



ALTA VISTA COMMERCIAL/ RESIDENTIAL PROJECT

TRAFFIC IMPACT ANALYSIS

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Table of Contents

1	EXECUTIVE SUMMARY.....	1
2	INTRODUCTION.....	2
2.1	Project Description.....	2
2.2	Study Area and Analysis Scenarios.....	1
2.3	Methodology.....	2
2.4	Significance Criteria.....	3
3	BASELINE CONDITIONS.....	4
3.1	Existing Transportation System.....	4
3.2	Existing Traffic Volumes and Levels of Service.....	4
3.3	Project Opening Year (2019) Traffic Volumes and LOS.....	6
4	PROPOSED PROJECT.....	12
4.1	Project Description.....	12
4.2	Project Access.....	12
4.3	Project Trip Generation.....	12
4.4	Project Trips.....	13
5	PROJECT IMPACTS.....	17
5.1	Existing Plus Project Traffic Volumes and Intersection Operations.....	17
5.2	Opening Year (2019) Plus Project Traffic Volumes and Intersection Operations.....	20
6	ACCESS AND SITE CIRCULATION.....	23
6.1	Project Access.....	23
6.2	Onsite Circulation.....	23

Figures

FIGURE 1:	PROJECT LOCATION.....	2
FIGURE 2:	PROJECT SITE PLAN.....	3
FIGURE 3:	PROJECT STUDY AREA.....	2
FIGURE 4:	EXISTING AM AND PM PEAK HOUR TRAFFIC VOLUMES.....	5
FIGURE 5:	LOCATION OF CUMULATIVE PROJECTS.....	7
FIGURE 6:	AM AND PM PEAK HOUR CUMULATIVE PROJECTS TRIP ASSIGNMENT.....	10
FIGURE 7:	PROJECT OPENING YEAR (2019) AM AND PM PEAK HOUR TRAFFIC VOLUMES.....	11
FIGURE 8:	PROJECT TRIP DISTRIBUTION.....	14
FIGURE 9:	PROJECT TRIP ASSIGNMENT.....	15
FIGURE 10:	PROJECT PASS-BY TRIPS.....	16
FIGURE 11:	EXISTING PLUS PROJECT AM AND PM PEAK HOUR TRAFFIC VOLUMES.....	18
FIGURE 12:	OPENING YEAR (2019) PLUS PROJECT AM AND PM PEAK HOUR TRAFFIC VOLUMES.....	21

Tables

TABLE 1.	RELATIONSHIP BETWEEN ICU AND LOS.....	3
TABLE 2.	RELATIONSHIP BETWEEN DELAY AND LOS	3
TABLE 3.	EXISTING AM AND PM PEAK HOUR LEVELS OF SERVICE.....	6
TABLE 4.	CUMULATIVE PROJECTS TRIP GENERATION	8
TABLE 5.	OPENING YEAR (2019) AM AND PM PEAK HOUR LEVELS OF SERVICE	9
TABLE 6.	PROJECT TRIP GENERATION.....	13
TABLE 7.	EXISTING AND EXISTING PLUS PROJECT PEAK HOUR LEVELS OF SERVICE	19
TABLE 8.	OPENING YEAR (2019) AND OPENING YEAR PLUS PROJECT PEAK HOUR LEVELS OF SERVICE	22
TABLE 9.	QUEUING AT ROSE DRIVE/ALTA VISTA STREET	23

Appendices

APPENDIX A – TRAFFIC STUDY SCOPING AGREEMENT
APPENDIX B – TRAFFIC COUNTS
APPENDIX C – LEVEL OF SERVICE AND QUEUING CALCULATIONS

1 EXECUTIVE SUMMARY

This Traffic Impact Analysis TIA evaluates the project's potential traffic impacts based on the application of the ITE 10th Edition vehicle trip generation rates, which estimates that the project would generate 2,857 net daily trips. Of these daily trips, the project is expected to generate 145 net AM peak hour and 166 net PM peak hour trips.

The study area intersections listed in Section 2.2 – Study Area and Analysis Scenarios were evaluated during the AM and PM peak hours, which are defined as the hours with the highest traffic volumes during the 7 AM to 9 AM and 4 PM to 6 PM peak commute periods. AM and PM peak hour traffic operations were evaluated for the following scenarios:

- Existing Condition
- Existing plus Project Condition
- Project Opening Year (2019)
- Project Opening Year plus project

Based on the analysis in this TIA, all intersections and project driveways currently operate and are forecast to operate at satisfactory LOS D during the AM and PM peak hours. No project impacts were identified, and no mitigation measures are required.

Vehicle queuing at the intersection of Rose Drive/Alta Vista Street was also evaluated to determine whether vehicles on the adjacent streets could block the project driveways and thereby block vehicles entering and exiting the project. The queue at the adjacent signalized intersection of Rose Drive/Alta Vista Street would not extend to or block the project driveways during the AM or PM peak hours.

In addition, internal circulation was evaluated for ease of entry/exit and emergency vehicle access. The proposed residential security gate would have adequate capacity to accommodate the inbound vehicles during the AM and PM peak hours. Emergency vehicles would be able to access the commercial center and each residence without having to back-up or turn around on-site.

Finally, the proposed drive-through lane in the commercial center was evaluated against the City Municipal Code, which requires queuing for at least 7 vehicles. The project design provides space for approximately 16 vehicles and would therefore meet the City Municipal Code requirements for drive-through storage.

2 INTRODUCTION

This Traffic Impact Analysis (TIA) has been prepared by EPD Solutions, Inc. (EPD) to analyze the potential transportation-related impacts of the proposed Alta Vista Commercial/Residential Project (Project). The scope of work for this TIA was reviewed and approved by the City of Placentia and is provided in Appendix A. The TIA was prepared according to the approved scope of work using methodologies and significance criteria consistent with the requirements of the City of Placentia General Plan, the County of Orange Congestion Management Program and applicable provisions of the California Environmental Quality Act (CEQA).

2.1 Project Description

The proposed project is located on an 8.45-acre site at the southeast corner of Rose Drive and Alta Vista Street in the City of Placentia (City). The location of the project is shown in Figure 1 - Project Location, and the project site plan is shown in Figure 2 – Project Site Plan. The project proposes to construct a 10,600 square-foot commercial center at the corner of Rose Drive/Alta Vista Street and 54 single-family detached homes southeast of the commercial portion of the project. The commercial component of the project is proposed to be approximately half retail and half restaurant. To provide a worst-case analysis, retail uses with a higher than average trip generation per square foot were selected. This study assumes that the commercial component of the project would be comprised of a 2,000 square-foot coffee shop with drive through lane and 8,600 square feet of fast-casual restaurant space or retail/service commercial.

Figure 1: Project Location

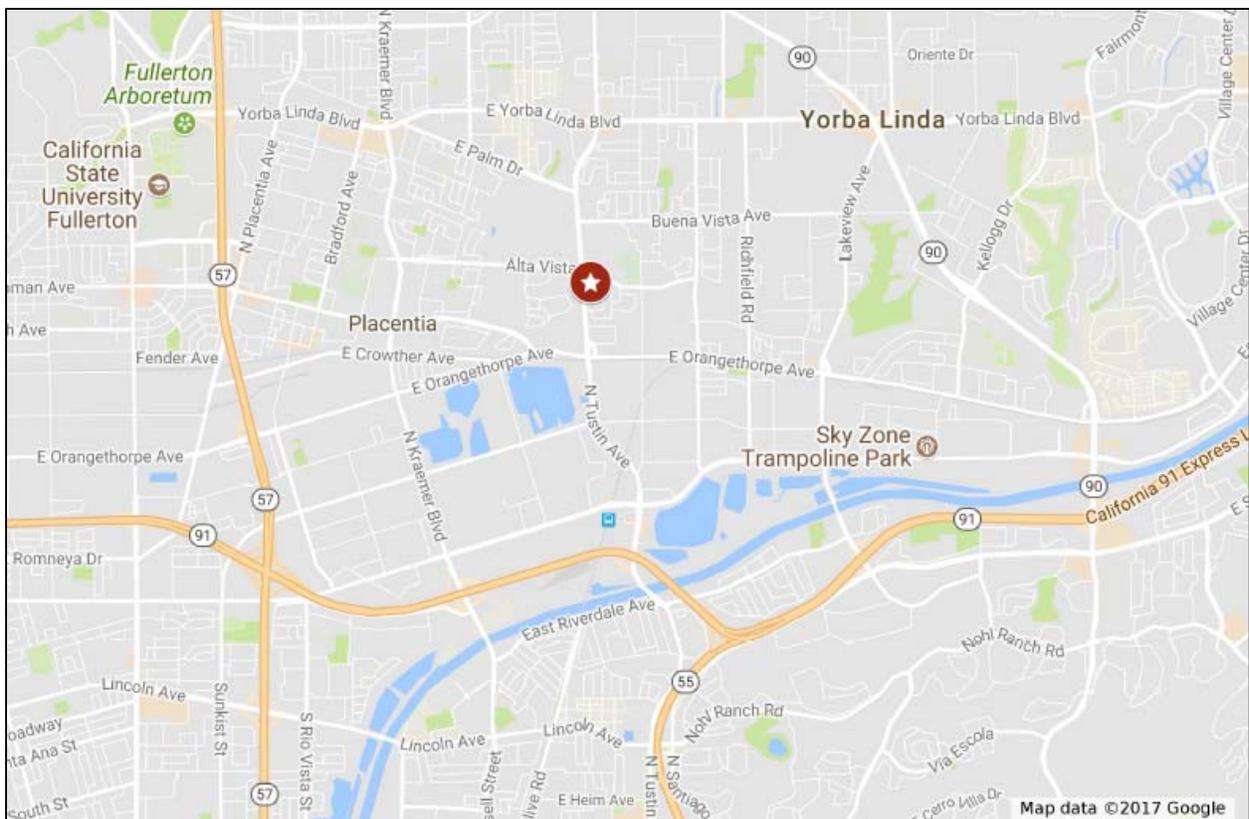
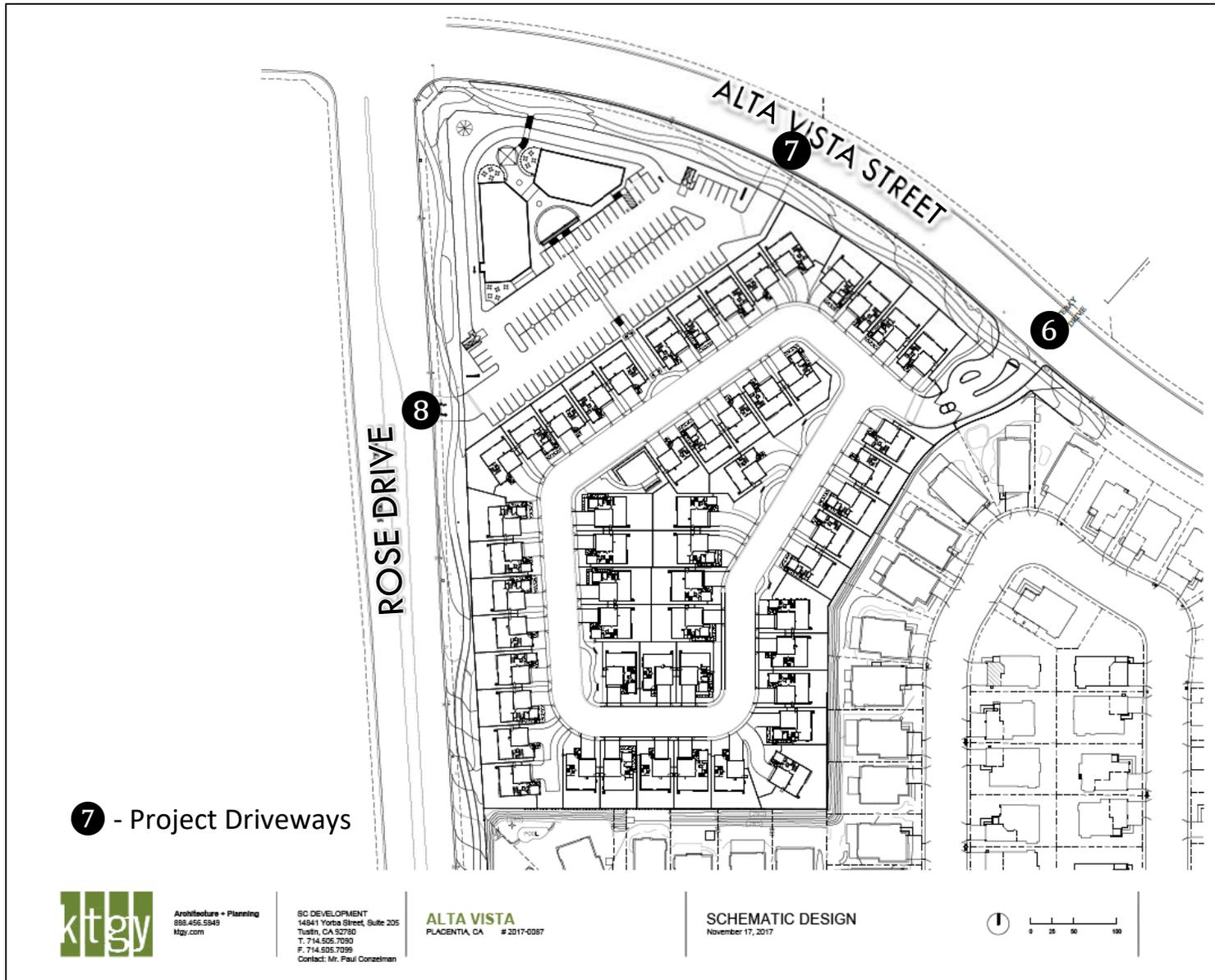


Figure 2: Project Site Plan



Access to the residential portion would be provided via a gated access from Alta Vista Street. Access to the commercial portion of the project would be provided from both Rose Drive and Alta Vista Street. The commercial driveway on Rose Drive would be right-in/right-out only, while the commercial driveway on Alta Vista Street would be full-access.

2.2 Study Area and Analysis Scenarios

This TIA includes all signalized intersections where the project has the potential to add 50-trips or more. The following study area was approved by City staff, via the scoping agreement. Based on the 50-trip criteria, the following intersections were included in the analysis: The location of the eight study area intersections is shown on Figure 3 – Project Study Area.

