (R)	07	08 (R)	
	54.5	106.5	27.5	106.5	27.5	106.5	

2029 PM Peak NOBUILD Conditions
Synchro 10 Report
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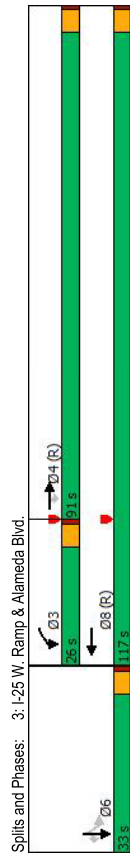
HCM 6th Signalized Intersection Summary Terry O. Brown, PE
2: I-25 E. Ramp & Alameda Blvd. 11/24/2018

	EBL	EBT	WBT	NBL	NBT	NBR	SBT	SBR
Movement	EBL	EBT	WBT	NBL	NBT	NBR	SBT	SBR
Lane Configurations	423	1323	0	0	741	689	83	435
Traffic Volume (veh/h)	423	1323	0	0	741	689	83	435
Future Volume (veh/h)	423	1323	0	0	741	689	83	435
Initial Q (Qb), veh	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856
Adj Flow Rate, veh/h	460	1438	0	0	805	329	749	90
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	0	0	3	3	3	3
Cap, veh/h	439	2170	0	0	1541	625	1123	590
Arrive On Green	0.29	1.00	0.00	0.00	0.44	0.44	0.32	0.32
Sat Flow, veh/h	1767	3618	0	0	3705	1436	1856	1572
Gp Volume(v), veh/h	460	1438	0	0	768	366	749	90
Gp Sat Flow(s), veh/h/ln	1767	1763	0	0	1689	1597	1767	1856
Q Serve(g, s), s	22.0	0.0	0.0	0.0	24.9	25.2	27.5	5.2
Cycle Q Clear(g, c), s	22.0	0.0	0.0	0.0	24.9	25.2	27.5	5.2
Prop In Lane	1.00	0.00	0.00	0.00	0.90	1.00	1.00	1.00
Lane Gp Cap(c), veh/h	439	2170	0	0	1471	695	1123	590
V/C Ratio(X)	1.05	0.66	0.00	0.00	0.52	0.53	0.67	0.15
Avail Cap(c, a), veh/h	439	2170	0	0	1471	695	1155	606
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.37	0.37	0.00	0.00	0.79	0.79	1.00	1.00
Uniform Delay (d), s/veh	23.3	0.0	0.0	0.0	30.9	31.0	44.3	36.7
Incr Delay (d2), s/veh	39.6	0.6	0.0	0.0	1.1	2.2	1.4	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	11.9	0.2	0.0	0.0	10.5	10.2	12.4	2.4
Unsig. Movement Delay, s/veh	62.9	0.6	0.0	0.0	32.0	33.2	45.7	36.8
LnGrp Delay(d), s/veh	15.7	1898	1134	32.4	56.2	1312	76.4	E
LnGrp LOS	F	A	A	A	C	D	D	E
Approach Vol, veh/h	15.7	1898	1134	32.4	56.2	1312	76.4	E
Approach Delay, s/veh	15.7	1898	1134	32.4	56.2	1312	76.4	E
Approach LOS	B	B	C	C	E	E	E	E
Timer - Assigned Phs	2	4	4	7	8	8	8	8
Phs Duration (G+Y+Rc), s	52.7	97.3	97.3	27.0	70.3	70.3	70.3	70.3
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	49.0	91.0	91.0	22.0	64.0	64.0	64.0	64.0
Max Q Clear Time (g, c+H1), s	46.0	2.0	2.0	24.0	27.2	27.2	27.2	27.2
Green Ext Time (p, c), s	1.7	18.5	18.5	0.0	10.0	10.0	10.0	10.0
Intersection Summary								
HCM 6th Ctrl Delay	32.3							
HCM 6th LOS	C							
Notes								
User approved volume balancing among the lanes for turning movement.								

2029 PM Peak NOBUILD Conditions
Synchro 10 Report
2029PNX.syn

Timings Terry O. Brown, PE
3: I-25 W. Ramp & Alameda Blvd. 11/24/2018

	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔
Traffic Volume (vph)	1211	950	314	1052	548	590	153
Future Volume (vph)	1211	950	314	1052	548	590	153
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	4		3	8	6	6	
Permitted Phases	4	4	3	8	6	6	6
Detector Phase	4	4	3	8	6	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	10.0	21.0	21.0	21.0	21.0
Total Split (s)	91.0	91.0	26.0	117.0	33.0	33.0	33.0
Total Split (%)	60.7%	60.7%	17.3%	78.0%	22.0%	22.0%	22.0%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	Min	C-Max	Min	Min	Min
Act Effct Green (s)	87.3	19.7	112.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio	0.58	0.58	0.13	0.75	0.19	0.19	0.19
v/c Ratio	0.89	1.18	0.82	0.47	1.46	1.44	0.50
Control Delay	32.6	126.4	62.4	11.2	265.4	248.3	34.2
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Total Delay	32.6	126.4	62.4	11.6	265.4	248.3	34.2
LOS	C	F	E	B	F	F	C
Approach Delay	73.9			23.3		227.9	
Approach LOS	E			C		F	
Intersection Summary							
Cycle Length: 150							
Actuated Cycle Length: 150							
Offset: 0 (0%), Referenced to phase 4:EBT and 6:WBT, Start of Green							
Natural Cycle: 120							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 1.46							
Intersection Signal Delay: 100.8							
Intersection Capacity Utilization 101.8%							
Analysis Period (min) 15							



HCM 6th Signalized Intersection Summary Terry O. Brown, PE
3: I-25 W. Ramp & Alameda Blvd. 11/24/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔	↔↔
Traffic Volume (veh/h)	0	1211	950	314	1052	0	0	0	0	548	590	153
Future Volume (veh/h)	0	1211	950	314	1052	0	0	0	0	548	590	153
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/in	0	1856	1856	1856	1856	0	0	0	0	1856	1856	1856
Adj Flow Rate, veh/h	0	1408	1105	365	1223	0	0	0	0	1441	960	178
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	3	3	3	3	0	0	0	0	3	3	3
Cap, veh/h	0	2094	934	409	2632	0	0	0	0	330	693	294
Arrive On Green	0.00	0.20	0.20	0.24	1.00	0.00	0.00	0.00	0.00	0.19	0.19	0.19
Sat Flow, veh/h	0	3618	1572	3428	3618	0	0	0	0	1767	3711	1572
Grp Volume(v), veh/h	0	1408	1105	365	1223	0	0	0	0	441	960	178
Grp Sat Flow(s), veh/h/in	0	1763	1572	1714	1763	0	0	0	0	1767	1856	1572
Q Serve(g, s), s	0.0	55.5	89.1	15.4	0.0	0.0	0.0	0.0	0.0	28.0	28.0	15.6
Cycle Q Clear(g, c), s	0.0	55.5	89.1	15.4	0.0	0.0	0.0	0.0	0.0	28.0	28.0	15.6
Prop In Lane	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00
V/C Ratio(X)	0.00	0.67	1.18	0.89	0.46	0.00	0.00	0.00	0.00	1.34	1.39	0.61
Avail Cap(c, a), veh/h	0	2094	934	480	2632	0	0	0	0	330	693	294
HCM Platoon Ratio	1.00	0.33	0.33	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.22	0.22	0.78	0.78	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	46.8	60.3	56.1	0.0	0.0	0.0	0.0	0.0	61.0	61.0	55.9
Incr Delay (d2), s/veh	0.0	0.4	85.1	13.7	0.5	0.0	0.0	0.0	0.0	170.8	182.5	3.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/in	0.0	26.5	59.9	6.8	0.2	0.0	0.0	0.0	0.0	28.2	30.8	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	47.2	145.4	69.9	0.5	0.0	0.0	0.0	0.0	231.8	243.5	59.5
LnGrp LOS	A	D	F	E	A	A	A	A	A	F	F	E
Approach Vol, veh/h		2513			1588					1579		
Approach Delay, s/veh		90.4			16.4					219.5		
Approach LOS		F			B					F		
Timer - Assigned Phs			3	4	6	8						
Phs Duration (G+Y+Rc), s			22.9	94.1	33.0	117.0						
Change Period (Y+Rc), s			5.0	5.0	5.0	5.0						
Max Green Setting (Gmax), s			21.0	86.0	28.0	112.0						
Max Q Clear Time (g, c+H1), s			17.4	91.1	30.0	2.0						
Green Ext Time (p, c), s			0.5	0.0	0.0	13.6						
Intersection Summary												
HCM 6th Ctrl Delay			105.6									
HCM 6th LOS			F									
Notes												
User approved volume balancing among the lanes for turning movement.												

Timings
4: San Mateo Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

HCM 6th Signalized Intersection Summary
4: San Mateo Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	80	1580	45	902	30	12	340	62
Future Volume (vph)	80	1580	45	902	30	12	340	62
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8	2	2	6	6
Permitted Phases	4	4	8	8	2	2	6	6
Detector Phase	7	4	3	8	2	2	6	6
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	21.0	21.0	21.0	21.0
Minimum Split (s)	18.0	91.0	18.0	91.0	41.0	41.0	41.0	41.0
Total Split (%)	12.0%	60.7%	12.0%	60.7%	27.3%	27.3%	27.3%	27.3%
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	C-Max	Min	C-Max	Min	C-Max	Min	C-Max
Recall Mode	98.6	92.0	99.4	92.4	36.0	36.0	36.0	36.0
Act Effct Green (s)	0.66	0.61	0.66	0.62	0.24	0.24	0.24	0.24
Actuated g/C Ratio	0.15	0.81	0.34	0.54	0.87	0.34	1.59	0.87
v/c Ratio	8.6	26.2	23.0	33.9	110.2	10.2	323.5	50.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Length	8.6	26.2	23.0	33.9	110.2	10.2	323.5	50.1
LOS	A	C	C	C	F	B	F	D
Approach Delay	25.8	33.4	33.4	26.4	26.4	26.4	172.5	172.5
Approach LOS	C	C	C	C	C	C	F	F
Intersection Summary								
Cycle Length: 150								
Actuated Cycle Length: 150								
Offset: 69 (46%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green								
Natural Cycle: 110								
Control Type: Actuated-Coordinated								
Maximum v/c Ratio: 1.59								
Intersection Signal Delay: 58.4								
Intersection Capacity Utilization 86.2%								
Analysis Period (min) 15								
Splits and Phases: 4: San Mateo Blvd. & Alameda Blvd.								

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	80	1580	15	45	902	157	30	12	144	340	62	358
Future Volume (veh/h)	80	1580	15	45	902	157	30	12	144	340	62	358
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	43	1717	16	49	980	171	33	13	157	370	67	389
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	293	2243	21	185	1881	328	48	29	353	228	57	329
Arrive On Green	0.03	0.63	0.63	0.02	0.42	0.42	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1767	3579	33	1767	3001	523	928	122	1489	1206	236	1372
Grip Volume(v), veh/h	43	845	888	49	575	576	33	0	170	370	0	456
Grip Sat Flow(s), veh/h/ln	1767	1763	1850	1767	1763	1761	928	0	1591	1206	0	1609
Q Serve(g, s), s	1.3	51.5	51.7	1.5	36.3	36.4	0.0	0.0	13.6	22.4	0.0	36.0
Cycle Q Clear(g, c), s	1.3	51.5	51.7	1.5	36.3	36.4	0.0	0.0	13.6	22.4	0.0	36.0
Prop In Lane	1.00	0.02	1.00	1.00	0.30	0.30	1.00	0.92	1.00	1.00	0.85	0.85
VC Ratio(X)	0.15	0.76	0.77	0.26	0.52	0.52	0.69	0.00	0.45	1.62	0.00	1.18
Avail Cap(c, a), veh/h	387	1105	1159	279	1105	1104	48	0	382	228	0	386
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.88	0.88	0.88	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.7	20.1	20.1	20.0	26.8	26.8	75.0	0.0	48.5	66.2	0.0	57.0
Incr Delay (d2), s/veh	0.2	5.1	4.9	0.7	1.5	1.5	33.9	0.0	0.8	300.4	0.0	105.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.5	22.1	23.2	0.7	16.8	16.9	1.7	0.0	5.6	27.8	0.0	25.9
Unsig. Movement Delay, s/veh	14.0	25.1	25.0	20.7	28.3	28.4	108.9	0.0	49.3	366.6	0.0	162.1
LnGrp Delay(d), s/veh	14.0	25.1	25.0	20.7	28.3	28.4	108.9	0.0	49.3	366.6	0.0	162.1
LnGrp LOS	B	C	C	C	C	C	F	A	D	F	A	F
Approach Vol, veh/h	1776	1776	1776	1776	1776	1776	1776	1776	1776	1776	1776	1776
Approach Delay, s/veh	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8	24.8
Approach LOS	C	C	C	C	C	C	C	C	C	C	C	C
Timer - Assigned Phs	2	3	4	6	7	8	8	8	8	8	8	8
Phs Duration (G+Y+Rc), s	41.0	10.0	99.0	41.0	10.0	99.0	41.0	10.0	99.0	41.0	10.0	99.0
Change Period (Y+Rc), 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
Max Green Setting (Gmax), s	38.0	13.0	86.0	38.0	13.0	86.0	38.0	13.0	86.0	38.0	13.0	86.0
Max Q Clear Time (g, c+H1), s	38.0	3.5	53.7	38.0	3.5	53.7	38.0	3.5	53.7	38.0	3.5	53.7
Green Ext Time (p, c), s	0.0	0.0	17.8	0.0	0.0	17.8	0.0	0.0	17.8	0.0	0.0	17.8
Intersection Summary												
HCM 6th Ctrl Delay	74.7											
HCM 6th LOS	E											

2029 PM Peak NOBUILD Conditions
Synchro 10 Report
2029PNX.syn

2029 PM Peak NOBUILD Conditions
Synchro 10 Report
2029PNX.syn

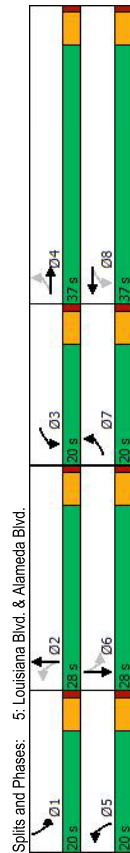
Timings

5: Louisiana Blvd. & Alameda Blvd.