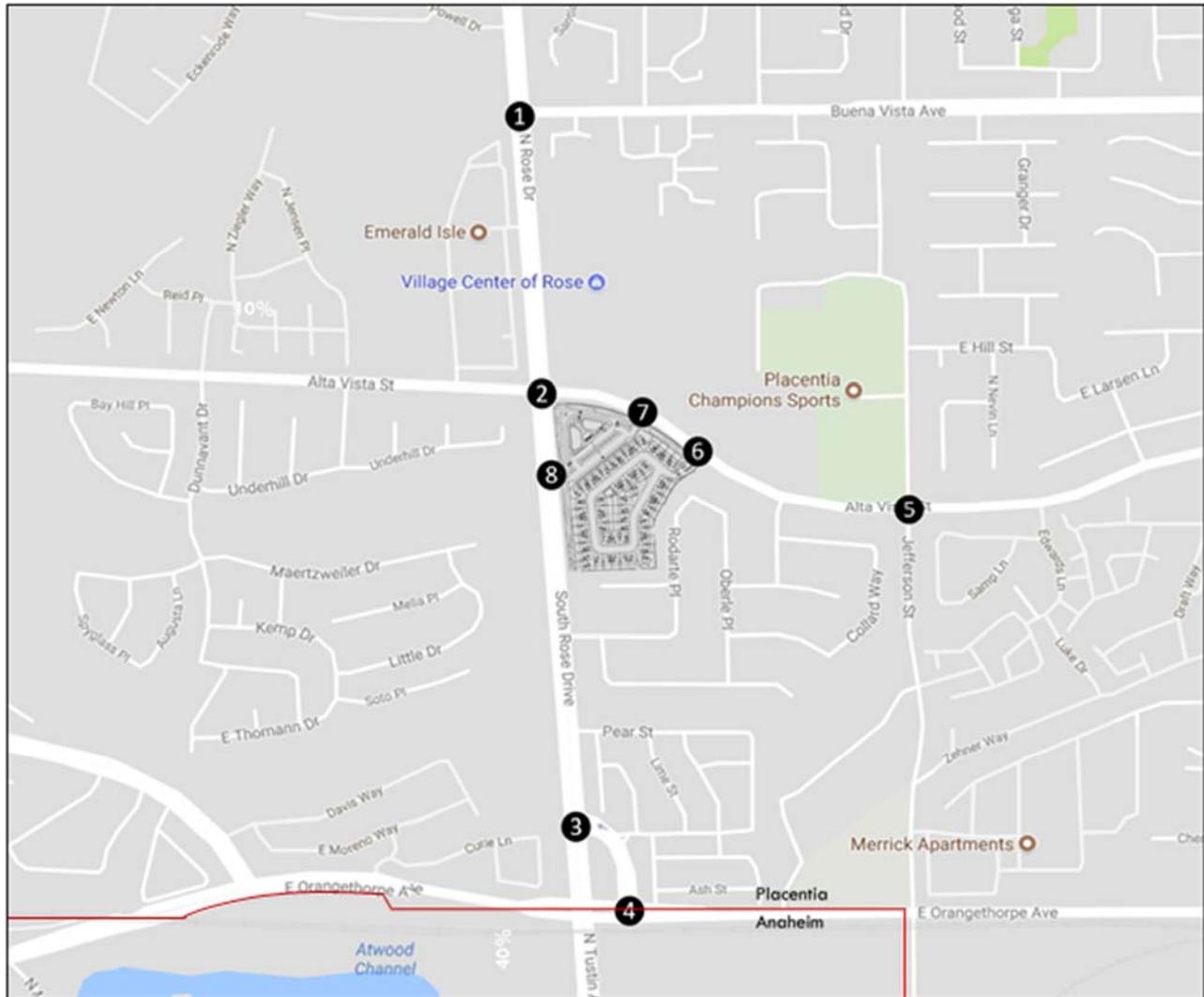
1. Rose Drive/Buena Vista Avenue
2. Rose Drive/Alta Vista Street
3. Rose Drive/Del Cerro Drive
4. Del Cerro Drive/Orangethorpe Avenue
5. Jefferson Street/Alta Vista Street
6. Residential Driveway/Alta Vista Street (future intersection)
7. Commercial Driveway/Alta Vista Street (aligned with existing retail center driveway)
8. Rose Drive/Commercial Driveway (future intersection)

Study area intersections were evaluated during the AM and PM peak hours, which are defined as the hour with the highest traffic volumes during the 7 AM to 9 AM and 4 PM to 6 PM peak commute periods. AM and PM peak hour traffic operations were evaluated for the following scenarios:

- Existing Condition
- Existing plus Project Condition
- Project Opening Year (2019)
- Project Opening Year plus project

Forecast traffic volumes for the Opening Year (2019) condition were developed by applying a growth rate of one percent per year to the 2017 traffic counts and adding traffic from nearby cumulative (approved and not yet build and those under review) development projects. The growth rate was provided by City of Placentia staff during the scoping process. Cumulative projects for the cities of Placentia and Anaheim are included in the Opening Year (2019) analysis.

Figure 3: Project Study Area



2.3 Methodology

Intersection operations are evaluated using Level of Service (LOS), which is a measure of the delay experienced by drivers on a roadway facility. LOS A indicates free-flow traffic conditions and is generally the best operating conditions. LOS F is an extremely congested condition and is the worst operating condition from the driver’s perspective. In this report, LOS at signalized intersections is calculated using the Intersection Capacity Utilization (ICU) methodology, while LOS at unsignalized intersections is calculated using the Highway Capacity Manual (HCM), 6th Edition methodology.

The ICU methodology is a planning-level operational methodology and provides an estimate of the volume to capacity (v/c) ratio at a signalized intersection. The overall v/c ratio for the intersection is the sum of the individual v/c ratio for each critical movement, plus an additional factor for the clearance interval (yellow plus all red time). The ICU calculations for this analysis utilize a lane

capacity of 1,700 vehicles per hour per lane and a clearance interval of 5 seconds. The LOS at the intersection is determined according to the values shown in Table 1.

Table 1. Relationship between ICU and LOS

LOS	ICU (V/C Ratio)
A	≤ 0.60
B	0.61 to ≤ 0.70
C	0.71 to ≤ 0.80
D	0.81 to ≤ 0.90
E	0.91 to ≤ 1.00
F	>1.00

The Highway Capacity Manual Two-Way Stop-Controlled (TWSC) intersection methodology calculates LOS based on the delay experienced by drivers on the minor (stop-controlled) approaches to the intersection. For TWSC intersections, LOS is determined for each minor-street movement, as well as the major-street left-turns. The relationship between delay and LOS at TWSC intersections is shown in Table 2.

Table 2. Relationship between Delay and LOS

LOS	Delay (seconds)
A	0-10
B	>10 – 15
C	>15 – 25
D	>25 – 35
E	>35 – 50
F	>50

2.4 Significance Criteria

City of Placentia

General Plan Policy CIR 1.1 of the City of Placentia Circulation Element states “Developments that are under the City’s jurisdiction are to provide improvements needed to maintain LOS D or better with existing plus new development traffic”. Based on this policy, a significant impact would occur if the project causes an intersection to deteriorate from acceptable LOS (LOS D or better) to unacceptable LOS E or F. If an intersection is already operating at LOS E or F, a project impact would occur if the project causes an increase of 0.01 or more in the v/c ratio.

City of Anaheim

One of the study intersections, Del Cerro Drive/Orangethorpe Avenue, is partially in the City of Anaheim. The City of Anaheim Criteria for Preparation of Traffic Impact Studies¹, provides the following scale to determine whether a transportation impact is significant:

LOS	Final V/C Ratio	Project-Related Increase In V/C
C	>0.700 – 0.800	equal to or greater than 0.050
D	>0.800 – 0.900	equal to or greater than 0.030
E, F	>0.900	equal to or greater than 0.010

¹ City of Anaheim, *Criteria for Preparation of Traffic Impact Studies*, undated.

3 BASELINE CONDITIONS

This section discusses the baseline (without project) conditions. Baseline conditions are those conditions that exist within the study area in the existing condition and that are forecast to occur in the future, without the proposed project.

3.1 Existing Transportation System

Existing access to the project site is provided by Rose Drive and Alta Vista Street. Characteristics of each roadway are discussed below:

- Rose Drive is classified as a Modified Major Arterial in the City's General Plan Circulation Element. Adjacent to the project, Rose Drive is a six-lane divided roadway with a posted speed limit of 45 MPH. There are sidewalks on both sides of Rose Drive. Bus stops are located on Rose Drive north and south of Alta Vista Street.
- Alta Vista Street is classified as a Secondary arterial in the City's General Plan Circulation Element. Adjacent to the project, Alta Vista Street is a four-lane roadway with a two-way left-turn lane. Class II Bicycle Lanes are provided on Alta Vista Street from Kraemer Boulevard to Van Buren Street.

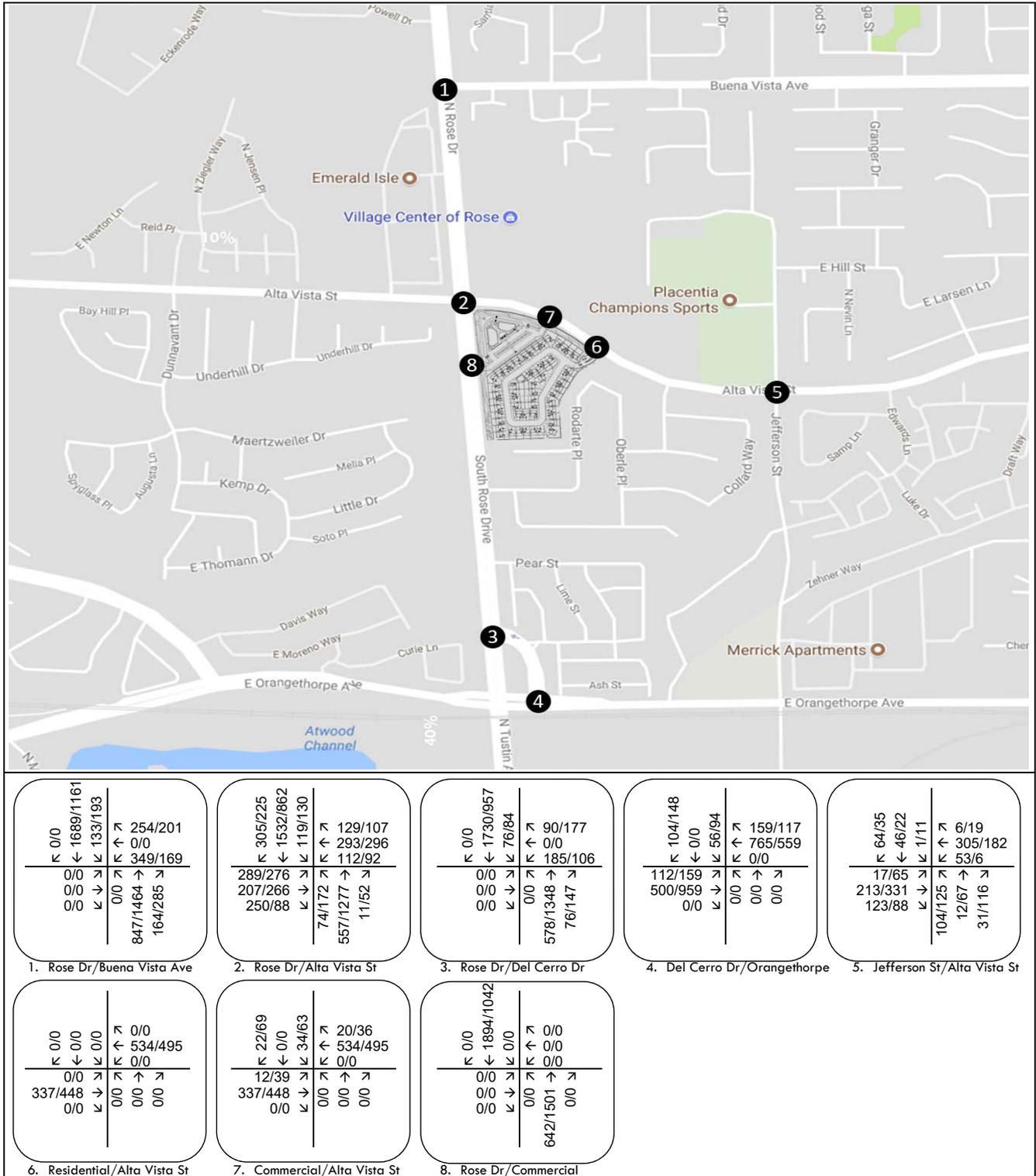
The project site is served by Orange County Transportation Authority (OCTA) bus route 71, which provides service from Yorba Linda to Newport Beach.

3.2 Existing Traffic Volumes and Levels of Service

Traffic counts at the five existing study area intersections shown in Figure 3 – Project Study Area, were collected on Tuesday, October 3 and Thursday, October 5, 2017. Counts at the existing shopping center driveway were collected on Tuesday, November 14, 2017. The counts were taken on typical weekdays when schools were in session. Intersection turn movement count sheets are provided in Appendix B. Existing AM and PM peak hour traffic volumes are shown on Figure 4 – Existing AM and PM peak Hour Traffic Volumes.

The existing Levels of Service at the five existing study area intersections were determined using the ICU methodology, described previously in section 1.3. Table 3 shows the existing AM and PM peak hour levels of service at study intersections. All LOS calculations are provided in Appendix C. As shown in Table 3, all of the intersections operate at satisfactory LOS C or better during the AM and PM peak hours in the existing (2017) condition.

Figure 4: Existing AM and PM Peak Hour Traffic Volumes



xx/yy = AM/PM Peak Hour Traffic Volume

① = Project Study Area Intersection

Table 3. Existing AM and PM Peak Hour Levels of Service

Intersection	LOS Method	AM Peak		PM Peak	
		V/C or Delay ²	LOS ¹	V/C or Delay ²	LOS ¹
1. Rose Dr/Buena Vista Ave	ICU	0.752	C	0.796	C
2. Rose Dr/Alta Vista St	ICU	0.669	B	0.634	B
3. Rose Dr/Del Cerro Dr	ICU	0.613	B	0.551	A
4. Del Cerro Dr/Orangethorpe	ICU	0.301	A	0.293	A
5. Jefferson St/Alta Vista St	ICU	0.279	A	0.271	A
6. Residential Driveway/Alta Vista St	HCM	Does not Exist			
7. Commercial Driveway/Alta Vista St	HCM	13.3	B	14.9	B
8. Rose Dr/Commercial Driveway	HCM	Does not Exist			

ICU = Intersection Capacity Utilization

HCM = Highway Capacity Manual

TWSC = Two Way Stop Controlled (evaluated using the HCM Methodology)

¹ Level of Service² Volume-to-capacity ratio for signalized intersection, delay for unsignalized intersections

3.3 Project Opening Year (2019) Traffic Volumes and LOS

Project Opening Year (2019) traffic volumes were developed by applying a growth rate of one percent per year to the existing (2017) traffic volumes and adding traffic generated by other approved and pending development projects. One project in the City of Placentia and five projects in the City of Anaheim were identified. The location of the cumulative projects is shown in Figure 5 – Location of Cumulative Projects. The project trip generation for each cumulative project was calculated using trip rates from the Institute of Transportation Engineers, *Trip Generation*, 10th Edition. Table 4 shows the trip generation for each cumulative project.

Figure 5: Location of Cumulative Projects

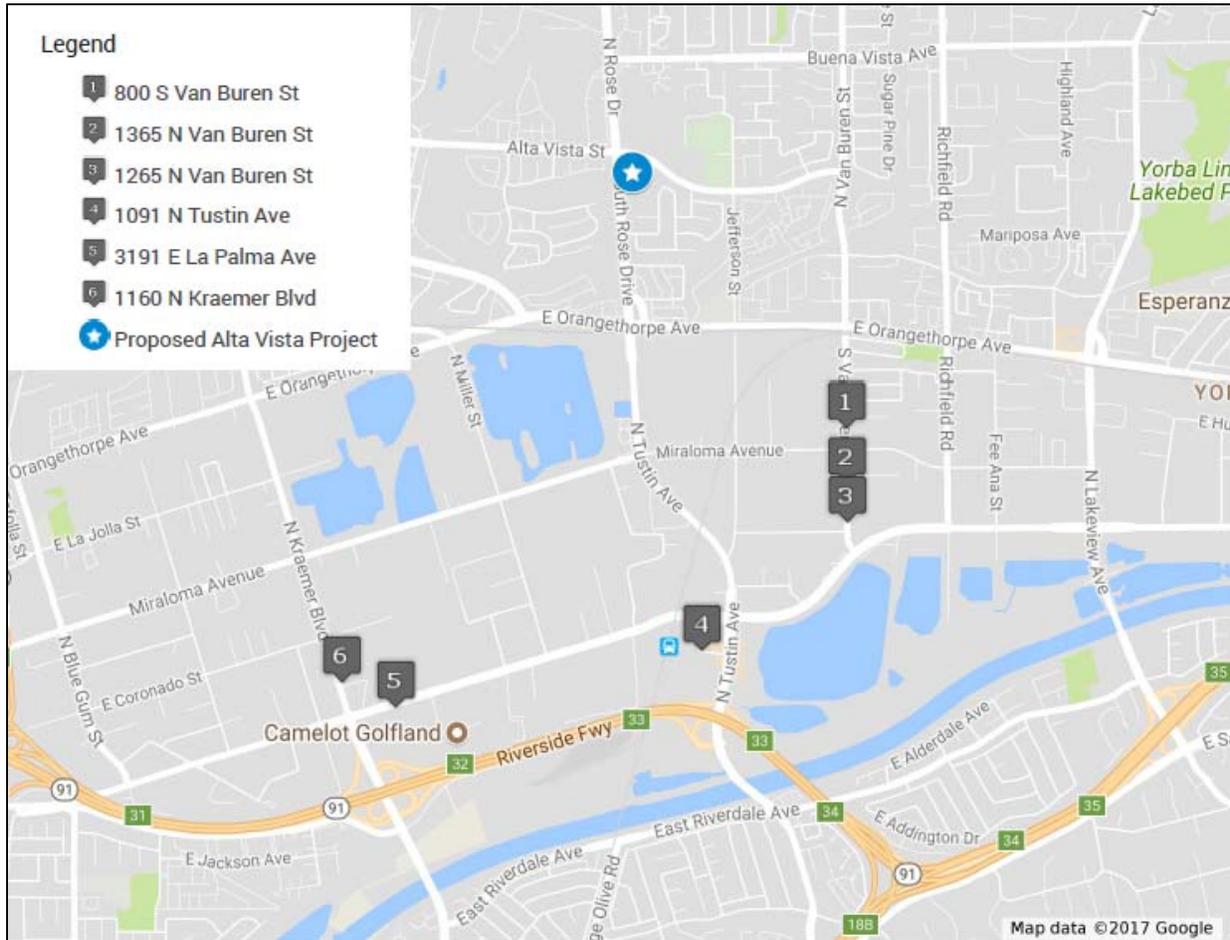


Table 4. Cumulative Projects Trip Generation

Land Use	Units	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
<u>Trip Rates</u>								
Residential with 1st-Floor Commercial ¹	DU	3.44	0.08	0.22	0.30	0.25	0.11	0.36
High-Turnover (Sit-Down) Restaurant ²	TSF	112.18	5.47	4.47	9.94	6.06	3.71	9.77
General Light Industrial ³	TSF	4.96	0.62	0.08	0.70	0.08	0.55	0.63
Warehouse ⁴	TSF	1.74	0.13	0.04	0.17	0.05	0.14	0.19
Drinking Place ⁵	TSF	113.60	-	-	-	7.50	3.86	11.36
Office ⁶	TSF	9.74	1.00	0.16	1.16	0.18	0.97	1.15
<u>Placentia Projects</u>								
1. S. Van Buren Industrial Industrial	118.410 TSF	587	73	10	83	10	65	75
<u>Anaheim Projects</u>								
2. 1365 N. Van Buren St. 2 Industrial Buildings	114.659 TSF	569	71	10	80	9	63	72
3. 1265 N. Van Buren St. Industrial	180.162 TSF	894	111	15	126	15	99	114
4. 1011-1091 N. Tustin Ave. Multi-Family DU	406 DU	1397	34	88	122	102	44	146
Retail	5.000 TSF							
5. 3191 E. La Palma Ave. Brewery and Tasting Room								
Warehouse	45.768 TSF	80	6	2	8	2	6	9
Event Area ⁵	5.084 TSF	578	-	-	-	38	20	58
Office	14.348 TSF	140	14	2	17	3	14	17
Total Brewery and Tasting Room		797	20	4	24	43	40	83
6. 1160 N. Kraemer Blvd. Restaurant	6.635 TSF	744	36	30	66	40	25	65
Total Trip Generation		4,988	345	156	501	219	335	554