Terry O. Brown, PE

11/24/2018

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	←	←	←	←	←	←	←	←
Traffic Volume (vph)	149	942	43	418	112	109	45	111
Future Volume (vph)	149	942	43	418	112	109	45	111
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4	4	3	8	2	5	2	1
Detector Phase	7	4	3	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)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0
Minimum Split (s)	20.0	37.0	20.0	37.0	20.0	28.0	20.0	28.0
Total Split (%)	19.0%	35.2%	19.0%	35.2%	19.0%	26.7%	19.0%	26.7%
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	40.9	32.1	36.1	29.7	20.1	10.6	15.0	8.0
Act Effct Green (s)	0.54	0.42	0.47	0.39	0.26	0.14	0.20	0.11
Actuated g/C Ratio	0.29	0.81	0.18	0.34	0.34	0.33	0.16	0.43
v/c Ratio	10.1	25.4	10.6	18.1	22.8	21.3	20.8	25.1
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	10.1	25.4	10.6	18.1	22.8	21.3	20.8	25.1
Total Delay	B	C	B	B	C	C	C	C
LOS	B	C	B	B	C	C	C	C
Approach Delay	23.6	17.5	17.5	21.9	24.2			
Approach LOS	C	B	B	C	C			
Intersection Summary								
Cycle Length: 105								
Actuated Cycle Length: 76.1								
Natural Cycle: 70								
Control Type: Actuated-Uncoordinated								
Maximum v/c Ratio: 0.81								
Intersection Signal Delay: 22.1								
Intersection Capacity Utilization 64.1%								
Analysis Period (min) 15								



HCM 6th Signalized Intersection Summary

5: Louisiana Blvd. & Alameda Blvd.

Terry O. Brown, PE

11/24/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	←	←	←	←	←	←	←	←	←	←	←	←
Traffic Volume (veh/h)	149	942	195	43	418	27	112	109	56	45	111	55
Future Volume (veh/h)	149	942	195	43	418	27	112	109	56	45	111	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	154	971	201	44	431	28	115	112	58	46	114	57
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	565	1218	252	314	1392	90	329	244	119	323	219	103
Arrive On Green	0.08	0.42	0.42	0.08	0.41	0.41	0.09	0.11	0.11	0.08	0.09	0.09
Sat Flow, veh/h	1767	2909	601	1767	3361	218	1767	2295	1121	1767	2323	1098
Grip Volume(v), veh/h	154	588	584	44	225	234	115	84	86	46	85	86
Grip Sat Flow(s), veh/h/ln	1767	1763	1747	1767	1763	1816	1767	1763	1654	1767	1763	1658
Q Serve(g, s), s	3.0	18.4	18.4	0.8	5.4	5.5	3.6	2.8	3.1	1.4	2.9	3.1
Cycle Q Clear(g, c), s	3.0	18.4	18.4	0.8	5.4	5.5	3.6	2.8	3.1	1.4	2.9	3.1
Prop In Lane	1.00	0.34	1.00	1.00	0.12	1.00	0.68	1.00	0.68	1.00	0.66	1.00
Lane Grip Cap(c), veh/h	565	738	732	314	730	752	329	187	176	323	166	156
V/C Ratio(X)	0.27	0.80	0.80	0.14	0.31	0.31	0.35	0.45	0.49	0.14	0.51	0.55
Avail Cap(c, a), veh/h	837	893	886	594	893	920	588	642	602	603	642	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(i)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (di), s/veh	9.0	16.0	16.0	11.2	12.4	12.4	22.5	26.5	26.6	22.2	27.2	27.3
Incr Delay (d2), s/veh	0.3	4.2	4.3	0.2	0.2	0.2	0.6	1.7	2.1	0.2	2.4	3.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.0	7.3	7.3	0.3	2.0	2.0	1.5	1.2	1.3	0.6	1.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.3	20.2	20.4	11.4	12.7	12.7	23.1	28.2	28.7	22.4	29.6	30.3
LnGrp LOS	A	C	C	B	B	B	C	C	C	C	C	C
Approach Vol, veh/h	1326				503			285			217	
Approach Delay, s/veh	19.0				12.6			26.3			28.4	
Approach LOS	B				B			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	11.7	10.0	31.4	10.8	11.0	10.3	31.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	15.0	23.0	15.0	32.0	15.0	23.0	15.0	32.0				
Max Q Clear Time (g, c+11), s	3.4	5.1	2.8	20.4	5.6	5.1	5.0	7.5				
Green Ext Time (p, c), s	0.1	0.8	0.0	6.0	0.2	0.8	0.3	2.8				
Intersection Summary												
HCM 6th Ctrl Delay	19.4											
HCM 6th LOS	B											

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	↕
Traffic Vol, veh/h	25	1	44	8	2	16	35	307	9	60	462	23
Future Vol, veh/h	25	1	44	8	2	16	35	307	9	60	462	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	240
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	27	1	47	9	2	17	38	330	10	65	497	25

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1048	1043	497	1075	1063	335	522	0	0	340	0	0
Stage 1	627	627	-	411	411	-	-	-	-	-	-	-
Stage 2	421	416	-	664	652	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	205	228	571	196	222	705	1039	-	-	1214	-	-
Stage 1	470	475	-	616	593	-	-	-	-	-	-	-
Stage 2	608	590	-	448	463	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	180	201	571	163	196	705	1039	-	-	1214	-	-
Mov Cap-2 Maneuver	180	201	-	163	196	-	-	-	-	-	-	-
Stage 1	449	439	-	588	566	-	-	-	-	-	-	-
Stage 2	564	563	-	379	428	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	19.9		17.5		0.9		0.9	
HCM LOS	C		C					

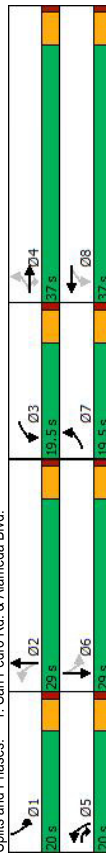
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1039	-	-	317 317	1214	-	-
HCM Lane V/C Ratio	0.036	-	-	0.237 0.088	0.053	-	-
HCM Control Delay (s)	8.6	0	-	19.9 17.5	8.1	0	-
HCM Lane LOS	A	A	-	C C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.9 0.3	0.2	-	-

Timings
1: San Pedro Rd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	←	←	←	←	←	←	←	←	←
Traffic Volume (vph)	110	1060	500	84	677	264	60	31	86
Future Volume (vph)	110	1060	500	84	677	264	60	31	86
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4	4	4	8	8	2	6	6	6
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase	5.0	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	10.0	21.0	10.0	10.0	10.0	21.0
Minimum Split (s)	19.5	37.0	20.0	19.5	37.0	20.0	29.0	20.0	29.0
Total Split (%)	18.5%	35.1%	19.0%	18.5%	35.1%	19.0%	27.5%	19.0%	27.5%
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	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min	Min	Min
Recall Mode	40.7	32.4	51.6	39.2	31.6	27.7	16.1	15.1	8.5
Act Effct Green (s)	0.49	0.39	0.62	0.47	0.38	0.33	0.19	0.18	0.10
Actuated g/C Ratio	0.32	0.82	0.45	0.36	0.55	0.72	0.22	0.13	0.63
Control Delay	12.7	29.8	2.1	14.6	22.8	33.8	14.3	20.8	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	29.8	2.1	14.6	22.8	33.8	14.3	20.8	16.1
LOS	B	C	A	B	C	C	B	C	B
Approach Delay	20.4				21.9		27.1		16.5
Approach LOS	C				C		C		B
Intersection Summary									
Cycle Length: 105.5									
Actuated Cycle Length: 82.7									
Natural Cycle: 70									
Control Type: Actuated-Uncoordinated									
Maximum v/c Ratio: 0.82									
Intersection Signal Delay: 21.2									
Intersection Capacity Utilization 75.3%									
Analysis Period (min) 15									

Splits and Phases: 1: San Pedro Rd. & Alameda Blvd.



HCM 6th Signalized Intersection Summary
1: San Pedro Rd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

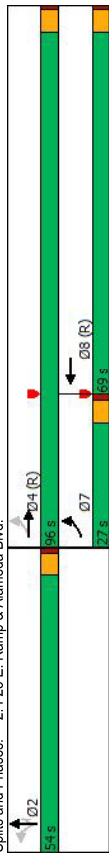
Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	←	←	←	←	←	←	←	←	←	←
Traffic Volume (veh/h)	110	1060	500	84	677	15	264	60	80	31
Future Volume (veh/h)	110	1060	500	84	677	15	264	60	80	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	117	1128	532	89	720	16	281	64	85	33
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3
Cap. veh/h	340	1284	804	209	1258	28	385	496	443	428
Arrive On Green	0.07	0.36	0.36	0.06	0.36	0.15	0.28	0.28	0.06	0.19
Sat Flow, veh/h	1767	3526	1572	1767	3526	78	1767	1572	1767	1763
Grip Volume(v), veh/h	117	1128	532	89	360	376	281	64	85	33
Grip Sat Flow(s), veh/h/ln	1767	1763	1572	1767	1763	1841	1767	1763	1763	1572
Q Serve(g, s), s	3.5	25.3	21.2	2.6	14.0	14.0	10.2	2.3	3.5	1.2
Cycle Q Clear(g, c), s	3.5	25.3	21.2	2.6	14.0	14.0	10.2	2.3	3.5	1.2
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grip Cap(c), veh/h	340	1284	804	209	629	657	385	496	443	428
V/C Ratio(X)	0.34	0.88	0.66	0.43	0.57	0.57	0.73	0.13	0.19	0.08
Avail Cap(c, a), veh/h	525	1332	825	407	666	696	439	499	446	436
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.5	25.2	15.3	20.0	22.0	22.1	22.7	23.1	24.1	29.0
Incr Delay (d2), s/veh	0.6	6.8	1.9	1.4	1.1	1.0	5.2	0.1	0.2	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.4	11.2	7.3	1.1	5.7	6.0	4.6	0.9	1.3	0.5
Unsig. Movement Delay, s/veh										
LnGrp Delay(d), s/veh	17.1	32.0	17.2	21.4	23.1	23.0	27.4	22.8	23.3	24.2
LnGrp LOS	B	C	B	C	C	C	C	C	C	C
Approach Vol, veh/h	1777				825			430		376
Approach Delay, s/veh	26.6				22.9			25.9		36.7
Approach LOS	C				C			C		D
Timer - Assigned Phs	1	2	3	4	5	6	7	8		
Phs Duration (G+Y+Rc), s	10.0	28.8	10.0	35.9	17.4	21.4	10.6	35.2		
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		
Max Green Setting (Gmax), s	15.0	24.0	14.5	32.0	15.0	24.0	14.5	32.0		
Max Q Clear Time (g, c+11), s	3.2	5.5	4.6	27.3	12.2	15.0	5.5	16.0		
Green Ext Time (p, c), s	0.0	0.7	0.1	3.5	0.2	1.4	0.2	4.2		
Intersection Summary										
HCM 6th Ctrl Delay										
HCM 6th LOS										

2029 PM Peak BUILD Conditions
Synchro 10 Report
2029PBX.syn

Timings
2: I-25 E. Ramp & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

	EBL	EBT	WBT	NBL	NBT	NBR	
Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	
Lane Configurations	423	1340	762	689	83	448	
Traffic Volume (vph)	423	1340	762	689	83	448	
Future Volume (vph)	423	1340	762	689	83	448	
Turn Type	pm+pt	NA	NA	Perm	NA	Perm	
Protected Phases	7	4	8	2	2	2	
Permitted Phases	4	4	8	2	2	2	
Detector Phase	7	4	8	2	2	2	
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Initial (s)	10.0	21.0	21.0	21.0	21.0	21.0	
Minimum Split (s)	27.0	96.0	69.0	54.0	54.0	54.0	
Total Split (%)	18.0%	64.0%	46.0%	36.0%	36.0%	36.0%	
Yellow Time (s)	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	
Lost Time Adjust (s)	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	
Lead/Lag	Lead	Lag					
Lead-Lag Optimize?	Min	C-Max	C-Min	Min	Min	Min	
Recall Mode	92.7	92.7	64.0	47.3	47.3	47.3	
Act Effct Green (s)	0.62	0.62	0.43	0.32	0.32	0.32	
Actuated g/C Ratio	1.16	0.67	0.55	0.74	0.46	0.92	
v/c Ratio	122.3	13.2	30.8	55.8	42.4	67.8	
Control Delay	0.0	0.7	0.0	0.0	0.0	0.0	
Queue Delay	122.3	13.8	30.8	55.8	42.4	67.8	
LOS	F	B	C	E	D	E	
Approach Delay	39.9	30.8			55.5		
Approach LOS	D	C			E		
Intersection Summary							
Cycle Length: 150							
Actuated Cycle Length: 150							
Offset: 22.5 (15%), Referenced to phase 4:EBTL and 8:WBT, Start of Green							
Natural Cycle: 60							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 1.16							
Intersection Signal Delay: 42.2							
Intersection Capacity Utilization 102.1%							
Analysis Period (min) 15							
Splits and Phases: 2: I-25 E. Ramp & Alameda Blvd.							



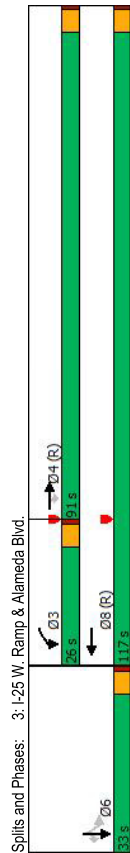
HCM 6th Signalized Intersection Summary
2: I-25 E. Ramp & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	423	1340	0	0	762	303	689	83	448	0	0	0
Traffic Volume (veh/h)	423	1340	0	0	762	303	689	83	448	0	0	0
Future Volume (veh/h)	423	1340	0	0	762	303	689	83	448	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	0	0	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	460	1457	0	0	828	329	749	90	487	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3	3	3	3
Cap, veh/h	431	2152	0	0	1536	607	1141	599	508	0	0	0
Arrive On Green	0.29	1.00	0.00	0.00	0.43	0.43	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1767	3618	0	0	3736	1410	3534	1856	1572	0	0	0
Gp Volume(v), veh/h	460	1457	0	0	783	374	749	90	487	0	0	0
Gp Sat Flow(s), veh/h/ln	1767	1763	0	0	1689	1602	1767	1856	1572	0	0	0
Q Serve(g, s), s	22.0	0.0	0.0	0.0	25.8	26.0	27.3	5.2	45.6	0	0	0
Cycle Q Clear(g, c), s	22.0	0.0	0.0	0.0	25.8	26.0	27.3	5.2	45.6	0	0	0
Prop In Lane	1.00	0.00	0.00	0.00	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Gp Cap(c), veh/h	431	2152	0	0	1454	689	1141	599	508	0	0	0
V/C Ratio(X)	1.07	0.68	0.00	0.00	0.54	0.54	0.66	0.15	0.96	0	0	0
Avail Cap(c, a), veh/h	431	2152	0	0	1454	689	1155	606	514	0	0	0
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.36	0.36	0.00	0.00	0.77	0.77	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.3	0.0	0.0	0.0	31.7	31.7	43.6	36.1	49.8	0	0	0
Incr Delay (d2), s/veh	45.9	0.6	0.0	0.0	1.1	2.4	1.3	0.1	29.4	0	0	0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	12.5	0.2	0.0	0.0	10.9	10.6	12.2	2.4	22.0	0	0	0
Unsig. Movement Delay, s/veh	69.2	0.6	0.0	0.0	32.8	34.1	45.0	36.3	79.2	0	0	0
LnGrp Delay(d), s/veh	1917	17.1	1157	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2
LnGrp LOS	F	A	A	A	C	C	D	D	E	E	E	E
Approach Vol, veh/h	1917	17.1	1157	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2
Approach Delay, s/veh	17.1	1157	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2
Approach LOS	B	B	C	C	C	C	D	D	E	E	E	E
Timer - Assigned Phs	2	4	4	4	4	4	4	4	4	4	4	4
Phs Duration (G+Y+Rc), s	53.4	96.6	96.6	96.6	96.6	96.6	96.6	96.6	96.6	96.6	96.6	96.6
Change Period (Y+Rc), 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
Max Green Setting (Gmax), s	49.0	91.0	91.0	91.0	91.0	91.0	91.0	91.0	91.0	91.0	91.0	91.0
Max Q Clear Time (g, c+H1), s	47.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Green Ext Time (p, c), s	0.9	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0
Intersection Summary												
HCM 6th Ctrl Delay	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3
HCM 6th LOS	C	C	C	C	C	C	C	C	C	C	C	C
Notes												
User approved volume balancing among the lanes for turning movement.												

2029 PM Peak BUILD Conditions
Synchro 10 Report
2029PBX.syn

	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	1228	950	324	1064	548	590	153
Future Volume (vph)	1228	950	324	1064	548	590	153
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	4	3	8	6	6	6	6
Permitted Phases	4	4	3	8	6	6	6
Detector Phase	4	4	3	8	6	6	6
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	21.0	10.0	21.0	21.0	21.0	21.0	21.0
Minimum Split (s)	91.0	91.0	26.0	117.0	33.0	33.0	33.0
Total Split (s)	60.7%	60.7%	17.3%	78.0%	22.0%	22.0%	22.0%
Total Split (%)	60.7%	60.7%	17.3%	78.0%	22.0%	22.0%	22.0%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead
Lead-Lag Optimize?							
Recall Mode	C-Max	C-Max	Min	C-Max	Min	Min	Min
Act Effct Green (s)	87.1	19.9	112.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio	0.58	0.58	0.13	0.75	0.19	0.19	0.19
v/c Ratio	0.70	1.19	0.83	0.47	1.46	1.44	0.50
Control Delay	33.1	127.7	64.1	11.1	265.4	248.3	34.2
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Total Delay	33.1	127.7	64.1	11.5	265.4	248.3	34.2
LOS	C	F	E	B	F	F	C
Approach Delay	74.3			23.7		227.9	
Approach LOS	E			C		F	
Intersection Summary							
Cycle Length: 150							
Actuated Cycle Length: 150							
Offset: 0 (0%), Referenced to phase 4:EBT and 6:WBT, Start of Green							
Natural Cycle: 120							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 1.46							
Intersection Signal Delay: 100.7							
Intersection Capacity Utilization 102.1%							
Analysis Period (min) 15							

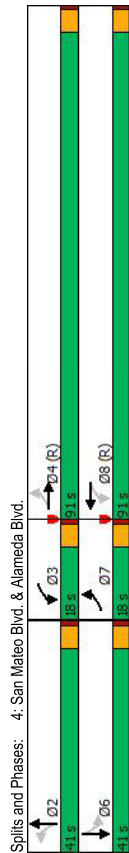


	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Movement	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	0	1228	950	324	1064	548	590
Future Volume (veh/h)	0	1228	950	324	1064	548	590
Initial Q (Qb), veh	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	0	1856	1856	1856	0	1856	1856
Adj Flow Rate, veh/h	0	1428	1105	377	1237	0	1428
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	0	3	3	3	3	3	3
Cap, veh/h	0	2083	929	420	2632	0	330
Arrive On Green	0.00	0.19	0.19	0.25	1.00	0.00	0.19
Sat Flow, veh/h	0	3618	1572	3428	3618	0	1767
Gp Volume(v), veh/h	0	1428	1105	377	1237	0	441
Gp Sat Flow(s), veh/h/ln	0	1763	1572	1714	1763	0	1767
Q Serve(g, s), s	0.0	56.5	88.6	16.0	0.0	0.0	28.0
Cycle Q Clear(g, c), s	0.0	56.5	88.6	16.0	0.0	0.0	28.0
Prop In Lane	0.00	1.00	1.00	1.00	0.00	1.00	1.00
V/C Ratio(X)	0.00	0.69	1.19	0.90	0.47	0.00	1.34
Avail Cap(c, a), veh/h	0	2083	929	480	2632	0	330
HCM Platoon Ratio	1.00	0.33	0.33	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.20	0.20	0.77	0.77	0.00	1.00
Uniform Delay (d), s/veh	0.0	47.4	60.4	55.7	0.0	0.0	61.0
Incr Delay (d2), s/veh	0.0	0.4	87.7	14.5	0.5	0.0	170.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%) veh/ln	0.0	27.0	60.2	7.1	0.2	0.0	28.2
Unsig. Movement Delay, s/veh	0.0	47.8	148.1	70.2	0.5	0.0	231.8
LnGrp Delay(d), s/veh	0.0	47.8	148.1	70.2	0.5	0.0	231.8
LnGrp LOS	A	D	F	E	A	A	F
Approach Vol, veh/h	2533			1614			1579
Approach Delay, s/veh	91.5			16.8			219.5
Approach LOS	F			B			F
Timer - Assigned Phs		3	4	6	8		
Phs Duration (G+Y+Rc), s		23.4	93.6	33.0	117.0		
Change Period (Y+Rc), s		5.0	5.0	5.0	5.0		
Max Green Setting (Gmax), s		21.0	86.0	28.0	112.0		
Max Q Clear Time (g, c+H1), s		18.0	90.6	30.0	2.0		
Green Ext Time (p, c), s		0.4	0.0	0.0	13.9		
Intersection Summary							
HCM 6th Ctrl Delay		105.7					
HCM 6th LOS		F					
Notes							
User approved volume balancing among the lanes for turning movement.							

Timings
4: San Mateo Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	80	1593	47	912	30	12	341	62
Future Volume (vph)	80	1593	47	912	30	12	341	62
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8	2	2	6	6
Permitted Phases	4	4	8	8	2	2	6	6
Detector Phase	7	4	3	8	2	2	6	6
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	21.0	21.0	21.0	21.0
Minimum Split (s)	18.0	91.0	18.0	91.0	41.0	41.0	41.0	41.0
Total Split (%)	12.0%	60.7%	12.0%	60.7%	27.3%	27.3%	27.3%	27.3%
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	C-Max	Min	C-Max	Min	C-Max	Min	C-Max
Recall Mode	98.6	91.9	99.4	92.4	36.0	36.0	36.0	36.0
Act Effct Green (s)	0.66	0.61	0.66	0.62	0.24	0.24	0.24	0.24
Actuated g/C Ratio	0.15	0.81	0.38	0.55	0.87	0.34	1.61	0.87
v/c Ratio	8.6	26.6	24.0	33.7	110.2	10.1	328.2	50.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	26.6	24.0	33.7	110.2	10.1	328.2	50.1
LOS	A	C	C	C	F	B	F	D
Approach Delay	26.2	33.3	33.3	26.2	C	C	F	F
Approach LOS	C	C	C	C	C	C	F	F
Intersection Summary								
Cycle Length: 150								
Actuated Cycle Length: 150								
Offset: 69 (46%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green								
Natural Cycle: 120								
Control Type: Actuated-Coordinated								
Maximum v/c Ratio: 1.61								
Intersection Signal Delay: 58.8								
Intersection Capacity Utilization 86.5%								
Analysis Period (min) 15								



HCM 6th Signalized Intersection Summary
4: San Mateo Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

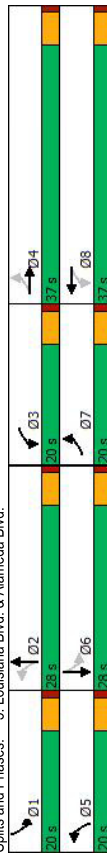
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	80	1593	15	47	912	158	30	12	146	341	62	358
Future Volume (veh/h)	80	1593	15	47	912	158	30	12	146	341	62	358
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	43	1732	16	51	991	172	33	13	159	371	67	389
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	289	2243	21	182	1882	326	48	29	353	226	57	329
Arrive On Green	0.03	0.63	0.63	0.02	0.42	0.42	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1767	3579	33	1767	3004	521	928	120	1471	1203	236	1372
Gp Volume(v), veh/h	43	852	896	51	581	582	33	0	172	371	0	456
Gp Sat Flow(s), veh/h/ln	1767	1763	1850	1767	1763	1762	928	0	1591	1203	0	1609
Q Serve(g, s), s	1.3	52.4	52.6	1.5	36.8	36.9	0.0	0.0	13.8	22.2	0.0	36.0
Cycle Q Clear(g, c), s	1.3	52.4	52.6	1.5	36.8	36.9	0.0	0.0	13.8	22.2	0.0	36.0
Prop In Lane	1.00	0.02	1.00	1.00	0.30	1.00	1.00	1.00	0.92	1.00	0.85	0.85
Lane Gp Cap(c), veh/h	289	1105	1159	182	1105	1104	48	0	382	226	0	386
V/C Ratio(X)	0.15	0.77	0.77	0.28	0.53	0.53	0.89	0.00	0.45	1.64	0.00	1.18
Avail Cap(c, a), veh/h	383	1105	1159	277	1105	1104	48	0	382	226	0	386
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.88	0.88	0.88	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.9	20.2	20.3	20.5	26.9	26.9	75.0	0.0	48.6	66.3	0.0	57.0
Incr Delay (d2), s/veh	0.2	5.2	5.0	0.7	1.6	1.6	33.9	0.0	0.8	308.0	0.0	105.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.5	22.5	23.6	0.8	17.1	17.1	1.7	0.0	5.6	28.1	0.0	25.9
Unsig. Movement Delay, s/veh	14.1	25.5	25.3	21.3	28.5	28.5	108.9	0.0	49.4	374.3	0.0	162.1
LnGrp Delay(d), s/veh	14.1	25.5	25.3	21.3	28.5	28.5	108.9	0.0	49.4	374.3	0.0	162.1
LnGrp LOS	B	C	C	C	C	C	F	A	D	F	A	F
Approach Vol, veh/h	1791	1791	1791	1791	1791	1791	1791	1791	1791	1791	1791	1791
Approach Delay, s/veh	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1
Approach LOS	C	C	C	C	C	C	F	E	F	F	F	F
Timer - Assigned Phs	2	3	4	6	7	8	8	8	8	8	8	8
Phs Duration (G+Y+Rc), s	41.0	10.0	99.0	41.0	10.0	99.0	41.0	10.0	99.0	41.0	10.0	99.0
Change Period (Y+Rc), 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
Max Green Setting (Gmax), s	38.0	13.0	86.0	38.0	13.0	86.0	38.0	13.0	86.0	38.0	13.0	86.0
Max Q Clear Time (g, c+H1), s	38.0	3.5	54.6	38.0	3.5	54.6	38.0	3.5	54.6	38.0	3.5	54.6
Green Ext Time (p, c), s	0.0	0.1	17.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Intersection Summary												
HCM 6th Ctrl Delay	75.3											
HCM 6th LOS	E											

Timings
5: Louisiana Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	151	961	54	438	112	110	45	113
Future Volume (vph)	151	961	54	438	112	110	45	113
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4	8	8	8	2	5	2	1
Detector Phase	7	4	3	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)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0
Minimum Split (s)	20.0	37.0	20.0	37.0	20.0	28.0	20.0	28.0
Total Split (%)	19.0%	35.2%	19.0%	35.2%	19.0%	26.7%	19.0%	26.7%
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	41.0	32.1	36.4	29.8	20.2	10.7	15.0	8.1
Act Effct Green (s)	0.54	0.42	0.48	0.39	0.26	0.14	0.20	0.11
Actuated g/C Ratio	0.30	0.83	0.23	0.35	0.34	0.34	0.16	0.43
Control Delay	10.2	26.7	11.2	18.4	22.9	21.1	21.0	25.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	26.7	11.2	18.4	22.9	21.1	21.0	25.0
LOS	B	C	B	B	C	C	C	C
Approach Delay	24.8	17.6	17.6	17.6	21.8	21.8	24.2	24.2
Approach LOS	C	B	B	B	C	C	C	C
Intersection Summary								
Cycle Length: 105								
Actuated Cycle Length: 76.4								
Natural Cycle: 70								
Control Type: Actuated-Uncoordinated								
Maximum v/c Ratio: 0.83								
Intersection Signal Delay: 22.8								
Intersection Capacity Utilization 65.1%								
Analysis Period (min) 15								

Splits and Phases: 5: Louisiana Blvd. & Alameda Blvd.