TSF = Thousand Square Feet

¹ Trip rates from the Institute of Transportation Engineers, *Trip Generation, 10th Edition*, 2017. Land Use Code 231 - Mid-Rise Residential with 1st-Floor² Trip rates from the Institute of Transportation Engineers, *Trip Generation, 10th Edition*, 2017. Land Use Code 932 - High Turnover (Sit-Down) Restaurant.³ Trip rates from the Institute of Transportation Engineers, *Trip Generation, 10th Edition*, 2017. Land Use Code 110 - General Light Industrial.⁴ Trip rates from the Institute of Transportation Engineers, *Trip Generation, 10th Edition*, 2017. Land Use Code 150 - Warehousing.⁵ Trip rates from the Institute of Transportation Engineers, *Trip Generation, 10th Edition*, 2017. Land Use Code 925 - Drinking Place.⁶ Trip rates from the Institute of Transportation Engineers, *Trip Generation, 10th Edition*, 2017. Land Use Code 710 - General Office Building.

The traffic volumes generated by the cumulative projects were distributed to the study area intersections and are illustrated in Figure 6 – AM and PM Peak Hour Cumulative Projects Trip Assignment. As noted in Section 2.2 – Study Area and Analysis Scenarios, forecast traffic volumes for the Opening Year (2019) condition were developed by applying a growth rate of one percent per year to the 2017 traffic counts and adding traffic from cumulative projects. The Opening Year (2019) traffic volumes are illustrated in Figure 7 – Project Opening Year (2019) AM and PM Peak Hour Traffic Volumes.

The Opening Year (2019) levels of service (LOS) at the five existing study area intersections were determined using the ICU methodology, described previously in Section 2.3 - Methodology. Table 5 shows the existing AM and PM peak hour levels of service at study intersections. As shown in Table 5, all of the intersections are forecast to operate at satisfactory LOS D or better during the AM and PM peak hours in the Opening Year (2019) condition.

Table 5. Opening Year (2019) AM and PM Peak Hour Levels of Service

Intersection	LOS Method	AM Peak		PM Peak	
		V/C or Delay ²	LOS ¹	V/C or Delay ²	LOS ¹
1. Rose Dr/Buena Vista Ave	ICU	0.773	C	0.821	D
2. Rose Dr/Alta Vista St	ICU	0.683	B	0.648	B
3. Rose Dr/Del Cerro Dr	ICU	0.632	B	0.571	A
4. Del Cerro Dr/Orangethorpe	ICU	0.313	A	0.301	A
5. Jefferson St/Alta Vista St	ICU	0.283	A	0.275	A
6. Residential Driveway/Alta Vista St	HCM	<i>Does not Exist</i>			
7. Commercial Driveway/Alta Vista St	HCM	13.4	B	15.1	C
8. Rose Dr/Commercial Driveway	HCM	<i>Does not Exist</i>			

ICU = Intersection Capacity Utilization

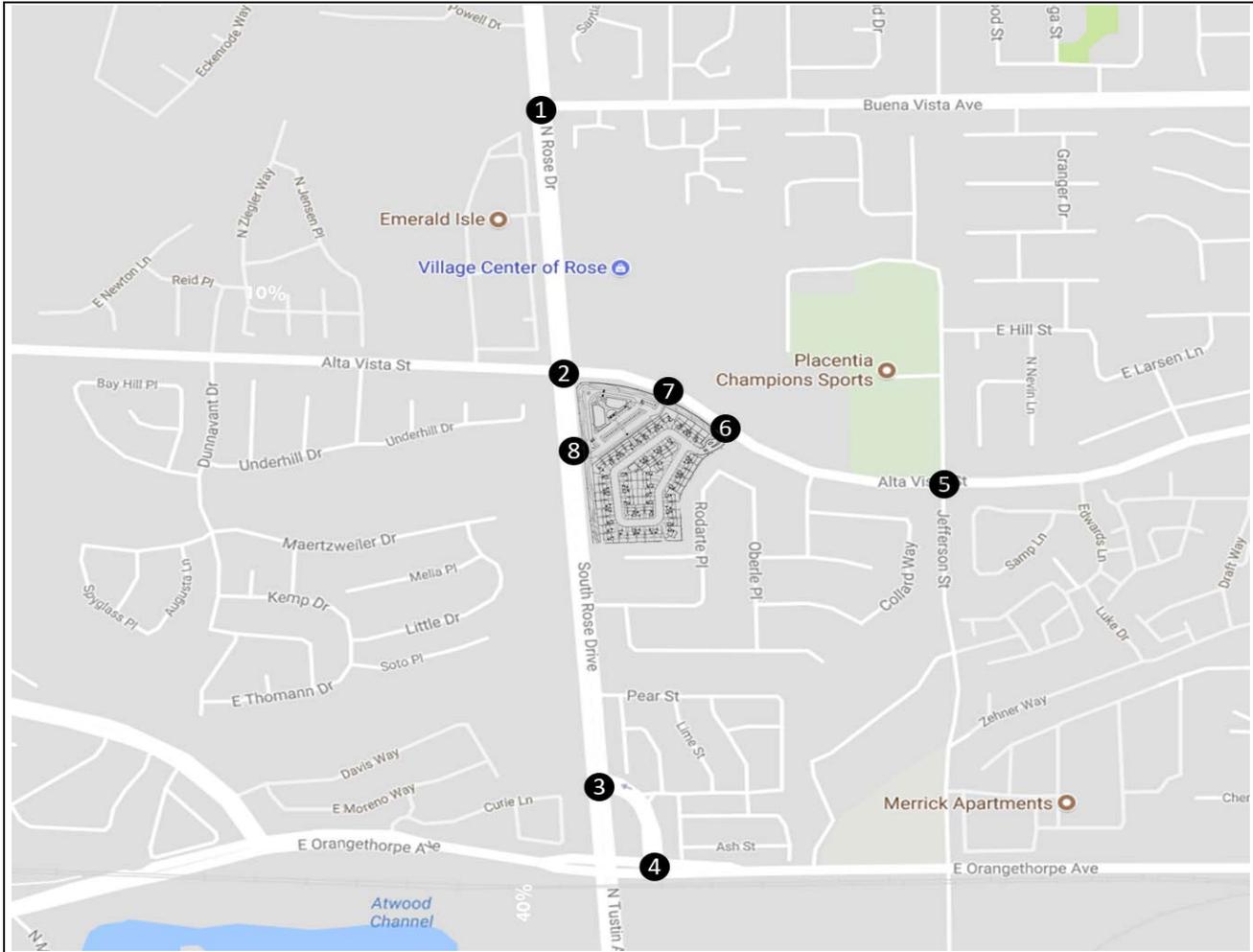
HCM = Highway Capacity Manual

TWSC = Two Way Stop Controlled (evaluated using the HCM Methodology)

¹ Level of Service

² Volume-to-capacity ratio for signalized intersection, delay for unsignalized intersections

Figure 6: AM and PM Peak Hour Cumulative Projects Trip Assignment



K 0/0	← 35/22	↑ 0/0	↖ 0/0
0/0	→ 0/0	↓ 0/0	↗ 0/0
0/0	↘ 0/0	↙ 16/33	↕ 0/0

1. Rose Dr/Buena Vista Ave

K 0/0	← 35/22	↑ 0/0	↖ 0/0
0/0	→ 0/0	↓ 0/0	↗ 0/0
0/0	↘ 0/0	↙ 16/33	↕ 0/0

2. Rose Dr/Alta Vista St

K 0/0	← 22/20	↑ 13/2	↖ 2/11
0/0	→ 0/0	↓ 0/0	↗ 0/0
0/0	↘ 0/0	↙ 14/22	↕ 0/0

3. Rose Dr/Del Cerro Dr

K 0/0	← 0/0	↑ 13/2	↖ 2/11
0/0	→ 0/0	↓ 0/0	↗ 13/41
38/14	↘ 0/0	↙ 0/0	↕ 0/0

4. Del Cerro Dr/Orangethorpe

K 0/0	← 0/0	↑ 0/0	↖ 0/0
0/0	→ 0/0	↓ 0/0	↗ 0/0
0/0	↘ 0/0	↙ 0/0	↕ 0/0

5. Jefferson St/Alta Vista St

K 0/0	← 0/0	↑ 0/0	↖ 0/0
0/0	→ 0/0	↓ 0/0	↗ 0/0
0/0	↘ 0/0	↙ 0/0	↕ 0/0

6. Residential/Alta Vista St

K 0/0	← 0/0	↑ 0/0	↖ 0/0
0/0	→ 0/0	↓ 0/0	↗ 0/0
0/0	↘ 0/0	↙ 0/0	↕ 0/0

7. Commercial/Alta Vista St

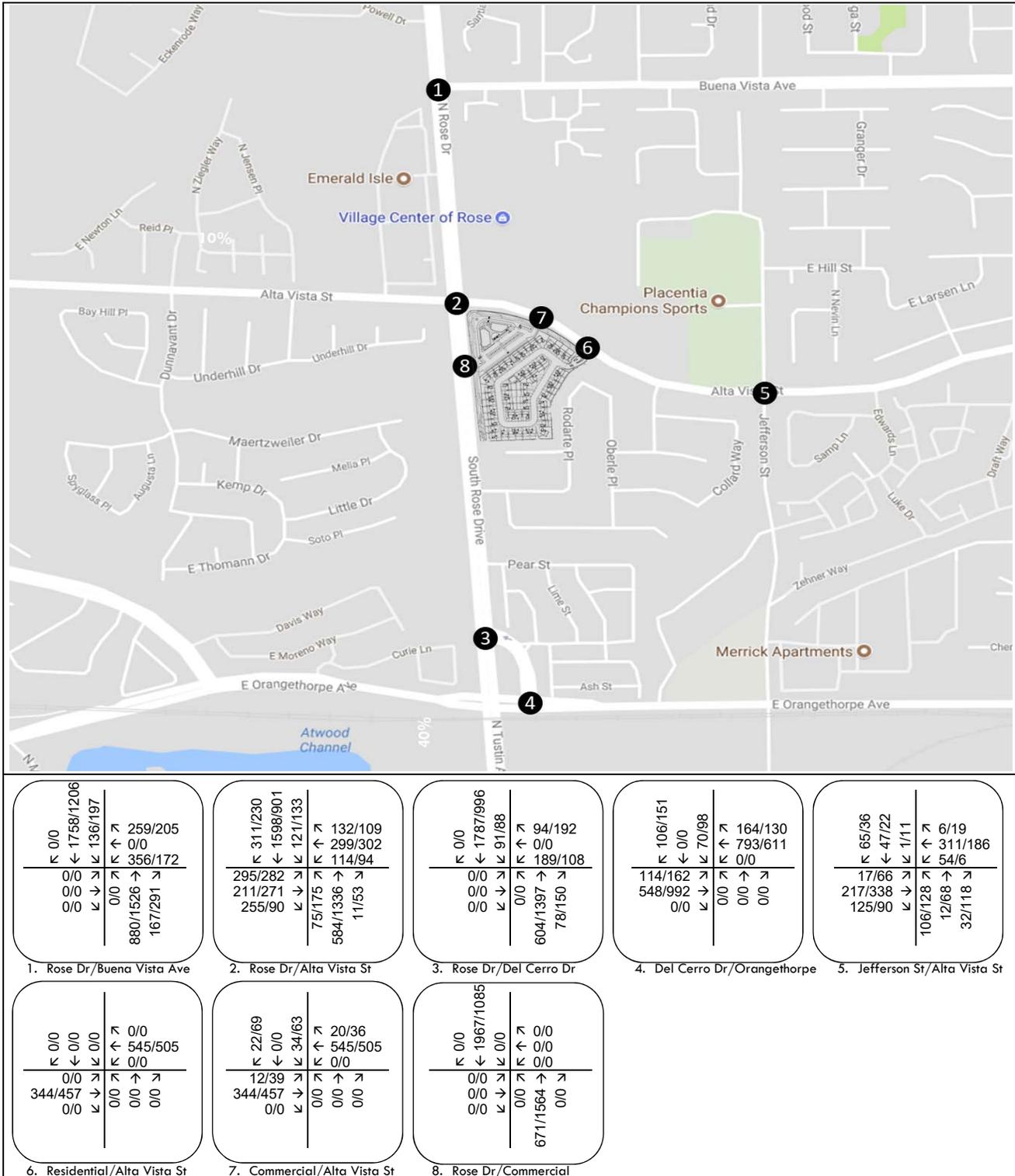
K 0/0	← 35/22	↑ 0/0	↖ 0/0
0/0	→ 0/0	↓ 0/0	↗ 0/0
0/0	↘ 0/0	↙ 16/33	↕ 0/0

8. Rose Dr/Commercial

xx/yy = AM/PM Peak Hour Traffic Volume

① = Project Study Area Intersection

Figure 7: Project Opening Year (2019) AM and PM Peak Hour Traffic Volumes



xx/yy = AM/PM Peak Hour Traffic Volume

① = Project Study Area Intersection

4 PROPOSED PROJECT

4.1 Project Description

As described in Section 2.1 – Project Description, the project proposes to construct a 10,600 square-foot commercial center and 54 single-family detached homes. This study evaluates a 2,000 square-foot coffee shop with drive through lane and 8,600 square-feet of fast-casual restaurant space or retail/service commercial. These uses were selected because restaurant is the retail/commercial use with the highest trip generation per square foot.

4.2 Project Access

As shown in Figure 2 – Project Site Plan, Access to the commercial portion of the project would be provided via two driveways; one on Rose Drive and one on Alta Vista Street. The driveway on Rose Drive would be right-in/right-out only. The driveway on Alta Vista Street would be aligned with the existing shopping center driveway on the north side of Alta Vista Street and would provide full-access into and out of the project. Access to the residential portion of the project will be provided via a full-access driveway on Alta Vista Street. A security gate will be located approximately 120 feet south of Alta Vista Street.

4.3 Project Trip Generation

Vehicle trips were generated for the project using trip rates from the Institute of Transportation Engineers (ITE) *Trip Generation* (10th Edition, 2017). It is expected that a significant number of vehicle trips would not be new trips, rather they will be trips that are already present on the street system, the drivers of which will stop at the proposed restaurant or coffee shop on their way to and from other destinations. Therefore, a pass-by percentage/estimate is provided in the trip generation estimates. The project trip generation is shown in Table 6. The project would generate 2,857 net daily, 145 net AM peak hour and 166 net PM peak hour trips.