HCM 6th Signalized Intersection Summary
5: Louisiana Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	151	961	205	54	438	27	112	110	59	45	113	58
Future Volume (veh/h)	151	961	205	54	438	27	112	110	59	45	113	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pbT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	156	991	211	56	452	28	115	113	61	46	116	60
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	558	1226	260	307	1410	87	326	244	124	320	219	107
Arrive On Green	0.08	0.42	0.42	0.08	0.42	0.42	0.09	0.11	0.11	0.08	0.10	0.10
Sat Flow, veh/h	1767	2893	615	1767	3372	208	1767	2262	1149	1767	2286	1121
Gp Volume(v), veh/h	156	603	599	56	236	244	115	87	87	46	87	89
Gp Sat Flow(s), veh/h/ln	1767	1763	1745	1767	1763	1818	1767	1763	1649	1767	1763	1654
Q Serve(g, s), s	3.1	19.2	19.3	1.1	5.8	5.8	3.6	2.9	3.2	1.4	3.0	3.3
Cycle Q Clear(g, c), s	3.1	19.2	19.3	1.1	5.8	5.8	3.6	2.9	3.2	1.4	3.0	3.3
Prop In Lane	1.00	0.35	1.00	1.00	0.11	1.00	0.70	1.00	1.00	0.70	1.00	0.68
Lane Gp Cap(c), veh/h	558	747	739	307	737	760	326	190	178	320	168	158
V/C Ratio(X)	0.28	0.81	0.81	0.18	0.32	0.32	0.35	0.45	0.49	0.14	0.52	0.56
Avail Cap(c, a), veh/h	824	880	871	583	880	908	579	633	592	596	633	594
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.0	16.2	16.2	11.6	12.5	12.5	22.8	26.8	26.9	22.5	27.6	27.7
Incr Delay (d2), s/veh	0.3	4.8	5.0	0.3	0.2	0.2	0.7	1.7	2.1	0.2	2.5	3.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.1	7.8	7.8	0.4	2.1	2.2	1.5	1.3	1.3	0.6	1.3	1.4
Unsig. Movement Delay, s/veh	9.3	21.0	21.2	11.9	12.8	12.8	23.4	28.5	29.0	22.7	30.0	30.8
LnGrp Delay(d), s/veh	A	C	C	B	B	B	C	C	C	C	C	C
LnGrp LOS	A	C	C	B	B	B	C	C	C	C	C	C
Approach Vol, veh/h	1358	198	198	536	12.7	289	26.6	288	222	288	222	222
Approach Delay, s/veh	19.8	19.8	19.8	12.7	12.7	12.7	26.6	26.6	26.6	26.6	26.6	26.6
Approach LOS	B	B	B	B	B	B	C	C	C	C	C	C
Timer - Assigned Phs	1	2	3	4	5	6	7	8	8	8	8	8
Phs Duration (G+Y+Rc), s	10.0	11.9	10.0	32.1	10.8	11.1	10.4	31.8	31.8	31.8	31.8	31.8
Change Period (Y+Rc), 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
Max Green Setting (Gmax), s	15.0	23.0	15.0	32.0	15.0	23.0	15.0	32.0	32.0	32.0	32.0	32.0
Max Q Clear Time (g, c+11), s	3.4	5.2	3.1	21.3	5.6	5.3	5.1	7.8	7.8	7.8	7.8	7.8
Green Ext Time (p, c), s	0.1	0.8	0.1	5.8	0.2	0.8	0.3	2.9	2.9	2.9	2.9	2.9
Intersection Summary												
HCM 6th Ctrl Delay	19.8											
HCM 6th LOS	B											

2029 PM Peak BUILD Conditions
Synchro 10 Report
2029PBX.syn

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	↔
Traffic Vol, veh/h	25	1	44	41	2	18	35	350	12	86	462	23
Future Vol, veh/h	25	1	44	41	2	18	35	350	12	86	462	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	240
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	27	1	47	44	2	19	38	376	13	92	497	25

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1150	1146	497	1177	1165	383	522	0	0	389	0	0
Stage 1	681	681	-	459	459	-	-	-	-	-	-	-
Stage 2	469	465	-	718	706	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	174	198	571	167	193	662	1039	-	-	1164	-	-
Stage 1	439	449	-	580	565	-	-	-	-	-	-	-
Stage 2	573	561	-	419	437	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	148	168	571	134	163	662	1039	-	-	1164	-	-
Mov Cap-2 Maneuver	148	168	-	134	163	-	-	-	-	-	-	-
Stage 1	418	399	-	553	538	-	-	-	-	-	-	-
Stage 2	528	535	-	340	388	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	22.7		36.8		0.8		1.3	
HCM LOS	C		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1039	-	-	278	177	1164	-
HCM Lane V/C Ratio	0.036	-	-	0.271	0.371	0.079	-
HCM Control Delay (s)	8.6	0	-	22.7	36.8	8.4	0
HCM Lane LOS	A	A	-	C	E	A	A
HCM 95th %tile Q(veh)	0.1	-	-	1.1	1.6	0.3	-

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	70	26	34	10	35
Future Vol, veh/h	30	70	26	34	10	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	32	75	28	37	11	38
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	65	0	-	0	186	47
Stage 1	-	-	-	-	47	-
Stage 2	-	-	-	-	139	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1531	-	-	-	801	1019
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	885	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1531	-	-	-	783	1019
Mov Cap-2 Maneuver	-	-	-	-	783	-
Stage 1	-	-	-	-	952	-
Stage 2	-	-	-	-	885	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.2	0		9		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1531	-	-	-	955	
HCM Lane V/C Ratio	0.021	-	-	-	0.051	
HCM Control Delay (s)	7.4	0	-	-	9	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	

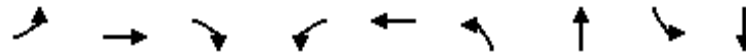
Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	20	370	23	0	571
Future Vol, veh/h	0	20	370	23	0	571
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	22	398	25	0	614
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	411	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.23	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.327	-	-	-	-
Pot Cap-1 Maneuver	0	639	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	639	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10.8	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBT		
Capacity (veh/h)	-	639		-		
HCM Lane V/C Ratio	-	0.034		-		
HCM Control Delay (s)	-	10.8		-		
HCM Lane LOS	-	B		-		
HCM 95th %tile Q(veh)	-	0.1		-		

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↗
Traffic Vol, veh/h	1147	24	0	776	0	15
Future Vol, veh/h	1147	24	0	776	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1220	26	0	826	0	16
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	623
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.93
Pot Cap-1 Maneuver	-	-	0	-	0	366
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	366
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		15.3	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1		EBT	EBR	WBT	
Capacity (veh/h)	366		-	-	-	
HCM Lane V/C Ratio	0.044		-	-	-	
HCM Control Delay (s)	15.3		-	-	-	
HCM Lane LOS	C		-	-	-	
HCM 95th %tile Q(veh)	0.1		-	-	-	

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑		↗
Traffic Vol, veh/h	1138	24	0	776	0	15
Future Vol, veh/h	1138	24	0	776	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1211	26	0	826	0	16
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	619
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.16
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.93
Pot Cap-1 Maneuver	-	-	0	-	0	368
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	368
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		15.2	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	368	-	-	-		
HCM Lane V/C Ratio	0.043	-	-	-		
HCM Control Delay (s)	15.2	-	-	-		
HCM Lane LOS	C	-	-	-		
HCM 95th %tile Q(veh)	0.1	-	-	-		

Queues
1: San Pedro Rd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018



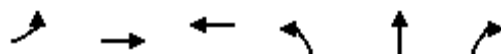
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	76	457	312	50	1051	333	97	118	192
v/c Ratio	0.29	0.32	0.28	0.10	0.77	0.82	0.19	0.38	0.48
Control Delay	11.9	17.5	1.5	9.7	26.6	41.9	23.6	24.6	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.9	17.5	1.5	9.7	26.6	41.9	23.6	24.6	13.9
Queue Length 50th (ft)	17	80	0	11	237	140	15	43	8
Queue Length 95th (ft)	39	126	27	28	347	#263	39	85	40
Internal Link Dist (ft)		716			2560		449		221
Turn Bay Length (ft)	160			160		90		100	
Base Capacity (vph)	398	1441	1135	636	1381	413	1010	431	1021
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.32	0.27	0.08	0.76	0.81	0.10	0.27	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
2: I-25 E. Ramp & Alameda Blvd.

Terry O. Brown, PE
11/24/2018



Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	218	692	1475	504	583	226
v/c Ratio	0.83	0.33	0.65	0.98	0.94dl	0.34
Control Delay	55.8	16.6	28.7	78.5	38.9	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.8	16.6	28.7	78.5	38.9	5.4
Queue Length 50th (ft)	129	144	346	461	223	0
Queue Length 95th (ft)	#272	256	400	#712	286	57
Internal Link Dist (ft)		508	716		331	
Turn Bay Length (ft)	180			185		185
Base Capacity (vph)	280	2103	2274	515	1039	659
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.33	0.65	0.98	0.56	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

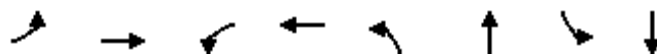
Queues
3: I-25 W. Ramp & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

	→	↘	↙	←	↘	↓	↙
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	696	543	539	1701	112	231	158
v/c Ratio	0.35	0.54	0.82	0.61	0.58	0.58	0.65
Control Delay	13.6	8.7	68.6	3.5	65.0	59.2	46.0
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	13.6	8.7	68.6	3.7	65.0	59.2	46.0
Queue Length 50th (ft)	134	102	225	106	100	102	80
Queue Length 95th (ft)	167	147	m246	m135	160	140	147
Internal Link Dist (ft)	1258			508		286	
Turn Bay Length (ft)		200	215		165		165
Base Capacity (vph)	1997	998	702	2809	306	631	349
Starvation Cap Reductn	0	0	0	275	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.54	0.77	0.67	0.37	0.37	0.45
Intersection Summary							
m Volume for 95th percentile queue is metered by upstream signal.							

Queues
4: San Mateo Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018



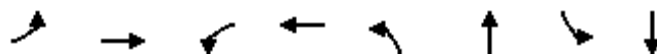
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	137	1115	81	1572	16	154	80	70
v/c Ratio	0.54	0.45	0.21	0.67	0.10	0.66	0.83	0.28
Control Delay	12.9	9.5	5.5	12.2	48.7	57.4	108.7	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	9.5	5.5	12.2	48.7	57.4	108.7	16.5
Queue Length 50th (ft)	21	188	14	129	12	104	67	6
Queue Length 95th (ft)	58	295	m27	176	33	168	120	48
Internal Link Dist (ft)		440		1258		442		400
Turn Bay Length (ft)	255		170		75		140	
Base Capacity (vph)	292	2476	434	2358	252	353	151	357
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.45	0.19	0.67	0.06	0.44	0.53	0.20

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
5: Louisiana Blvd. & Alameda Blvd.

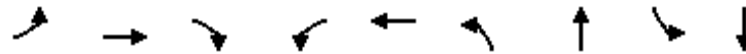
Terry O. Brown, PE
11/24/2018



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	40	450	68	624	268	143	47	279
v/c Ratio	0.13	0.49	0.17	0.66	0.56	0.18	0.14	0.52
Control Delay	12.5	21.7	12.8	26.0	20.2	16.6	15.8	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.5	21.7	12.8	26.0	20.2	16.6	15.8	19.8
Queue Length 50th (ft)	9	77	16	122	74	16	11	31
Queue Length 95th (ft)	27	130	40	191	157	44	36	73
Internal Link Dist (ft)		2560		324		478		434
Turn Bay Length (ft)	190		200		200		200	
Base Capacity (vph)	512	1653	564	1683	515	1187	553	1215
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.27	0.12	0.37	0.52	0.12	0.08	0.23
Intersection Summary								

Queues
1: San Pedro Rd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018



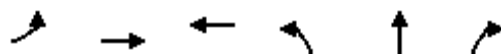
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	76	468	313	60	1051	345	105	118	192
v/c Ratio	0.29	0.33	0.28	0.13	0.77	0.84	0.20	0.38	0.48
Control Delay	12.0	17.7	1.5	9.8	26.6	44.5	22.2	24.6	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.0	17.7	1.5	9.8	26.6	44.5	22.2	24.6	13.9
Queue Length 50th (ft)	17	83	0	13	237	146	15	43	8
Queue Length 95th (ft)	39	130	28	32	347	#279	40	85	40
Internal Link Dist (ft)		716			171		120		221
Turn Bay Length (ft)	160			160		90		100	
Base Capacity (vph)	398	1430	1132	627	1379	413	1006	429	1020
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.33	0.28	0.10	0.76	0.84	0.10	0.28	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
2: I-25 E. Ramp & Alameda Blvd.

Terry O. Brown, PE
11/24/2018



Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	218	699	1487	504	583	231
v/c Ratio	0.83	0.33	0.65	0.98	0.94dl	0.35
Control Delay	56.4	16.7	28.8	78.5	38.9	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.4	16.7	28.8	78.5	38.9	5.4
Queue Length 50th (ft)	130	146	351	461	223	0
Queue Length 95th (ft)	#222	261	405	#712	286	58
Internal Link Dist (ft)		508	716		331	
Turn Bay Length (ft)	180			185		185
Base Capacity (vph)	279	2103	2272	515	1039	662
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.33	0.65	0.98	0.56	0.35

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

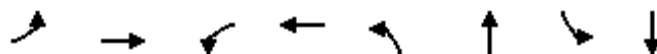
Queues
3: I-25 W. Ramp & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

	→	↘	↙	←	↘	↓	↙
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	702	543	544	1707	112	231	158
v/c Ratio	0.35	0.55	0.82	0.61	0.58	0.58	0.65
Control Delay	13.7	8.7	68.5	3.5	65.0	59.2	46.0
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	13.7	8.7	68.5	3.7	65.0	59.2	46.0
Queue Length 50th (ft)	135	103	227	106	100	102	80
Queue Length 95th (ft)	168	146	m249	m135	160	140	147
Internal Link Dist (ft)	1258			508		286	
Turn Bay Length (ft)		200	215		165		165
Base Capacity (vph)	1992	995	704	2809	306	631	349
Starvation Cap Reductn	0	0	0	276	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.55	0.77	0.67	0.37	0.37	0.45
Intersection Summary							
m Volume for 95th percentile queue is metered by upstream signal.							

Queues
4: San Mateo Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018



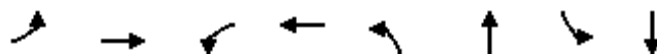
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	137	1121	82	1577	16	155	80	70
v/c Ratio	0.54	0.45	0.22	0.67	0.10	0.66	0.84	0.28
Control Delay	13.3	9.6	5.6	12.2	48.6	57.5	110.3	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.3	9.6	5.6	12.2	48.6	57.5	110.3	16.5
Queue Length 50th (ft)	21	190	14	128	12	105	67	6
Queue Length 95th (ft)	60	298	m27	176	33	169	120	48
Internal Link Dist (ft)		440		1258		442		400
Turn Bay Length (ft)	255		170		75		140	
Base Capacity (vph)	291	2474	431	2356	252	352	149	357
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.45	0.19	0.67	0.06	0.44	0.54	0.20

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
5: Louisiana Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	41	465	72	632	268	146	47	281
v/c Ratio	0.13	0.50	0.19	0.66	0.56	0.18	0.14	0.52
Control Delay	12.6	21.9	12.9	26.1	20.4	16.6	16.0	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.6	21.9	12.9	26.1	20.4	16.6	16.0	19.8
Queue Length 50th (ft)	10	81	17	124	75	16	11	31
Queue Length 95th (ft)	27	134	42	195	159	45	36	74
Internal Link Dist (ft)		1729		324		478		434
Turn Bay Length (ft)	190		200		200		200	
Base Capacity (vph)	509	1644	558	1675	513	1181	551	1211
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.28	0.13	0.38	0.52	0.12	0.09	0.23
Intersection Summary								

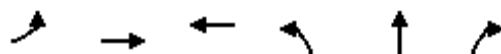
Queues
1: San Pedro Rd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	100	941	453	48	542	245	121	20	216
v/c Ratio	0.24	0.74	0.40	0.18	0.45	0.58	0.18	0.08	0.49
Control Delay	11.1	25.0	1.9	11.4	20.6	25.8	15.6	19.5	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	25.0	1.9	11.4	20.6	25.8	15.6	19.5	15.2
Queue Length 50th (ft)	23	199	0	11	102	89	12	6	13
Queue Length 95th (ft)	49	291	34	28	160	160	36	21	47
Internal Link Dist (ft)		716			2560		449		221
Turn Bay Length (ft)	160			160		90		100	
Base Capacity (vph)	559	1520	1162	444	1516	450	1094	474	1122
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.62	0.39	0.11	0.36	0.54	0.11	0.04	0.19
Intersection Summary									

Queues
2: I-25 E. Ramp & Alameda Blvd.