Table 6. Project Trip Generation

Land Use	Units	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
<u>Trip Rates</u>								
Fast Casual Restaurant ¹	TSF	315.17	1.39	0.68	2.07	7.77	6.36	14.13
Coffee Shop with Drive Through ²	TSF	820.38	45.38	43.61	88.99	21.69	21.69	43.38
Single Family Residential ³	DU	9.44	0.19	0.56	0.74	0.62	0.37	0.99
<u>Project Trip Generation</u>								
Fast Casual Restaurant	8.6 TSF	2711	12	5	17	67	55	122
<i>Pass-By Trips (43 %) ⁴</i>		-1166	-	-	-	-29	-24	-53
Coffee Shop with Drive Through	2 TSF	1641	91	87	178	44	43	87
<i>Pass-By Trips (50 %) ⁵</i>		-821	-46	-44	-90	-22	-22	-44
Single Family Residential	54 DU	510	10	30	40	34	20	54
Total Trip Generation		2875	67	78	145	94	72	166

TSF = Thousand Square Feet

¹ Trip rates from the Institute of Transportation Engineers, *Trip Generation, 10th Edition*, 2017. Land Use Code 930 - Fast Casual Restaurant

² Trip rates from the Institute of Transportation Engineers, *Trip Generation, 10th Edition*, 2017. Land Use Code 937 - Coffee/Donut Shop with Drive-Through Window

³ Trip rates from the Institute of Transportation Engineers, *Trip Generation, 10th Edition*, 2017. Land Use Code 210 - Single-Family Detached Housing.

⁴ Pass-By Trip Percentage from the Institute of Transportation Engineers, *Trip Generation Handbook, 3rd Edition*. Land Use Code 932 - High-Turnover (Sit-Down) Restaurant.

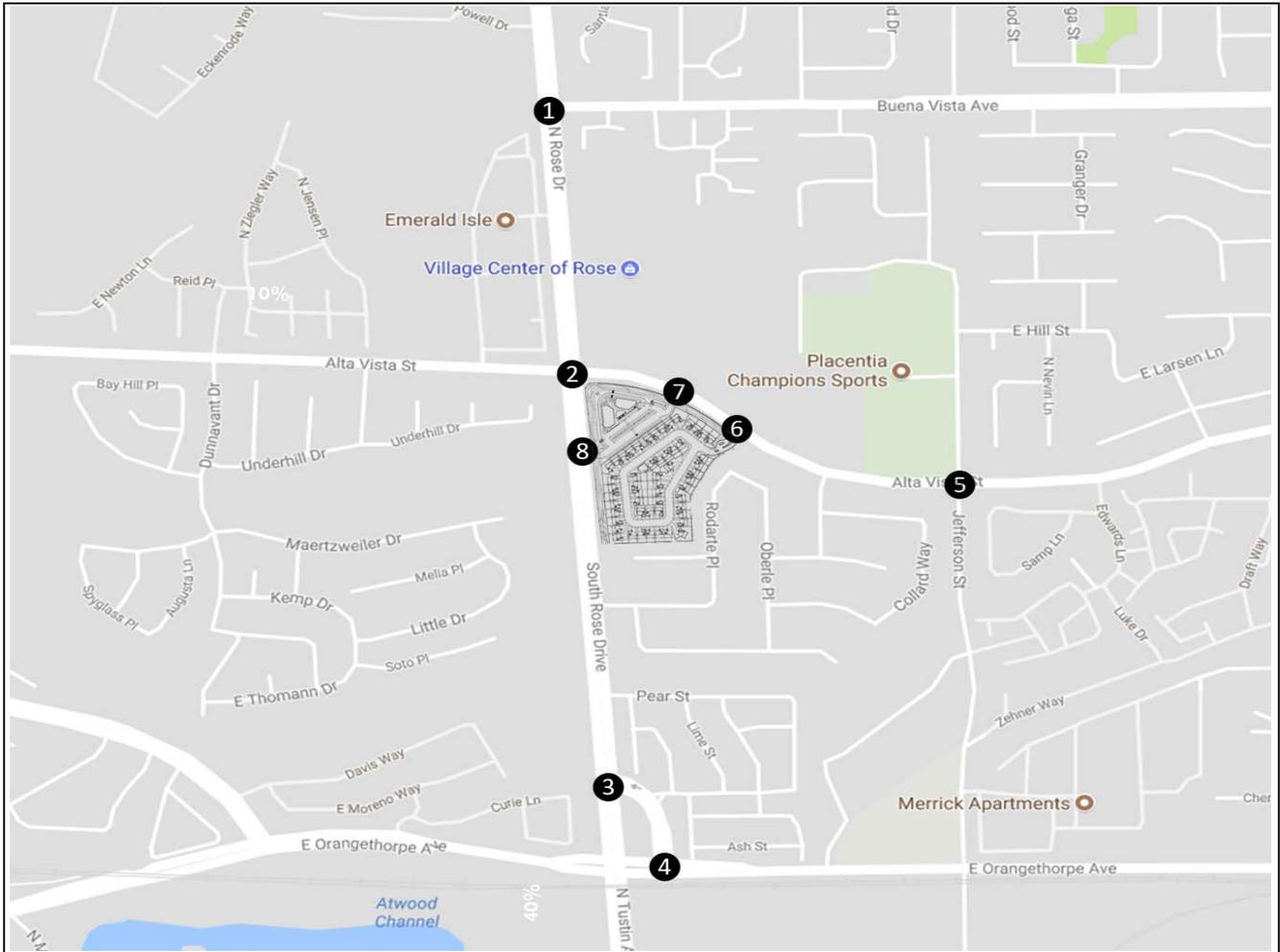
⁵ Pass-By Trip Percentage from the Institute of Transportation Engineers, *Trip Generation Handbook, 3rd Edition*. Land Use Code 934 - Fast-Food Restaurant with Drive-Through Window was used. There is no pass-by rate for Coffee Shop with Drive Through and indoor seating.

4.4 Project Trips

Project trips were distributed to the five study area intersections using existing travel patterns observed in the existing traffic counts as well as logical travel paths between the project and local and regional destinations. The forecast trip distribution is shown in Figure 8 – Project Trip Distribution. Project trips were assigned to the study area intersections by multiplying the net project trip generation by the trip distribution percent at each location. The project trip assignment is illustrated on Figure 9 – Project Trip Assignment.

The commercial portion of the project would likely generate pass-by trips. A pass-by trip is a trip that stops at the commercial center on their way to or from another destination. Project pass-by trips would not be assigned at offsite intersections, as these trips are already utilizing the roadway network and are accounted for in the existing traffic counts. Pass-by trips were added to the project driveways and at the adjacent intersection of Rose Drive/Alta Vista Street. Pass-by trips are shown on Figure 10 – Project Pass-By Trips.

Figure 9: Project Trip Assignment



K	0/0	←	10/14	→	0/0
←	0/0	←	0/0	→	0/0
0/0	→	←	0/0	→	3/5
0/0	←	0/0	→	→	4/4
			12/11		

1. Rose Dr/Buena Vista Ave

K	0/0	←	0/0	→	13/19
←	0/0	←	0/0	→	11/9
0/0	→	←	7/9	→	8/7
0/0	←	0/0	5/5	→	47/43
			0/0		6/20

2. Rose Dr/Alta Vista St

K	0/0	←	31/29	→	16/14
←	0/0	←	0/0	→	13/19
0/0	→	←	0/0	→	0/0
0/0	←	0/0	27/38	→	0/0
			0/0		0/0

3. Rose Dr/Del Cerro Dr

K	12/11	←	0/0	→	4/4
←	0/0	←	0/0	→	3/5
0/0	→	←	0/0	→	0/0
0/0	←	0/0	0/0	→	0/0
			0/0		0/0

4. Del Cerro Dr/Orangethorpe

K	0/0	←	0/0	→	0/0
←	0/0	←	0/0	→	0/0
0/0	→	←	8/7	→	7/9
0/0	←	0/0	0/0	→	0/0
			0/0		0/0

5. Jefferson St/Alta Vista St

K	0/0	←	0/0	→	0/0
←	0/0	←	0/0	→	6/6
0/0	→	←	5/5	→	1/3
0/0	←	0/0	0/0	→	3/2
			27/18		

6. Residential/Alta Vista St

K	0/0	←	0/0	→	0/0
←	0/0	←	0/0	→	27/18
0/0	→	←	9/31	→	6/6
0/0	←	0/0	17/18	→	5/5
			38/41		0/0

7. Commercial/Alta Vista St

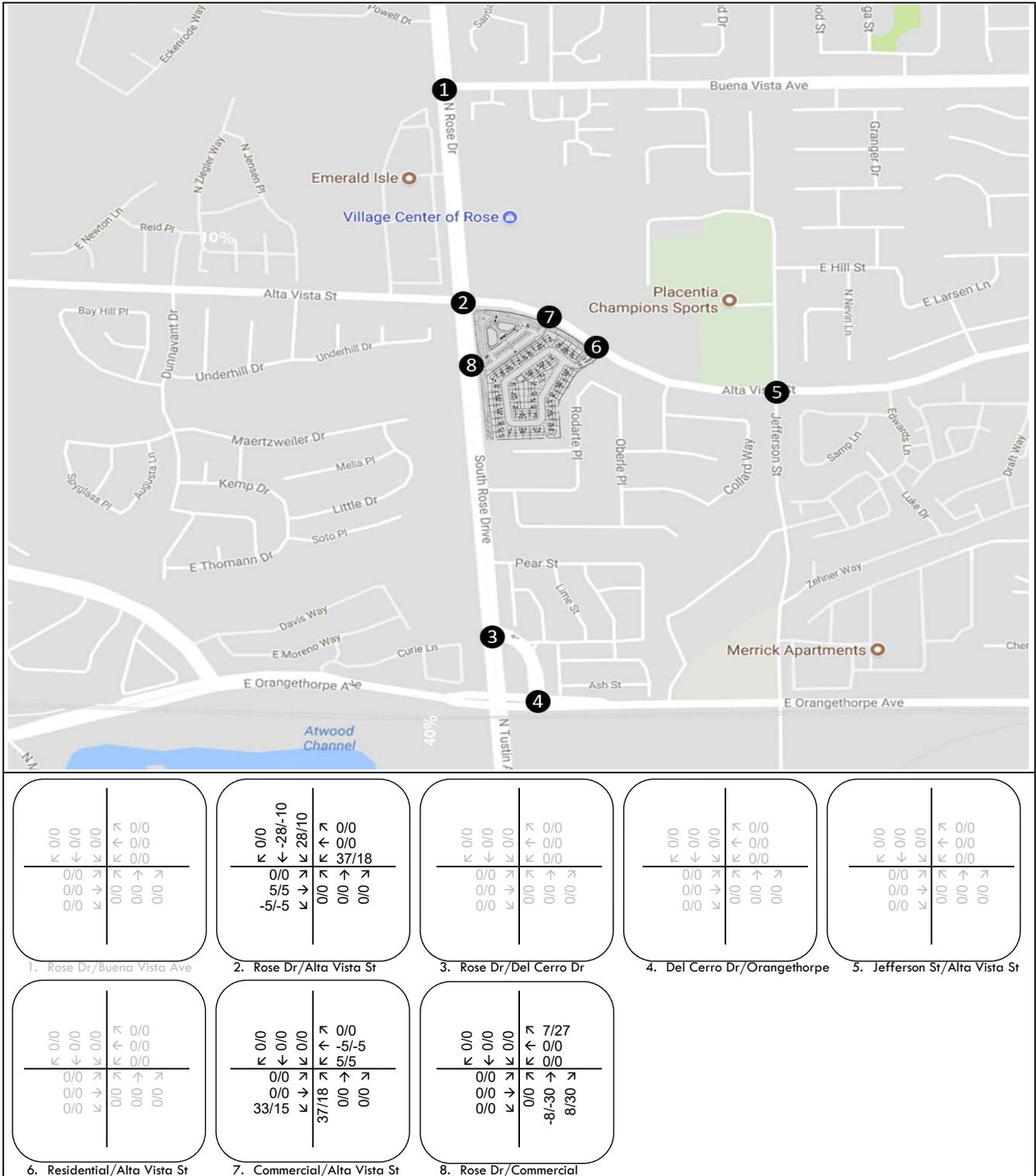
K	0/0	←	47/43	→	0/0
←	0/0	←	0/0	→	5/5
0/0	→	←	0/0	→	0/0
0/0	←	0/0	6/20	→	34/36
			0/0		0/0

8. Rose Dr/Commercial

xx/yy = AM/PM Peak Hour Traffic Volume

① = Project Study Area Intersection

Figure 10: Project Pass-By Trips



xx/yy = AM/PM Peak Hour Traffic Volume

① = Project Study Area Intersection

Note: Pass-By Trips are only added to the project driveways and the adjacent intersection of Rose Dr/Alta Vista St.

5 PROJECT IMPACTS

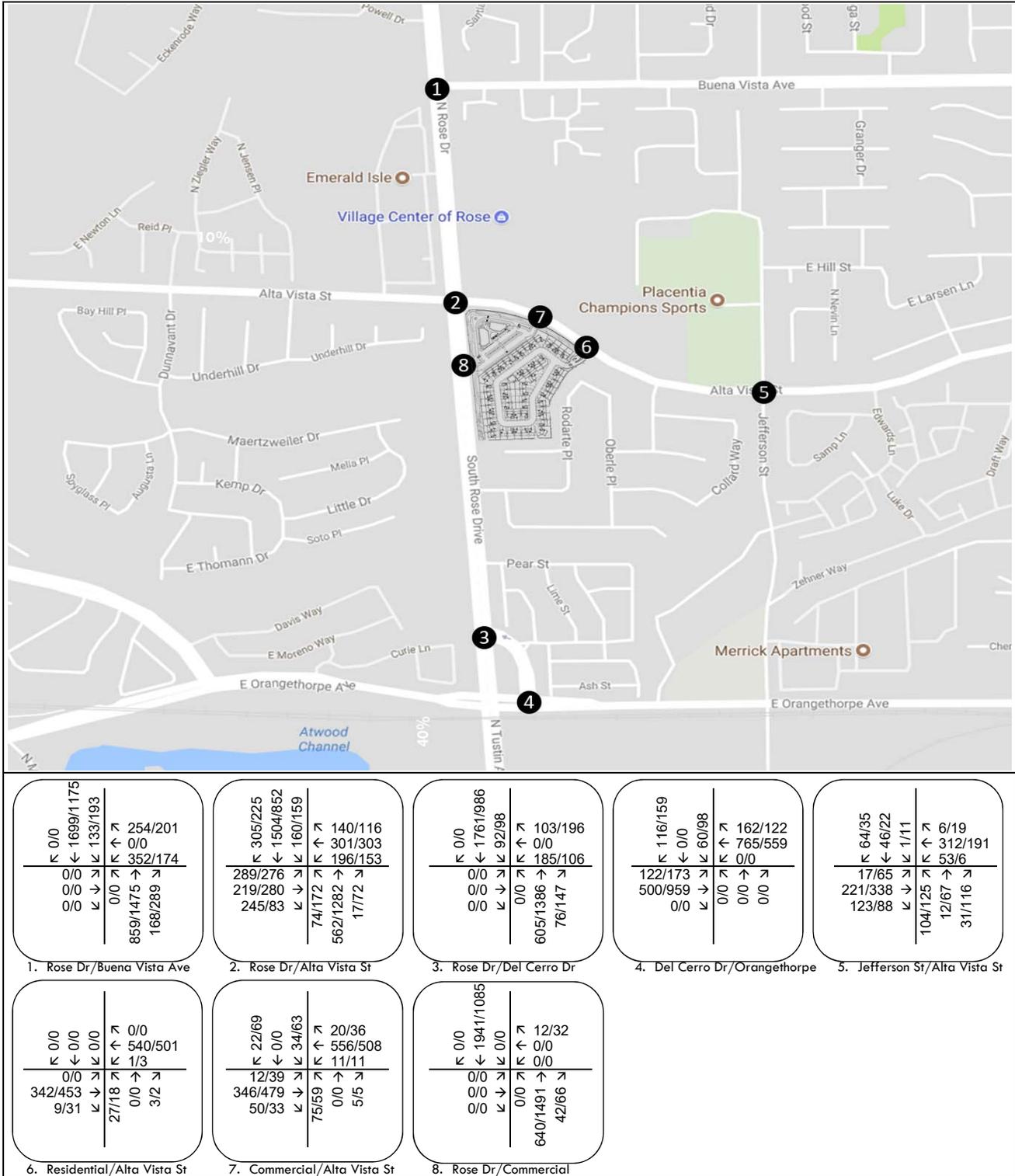
5.1 Existing Plus Project Traffic Volumes and Intersection Operations

Existing With Project traffic volumes were determined by adding the project trips and pass-by trips to the Existing Without Project traffic volumes. Figure 11 – Existing plus Project AM and PM Peak Hour Traffic Volumes, shows the Existing With Project weekday AM and PM peak hour traffic volumes at the study intersections.

An intersection operations analysis was conducted for the study area to evaluate the Existing With Project weekday AM and PM peak hour conditions. Intersection operations were calculated using the LOS methodology described previously in Section 2.3 - Methodology. Table 7 provides a comparison between the Existing Without and With Project conditions.

As shown in Table 7, all study area intersections would continue to operate at satisfactory LOS D or better when the project traffic is added to existing conditions. The project would not cause any significant impacts at study intersections and no mitigation measures are required.

Figure 11: Existing plus Project AM and PM Peak Hour Traffic Volumes



xx/yy = AM/PM Peak Hour Traffic Volume

① = Project Study Area Intersection

Table 7. Existing and Existing plus Project Peak Hour Levels of Service

Intersection	LOS Method	Existing				Existing plus Project				V/C Change		Impact?	
		AM Peak		PM Peak		AM Peak		PM Peak		AM	PM	AM	PM
		V/C or Delay ²	LOS ¹										
1. Rose Dr/Buena Vista Ave	ICU	0.752	C	0.796	C	0.817	D	0.833	D	0.065	0.037	NO	NO
2. Rose Dr/Alta Vista St	ICU	0.669	B	0.634	B	0.744	C	0.697	B	0.075	0.063	NO	NO
3. Rose Dr/Del Cerro Dr	ICU	0.613	B	0.551	A	0.666	B	0.600	A	0.053	0.049	NO	NO
4. Del Cerro Dr/Orangethorpe	ICU	0.301	A	0.293	A	0.356	A	0.309	A	0.055	0.016	NO	NO
5. Jefferson St/Alta Vista St	ICU	0.279	A	0.271	A	0.299	A	0.295	A	0.020	0.024	NO	NO
6. Residential Driveway/Alta Vista St	HCM	<i>Does not Exist</i>				12.5	B	13.3	B	-	-	NO	NO
7. Commercial Driveway/Alta Vista St	HCM	13.3	B	14.9	B	22.3	C	31.3	D	-	-	NO	NO
8. Rose Dr/Commercial Driveway	HCM	<i>Does not Exist</i>				11.9	B	20.8	C	-	-	NO	NO

ICU = Intersection Capacity Utilization

HCM = Highway Capacity Manual

TWSC = Two Way Stop Controlled (evaluated using the HCM Methodology)

¹ Level of Service

² Volume-to-capacity ratio for signalized intersection, delay for unsignalized intersections

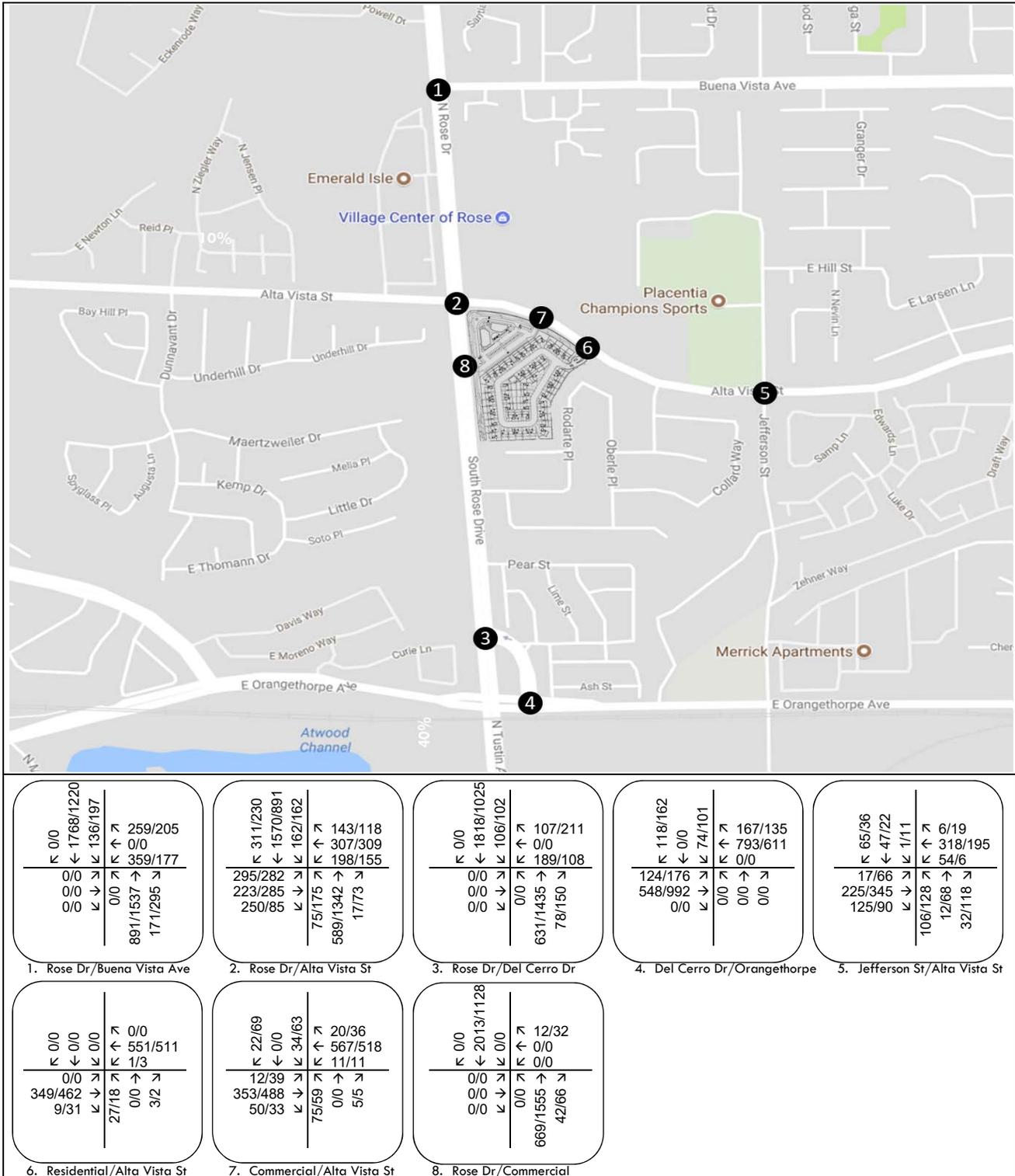
5.2 Opening Year (2019) Plus Project Traffic Volumes and Intersection Operations

Opening Year (2019) with-project traffic volumes were determined by adding the project trips and pass-by trips to the Opening Year (2019) without-project traffic volumes. Figure 12 – Opening Year (2019) plus Project AM and PM Peak Hour Traffic Volumes, shows the Opening Year (2019) with-project weekday AM and PM peak hour traffic volumes at the study intersections.

An intersection operations analysis was conducted for the study area to evaluate the Opening Year (2019) with-Project weekday AM and PM peak hour conditions. Intersection operations were calculated using the LOS methodology described previously. Table 8 provides a comparison between the Existing without and with-project conditions.

As shown in Table 8, all study area intersections would continue to operate at satisfactory LOS D or better when the project traffic is added to Opening Year (2019) conditions. The project would not cause any significant impacts at study intersections and no mitigation measures are required.

Figure 12: Opening Year (2019) plus Project AM and PM Peak Hour Traffic Volumes



xx/yy = AM/PM Peak Hour Traffic Volume

① = Project Study Area Intersection

Table 8. Opening Year (2019) and Opening Year plus Project Peak Hour Levels of Service

Intersection	LOS Method	Opening Year				Opening Year plus Project				V/C Change		Impact?	
		AM Peak		PM Peak		AM Peak		PM Peak		AM	PM	AM	PM
		V/C or Delay ²	LOS ¹										
1. Rose Dr/Buena Vista Ave	ICU	0.773	C	0.821	D	0.839	D	0.858	D	0.066	0.037	NO	NO
2. Rose Dr/Alta Vista St	ICU	0.683	B	0.648	B	0.760	C	0.711	C	0.077	0.063	NO	NO
3. Rose Dr/Del Cerro Dr	ICU	0.632	B	0.571	A	0.686	B	0.621	B	0.054	0.050	NO	NO
4. Del Cerro Dr/Orangethorpe	ICU	0.313	A	0.301	A	0.370	A	0.319	A	0.057	0.018	NO	NO
5. Jefferson St/Alta Vista St	ICU	0.283	A	0.275	A	0.304	A	0.3	A	0.021	0.025	NO	NO
6. Residential Driveway/Alta Vista St	HCM	<i>Does not Exist</i>				12.6	B	13.4	B	-	-	NO	NO
7. Commercial Driveway/Alta Vista St	HCM	13.4	B	15.1	C	22.8	C	32.7	D	-	-	NO	NO
8. Rose Dr/Commercial Driveway	HCM	<i>Does not Exist</i>				12.1	B	21.8	C	-	-	NO	NO

ICU = Intersection Capacity Utilization

HCM = Highway Capacity Manual

TWSC = Two Way Stop Controlled (evaluated using the HCM Methodology)

¹ Level of Service

² Volume-to-capacity ratio for signalized intersection, delay for unsignalized intersections

6 ACCESS AND SITE CIRCULATION

6.1 Project Access

As discussed in Section 4.2 – Project Access and shown on Figure 2, access to the commercial portion of the project would be provided via two driveways; one on Rose Drive approximately 425 feet south of Alta Vista Street and one on Alta Vista Street approximately 350 feet east of Rose Drive. The driveway on Rose Drive would be right-in/right-out only. The driveway on Alta Vista Street would be aligned with the existing shopping center driveway on the north side of Alta Vista Street and would provide full-access into and out of the project. The LOS analysis provided in Chapter 4 demonstrated that the project driveways would operate with acceptable LOS and minimal delays during the peak hours. However, the LOS analysis does not account for queuing at the adjacent intersection of Rose Drive/Alta Vista Street. An analysis of queuing at Rose Drive/Alta Vista Street was prepared Using Synchro 10 to determine whether queues at the intersection could affect access to the project during the peak hours. The queuing analysis is summarized in Table 9.

Table 9. Queuing at Rose Drive/Alta Vista Street

Movement	Distance to Driveway	50 th Percentile Queue	95 th Percentile Queue
AM Peak Hour			
WBL	425 ft.	115 ft.	175 ft.
WBT	425 ft.	116 ft.	191 ft.
NBL	350 ft.	24 ft.	56 ft.
NBT	350 ft.	115 ft.	152 ft.
PM Peak Hour			
WBL	425 ft.	90 ft.	146 ft.
WBT	425 ft.	120 ft.	206 ft.
NBL	350 ft.	53 ft.	87 ft.
NBT	350 ft.	287 ft.	348 ft.

As shown in Table 9, the queue at the adjacent signalized intersection of Rose Drive/Alta Vista Street would not extend to or block the project driveways during the AM or PM peak hours.

6.2 Onsite Circulation

The residential portion of the project will be accessed via a gated driveway from Alta Vista Street. Two inbound lanes are provided, one for residents and one for visitors to pull out of the inbound lane before gaining access to the site. As shown in Table 6 – Project Trip Generation, the residential portion of the project would generate approximately 10 inbound vehicles during the AM peak hour and 34 vehicles during the PM peak hour. A card-operated access gate has a design capacity of approximately 340 vehicles per hour². As a result, the gate would have adequate capacity to accommodate inbound residents without queuing onto Alta Vista Street.

² Table 4 – Parking Control Service Rate, *Entrance-Exit Design and Control for Major Parking Facilities*, Robert W. Crommelin, P.E., October 1972.

The residential roadway is proposed to be in a loop configuration. Emergency vehicles would be able to access each residence without having to back-up or turn around on-site.

Access to the commercial portion of the site will be via Rose Drive and Alta Vista Street. Similar to the residential site, vehicles would be able to access all portions of the commercial site without backing up or turning around onsite. A drive through lane providing stacking for approximately 16 vehicles is located adjacent to the City right-of-way at the northeast corner of the site. The City of Placentia Municipal Code, Chapter 23.78.030(3) requires drive-through lanes to provide space for a minimum of seven (7) vehicles to queue. The proposed drive-through lane would meet the City Municipal Code requirements for drive-through storage.

APPENDIX A – TRAFFIC STUDY SCOPING AGREEMENT

ENVIRONMENT | PLANNING | DEVELOPMENT SOLUTIONS, INC.

Memorandum

To: Rusty Beardsley, T.E., City of Placentia Traffic Engineer
From: Meghan Macias, T.E.
CC: Jeremy Krout, EPD Solutions, Inc.
Date: October 17, 2017
Subject: Alta Vista Traffic Impact Analysis Scope of Work

EPD Solutions, Inc. (EPD) proposes the following scope of work to prepare a Traffic Impact Analysis (TIA) for the proposed Alta Vista project. The project proposes 10,500 square feet of commercial retail and 54 single family dwelling units at the southeast corner of Rose Drive/Alta Vista Street. Access to the commercial retail portion would be provided via driveways on Rose Drive and Alta Vista Street, while access to the residential units would be provided from Alta Vista Street. The trip generation for the project is shown in Table 1. Attached to this memo you will find the project site plan. Please review the scope of work and provide your comments or approval. If you would like to discuss the scope, please contact me at (949) 533-9182 or at Meghan@epdsolutions.com.

Table 1. Alta Vista Project Trip Generation

Land Use	Units	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
<u>Trip Rates</u>								
Fast Casual Restaurant ¹	TSF	315	1.39	0.68	2.07	7.77	6.36	14.13
Coffee Shop with Drive Through ²	TSF	820	45.38	43.61	88.99	21.69	21.69	43.38
Single Family Residential ³	DU	9	0.19	0.56	0.74	0.62	0.37	0.99
<u>Project Trip Generation</u>								
Fast Casual Restaurant	8.5 TSF	2679	12	5	17	66	54	120
<i>Pass-By Trips (43 %) ⁴</i>		-1152	-	-	-	-28	-23	-51
Coffee Shop with Drive Through	2 TSF	1641	91	87	178	44	43	87
<i>Pass-By Trips (50 %) ⁵</i>		-821	-46	-44	-90	-22	-22	-44
Single Family Residential	54 DU	510	10	30	40	34	20	54
Total Trip Generation		2857	67	78	145	94	72	166

TSF = Thousand Square Feet

¹ Trip rates from the Institute of Transportation Engineers, *Trip Generation, 10th Edition*, 2017. Land Use Code 930 - Fast Casual Restaurant

² Trip rates from the Institute of Transportation Engineers, *Trip Generation, 10th Edition*, 2017. Land Use Code 937 - Coffee/Donut Shop with Drive-Through Window

³ Trip rates from the Institute of Transportation Engineers, *Trip Generation, 10th Edition*, 2017. Land Use Code 210 - Single-Family Detached Housing.

⁴ Pass-By Trip Percentage from the Institute of Transportation Engineers, *Trip Generation Handbook, 3rd Edition*. Land Use Code 932 - High-Turnover (Sit-Down) Restaurant.

⁵ Pass-By Trip Percentage from the Institute of Transportation Engineers, *Trip Generation Handbook, 3rd Edition*. Land Use Code 934 - Fast-Food Restaurant with Drive-Through Window was used. There is no pass-by rate for Coffee Shop with Drive Through and indoor seating.

TRAFFIC IMPACT ANALYSIS SCOPE OF WORK

Task 1: Existing Circulation System

A description of the existing circulation system of the study will be prepared to provide an assessment of the study area and existing intersection operations. Specific topics to be included in this section of the traffic study include:

- Existing street system
- Existing traffic volumes and levels of service
- Existing traffic controls
- Existing pedestrian/bicycle facilities
- Transit service, including bus facilities (if any)

Data Collection

This scope assumes that new intersection traffic counts will need to be collected. If the City has current (i.e., less than one year) traffic counts in their database, those counts will be requested and used. For purposes of this scope of work, up to four (5) intersections will be counted. The TIA will include analysis of the project driveways and the following intersections (upon approval by City staff).

- Rose Drive/Buena Vista Avenue
- Rose Drive/Alta Vista Street
- Rose Drive/Del Cerro Drive
- Del Cerro Drive/Orangethorpe Avenue
- Alta Vista Street/Jefferson Street

Typical weekday AM and PM peak hour turn movement counts will be collected by a qualified traffic data collection firm. The intersection counts will be conducted on a Tuesday, Wednesday or Thursday of a non-holiday week.

Task 2: Project Traffic Analysis

A traffic analysis will be prepared to determine the impacts of the proposed project. All information provided by City staff and the new data collected as part of the existing conditions analysis will be utilized. The proposed analysis scenarios are outlined below:

- Existing Condition
- Existing plus Project Condition
- Short-Term Cumulative Baseline Condition (corresponding to the opening year of the proposed project)
- Short-Term Cumulative plus Project Condition

Forecast traffic volumes for the short-term traffic condition will be based on the application of an ambient growth rate provided by the City, and traffic from adjacent cumulative (approved/pending) projects also to be provided by the City.