Terry O. Brown, PE
11/24/2018



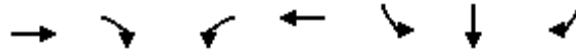
Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	364	1137	948	356	443	450
v/c Ratio	0.84	0.51	0.40	0.77	0.47	0.87
Control Delay	40.1	11.5	24.6	59.5	44.7	56.6
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0
Total Delay	40.1	11.7	24.6	59.5	44.7	56.6
Queue Length 50th (ft)	163	212	213	336	189	331
Queue Length 95th (ft)	m217	m217	257	464	241	474
Internal Link Dist (ft)		508	716		331	
Turn Bay Length (ft)	180			185		185
Base Capacity (vph)	457	2251	2349	521	1053	573
Starvation Cap Reductn	0	363	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.60	0.40	0.68	0.42	0.79

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues
3: I-25 W. Ramp & Alameda Blvd.

Terry O. Brown, PE
11/24/2018



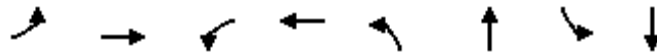
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1113	873	343	1150	352	740	148
v/c Ratio	0.54	0.93	0.79	0.44	1.19	1.20	0.41
Control Delay	30.4	54.4	61.7	11.8	163.1	153.8	28.0
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Total Delay	30.4	54.4	61.7	12.1	163.1	153.8	28.0
Queue Length 50th (ft)	462	858	173	335	~452	~479	55
Queue Length 95th (ft)	m481	m#952	210	351	#632	#574	117
Internal Link Dist (ft)	1258			508		286	
Turn Bay Length (ft)		200	215		165		165
Base Capacity (vph)	2052	939	476	2617	297	619	359
Starvation Cap Reductn	0	0	0	818	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.93	0.72	0.64	1.19	1.20	0.41

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues
4: San Mateo Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	35	1389	47	1097	22	114	311	384
v/c Ratio	0.12	0.64	0.22	0.52	0.33	0.25	1.11	0.73
Control Delay	8.2	20.3	18.9	37.2	63.2	10.9	139.1	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.2	20.3	18.9	37.2	63.2	10.9	139.1	36.4
Queue Length 50th (ft)	10	435	25	509	18	7	~347	190
Queue Length 95th (ft)	22	518	49	577	50	59	#544	320
Internal Link Dist (ft)		440		1258		442		400
Turn Bay Length (ft)	255		170		75		140	
Base Capacity (vph)	374	2154	287	2124	66	461	279	523
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.64	0.16	0.52	0.33	0.25	1.11	0.73

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
5: Louisiana Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	115	884	42	440	110	162	38	140
v/c Ratio	0.23	0.71	0.14	0.38	0.30	0.30	0.12	0.34
Control Delay	9.8	21.9	9.8	18.4	20.5	20.3	19.2	23.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.8	21.9	9.8	18.4	20.5	20.3	19.2	23.8
Queue Length 50th (ft)	22	155	8	70	33	21	11	18
Queue Length 95th (ft)	52	250	24	123	77	52	34	50
Internal Link Dist (ft)		2560		324		478		434
Turn Bay Length (ft)	190		200		200		200	
Base Capacity (vph)	634	1646	509	1665	481	1180	498	1177
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.54	0.08	0.26	0.23	0.14	0.08	0.12
Intersection Summary								

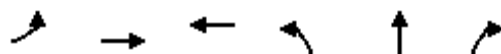
Queues
1: San Pedro Rd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	100	970	456	72	542	268	143	21	216
v/c Ratio	0.23	0.75	0.40	0.28	0.43	0.63	0.21	0.08	0.49
Control Delay	11.0	25.7	1.9	12.5	20.2	28.1	14.1	20.1	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	25.7	1.9	12.5	20.2	28.1	14.1	20.1	15.5
Queue Length 50th (ft)	23	210	0	16	102	104	13	7	14
Queue Length 95th (ft)	49	308	34	38	160	178	38	23	47
Internal Link Dist (ft)		716			171		120		221
Turn Bay Length (ft)	160			160		90		100	
Base Capacity (vph)	565	1476	1159	428	1472	442	1067	460	1094
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.66	0.39	0.17	0.37	0.61	0.13	0.05	0.20
Intersection Summary									

Queues
2: I-25 E. Ramp & Alameda Blvd.

Terry O. Brown, PE
11/24/2018



Lane Group	EBL	EBT	WBT	NBL	NBT	NBR
Lane Group Flow (vph)	364	1155	971	356	443	464
v/c Ratio	0.86	0.52	0.42	0.75	0.46	0.88
Control Delay	44.1	11.8	25.6	57.5	43.8	58.4
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0
Total Delay	44.1	12.0	25.6	57.5	43.8	58.4
Queue Length 50th (ft)	172	212	224	331	186	348
Queue Length 95th (ft)	m227	m217	266	464	241	#507
Internal Link Dist (ft)		508	716		331	
Turn Bay Length (ft)	180			185		185
Base Capacity (vph)	445	2225	2309	521	1053	570
Starvation Cap Reductn	0	354	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.62	0.42	0.68	0.42	0.81

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

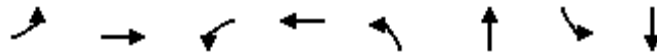
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues
3: I-25 W. Ramp & Alameda Blvd.

Terry O. Brown, PE
11/24/2018

	→	↘	↙	←	↘	↓	↙
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1133	873	355	1164	352	740	148
v/c Ratio	0.55	0.93	0.80	0.44	1.19	1.20	0.41
Control Delay	30.8	54.9	63.0	11.6	163.1	153.8	28.0
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Total Delay	30.8	54.9	63.0	12.0	163.1	153.8	28.0
Queue Length 50th (ft)	476	862	180	332	~452	~479	55
Queue Length 95th (ft)	m491	m#948	218	350	#632	#574	117
Internal Link Dist (ft)	1258			508		286	
Turn Bay Length (ft)		200	215		165		165
Base Capacity (vph)	2045	936	476	2617	297	619	359
Starvation Cap Reductn	0	0	0	796	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.93	0.75	0.64	1.19	1.20	0.41
Intersection Summary							
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.							
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.							
m Volume for 95th percentile queue is metered by upstream signal.							



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	35	1403	49	1109	22	117	312	384
v/c Ratio	0.12	0.65	0.23	0.52	0.33	0.25	1.13	0.73
Control Delay	8.2	20.5	18.8	36.8	63.2	10.8	142.9	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.2	20.5	18.8	36.8	63.2	10.8	142.9	36.4
Queue Length 50th (ft)	10	443	26	516	18	7	~352	190
Queue Length 95th (ft)	22	529	0	583	50	60	#549	320
Internal Link Dist (ft)		440		1258		442		400
Turn Bay Length (ft)	255		170		75		140	
Base Capacity (vph)	370	2152	284	2124	66	463	277	523
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.65	0.17	0.52	0.33	0.25	1.13	0.73

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

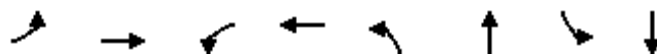
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues
5: Louisiana Blvd. & Alameda Blvd.

Terry O. Brown, PE
11/24/2018



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	118	914	54	461	110	166	38	145
v/c Ratio	0.24	0.71	0.19	0.38	0.30	0.31	0.13	0.36
Control Delay	9.8	22.0	10.1	18.3	21.4	20.6	19.9	24.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.8	22.0	10.1	18.3	21.4	20.6	19.9	24.2
Queue Length 50th (ft)	23	164	10	74	35	22	12	20
Queue Length 95th (ft)	53	264	29	130	78	52	34	51
Internal Link Dist (ft)		1729		324		478		434
Turn Bay Length (ft)	190		200		200		200	
Base Capacity (vph)	631	1606	497	1625	470	1154	487	1149
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.57	0.11	0.28	0.23	0.14	0.08	0.13
Intersection Summary								

ABQ RIDE System Map

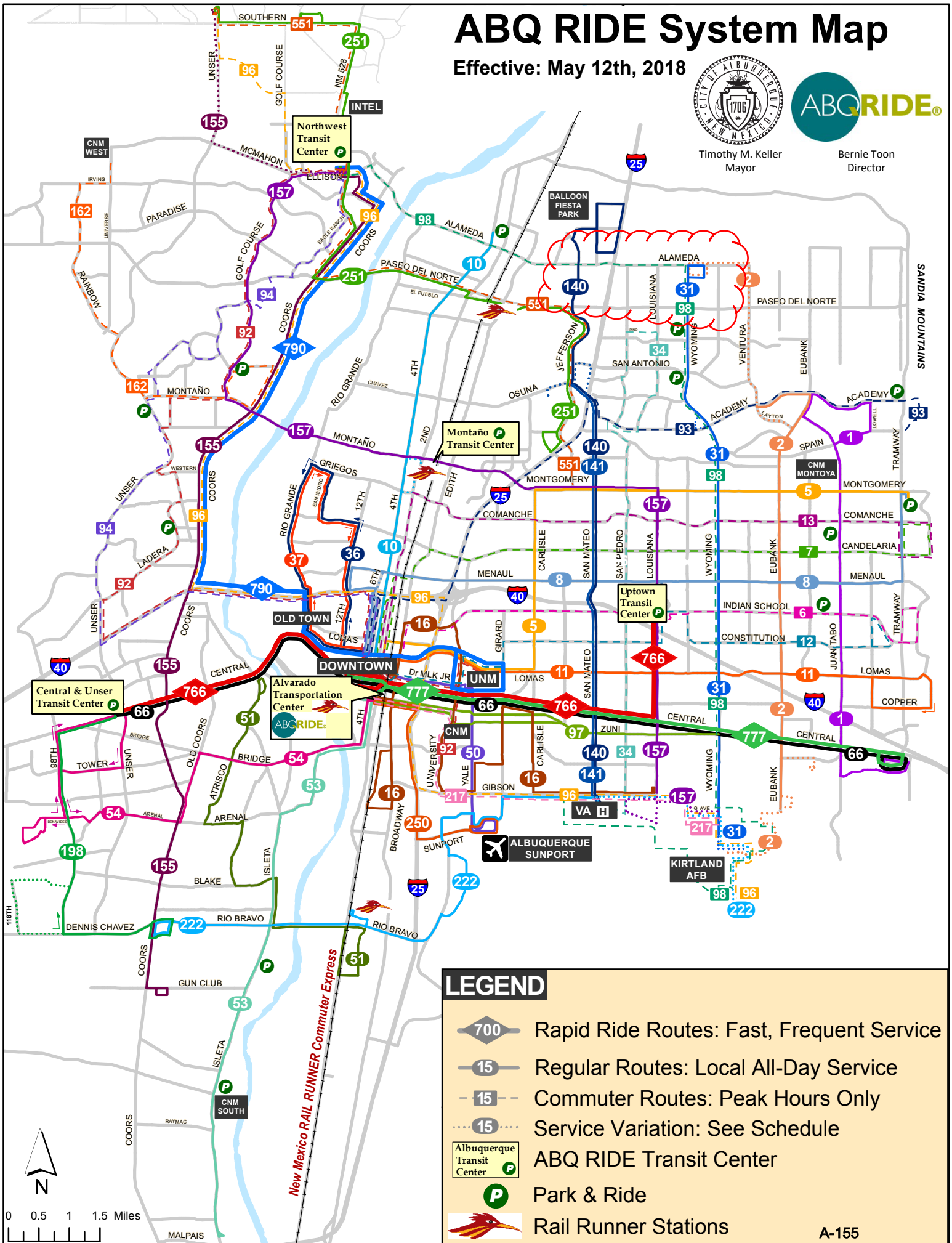
Effective: May 12th, 2018



Timothy M. Keller
Mayor



Bernie Toon
Director



LEGEND



Rapid Ride Routes: Fast, Frequent Service



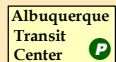
Regular Routes: Local All-Day Service



Commuter Routes: Peak Hours Only



Service Variation: See Schedule



ABQ RIDE Transit Center



Park & Ride



Rail Runner Stations

A-155

For more detailed information visit www.myabqride.com or call 243-7433 (243-RIDE)

Traffic Count Data Sheet

Year Counts Taken:

2018

E-W Street:

Alameda Blvd.

Signalized

Speed Limit (Alameda Blvd.)=

35 MPH

N-S Street:

San Pedro Blvd.

Speed Limit (San Pedro Blvd.)=

35 MPH

11/6/18

Begin Time	End Time	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (San Pedro Blvd.)			Southbound (San Pedro Blvd.)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	10	113	97	15	239	5	58	10	5	2	5	36
7:15 AM	7:30 AM	18	98	75	13	245	6	98	20	9	3	11	39
7:30 AM	7:45 AM	26	115	57	9	242	8	75	10	9	4	8	44
7:45 AM	8:00 AM	17	102	63	9	219	7	80	21	7	2	6	24
8:00 AM	8:15 AM	26	102	63	10	206	6	69	7	6	1	13	29
8:15 AM	8:30 AM	21	69	46	9	185	6	73	9	1	4	39	7
8:30 AM	8:45 AM	30	111	53	7	142	2	58	13	6	2	10	31
8:45 AM	9:00 AM	18	95	43	8	119	4	59	13	6	4	6	42
AM Peak Hour Volumes		71	428	292	46	945	26	311	61	30	11	30	143
% of Total Traffic		3.0%	17.9%	12.2%	1.9%	39.5%	1.1%	13.0%	2.5%	1.3%	0.5%	1.3%	6.0%
% Directional		Intersection											
AM Peak Hour Factor		0.94											
		0.96											
		0.90											

Begin Time	End Time	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (San Pedro Blvd.)			Southbound (San Pedro Blvd.)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	20	215	89	8	122	7	51	18	13	3	17	34
4:15 PM	4:30 PM	35	200	93	14	97	7	66	11	12	5	20	26
4:30 PM	4:45 PM	22	211	77	9	131	4	65	13	13	7	12	33
4:45 PM	5:00 PM	25	217	112	13	106	1	56	15	7	4	12	44
5:00 PM	5:15 PM	16	249	132	14	126	4	47	11	11	4	12	36
5:15 PM	5:30 PM	31	204	103	8	126	2	61	17	26	3	16	30
5:30 PM	5:45 PM	18	187	73	9	124	1	50	9	19	4	14	29
5:45 PM	6:00 PM	10	166	81	8	99	2	40	9	20	5	16	30
PM Peak Hour Volumes		94	881	424	44	489	11	229	56	57	18	52	143
% of Total Traffic		3.8%	35.2%	17.0%	1.8%	19.6%	0.4%	9.2%	2.2%	2.3%	0.7%	2.1%	5.7%
% Directional		Intersection											
PM Peak Hour Factor		0.88											
		0.94											
		0.82											

Traffic Count Data Sheet

Year Counts Taken:

2018

E-W Street:

Alameda Blvd.