Trip Generation and Distribution

Trip generation for the proposed project has been calculated using trip rates from ITE's *Trip Generation, 10th Edition*. The project trip generation is shown in Table 1. Pass-by trips for the coffee shop with drive-through were calculated using the rates for Land Use Code 934 - Fast-Food Restaurant with Drive-Through

Window. ITE does have pass-by rates for Coffee Shop with Drive-Through and no indoor seating, however it is likely that these pass-by rates would overestimate pass-by trips as the project proposes indoor seating as well as a drive-through at the coffee shop. The project trip distribution was determined using traffic count data near the project site. The project trip distribution patterns and shown in Figure 1 (attached).

Intersection Level of Service Analyses

Intersection analysis and impact threshold determination will be performed according to City requirements. Analyses of intersections will be based on peak hour level of service (LOS) for the *Intersection Capacity Utilization* (ICU) methodology for signalized intersections. For unsignalized intersections, the *Highway Capacity Manual* (HCM) methodology will be used. For any impact found to be significant we will determine the traffic contribution from the proposed project. The thresholds to be used for significance criteria will be consistent with City guidelines.

Site Plan, Circulation, and Queuing

The current site plan will be reviewed with respect to on-site circulation, access, and driveway queuing. The project driveway analysis will include analysis of the peak periods and will focus on queuing at the intersection of Rose Drive/Alta Vista Street, which may block access to the project site. The site plan will also be evaluated for conformity with local standards, emergency vehicle access, on-site circulation, and the Municipal Code's Parking Requirements.

City Approval:

Name: _____

Signature: _____

Date: _____

PROJECT INFORMATION - RETAIL

ZONE: SPECIFIC PLAN AREA
 85 (1.85 AC)
 GROSS SITE AREA: 10,000 SF
 GROSS BUILDING AREA: 101 STALLS
 PARKING PROVIDED: 98 STALLS
 PARKING REQUIRED: 10 / 1000

CITY REQUIREMENT:

SETBACK: FRONT YARD: 15'
 15' IF FRONTING STREET
 SIDE YARD: 3' FOR OTHER CONDITIONS
 REAR: 15'

PARKING DIMENSION:

STANDARD: 8'-6" X 19' / 25' ASLE
 COMPACT: 8'-6" X 15' / 25' ASLE
 MAXIMUM OF 35% OF COMPACT IS ALLOWED
 DRIVE THRU: 8 X 20 MIN.

PARKING REQUIREMENT:

RETAIL: 4,000 @ 1 / 250 = 16 STALLS
 RESTAURANT: 4,500 SF @ 1 / 600 = 7.5 STALLS
 1,500 SF @ 1 / 400 = 3.75 STALLS

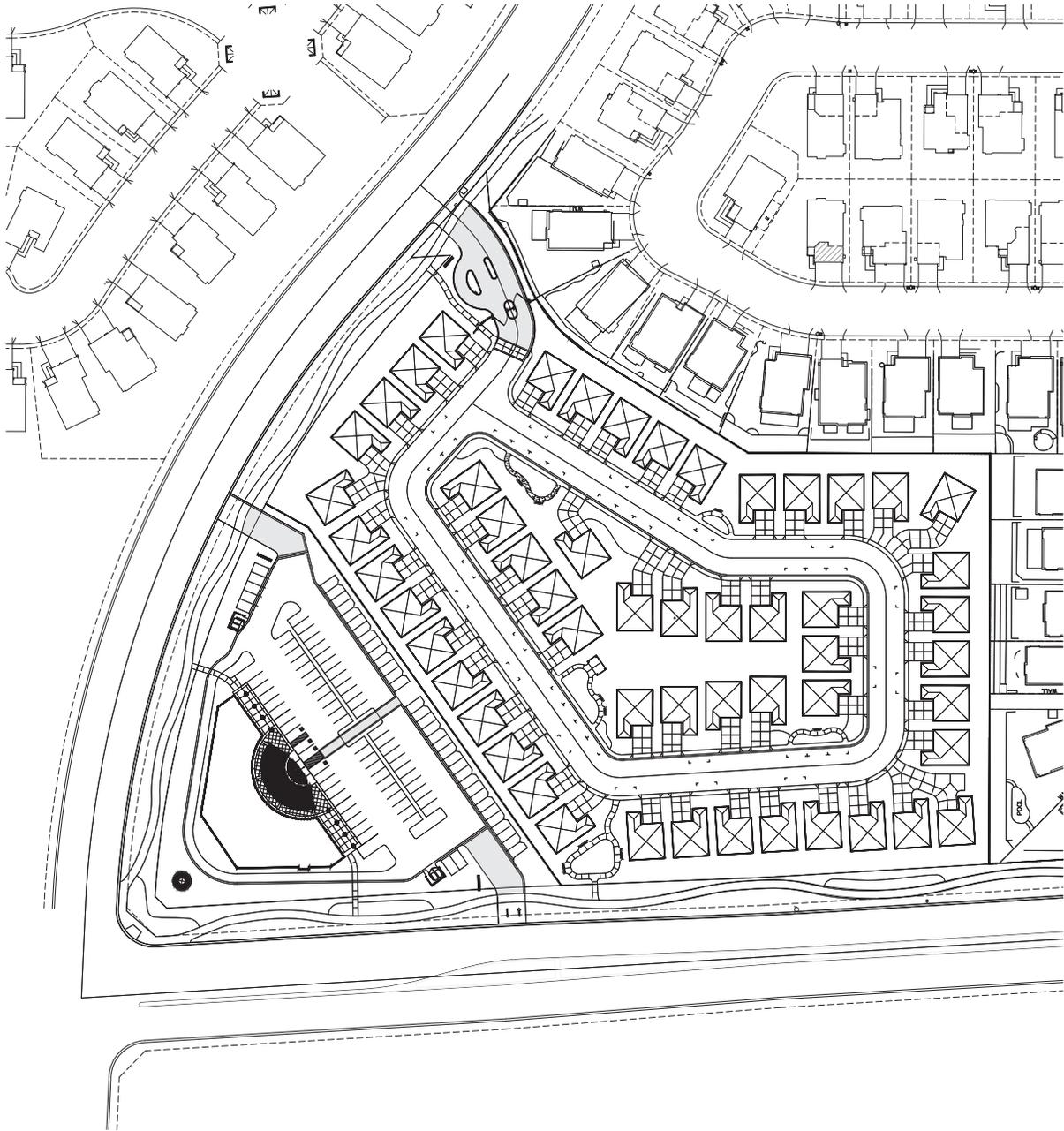
PROJECT INFORMATION - RESIDENTIAL

SITE AREA INFORMATION: 6.11 ACRES
 GROSS SITE AREA: 19 (43,677) LOTS/DU
 DWELLING UNITS: 35 (63,722) LOTS/DU
 54 TOTAL

DENSITY: #883 DU/AC

PARKING:

GARAGE: 108
 STREET: 38
 DRIVEWAY: 108
 TOTAL: 254 (7,710/du)



KEY MAP



Architecture + Planning
 888.456.5849
 ktpj.com

SC DEVELOPMENT
 14841 Yorba Street, Suite 205
 Tustin, CA 92780
 P: 714.995.7090
 F: 714.995.7090
 Contact: Mr. Paul Conzelmann

ALTA VISTA
 PLACENTIA, CA # 2017-0087

SCHEMATIC DESIGN
 Aug 14, 2017

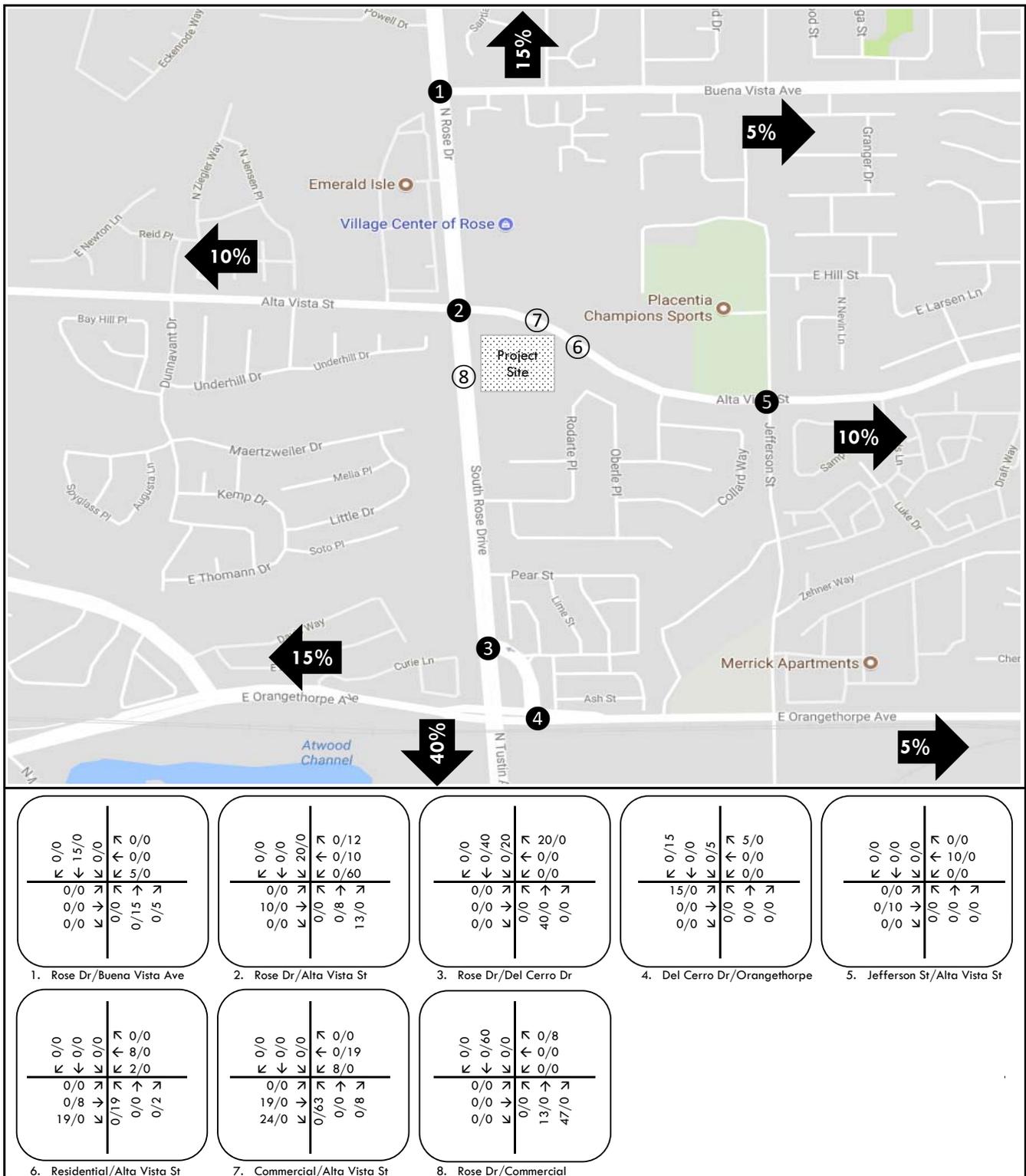


SITE PLAN

A1.0



Figure 1: Trip Distribution



xx/yy = In/Out Trip Distribution

① = Off-Site Intersection

① = Project Driveway

Meghan Macias

From: Beardsley, Rusty <rbeardsley@placentia.org>
Sent: Wednesday, November 1, 2017 11:11 AM
To: Meghan Macias
Cc: Estevez, Luis; Lambert, Joseph; Jeremy Krout; Gonzales, Andrew
Subject: RE: Alta Vista Project Traffic Scope

Meghan,

I have reviewed your latest TIA Scoping Agreement and it is acceptable.

In regards to your question about what annual growth rate of ambient traffic to use for this project, I think that 1% will be sufficient.

Rusty Beardsley
Traffic Engineer
City of Placentia

From: Gonzales, Andrew
Sent: Tuesday, October 31, 2017 5:51 PM
To: Meghan Macias
Cc: Beardsley, Rusty; Estevez, Luis; Lambert, Joseph; Jeremy Krout
Subject: RE: Alta Vista Project Traffic Scope

Meghan,

There really are no major projects within the immediate area of the project site. All activity is focused on the southwest portion of the City. Attached is the most recent traffic impact analysis prepared for the City for a proposed 215-unit residential project. Please contact me should you need anything additional.

Andrew A. Gonzales
Senior Planner
City of Placentia
(714) 993-8218

From: Meghan Macias [<mailto:meghan@epdsolutions.com>]
Sent: Monday, October 30, 2017 2:05 PM
To: Gonzales, Andrew <agonzales@placentia.org>
Cc: Beardsley, Rusty <rbeardsley@placentia.org>; Estevez, Luis <lestevez@placentia.org>; Lambert, Joseph <jlambert@placentia.org>; Jeremy Krout <jeremy@epdsolutions.com>
Subject: RE: Alta Vista Project Traffic Scope

Hello Andrew,

I wanted to follow-up on my e-mail from Friday to remind you that we will need a list of cumulative projects in the City of Placentia. I will also need to confirm an annual growth rate to use in projecting traffic volumes to the opening year.

Thank you,
Meghan

Meghan Macias, T.E.
E|P|D Solutions, Inc.

meghan@epdsolutions.com

949.794.1186 direct

949.533.9182 cell

2030 Main St., Ste. 1200

Irvine, CA 92614

www.epdsolutions.com

From: Meghan Macias

Sent: Friday, October 27, 2017 9:39 AM

To: 'Gonzales, Andrew' <agonzales@placentia.org>

Cc: Beardsley, Rusty <rbeardsley@placentia.org>; Estevez, Luis <lestevez@placentia.org>; Lambert, Joseph <jlambert@placentia.org>; Jeremy Krout <jeremy@epdsolutions.com>

Subject: RE: Alta Vista Project Traffic Scope

Good Morning Andrew,

Thanks for the update on the traffic scope. We would appreciate getting the City's comments as soon as possible so that we can stay on schedule with the technical studies and IS/MND. Also, have you had a chance to review the project descriptions and the proposed noise monitoring locations that I sent over a few weeks ago? We would like to get your approval or comments on those as well.

Thank you,

Meghan Macias, T.E.

E|P|D Solutions, Inc.

meghan@epdsolutions.com

949.794.1186 direct

949.533.9182 cell

2030 Main St., Ste. 1200

Irvine, CA 92614

www.epdsolutions.com

From: Gonzales, Andrew [<mailto:agonzales@placentia.org>]

Sent: Thursday, October 26, 2017 10:51 AM

To: Meghan Macias <meghan@epdsolutions.com>

Cc: Beardsley, Rusty <rbeardsley@placentia.org>; Estevez, Luis <lestevez@placentia.org>; Lambert, Joseph <jlambert@placentia.org>; Jeremy Krout <jeremy@epdsolutions.com>

Subject: RE: Alta Vista Project Traffic Scope

Meghan,

This is a brief update regarding our review of your scope. City staff is presently evaluating your revised scope submission and will make all attempts to provide you with a determination by the end of the day. I will contact you should there be a change with the timing of our review. Thank you for your patience reading this matter.

Regards,

Andrew A. Gonzales

Senior Planner

City of Placentia

(714) 993-8218

From: Meghan Macias [<mailto:meghan@epdsolutions.com>]

Sent: Tuesday, October 17, 2017 4:24 PM

To: Gonzales, Andrew <agonzales@placentia.org>
Cc: Beardsley, Rusty <rbeardsley@placentia.org>; Estevez, Luis <lestevez@placentia.org>; Lambert, Joseph <jlambert@placentia.org>; Jeremy Krout <jeremy@epdsolutions.com>
Subject: RE: Alta Vista Project Traffic Scope

Hello Andrew,

Attached, you will find the revised scope in response to the comments below. If I can provide anything else to facilitate the City's review of this scope, please let me know.

Thank you,

Meghan Macias, T.E.
E|P|D Solutions, Inc.

meghan@epdsolutions.com
949.794.1186 direct
949.533.9182 cell
2030 Main St., Ste. 1200
Irvine, CA 92614
www.epdsolutions.com

From: Gonzales, Andrew [<mailto:agonzales@placentia.org>]
Sent: Thursday, October 12, 2017 4:22 PM
To: Meghan Macias <meghan@epdsolutions.com>
Cc: Beardsley, Rusty <rbeardsley@placentia.org>; Estevez, Luis <lestevez@placentia.org>; Lambert, Joseph <jlambert@placentia.org>
Subject: RE: Alta Vista Project Traffic Scope

Meghan,

Below are comments pertaining to the traffic scope. These comments are directly from the Public Works Department. These comments are as follows:

- Trip Generation is based on Coffee/Donut shop with NO indoor seating (footnote 5). Is this an accurate assessment of the operations of the use.
- The project's Traffic Distribution percentages should be determined as part of this Scope. It should be presented in a graphical format.

I understand that the comments may be slightly cryptic, but please call me should you have any questions.