Speed Limit (Alameda Blvd.)=

35 MPH

N-S Street:

I-25 W. Ramp

Speed Limit (I-25 W. Ramp)=

30 MPH

11/6/18

Signalized

Begin Time	End Time	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 W. Ramp)			Southbound (I-25 W. Ramp)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	0	141	125	4	120	274	0	0	0	39	27	24
7:15 AM	7:30 AM	0	187	150	0	143	383	0	0	0	39	30	33
7:30 AM	7:45 AM	0	172	113	2	139	418	0	0	0	41	18	35
7:45 AM	8:00 AM	0	139	115	0	131	456	0	0	0	53	25	28
8:00 AM	8:15 AM	0	159	135	0	95	344	0	0	0	41	30	32
8:15 AM	8:30 AM	0	113	95	0	107	316	0	0	0	43	17	41
8:30 AM	8:45 AM	0	116	126	0	97	351	0	0	0	46	25	38
8:45 AM	9:00 AM	0	138	99	0	82	292	0	0	0	38	24	35
AM Peak Hour Volumes		0	657	513	2	508	1601	0	0	0	174	103	128
Percent Approach		0.0%	56.2%	43.8%	24.1%	75.9%	0.0%	#DIV/0!	#DIV/0!	#DIV/0!	43.0%	25.4%	31.6%

AM Peak Hour Factor

0.87

0.90

Intersection

0.95

0.96

Begin Time	End Time	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 W. Ramp)			Southbound (I-25 W. Ramp)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	0	189	141	4	89	264	0	0	0	92	54	33
4:15 PM	4:30 PM	0	213	167	1	76	264	0	0	0	112	107	33
4:30 PM	4:45 PM	0	217	187	1	60	217	0	0	0	107	101	34
4:45 PM	5:00 PM	0	202	189	2	73	219	0	0	0	103	133	34
5:00 PM	5:15 PM	0	222	159	0	74	246	0	0	0	109	96	22
5:15 PM	5:30 PM	0	293	196	0	77	270	0	0	0	115	138	32
5:30 PM	5:45 PM	0	223	140	0	69	243	0	0	0	132	89	23
5:45 PM	6:00 PM	0	157	122	1	59	226	0	0	0	87	81	30
PM Peak Hour Volumes		0	934	731	3	284	952	0	0	0	434	468	122
Percent Approach		0.0%	56.1%	43.9%	23.0%	77.0%	0.0%	#DIV/0!	#DIV/0!	#DIV/0!	42.4%	45.7%	11.9%

PM Peak Hour Factor

0.85

0.89

Intersection

0.88

0.90

Turning Movement Demand Worksheet:

Laneage:	0	2	1		2	2	0		0	0	0		1	2	1			
Lane Length (Ft.):	0	999	200		215	999	0		0	0	0		165	999	165			
Lane Capacity (veh.)	0	78	8		16	78	0		0	0	0		6	78	6			
	0.0%	56.2%	43.8%		24.1%	75.9%	0.0%		#DIV/0!	#DIV/0!	#DIV/0!		43.0%	25.4%	31.6%			
Begin Time	End Time	Eastbound (Alameda Blvd.)				Westbound (Alameda Blvd.)				Northbound (I-25 W. Ramp)				Southbound (I-25 W. Ramp)				Video Time
		L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians	
7:00 AM	7:15 AM	0	141	125		120	274	0		0	0	0		39	24	24		
End of Period Queue		0				2				0				24				6:20:00
Distributed Queue		0	0	0		0	2	0		#DIV/0!	#DIV/0!	#DIV/0!		10	6	8		
15-Minute Demand		0	141	125		120	276	0		#DIV/0!	#DIV/0!	#DIV/0!		49	27	32		
7:15 AM	7:30 AM	0	187	150		143	383	0		0	0	0		39	30	33		
End of Period Queue		0				0				0				20				10:40:00
Distributed Queue		0	0	0		0	0	0		#DIV/0!	#DIV/0!	#DIV/0!		9	5	6		
Prev. Queue Credit		0	0	0		0	-2	0		#DIV/0!	#DIV/0!	#DIV/0!		-10	-6	-8		
15-Minute Demand		0	187	150		143	383	0		#DIV/0!	#DIV/0!	#DIV/0!		48	35	39		
7:30 AM	7:45 AM	0	172	113		139	418	0		0	0	0		41	18	35		
End of Period Queue		0				5				0				21				15:53:00
Distributed Queue		0	0	0		1	4	0		#DIV/0!	#DIV/0!	#DIV/0!		9	5	7		
Prev. Queue Credit		0	0	0		0	0	0		#DIV/0!	#DIV/0!	#DIV/0!		-9	-5	-6		
15-Minute Demand		0	172	113		140	422	0		#DIV/0!	#DIV/0!	#DIV/0!		50	23	42		
7:45 AM	8:00 AM	0	139	115		131	456	0		0	0	0		53	25	28		
End of Period Queue		0				1				0				17				20:13:00
Distributed Queue		0	0	0		0	1	0		#DIV/0!	#DIV/0!	#DIV/0!		7	4	5		
Prev. Queue Credit		0	0	0		-1	-4	0		#DIV/0!	#DIV/0!	#DIV/0!		-9	-5	-7		
15-Minute Demand		0	139	115		131	457	0		#DIV/0!	#DIV/0!	#DIV/0!		60	29	33		
8:00 AM	8:15 AM	0	159	135		95	344	0		0	0	0		41	30	32		
End of Period Queue		1				2				0				11				24:27:00
Distributed Queue		0	1	0		0	2	0		#DIV/0!	#DIV/0!	#DIV/0!		5	3	3		
Prev. Queue Credit		0	0	0		0	-1	0		#DIV/0!	#DIV/0!	#DIV/0!		-7	-4	-5		
15-Minute Demand		0	160	135		95	346	0		#DIV/0!	#DIV/0!	#DIV/0!		46	33	35		
8:15 AM	8:30 AM	0	113	95	0	107	316	0	0	0	0	0	0	43	17	41	2	
End of Period Queue		19				15				0				2				28:47:00
Distributed Queue		0	11	8		4	11	0		#DIV/0!	#DIV/0!	#DIV/0!		1	1	1		
Prev. Queue Credit		0	-1	0		0	-2	0		#DIV/0!	#DIV/0!	#DIV/0!		-5	-3	-3		
15-Minute Demand		0	124	103		111	327	0		#DIV/0!	#DIV/0!	#DIV/0!		44	18	42		
8:30 AM	8:45 AM	0	116	126	0	97	351	0	0	0	0	0	0	46	25	38	0	
End of Period Queue		8				9				0				0				33:07:00
Distributed Queue		0	4	4		2	7	0		#DIV/0!	#DIV/0!	#DIV/0!		0	0	0		
Prev. Queue Credit		0	-11	-8		-4	-11	0		#DIV/0!	#DIV/0!	#DIV/0!		-1	-1	-1		
15-Minute Demand		0	120	130		99	358	0		#DIV/0!	#DIV/0!	#DIV/0!		46	25	38		
8:45 AM	9:00 AM	0	138	99	0	82	292	0	0	0	0	0	0	38	24	35	0	
End of Period Queue		9				5				0				0				37:26:00
Distributed Queue		0	5	4		1	4	0		#DIV/0!	#DIV/0!	#DIV/0!		0	0	0		
Prev. Queue Credit		0	-4	-4		-2	-7	0		#DIV/0!	#DIV/0!	#DIV/0!		0	0	0		
15-Minute Demand		0	143	103		83	296	0		#DIV/0!	#DIV/0!	#DIV/0!		38	24	35		

Turning Movement Demand Worksheet:

Laneage:	0	2	1	2	2	0	0	0	0	0	0	1	2	1				
Lane Length (Ft.):	0	999	200	215	999	0	0	0	0	0	0	165	999	165				
Lane Capacity (veh.)	0	78	8	16	78	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	6	78	6				
	0.0%	56.1%	43.9%	23.0%	77.0%	0.0%						42.4%	45.7%	11.9%				
Begin Time	End Time	Eastbound (Alameda Blvd.)				Westbound (Alameda Blvd.)				Northbound (I-25 W. Ramp)				Southbound (I-25 W. Ramp)				Video Time
		L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians	
4:00 PM	4:15 PM	0	189	141		89	264	0		0	0	0		92	54	33		46:17:00
End of Period Queue		0				7				0				6				
Distributed Queue		0	0	0		2	5	0		#DIV/0!	#DIV/0!	#DIV/0!		3	3	1		
15-Minute Demand		0	189	141		91	269	0		#DIV/0!	#DIV/0!	#DIV/0!		95	57	34		
4:15 PM	4:30 PM	0	213	167		76	264	0		0	0	0		112	107	33		50:35:00
End of Period Queue		10				0				0				3				
Distributed Queue		0	6	4		0	0	0		#DIV/0!	#DIV/0!	#DIV/0!		1	1	0		
Prev. Queue Credit		0	0	0		-2	-5	0		#DIV/0!	#DIV/0!	#DIV/0!		-3	-3	-1		
15-Minute Demand		0	219	171		76	264	0		#DIV/0!	#DIV/0!	#DIV/0!		113	108	33		
4:30 PM	4:45 PM	0	217	187		60	217	0		0	0	0		107	101	34		54:55:00
End of Period Queue		13				11				0				0				
Distributed Queue		0	7	6		3	8	0		#DIV/0!	#DIV/0!	#DIV/0!		0	0	0		
Prev. Queue Credit		0	-6	-4		0	0	0		#DIV/0!	#DIV/0!	#DIV/0!		-1	-1	0		
15-Minute Demand		0	224	193		63	225	0		#DIV/0!	#DIV/0!	#DIV/0!		107	101	34		
4:45 PM	5:00 PM	0	202	189		73	219	0		0	0	0		103	133	34		59:15:00
End of Period Queue		8				15				0				0				
Distributed Queue		0	4	4		3	12	0		#DIV/0!	#DIV/0!	#DIV/0!		0	0	0		
Prev. Queue Credit		0	-7	-6		-3	-8	0		#DIV/0!	#DIV/0!	#DIV/0!		0	0	0		
15-Minute Demand		0	206	193		76	231	0		#DIV/0!	#DIV/0!	#DIV/0!		103	133	34		
5:00 PM	5:15 PM	0	222	159		74	246	0		0	0	0		109	96	22		63:36:00
End of Period Queue		13				5				0				0				
Distributed Queue		0	7	6		1	4	0		#DIV/0!	#DIV/0!	#DIV/0!		0	0	0		
Prev. Queue Credit		0	-4	-4		-3	-12	0		#DIV/0!	#DIV/0!	#DIV/0!		0	0	0		
15-Minute Demand		0	229	165		75	250	0		#DIV/0!	#DIV/0!	#DIV/0!		109	96	22		
5:15 PM	5:30 PM	0	293	196		77	270	0		0	0	0		115	138	32		67:56:00
End of Period Queue		0				11				0				37				
Distributed Queue		0	0	0		3	8	0		#DIV/0!	#DIV/0!	#DIV/0!		16	17	4		
Prev. Queue Credit		0	-7	-6		-1	-4	0		#DIV/0!	#DIV/0!	#DIV/0!		0	0	0		
15-Minute Demand		0	293	196		80	278	0		#DIV/0!	#DIV/0!	#DIV/0!		131	155	36		
5:30 PM	5:45 PM	0	223	140		69	243	0		0	0	0		132	89	23		72:15:00
End of Period Queue		0				8				0				19				
Distributed Queue		0	0	0		2	6	0		#DIV/0!	#DIV/0!	#DIV/0!		8	9	2		
Prev. Queue Credit		0	0	0		-3	-8	0		#DIV/0!	#DIV/0!	#DIV/0!		-16	-17	-4		
15-Minute Demand		0	223	140		71	249	0		#DIV/0!	#DIV/0!	#DIV/0!		140	98	25		
5:45 PM	6:00 PM	0	157	122		59	226	0		0	0	0		87	81	30		76:35:00
End of Period Queue		0				2				0				18				
Distributed Queue		0	0	0		0	2	0		#DIV/0!	#DIV/0!	#DIV/0!		8	8	2		
Prev. Queue Credit		0	0	0		-2	-6	0		#DIV/0!	#DIV/0!	#DIV/0!		-8	-9	-2		
15-Minute Demand		0	157	122		59	228	0		#DIV/0!	#DIV/0!	#DIV/0!		95	89	32		

Traffic Count Data Sheet (Demand Adjusted)

Year Counts Taken:

2018

E-W Street:

Alameda Blvd.

Speed Limit (Alameda Blvd.)=

35 MPH

N-S Street:

I-25 W. Ramp

Speed Limit (I-25 W. Ramp)=

30 MPH

11/6/18

Signalized

Begin Time	End Time	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 W. Ramp)			Southbound (I-25 W. Ramp)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	0	141	125	4	120	276	0	0	0	49	27	32
7:15 AM	7:30 AM	0	187	150	0	143	383	0	0	0	48	35	39
7:30 AM	7:45 AM	0	172	113	2	140	422	0	0	0	50	23	42
7:45 AM	8:00 AM	0	139	115	0	131	457	0	0	0	60	29	33
8:00 AM	8:15 AM	0	160	135	0	95	346	0	0	0	46	33	35
8:15 AM	8:30 AM	0	124	103	0	111	327	0	0	0	44	18	42
8:30 AM	8:45 AM	0	120	100	0	99	358	0	0	0	46	25	38
8:45 AM	9:00 AM	0	143	103	0	83	296	0	0	0	38	24	35
AM Peak Hour Volumes		0	658	513	2	509	1608	0	0	0	204	120	149
Percent Approach		0.0%	56.2%	43.8%	24.0%	76.0%	0.0%	#DIV/0!	#DIV/0!	#DIV/0!	43.1%	25.4%	31.5%

Intersection

0.95

0.90

0.87

0.97

Begin Time	End Time	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 W. Ramp)			Southbound (I-25 W. Ramp)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	0	189	141	4	91	269	0	0	0	95	57	34
4:15 PM	4:30 PM	0	219	171	1	76	264	0	0	0	113	108	33
4:30 PM	4:45 PM	0	224	193	1	63	225	0	0	0	107	101	34
4:45 PM	5:00 PM	0	206	193	2	76	231	0	0	0	103	133	34
5:00 PM	5:15 PM	0	229	165	0	75	250	0	0	0	109	96	22
5:15 PM	5:30 PM	0	293	196	0	80	278	0	0	0	131	155	36
5:30 PM	5:45 PM	0	223	140	0	71	249	0	0	0	140	98	25
5:45 PM	6:00 PM	0	157	122	1	59	228	0	0	0	95	89	32
PM Peak Hour Volumes		0	952	747	3	294	984	0	0	0	450	485	126
Percent Approach		0.0%	56.0%	44.0%	23.0%	77.0%	0.0%	#DIV/0!	#DIV/0!	#DIV/0!	42.4%	45.7%	11.9%

Intersection

0.86

0.89

0.87

0.82

Traffic Count Data Sheet

Year Counts Taken:

2018

E-W Street:

Alameda Blvd.