Andrew A. Gonzales
Senior Planner
City of Placentia
(714) 993-8218

From: Meghan Macias [<mailto:meghan@epdsolutions.com>]
Sent: Wednesday, October 11, 2017 2:13 PM
To: Gonzales, Andrew <agonzales@placentia.org>; Beardsley, Rusty <rbeardsley@placentia.org>
Subject: Alta Vista Project Traffic Scope

Hello Andrew and Rusty,

I'm just following-up again on the status of the scope for the traffic study. Would you please give me an update on when we might receive comments or an approval of the proposed scope of work.

Thank you,
Meghan

Meghan Macias, T.E.
E|P|D Solutions, Inc.

meghan@epdsolutions.com

949.794.1186 direct

949.533.9182 cell

2030 Main St., Ste. 1200

Irvine, CA 92614

www.epdsolutions.com

APPENDIX B – TRAFFIC COUNTS

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Thu, Oct 5, 17

LOCATION: Placentia
NORTH & SOUTH: Rose
EAST & WEST: Alta Vista

PROJECT #: SC1487
LOCATION #: 2
CONTROL: SIGNAL

NOTES:

	AM	PM	MD	OTHER	OTHER
	▲	▲	▲	▲	▲
	N	N	N	N	N
	◀	◀	◀	◀	◀
	W	W	W	W	W
	▶	▶	▶	▶	▶
	E	E	E	E	E
	▼	▼	▼	▼	▼
	S	S	S	S	S

Add U-Turns to Left Turns

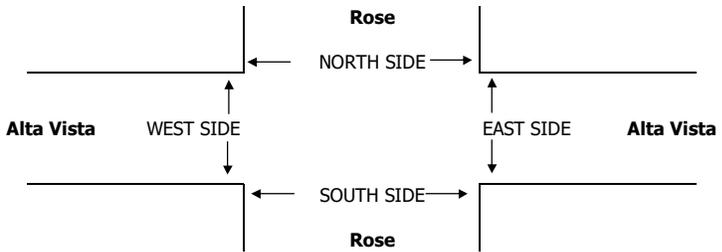
LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Rose NL	Rose NT	Rose NR	Rose SL	Rose ST	Rose SR	Alta Vista EL	Alta Vista ET	Alta Vista ER	Alta Vista WL	Alta Vista WT	Alta Vista WR	
	2	3	0	2	3	1	1	1.5	0.5	1	2	0	

U-TURNS				
NB	SB	EB	WB	TTL
0	1	0	0	1
1	1	0	0	2
1	0	0	0	1
0	2	0	0	2
0	1	0	0	1
1	0	0	0	1
0	1	0	0	1
0	1	0	0	1
3	7	0	0	10

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Rose NL	Rose NT	Rose NR	Rose SL	Rose ST	Rose SR	Alta Vista EL	Alta Vista ET	Alta Vista ER	Alta Vista WL	Alta Vista WT	Alta Vista WR	
AM													
7:00 AM	9	92	6	18	339	27	26	26	59	33	46	21	702
7:15 AM	13	100	3	20	354	63	65	32	75	24	93	30	872
7:30 AM	16	168	2	31	399	94	96	47	65	31	96	44	1,089
7:45 AM	20	143	4	38	390	77	72	82	70	22	58	26	1,002
8:00 AM	25	146	2	30	389	71	56	46	40	35	46	29	915
8:15 AM	28	182	3	19	336	49	47	38	43	22	55	14	836
8:30 AM	17	128	6	19	299	55	43	30	40	28	62	17	744
8:45 AM	10	124	4	16	270	40	64	43	42	27	37	16	693
VOLUMES	138	1,083	30	191	2,776	476	469	344	434	222	493	197	6,853
APPROACH %	11%	87%	2%	6%	81%	14%	38%	28%	35%	24%	54%	22%	
APP/DEPART	1,251	/	1,756	3,443	/	3,435	1,247	/	558	912	/	1,104	0
BEGIN PEAK HR	7:15 AM												
VOLUMES	74	557	11	119	1,532	305	289	207	250	112	293	129	3,878
APPROACH %	12%	87%	2%	6%	78%	16%	39%	28%	34%	21%	55%	24%	
PEAK HR FACTOR	0.863			0.933			0.833			0.781			0.890
APP/DEPART	642	/	979	1,956	/	1,896	746	/	333	534	/	670	0
PM													
4:00 PM	33	238	12	36	195	41	60	49	21	28	54	25	792
4:15 PM	37	281	5	26	216	35	64	51	25	25	47	25	837
4:30 PM	49	282	10	26	180	43	72	41	22	16	63	25	829
4:45 PM	38	330	14	31	224	44	63	66	23	25	61	28	947
5:00 PM	44	328	11	29	211	54	82	67	20	26	64	24	960
5:15 PM	43	334	11	39	233	71	63	70	24	23	101	19	1,031
5:30 PM	47	285	16	31	194	56	68	63	21	18	70	36	905
5:45 PM	44	279	7	42	217	43	67	50	32	20	50	22	873
VOLUMES	335	2,357	86	260	1,670	387	539	457	188	181	510	204	7,174
APPROACH %	12%	85%	3%	11%	72%	17%	46%	39%	16%	20%	57%	23%	
APP/DEPART	2,778	/	3,114	2,317	/	2,043	1,184	/	789	895	/	1,228	0
BEGIN PEAK HR	4:45 PM												
VOLUMES	172	1,277	52	130	862	225	276	266	88	92	296	107	3,843
APPROACH %	11%	85%	3%	11%	71%	18%	44%	42%	14%	19%	60%	22%	
PEAK HR FACTOR	0.967			0.887			0.932			0.865			0.932
APP/DEPART	1,501	/	1,670	1,217	/	1,044	630	/	438	495	/	691	0

0	1	0	0	1
1	1	0	0	2
1	0	0	0	1
0	2	0	0	2
0	1	0	0	1
1	0	0	0	1
0	1	0	0	1
0	1	0	0	1
3	7	0	0	10

1	1	0	0	2
1	1	0	0	2
0	2	0	0	2
0	3	0	0	3
0	2	0	0	2
1	4	0	0	5
1	1	0	0	2
0	0	0	0	0
4	14	0	0	18



	PEDESTRIAN + BIKE CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM					
7:00 AM	1	0	2	1	4
7:15 AM	2	4	1	0	7
7:30 AM	3	5	2	0	10
7:45 AM	6	1	2	0	9
8:00 AM	1	1	1	0	3
8:15 AM	0	1	2	0	3
8:30 AM	0	1	0	0	1
8:45 AM	1	1	3	0	5
TOTAL	14	14	13	1	42
PM					
4:00 PM	3	1	1	1	6
4:15 PM	0	2	2	1	5
4:30 PM	3	0	1	1	5
4:45 PM	0	0	1	1	2
5:00 PM	1	3	2	0	6
5:15 PM	3	1	5	1	10
5:30 PM	6	2	0	0	8
5:45 PM	1	1	4	0	6
TOTAL	17	10	16	5	48

	PEDESTRIAN CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM					
7:00 AM	1	0	1	0	2
7:15 AM	0	2	0	0	2
7:30 AM	2	3	2	0	7
7:45 AM	3	0	2	0	5
8:00 AM	0	1	0	0	1
8:15 AM	0	0	2	0	2
8:30 AM	0	0	0	0	0
8:45 AM	1	1	3	0	5
TOTAL	7	7	10	0	24
PM					
4:00 PM	2	1	1	0	4
4:15 PM	0	1	1	1	3
4:30 PM	2	0	0	1	3
4:45 PM	0	0	1	0	1
5:00 PM	1	3	2	0	6
5:15 PM	3	1	5	1	10
5:30 PM	6	2	0	0	8
5:45 PM	1	1	3	0	5
TOTAL	15	9	13	3	40

	BICYCLE CROSSINGS				
	NS	SS	ES	WS	TOTAL
AM					
7:00 AM	0	0	1	1	2
7:15 AM	2	2	1	0	5
7:30 AM	1	2	0	0	3
7:45 AM	3	1	0	0	4
8:00 AM	1	0	1	0	2
8:15 AM	0	1	0	0	1
8:30 AM	0	1	0	0	1
8:45 AM	0	0	0	0	0
TOTAL	7	7	3	1	18
PM					
4:00 PM	1	0	0	1	2
4:15 PM	0	1	1	0	2
4:30 PM	1	0	1	0	2
4:45 PM	0	0	0	1	1
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	1	0	1
TOTAL	2	1	3	2	8

INTERSECTION TURNING MOVEMENT COUNTS

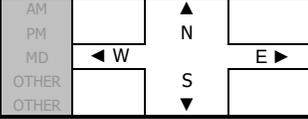
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 3, 17

LOCATION: Placentia
NORTH & SOUTH: Rose
EAST & WEST: Buena Vista

PROJECT #: SC1487
LOCATION #: 1
CONTROL: SIGNAL

NOTES:



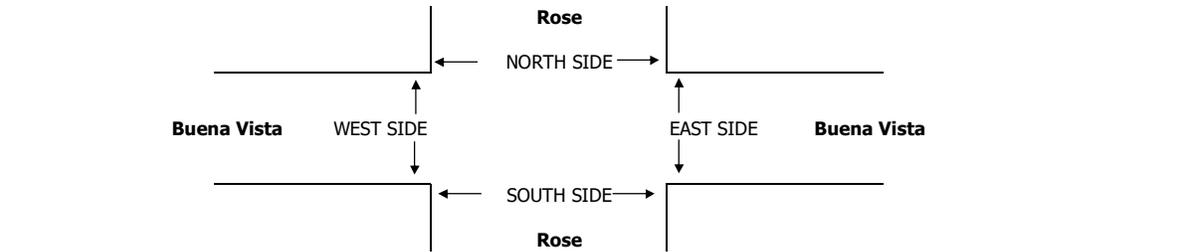
Add U-Turns to Left Turns

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Rose NL	Rose NT	Rose NR	Rose SL	Rose ST	Rose SR	Buena Vista EL	Buena Vista ET	Buena Vista ER	Buena Vista WL	Buena Vista WT	Buena Vista WR	
	X	2	0	1	2	X	X	X	X	1	X	1	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Rose NL	Rose NT	Rose NR	Rose SL	Rose ST	Rose SR	Buena Vista EL	Buena Vista ET	Buena Vista ER	Buena Vista WL	Buena Vista WT	Buena Vista WR	
7:00 AM	0	93	22	26	367	0	0	0	0	56	0	34	598
7:15 AM	0	176	32	20	415	0	0	0	0	85	0	56	784
7:30 AM	0	256	57	30	412	0	0	0	0	94	0	79	928
7:45 AM	0	207	41	43	440	0	0	0	0	103	0	66	900
8:00 AM	0	208	34	40	422	0	0	0	0	67	0	53	824
8:15 AM	0	245	41	23	376	0	0	0	0	49	0	40	774
8:30 AM	0	208	22	14	342	0	0	0	0	39	0	56	681
8:45 AM	0	197	33	19	312	0	0	0	0	48	0	47	656
VOLUMES	0	1,590	282	215	3,086	0	0	0	0	541	0	431	6,150
APPROACH %	0%	85%	15%	7%	93%	0%	0%	0%	0%	56%	0%	44%	
APP/DEPART	1,873	/	2,025	3,305	/	3,628	0	/	497	972	/	0	0
BEGIN PEAK HR	7:15 AM												
VOLUMES	0	847	164	133	1,689	0	0	0	0	349	0	254	3,438
APPROACH %	0%	84%	16%	7%	93%	0%	0%	0%	0%	58%	0%	42%	
PEAK HR FACTOR	0.808			0.944			0.000			0.871			0.925
APP/DEPART	1,011	/	1,103	1,824	/	2,038	0	/	297	603	/	0	0

NB	SB	EB	WB	TTL
0	1	0	0	1
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	1	0	0	1
1	0	0	0	1
1	4	0	0	5



AM	PEDESTRIAN + BIKE CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
7:00 AM	0	1	1	0	2
7:15 AM	1	0	0	0	1
7:30 AM	0	1	2	0	3
7:45 AM	1	0	1	0	2
8:00 AM	1	0	1	0	2
8:15 AM	1	1	1	0	3
8:30 AM	0	0	0	0	0
8:45 AM	0	2	0	0	2
TOTAL	4	5	6	0	15

PM	PEDESTRIAN + BIKE CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
4:00 PM	0	0	0	0	0
4:15 PM	0	1	1	0	2
4:30 PM	0	3	3	0	6
4:45 PM	1	0	1	0	2
5:00 PM	1	0	3	0	4
5:15 PM	1	0	4	0	5
5:30 PM	1	0	3	0	4
5:45 PM	0	0	2	0	2
TOTAL	4	4	17	0	25

AM	PEDESTRIAN CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	1	1	0	2
7:45 AM	0	0	1	0	1
8:00 AM	1	0	1	0	2
8:15 AM	1	1	1	0	3
8:30 AM	0	0	0	0	0
8:45 AM	0	2	0	0	2
TOTAL	2	4	4	0	10

PM	PEDESTRIAN CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
4:00 PM	0	0	0	0	0
4:15 PM	0	1	0	0	1
4:30 PM	0	3	2	0	5
4:45 PM	0	0	0	0	0
5:00 PM	0	0	2	0	2
5:15 PM	1	0	2	0	3
5:30 PM	0	0	2	0	2
5:45 PM	0	0	1	0	1
TOTAL	1	4	9	0	14

AM	BICYCLE CROSSINGS				
	NS	SS	ES	WS	TOTAL
7:00 AM	0	1	1	0	2
7:15 AM	1	0	0	0	1
7:30 AM	0	0	1	0	1
7:45 AM	1	0	0	0	1
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL	2	1	2	0	5

PM	BICYCLE CROSSINGS				
	NS	SS	ES	WS	TOTAL
4:00 PM	0	0	0	0	0
4:15 PM	0	0	1	0	1
4:30 PM	0	0	1	0	1
4:45 PM	1	0	1	0	2
5:00 PM	1	0	1	0	2
5:15 PM	0	0	2	0	2
5:30 PM	1	0	1	0	2
5:45 PM	0	0	1	0	1
TOTAL	3	0	8	0	11

INTERSECTION TURNING MOVEMENT COUNTS

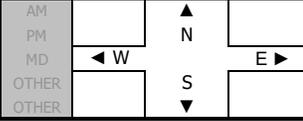
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 3, 17

LOCATION: Placentia
NORTH & SOUTH: Rose
EAST & WEST: Del Cerro

PROJECT #: SC1487
LOCATION #: 3
CONTROL: SIGNAL

NOTES:



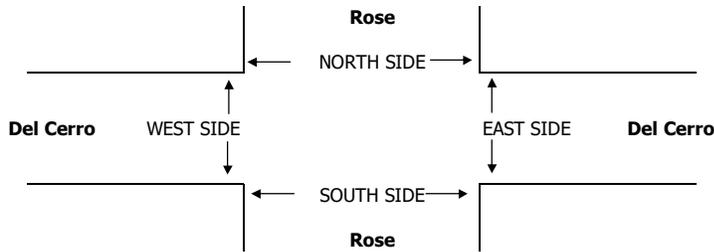
Add U-Turns to Left Turns

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Rose NL	Rose NT	Rose NR	Rose SL	Rose ST	Rose SR	Del Cerro EL	Del Cerro ET	Del Cerro ER	Del Cerro WL	Del Cerro WT	Del Cerro WR	
	X	2	1	1	2	X	X	X	0.5	X	1.5		