Speed Limit (Alameda Blvd.)=

35 MPH

N-S Street:

I-25 E. Ramp

Speed Limit (I-25 E. Ramp)=

30 MPH

10/30/18

Signalized

Begin Time	End Time	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 E. Ramp)			Southbound (I-25 E. Ramp)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	34	141	0	0	0	0	163	19	64	0	0	0
7:15 AM	7:30 AM	47	180	0	0	291	44	223	17	51	0	0	0
7:30 AM	7:45 AM	40	161	0	0	323	35	241	13	44	0	0	0
7:45 AM	8:00 AM	51	141	0	0	346	29	267	16	62	1	0	0
8:00 AM	8:15 AM	56	134	0	1	248	49	189	27	48	0	0	0
8:15 AM	8:30 AM	41	139	0	0	284	40	162	16	46	0	0	1
8:30 AM	8:45 AM	67	111	0	0	238	42	159	14	48	0	0	0
8:45 AM	9:00 AM	46	136	0	0	195	30	163	19	51	0	0	0
AM Peak Hour Volumes		194	616	0	1	1208	157	920	73	205	1	0	0
Percent Approach		24.0%	76.0%	0.0%	0.0%	88.5%	11.5%	76.8%	6.1%	17.1%	#DIV/0!	#DIV/0!	#DIV/0!

AM Peak Hour Factor

0.89

0.91

Intersection

0.92

#DIV/0!

Begin Time	End Time	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 E. Ramp)			Southbound (I-25 E. Ramp)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	62	238	0	0	194	62	161	20	81	1	0	0
4:15 PM	4:30 PM	78	260	0	0	157	40	138	17	83	0	0	0
4:30 PM	4:45 PM	86	225	0	0	151	37	104	17	90	0	0	0
4:45 PM	5:00 PM	69	240	0	0	147	72	153	20	102	2	0	0
5:00 PM	5:15 PM	79	246	0	0	151	61	161	24	101	0	0	0
5:15 PM	5:30 PM	110	309	0	0	148	61	159	19	99	0	0	0
5:30 PM	5:45 PM	72	238	0	0	169	58	152	12	91	9	0	0
5:45 PM	6:00 PM	58	192	0	0	142	48	135	0	92	0	0	0
PM Peak Hour Volumes		330	1033	0	0	615	252	625	75	393	11	0	0
Percent Approach		24.2%	75.8%	0.0%	0.0%	70.9%	29.1%	57.2%	6.9%	36.0%	#DIV/0!	#DIV/0!	#DIV/0!

PM Peak Hour Factor

0.81

0.95

Intersection

0.96

#DIV/0!

Turning Movement Demand Worksheet:

Laneage:	1	2	0	0	3	0	1	2	1	0	0	0					
Lane Length (Ft.):	180	999	0	0	999	0	185	999	185	0	0	0					
Lane Capacity (veh.)	7	78	0	0	117	0	7	78	7	0	0	0					
% Turns	24.0%	76.0%	0.0%	0.0%	88.5%	11.5%	76.8%	6.1%	17.1%	#DIV/0!	#DIV/0!	#DIV/0!	Video Time				
Begin Time	Eastbound (Alameda Blvd.)				Westbound (Alameda Blvd.)				Northbound (I-25 E. Ramp)					Southbound (I-25 E. Ramp)			
End Time	L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians	
7:00 AM	34	141	0		0	221	37		163	19	64		0	0	0		
End of Period Queue	14				3				8				0				6:20:00
Distributed Queue	3	11	0		0	3	0		6	0	1		#DIV/0!	#DIV/0!	#DIV/0!		
15-Minute Demand	37	152	0		0	224	37		169	19	65		#DIV/0!	#DIV/0!	#DIV/0!		
7:15 AM	47	180	0		0	291	44		223	17	61		0	0	0		10:40:00
End of Period Queue	20				0				4				0				
Distributed Queue	5	15	0		0	0	0		3	0	1		#DIV/0!	#DIV/0!	#DIV/0!		
Prev. Queue Credit	-3	-11	0		0	-3	0		-6	0	-1		#DIV/0!	#DIV/0!	#DIV/0!		
15-Minute Demand	52	195	0		0	291	44		226	17	52		#DIV/0!	#DIV/0!	#DIV/0!		
7:30 AM	40	161	0		0	323	35		241	13	44		0	0	0		15:53:00
End of Period Queue	5				0				5				0				
Distributed Queue	1	4	0		0	0	0		4	0	1		#DIV/0!	#DIV/0!	#DIV/0!		
Prev. Queue Credit	-5	-15	0		0	0	0		-3	0	-1		#DIV/0!	#DIV/0!	#DIV/0!		
15-Minute Demand	41	165	0		0	323	35		245	13	45		#DIV/0!	#DIV/0!	#DIV/0!		
7:45 AM	51	141	0		0	346	29		267	16	62		0	0	0		20:13:00
End of Period Queue	8				0				4				0				
Distributed Queue	2	6	0		0	0	0		3	0	1		#DIV/0!	#DIV/0!	#DIV/0!		
Prev. Queue Credit	-1	-4	0		0	0	0		-4	0	-1		#DIV/0!	#DIV/0!	#DIV/0!		
15-Minute Demand	53	147	0		0	346	29		270	16	63		#DIV/0!	#DIV/0!	#DIV/0!		
8:00 AM	56	134	0		0	248	49		189	27	48		0	0	0		24:27:00
End of Period Queue	0				0				4				0				
Distributed Queue	0	0	0		0	0	0		3	0	1		#DIV/0!	#DIV/0!	#DIV/0!		
Prev. Queue Credit	-2	-6	0		0	0	0		-3	0	-1		#DIV/0!	#DIV/0!	#DIV/0!		
15-Minute Demand	56	134	0		0	248	49		192	27	49		#DIV/0!	#DIV/0!	#DIV/0!		
8:15 AM	41	139	0	0	0	284	40	1	162	16	46	0	0	0	0	1	28:47:00
End of Period Queue	0				0				9				0				
Distributed Queue	0	0	0		0	0	0		7	1	2		#DIV/0!	#DIV/0!	#DIV/0!		
Prev. Queue Credit	0	0	0		0	0	0		-3	0	-1		#DIV/0!	#DIV/0!	#DIV/0!		
15-Minute Demand	41	139	0		0	284	40		169	17	48		#DIV/0!	#DIV/0!	#DIV/0!		
8:30 AM	67	111	0	0	0	238	42	0	159	14	48	0	0	0	0	0	33:07:00
End of Period Queue	0				0				4				0				
Distributed Queue	0	0	0		0	0	0		3	0	1		#DIV/0!	#DIV/0!	#DIV/0!		
Prev. Queue Credit	0	0	0		0	0	0		-7	-1	-2		#DIV/0!	#DIV/0!	#DIV/0!		
15-Minute Demand	67	111	0		0	238	42		162	14	49		#DIV/0!	#DIV/0!	#DIV/0!		
8:45 AM	46	136	0	0	0	195	30	0	163	19	51	0	0	0	0	0	37:26:00
End of Period Queue	0				0				2				0				
Distributed Queue	0	0	0		0	0	0		2	0	0		#DIV/0!	#DIV/0!	#DIV/0!		
Prev. Queue Credit	0	0	0		0	0	0		-3	0	-1		#DIV/0!	#DIV/0!	#DIV/0!		
15-Minute Demand	46	136	0		0	195	30		165	19	51		#DIV/0!	#DIV/0!	#DIV/0!		

Turning Movement Demand Worksheet:

Laneage:	1	2	0	0	3	0	1	2	1	0	0	0						
Lane Length (Ft.):	180	999	0	0	999	0	185	999	185	0	0	0						
Lane Capacity (veh.)	7	78	0	0	117	0	7	78	7	0	0	0						
% Turns	24.2%	75.8%	0.0%	0.0%	70.9%	29.1%	57.2%	6.9%	36.0%	#DIV/0!	#DIV/0!	#DIV/0!						
Begin Time	End Time	Eastbound (Alameda Blvd.)				Westbound (Alameda Blvd.)				Northbound (I-25 E. Ramp)				Southbound (I-25 E. Ramp)				Video Time
		L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians	
4:00 PM	4:15 PM	62	238	0		6	194	62		161	20	81		0	0	0		
End of Period Queue		0				0				10				0				46:17:00
Distributed Queue		0	0	0		0	0	0		6	1	4		#DIV/0!	#DIV/0!	#DIV/0!		
15-Minute Demand		62	238	0		6	194	62		167	21	85		#DIV/0!	#DIV/0!	#DIV/0!		
4:15 PM	4:30 PM	78	260	0		0	157	40		138	17	83		0	0	0		
End of Period Queue		3				0				9				0				50:35:00
Distributed Queue		1	2	0		0	0	0		5	1	3		#DIV/0!	#DIV/0!	#DIV/0!		
Prev. Queue Credit		0	0	0		0	0	0		-6	-1	-4		#DIV/0!	#DIV/0!	#DIV/0!		
15-Minute Demand		79	262	0		0	157	40		143	18	86		#DIV/0!	#DIV/0!	#DIV/0!		
4:30 PM	4:45 PM	86	225	0		0	151	37		104	17	90		0	0	0		
End of Period Queue		0				0				10				0				54:55:00
Distributed Queue		0	0	0		0	0	0		6	1	4		#DIV/0!	#DIV/0!	#DIV/0!		
Prev. Queue Credit		-1	-2	0		0	0	0		-5	-1	-3		#DIV/0!	#DIV/0!	#DIV/0!		
15-Minute Demand		86	225	0		0	151	37		110	18	94		#DIV/0!	#DIV/0!	#DIV/0!		
4:45 PM	5:00 PM	69	240	0		0	147	72		153	20	102		0	0	0		
End of Period Queue		5				1				13				0				59:15:00
Distributed Queue		1	4	0		0	1	0		7	1	5		#DIV/0!	#DIV/0!	#DIV/0!		
Prev. Queue Credit		0	0	0		0	0	0		-6	-1	-4		#DIV/0!	#DIV/0!	#DIV/0!		
15-Minute Demand		70	244	0		0	148	72		160	21	107		#DIV/0!	#DIV/0!	#DIV/0!		
5:00 PM	5:15 PM	79	246	0		0	151	61		161	24	101		0	0	0		
End of Period Queue		3				0				14				0				63:36:00
Distributed Queue		1	2	0		0	0	0		8	1	5		#DIV/0!	#DIV/0!	#DIV/0!		
Prev. Queue Credit		-1	-4	0		0	-1	0		-7	-1	-5		#DIV/0!	#DIV/0!	#DIV/0!		
15-Minute Demand		80	248	0		0	151	61		169	25	106		#DIV/0!	#DIV/0!	#DIV/0!		
5:15 PM	5:30 PM	110	309	0		0	148	61		159	19	99		0	0	0		
End of Period Queue		3				0				10				0				67:56:00
Distributed Queue		1	2	0		0	0	0		6	1	4		#DIV/0!	#DIV/0!	#DIV/0!		
Prev. Queue Credit		-1	-2	0		0	0	0		-8	-1	-5		#DIV/0!	#DIV/0!	#DIV/0!		
15-Minute Demand		111	311	0		0	148	61		165	20	103		#DIV/0!	#DIV/0!	#DIV/0!		
5:30 PM	5:45 PM	72	238	0		0	169	58		152	12	91		0	0	0		
End of Period Queue		0				0				13				0				72:15:00
Distributed Queue		0	0	0		0	0	0		7	1	5		#DIV/0!	#DIV/0!	#DIV/0!		
Prev. Queue Credit		-1	-2	0		0	0	0		-6	-1	-4		#DIV/0!	#DIV/0!	#DIV/0!		
15-Minute Demand		72	238	0		0	169	58		159	13	96		#DIV/0!	#DIV/0!	#DIV/0!		
5:45 PM	6:00 PM	58	192	0		0	142	48		135	9	92		0	0	0		
End of Period Queue		0				0				7				0				76:35:00
Distributed Queue		0	0	0		0	0	0		4	0	3		#DIV/0!	#DIV/0!	#DIV/0!		
Prev. Queue Credit		0	0	0		0	0	0		-7	-1	-5		#DIV/0!	#DIV/0!	#DIV/0!		
15-Minute Demand		58	192	0		0	142	48		139	9	95		#DIV/0!	#DIV/0!	#DIV/0!		

Traffic Count Data Sheet (Demand Adjusted)

Year Counts Taken:

2018

E-W Street:

Alameda Blvd.

Speed Limit (Alameda Blvd.)=

35 MPH

N-S Street:

I-25 E. Ramp

Speed Limit (I-25 E. Ramp)=

30 MPH

10/30/18

Signalized

Begin Time	End Time	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 E. Ramp)			Southbound (I-25 E. Ramp)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	37	152	0	0	0	0	169	19	65	0	0	0
7:15 AM	7:30 AM	52	195	0	0	291	44	226	17	52	0	0	0
7:30 AM	7:45 AM	41	165	0	0	323	35	245	13	45	0	0	0
7:45 AM	8:00 AM	53	147	0	0	346	29	270	16	63	1	0	0
8:00 AM	8:15 AM	56	134	0	1	248	49	192	27	49	0	0	0
8:15 AM	8:30 AM	41	139	0	0	284	40	169	17	48	0	0	1
8:30 AM	8:45 AM	67	111	0	0	238	42	162	14	49	0	0	0
8:45 AM	9:00 AM	46	136	0	0	195	30	165	19	51	0	0	0
AM Peak Hour Volumes		202	641	0	1	1208	157	933	73	209	1	0	0
Percent Approach		24.0%	76.0%	0.0%	0.0%	88.5%	11.5%	76.8%	6.0%	17.2%	#DIV/0!	#DIV/0!	#DIV/0!

Intersection

0.93

0.87

#DIV/0!

AM Peak Hour Factor

0.85

0.91

Begin Time	End Time	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (I-25 E. Ramp)			Southbound (I-25 E. Ramp)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	62	238	0	0	194	62	167	21	85	1	0	0
4:15 PM	4:30 PM	79	262	0	0	157	40	143	18	86	0	0	0
4:30 PM	4:45 PM	86	225	0	0	151	37	110	18	94	0	0	0
4:45 PM	5:00 PM	70	244	0	0	148	72	160	21	107	2	0	0
5:00 PM	5:15 PM	80	248	0	0	151	61	169	25	106	0	0	0
5:15 PM	5:30 PM	111	311	0	0	148	61	165	20	103	0	0	0
5:30 PM	5:45 PM	72	238	0	0	169	58	159	13	96	9	0	0
5:45 PM	6:00 PM	58	192	0	0	142	48	139	0	95	0	0	0
PM Peak Hour Volumes		333	1041	0	0	616	252	653	79	412	11	0	0
Percent Approach		24.2%	75.8%	0.0%	0.0%	71.0%	29.0%	57.1%	6.9%	36.0%	#DIV/0!	#DIV/0!	#DIV/0!

Intersection

0.92

0.95

#DIV/0!

PM Peak Hour Factor

0.81

0.96

Traffic Count Data Sheet

Year Counts Taken:

2018

E-W Street:

Alameda Blvd.

San Mateo Blvd.

35 MPH

Speed Limit (Alameda Blvd.)=

N-S Street:

San Mateo Blvd.

30 MPH

Speed Limit (San Mateo Blvd.)=

Signalized

11/6/18

Begin Time	End Time	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (San Mateo Blvd.)			Southbound (San Mateo Blvd.)		
		L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians
7:00 AM	7:15 AM	57	286	5	0	12	192	96	0	5	10	18	0
7:15 AM	7:30 AM	66	286	9	1	20	234	160	0	1	18	21	1
7:30 AM	7:45 AM	62	217	9	0	28	249	163	3	1	29	10	0
7:45 AM	8:00 AM	75	238	5	0	17	225	166	0	8	27	14	0
8:00 AM	8:15 AM	54	208	5	0	10	215	121	0	0	11	12	0
8:15 AM	8:30 AM	36	182	4	0	0	229	98	1	6	11	17	0
8:30 AM	8:45 AM	42	210	1	0	14	239	101	1	2	7	13	0
8:45 AM	9:00 AM	33	184	4	0	12	213	64	1	1	3	12	0
AM Peak Hour Volumes		260	1027	28	1	77	900	585	3	15	84	63	1
% of Total Traffic		8.2%	32.3%	0.9%		2.4%	28.3%	18.4%		0.5%	2.6%	2.0%	
% Directional			41.3%				49.1%				5.1%		
AM Peak Hour Factor			0.91				0.89				0.83		
Intersection													
0.95													

Begin Time	End Time	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (San Mateo Blvd.)			Southbound (San Mateo Blvd.)		
		L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians
4:00 PM	4:15 PM	17	306	1	0	15	223	34	0	6	0	24	0
4:15 PM	4:30 PM	19	265	0	0	11	193	30	0	4	3	23	0
4:30 PM	4:45 PM	25	323	1	0	9	205	36	0	4	1	26	0
4:45 PM	5:00 PM	13	298	4	0	11	208	38	0	0	2	17	0
5:00 PM	5:15 PM	12	348	4	0	10	219	38	0	12	2	33	0
5:15 PM	5:30 PM	14	291	3	0	13	223	37	0	4	3	21	0
5:30 PM	5:45 PM	14	234	0	0	5	214	30	1	4	2	10	0
5:45 PM	6:00 PM	13	224	0	0	11	174	37	0	0	0	6	0
PM Peak Hour Volumes		64	1260	12	0	43	855	149	0	20	8	97	0
% of Total Traffic		2.0%	40.3%	0.4%		1.4%	27.3%	4.8%		0.6%	0.3%	3.1%	
% Directional			42.7%				33.5%				4.0%		
PM Peak Hour Factor			0.92				0.96				0.66		
Intersection													
0.92													

Traffic Count Data Sheet

Year Counts Taken:

2018

E-W Street:

Alameda Blvd.

Signalized

Speed Limit (Alameda Blvd.)=

35 MPH

N-S Street:

Louisiana Blvd.

Speed Limit (Louisiana Blvd.)=

35 MPH

11/6/18

Begin Time	End Time	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Louisiana Blvd.)			Southbound (Louisiana Blvd.)		
		L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians
7:00 AM	7:15 AM	12	72	23	0	20	160	4	0	56	22	8	0
7:15 AM	7:30 AM	7	86	26	0	17	161	3	0	63	22	11	0
7:30 AM	7:45 AM	13	87	23	0	16	114	3	0	82	26	5	0
7:45 AM	8:00 AM	6	93	23	0	13	151	9	1	61	25	21	0
8:00 AM	8:15 AM	8	69	17	0	15	149	6	0	40	14	10	0
8:15 AM	8:30 AM	5	65	23	1	10	130	7	0	33	14	10	1
8:30 AM	8:45 AM	19	69	15	0	8	81	5	0	28	20	8	0
8:45 AM	9:00 AM	8	66	16	0	2	87	5	0	29	13	2	0
AM Peak Hour Volumes		38	338	95	0	66	586	19	1	262	95	45	0
% of Total Traffic		2.0%	18.2%	5.1%		3.5%	31.5%	1.0%		14.1%	5.1%	2.4%	
% Directional			25.3%				36.0%				21.6%		
AM Peak Hour Factor			0.96				0.91		Intersection		0.89		0.80

Begin Time	End Time	Eastbound (Alameda Blvd.)			Westbound (Alameda Blvd.)			Northbound (Louisiana Blvd.)			Southbound (Louisiana Blvd.)		
		L	T	R	Pedestrians	L	T	R	Pedestrians	L	T	R	Pedestrians
4:00 PM	4:15 PM	25	164	36	0	7	100	5	0	24	24	5	1
4:15 PM	4:30 PM	21	148	36	0	10	82	5	0	18	21	11	0
4:30 PM	4:45 PM	28	195	24	0	13	105	6	0	34	20	12	0
4:45 PM	5:00 PM	26	161	31	0	6	80	7	1	33	27	13	0
5:00 PM	5:15 PM	34	176	49	0	7	103	5	0	19	24	12	0
5:15 PM	5:30 PM	22	165	40	0	15	108	8	0	20	32	16	1
5:30 PM	5:45 PM	29	144	31	0	8	85	2	0	18	26	15	0
5:45 PM	6:00 PM	27	133	22	0	7	102	4	0	17	26	12	0
PM Peak Hour Volumes		110	697	144	0	41	396	26	1	106	103	53	1
% of Total Traffic		5.9%	37.7%	7.8%		2.2%	21.4%	1.4%		5.7%	5.6%	2.9%	
% Directional			51.4%				25.0%				14.2%		
PM Peak Hour Factor			0.92				0.88		Intersection		0.90		0.88

Traffic Count Data Sheet

Year Counts Taken:

2018

E-W Street:
N-S Street:Signal Av.
San Pedro Blvd.Speed Limit (Signal Av.)=
Speed Limit (San Pedro Blvd.)=

25 MPH

35 MPH

11/6/18

Unsignalized

Begin Time	End Time	Eastbound (Signal Av.)			Westbound (Signal Av.)			Northbound (San Pedro Blvd.)			Southbound (San Pedro Blvd.)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	8	1	3	0	0	0	0	97	2	6	107	1
7:15 AM	7:30 AM	1	0	6	0	0	6	1	91	2	5	82	5
7:30 AM	7:45 AM	5	1	2	0	0	11	3	84	3	5	58	4
7:45 AM	8:00 AM	0	0	1	0	0	3	2	93	2	8	77	3
8:00 AM	8:15 AM	3	0	7	0	0	4	0	86	0	7	52	4
8:15 AM	8:30 AM	3	0	6	0	0	7	2	75	2	4	67	5
8:30 AM	8:45 AM	0	0	2	0	0	2	7	75	7	3	54	5
8:45 AM	9:00 AM	3	0	2	0	0	2	0	63	7	2	59	4
AM Peak Hour Volumes		14	2	12	0	7	1	27	0	9	24	324	13
% of Total Traffic		1.7%	0.2%	1.5%	0.9%	0.1%	3.4%	0.7%	45.4%	1.1%	3.0%	40.3%	1.6%
% Directional		Intersection											
AM Peak Hour Factor		0.63											
		0.96											

Begin Time	End Time	Eastbound (Signal Av.)			Westbound (Signal Av.)			Northbound (San Pedro Blvd.)			Southbound (San Pedro Blvd.)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	7	7	2	2	0	2	6	87	7	5	120	7
4:15 PM	4:30 PM	2	0	5	0	0	3	4	89	2	4	97	7
4:30 PM	4:45 PM	5	0	10	0	0	6	7	68	1	13	112	14
4:45 PM	5:00 PM	11	0	14	0	0	4	4	59	2	22	132	5
5:00 PM	5:15 PM	3	1	8	0	0	3	9	81	3	14	111	0
5:15 PM	5:30 PM	5	0	10	0	0	2	13	83	3	8	83	3
5:30 PM	5:45 PM	5	0	6	0	0	7	7	67	4	13	99	0
5:45 PM	6:00 PM	3	7	8	0	7	4	5	52	7	0	67	0
PM Peak Hour Volumes		24	1	42	0	8	15	33	291	9	57	438	22
% of Total Traffic		2.5%	0.1%	4.5%	0.8%	0.2%	1.6%	3.5%	30.9%	1.0%	6.1%	46.5%	2.3%
% Directional		Intersection											
PM Peak Hour Factor		0.78											
		0.84											

SCOPE OF TRAFFIC IMPACT STUDY (TIS)

TO: Terry Brown

MEETING DATE: October 3, 2018

ATTENDEES: Consultant Team; COA Transportation Development Review; NMDOT

PROJECT: SEQ Alameda Blvd. and San Pedro Dr., Zone Atlas # C-18

REQUESTED CITY ACTION: ☐ Zone Change ☒ Site Development Plan

☐ Subdivision ☐ Building Permit ☐ Sector Plan ☐ Sector Plan Amendment

☐ Curb Cut Permit ☐ Conditional Use ☐ Annexation ☐ Site Plan Amendment

ASSOCIATED APPLICATION: New development with high turnover restaurant, retail commercial shops, rock climbing gym and one 3500 sq. ft. future tenant at SE corner of Alameda Blvd. and San Pedro Dr.

SCOPE OF REPORT:

The Traffic Impact Study should follow the standard report format, which is outlined in the DPM. The following supplemental information is provided for the preparation of this specific study.

1. Trip Generation - Use Trip Generation Manual, 10th Edition.
Local data may be used for certain land use types as determined by staff.
Consultant to provide.

2. Appropriate study area:
Signalized Intersections;
 - a. Alameda and N. & S. I-25 Frontage Rd. Ramps
 - b. Alameda and San Pedro
 - c. Alameda and Louisiana
 - d. Alameda and San Mateo

Unsignalized Intersections;

- a. San Pedro and Signal

Driveway Intersections: all site drives

3. Intersection turning movement counts
Study Time – 7-9 a.m. peak hour, 4-6 p.m. peak hour
Consultant to provide for all intersections listed above.

4. Type of intersection progression and factors to be used.
Type III arrival type (see “2016 Highway Capacity Manual” or equivalent as approved by staff). Unless otherwise justified, peak hour factors and % heavy commercial should be taken directly from the MRCOG turning movement data provided or as calculated from current count data by consultant.

5. Boundaries of area to be used for trip distribution.
2.5 mile radius – commercial;

6. Basis for trip distribution.

Residential – Use inverse relationship based upon distance and employment. Use employment data from 2040 Socioeconomic Forecasts, MRCOG – See MRCOG website for most current data.

Office/Industrial - Use inverse relationship based upon distance and population. Use population data from 2040 Socioeconomic Forecasts, MRCOG – See MRCOG website for most current data.

Commercial - Use relationship based upon population. Use population data from 2040 Socioeconomic Forecasts, MRCOG – See MRCOG website for most current data.

Residential - $T_s = (T_t) (Se / D) / (Se / D)$
 T_s = Development to Individual Subarea Trips
 T_t = Total Trips
 Se = Subarea Employment
 D = Distance from Development to Subarea

Office/Industrial - $T_s = (T_t) (Sp / D) / (Sp / D)$
 T_s = Development to Individual Subarea Trips
 T_t = Total Trips
 Sp = Subarea Population
 D = Distance from Development to Subarea

Commercial -
 $T_s = (T_t) (Sp) / (Sp)$
 T_s = Development to Individual Subarea Trips
 T_t = Total Trips
 Sp = Subarea Population

7. Traffic Assignment. Logical routing on the major street system.
8. Method of intersection capacity analysis - planning or operational (see “2016 Highway Capacity Manual” or equivalent [i.e. HCS, Synchro, Teapac, etc.] as approved by staff). Must use latest version of design software and/or current edition of design manual.
Implementation Year:
9. Traffic conditions for analysis:
- Existing analysis __ yes X no - year ();
 - Phase implementation year(s) without proposed development – 2019
 - Phase implementation year(s) with proposed development – 2019
 - Project completion year without proposed development – 2029
 - Project completion year with proposed development – 2029

f. Other –

10. Background traffic growth.

Method: use 10-year historical growth based on standard data from the MRCOG Traffic Flow Maps. Minimum growth rate to be used is 1/2%.

11. Items to be included in the study:

- a. Intersection analysis.
- b. Signal progression - An analysis is required if the driveway analysis indicates a traffic signal is possibly warranted. Analysis Method:
- c. Arterial LOS analysis;
- d. Recommended street, intersection and signal improvements.
- e. Site design features such as turning lanes, median cuts, queuing requirements and site circulation, including driveway signalization and visibility.
- f. Transportation system impacts.
- g. Other mitigating measures.
- h. Accident analyses ☐ yes ☒ no; Location(s):
- i. Weaving analyses ☐ yes ☒ no; Location(s):

12. Other:

SUBMITTAL REQUIREMENTS:

- 1. Number of copies of report required
 - a. 1 paper copy
 - b. 1 digital copy
- 2. Submittal Fee – \$1300 for up to 3 reviews

The Traffic Impact Study for this development proposal, project name, shall be performed in accordance with the above criteria. If there are any questions regarding the above items, please contact me at 924-3633.

Ernest Armijo, P.E.
Senior Engineer for
Transportation Development Section

10/4/18

Date

via: email

C: TIS Task Force Attendees, file