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Rose NL	Rose NT	Rose NR	Rose SL	Rose ST	Rose SR	Del Cerro EL	Del Cerro ET	Del Cerro ER	Del Cerro WL	Del Cerro WT	Del Cerro WR	
7:00 AM	0	73	7	10	450	0	0	0	0	39	0	11	590
7:15 AM	0	126	14	12	413	0	0	0	0	48	0	25	638
7:30 AM	0	149	21	21	446	0	0	0	0	39	0	22	698
7:45 AM	0	149	20	25	463	0	0	0	0	53	0	22	732
8:00 AM	0	154	21	18	408	0	0	0	0	45	0	21	667
8:15 AM	0	174	11	16	352	0	0	0	0	41	0	21	615
8:30 AM	0	155	14	24	318	0	0	0	0	32	0	17	560
8:45 AM	0	114	11	11	331	0	0	0	0	26	0	19	512
VOLUMES	0	1,094	119	137	3,181	0	0	0	0	323	0	158	5,012
APPROACH %	0%	90%	10%	4%	96%	0%	0%	0%	0%	67%	0%	33%	
APP/DEPART	1,213	/	1,252	3,318	/	3,493	0	/	267	481	/	0	0
BEGIN PEAK HR	7:15 AM												
VOLUMES	0	578	76	76	1,730	0	0	0	0	185	0	90	2,735
APPROACH %	0%	88%	12%	4%	96%	0%	0%	0%	0%	67%	0%	33%	
PEAK HR FACTOR	0.934			0.925			0.000			0.917			0.934
APP/DEPART	654	/	668	1,806	/	1,908	0	/	159	275	/	0	0
PM	4:00 PM	0	275	24	11	207	0	0	0	30	0	33	580
4:15 PM	0	251	44	13	240	0	0	0	0	22	0	29	599
4:30 PM	0	317	32	24	212	0	0	0	0	26	0	33	644
4:45 PM	0	346	35	16	232	0	0	0	0	27	0	44	700
5:00 PM	0	332	44	18	259	0	0	0	0	30	0	53	736
5:15 PM	0	353	36	26	254	0	0	0	0	23	0	47	739
5:30 PM	0	349	41	18	183	0	0	0	0	13	0	31	635
5:45 PM	0	361	36	22	200	0	0	0	0	24	0	23	666
VOLUMES	0	2,584	292	148	1,787	0	0	0	0	195	0	293	5,299
APPROACH %	0%	90%	10%	8%	92%	0%	0%	0%	0%	40%	0%	60%	
APP/DEPART	2,876	/	2,878	1,935	/	1,974	0	/	447	488	/	0	0
BEGIN PEAK HR	4:30 PM												
VOLUMES	0	1,348	147	84	957	0	0	0	0	106	0	177	2,819
APPROACH %	0%	90%	10%	8%	92%	0%	0%	0%	0%	37%	0%	63%	
PEAK HR FACTOR	0.961			0.929			0.000			0.852			0.954
APP/DEPART	1,495	/	1,525	1,041	/	1,058	0	/	236	283	/	0	0

NB	SB	EB	WB	TTL
0	0	0	1	1
0	0	0	0	0
0	0	0	2	2
0	0	0	4	4
0	0	0	1	1
0	0	0	1	1
0	0	0	1	1
0	0	0	1	1
0	0	0	11	11
0	0	0	2	2
0	0	0	1	1
0	0	0	0	0
0	0	0	2	2
0	0	0	3	3
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	1	0	8	9



AM	PEDESTRIAN + BIKE CROSSINGS					
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	
7:00 AM	0	0	4	0	4	
7:15 AM	1	0	4	0	5	
7:30 AM	0	1	1	0	2	
7:45 AM	0	0	1	0	1	
8:00 AM	0	0	1	0	1	
8:15 AM	0	0	1	0	1	
8:30 AM	0	0	0	0	0	
8:45 AM	1	0	0	1	2	
TOTAL	2	1	12	1	16	
PM	4:00 PM	0	0	2	0	2
4:15 PM	0	0	1	1	2	
4:30 PM	0	0	0	1	1	
4:45 PM	0	0	1	0	1	
5:00 PM	0	0	1	0	1	
5:15 PM	0	0	1	0	1	
5:30 PM	1	0	1	0	2	
5:45 PM	0	0	1	0	1	
TOTAL	1	0	8	2	11	

AM	PEDESTRIAN CROSSINGS					
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	
7:00 AM	0	0	3	0	3	
7:15 AM	1	0	4	0	5	
7:30 AM	0	1	1	0	2	
7:45 AM	0	0	0	0	0	
8:00 AM	0	0	1	0	1	
8:15 AM	0	0	1	0	1	
8:30 AM	0	0	0	0	0	
8:45 AM	1	0	0	0	1	
TOTAL	2	1	10	0	13	
PM	4:00 PM	0	0	2	0	2
4:15 PM	0	0	0	0	0	
4:30 PM	0	0	0	0	0	
4:45 PM	0	0	1	0	1	
5:00 PM	0	0	0	0	0	
5:15 PM	0	0	1	0	1	
5:30 PM	1	0	1	0	2	
5:45 PM	0	0	1	0	1	
TOTAL	1	0	6	0	7	

AM	BICYCLE CROSSINGS				
	NS	SS	ES	WS	TOTAL
7:00 AM	0	0	1	0	1
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	1	0	1
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	1	1
TOTAL	0	0	2	1	3
PM	4:00 PM	0	0	0	0
4:15 PM	0	0	1	1	2
4:30 PM	0	0	0	1	1
4:45 PM	0	0	0	0	0
5:00 PM	0	0	1	0	1
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	0	2	2	4

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Tue, Oct 3, 17

LOCATION: Placentia
NORTH & SOUTH: Del Cerro
EAST & WEST: Orangethorpe

PROJECT #: SC1487
LOCATION #: 4
CONTROL: SIGNAL

NOTES:

	AM		▲	
	PM		N	
	MD	◀ W		E ▶
	OTHER		S	
	OTHER		▼	

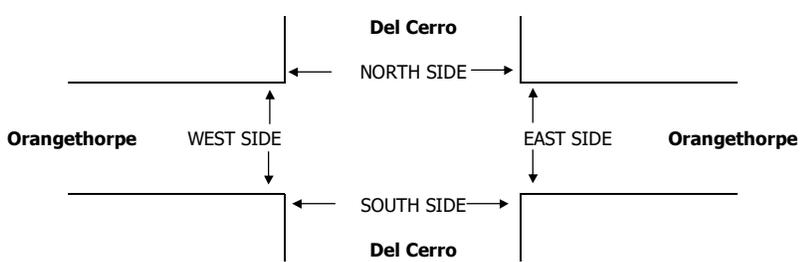
Add U-Turns to Left Turns

LANES:	NORTHBOUND <small>Del Cerro</small>			SOUTHBOUND <small>Del Cerro</small>			EASTBOUND <small>Orangethorpe</small>			WESTBOUND <small>Orangethorpe</small>			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	X	X	X		X	2		3	X	X	3	0	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0

	NORTHBOUND <small>Del Cerro</small>			SOUTHBOUND <small>Del Cerro</small>			EASTBOUND <small>Orangethorpe</small>			WESTBOUND <small>Orangethorpe</small>			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
AM													
7:00 AM	0	0	0	9	0	10	19	90	0	0	127	30	285
7:15 AM	0	0	0	9	0	16	30	112	0	0	173	41	381
7:30 AM	0	0	0	12	0	31	25	129	0	0	201	37	435
7:45 AM	0	0	0	22	0	27	27	145	0	0	235	46	502
8:00 AM	0	0	0	13	0	30	30	114	0	0	156	35	378
8:15 AM	0	0	0	11	0	17	28	113	0	0	150	38	357
8:30 AM	0	0	0	17	0	22	18	104	0	0	114	29	304
8:45 AM	0	0	0	11	0	11	24	92	0	0	102	25	265
VOLUMES	0	0	0	104	0	164	201	899	0	0	1,258	281	2,907
APPROACH %	0%	0%	0%	39%	0%	61%	18%	82%	0%	0%	82%	18%	
APP/DEPART	0	/	481	268	/	0	1,100	/	1,001	1,539	/	1,425	0
BEGIN PEAK HR	7:15 AM												
VOLUMES	0	0	0	56	0	104	112	500	0	0	765	159	1,696
APPROACH %	0%	0%	0%	35%	0%	65%	18%	82%	0%	0%	83%	17%	
PEAK HR FACTOR	0.000				0.816			0.890			0.822		0.845
APP/DEPART	0	/	268	160	/	0	612	/	556	924	/	872	0
PM													
4:00 PM	0	0	0	19	0	19	34	176	0	0	124	24	396
4:15 PM	0	0	0	20	0	30	28	194	0	0	91	24	387
4:30 PM	0	0	0	23	0	40	34	229	0	0	114	27	467
4:45 PM	0	0	0	23	0	28	39	246	0	0	144	35	515
5:00 PM	0	0	0	26	0	37	44	236	0	0	150	29	522
5:15 PM	0	0	0	22	0	43	42	248	0	0	151	26	532
5:30 PM	0	0	0	21	0	37	34	220	0	0	104	13	429
5:45 PM	0	0	0	22	0	37	26	222	0	0	101	22	430
VOLUMES	0	0	0	176	0	271	281	1,771	0	0	979	200	3,678
APPROACH %	0%	0%	0%	39%	0%	61%	14%	86%	0%	0%	83%	17%	
APP/DEPART	0	/	489	447	/	0	2,052	/	1,936	1,179	/	1,253	0
BEGIN PEAK HR	4:30 PM												
VOLUMES	0	0	0	94	0	148	159	959	0	0	559	117	2,036
APPROACH %	0%	0%	0%	39%	0%	61%	14%	86%	0%	0%	83%	17%	
PEAK HR FACTOR	0.000				0.931			0.964			0.944		0.957
APP/DEPART	0	/	281	242	/	0	1,118	/	1,047	676	/	708	0

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	2	0	2
0	0	0	0	0
0	2	0	0	2
0	0	0	0	0
0	0	0	0	0
0	2	3	0	5
0	2	1	0	3
0	1	1	0	2
0	2	0	0	2
0	1	1	0	2
0	1	0	0	1
0	2	0	0	2
0	1	0	0	1
0	1	0	0	1
0	11	3	0	14



	PEDESTRIAN + BIKE CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM					
7:00 AM	2	0	0	0	2
7:15 AM	2	0	0	3	5
7:30 AM	2	0	0	0	2
7:45 AM	3	0	0	2	5
8:00 AM	5	0	0	0	5
8:15 AM	2	0	0	1	3
8:30 AM	0	0	0	0	0
8:45 AM	6	0	0	2	8
TOTAL	22	0	0	8	30
PM					
4:00 PM	0	0	0	0	0
4:15 PM	3	0	0	0	3
4:30 PM	1	0	0	0	1
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	2	0	0	0	2
5:30 PM	3	1	0	0	4
5:45 PM	0	0	0	0	0
TOTAL	9	1	0	0	10

	PEDESTRIAN CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM					
7:00 AM	1	0	0	0	1
7:15 AM	2	0	0	3	5
7:30 AM	0	0	0	0	0
7:45 AM	3	0	0	1	4
8:00 AM	2	0	0	0	2
8:15 AM	1	0	0	1	2
8:30 AM	0	0	0	0	0
8:45 AM	6	0	0	2	8
TOTAL	15	0	0	7	22
PM					
4:00 PM	0	0	0	0	0
4:15 PM	2	0	0	0	2
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	1	0	0	0	1
5:30 PM	2	0	0	0	2
5:45 PM	0	0	0	0	0
TOTAL	5	0	0	0	5

	BICYCLE CROSSINGS				
	NS	SS	ES	WS	TOTAL
AM					
7:00 AM	1	0	0	0	1
7:15 AM	0	0	0	0	0
7:30 AM	2	0	0	0	2
7:45 AM	0	0	0	1	1
8:00 AM	3	0	0	0	3
8:15 AM	1	0	0	0	1
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL	7	0	0	1	8
PM					
4:00 PM	0	0	0	0	0
4:15 PM	1	0	0	0	1
4:30 PM	1	0	0	0	1
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	1	0	0	0	1
5:30 PM	1	1	0	0	2
5:45 PM	0	0	0	0	0
TOTAL	4	1	0	0	5

ADT Shopping Center Driveway north of Alta Vista.

Prepared by AimTD LLC tel. 714 253 7888

AM Period	IN	OUT	PM Period	IN	OUT	
0:00	0	0	12:00	0	0	
0:15	0	0	12:15	0	0	
0:30	0	0	12:30	0	0	
0:45	0	0	12:45	0	0	
1:00	0	0	13:00	0	0	
1:15	0	0	13:15	0	0	
1:30	0	0	13:30	0	0	
1:45	0	0	13:45	0	0	
2:00	0	0	14:00	0	0	
2:15	0	0	14:15	0	0	
2:30	0	0	14:30	0	0	
2:45	0	0	14:45	0	0	
3:00	0	0	15:00	0	0	
3:15	0	0	15:15	0	0	
3:30	0	0	15:30	0	0	
3:45	0	0	15:45	0	0	
4:00	0	0	16:00	9	19	
4:15	0	0	16:15	12	23	
4:30	0	0	16:30	12	31	
4:45	0	0	16:45	11	44	
5:00	0	0	17:00	18	29	
5:15	0	0	17:15	23	29	
5:30	0	0	17:30	16	39	
5:45	0	0	17:45	18	75	
6:00	0	0	18:00	0	0	
6:15	0	0	18:15	0	0	
6:30	0	0	18:30	0	0	
6:45	0	0	18:45	0	0	
7:00	7	8	19:00	0	0	
7:15	3	7	19:15	0	0	
7:30	12	16	19:30	0	0	
7:45	12	34	19:45	0	0	
8:00	5	18	20:00	0	0	
8:15	3	10	20:15	0	0	
8:30	7	7	20:30	0	0	
8:45	6	21	20:45	0	0	
9:00	0	0	21:00	0	0	
9:15	0	0	21:15	0	0	
9:30	0	0	21:30	0	0	
9:45	0	0	21:45	0	0	
10:00	0	0	22:00	0	0	
10:15	0	0	22:15	0	0	
10:30	0	0	22:30	0	0	
10:45	0	0	22:45	0	0	
11:00	0	0	23:00	0	0	
11:15	0	0	23:15	0	0	
11:30	0	0	23:30	0	0	
11:45	0	0	23:45	0	0	
Total Vol.	55	92	147	119	230	349
				IN	OUT	Daily Totals
				174	322	Combined
						496
			AM			PM
Split %	37.4%	62.6%	29.6%	34.1%	65.9%	70.4%
Peak Hour	7:00	7:30	7:30	17:00	17:00	17:00
Volume	34	56	88	75	132	207
P.H.F.	0.71	0.78	0.79	0.79	0.85	0.94

APPENDIX C – LEVEL OF SERVICE AND QUEUING CALCULATIONS

Scenario Report

Scenario: Existing AM
Command: Default Command
Volume: Existing AM
Geometry: Default Geometry
Impact Fee: Default Impact Fee
Trip Generation: None
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Existing

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C	
# 1 Rose Dr/Buena Vista Ave	C	xxxxxx 0.752	C	xxxxxx 0.752	+ 0.000 V/C
# 2 Rose Dr/Alta Vista St	B	xxxxxx 0.669	B	xxxxxx 0.669	+ 0.000 V/C
# 3 Rose Dr/Del Cerro Dr	B	xxxxxx 0.613	B	xxxxxx 0.613	+ 0.000 V/C
# 4 Del Cerro Dr/Orangethorpe Ave	A	xxxxxx 0.301	A	xxxxxx 0.301	+ 0.000 V/C
# 5 Alta Vista St/Jefferson St	A	xxxxxx 0.279	A	xxxxxx 0.279	+ 0.000 V/C

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Rose Dr/Buena Vista Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.752
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: C

Table with columns for Street Name (Rose Drive, Buena Vista Avenue), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Table for Volume Module showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Table for Capacity Analysis Module showing Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Rose Dr/Alta Vista St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.669
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: B

Table with columns for Street Name (Rose Drive, Alta Vista Street), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Rose Dr/Del Cerro Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.613
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: B

Street Name: Rose Drive Del Cerro Drive
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes: 0 0 2 0 1 1 0 2 0 0 0 0 0 0 0 1 0 1 0 1

Volume Module:
Base Vol: 0 578 76 76 1730 0 0 0 0 185 0 90
Growth 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
Initial Bse: 0 578 76 76 1730 0 0 0 0 185 0 90
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 578 76 76 1730 0 0 0 0 185 0 90
User 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
PHF 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
PHF Volume: 0 578 76 76 1730 0 0 0 0 185 0 90
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 578 76 76 1730 0 0 0 0 185 0 90
PCE 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
MLF 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
FinalVolume: 0 578 76 76 1730 0 0 0 0 185 0 90

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.00 2.00 1.00 1.00 2.00 0.00 0.00 0.00 0.00 2.00 0.00 1.00
Final Sat.: 0 3400 1700 1700 3400 0 0 0 0 3400 0 1700

Capacity Analysis Module:
Vol/Sat: 0.00 0.17 0.04 0.04 0.51 0.00 0.00 0.00 0.00 0.05 0.00 0.05
Crit Moves: **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Del Cerro Dr/Orangethorpe Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.301
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: A

Table with columns for Street Name (Del Cerro Drive, Orangethorpe Avenue), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Table for Volume Module showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume, and OvlAdjVol.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Table for Capacity Analysis Module showing Vol/Sat, OvlAdjV/S, and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Alta Vista St/Jefferson St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.279
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: A

Table with columns for Street Name (Alta Vista Street, Jefferson Street), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Table for Volume Module showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Table for Capacity Analysis Module showing Vol/Sat and Crit Moves.

Scenario Report

Scenario: Existing PM
Command: Default Command
Volume: Existing PM
Geometry: Default Geometry
Impact Fee: Default Impact Fee
Trip Generation: None
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Existing

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C	
# 1 Rose Dr/Buena Vista Ave	C	xxxxx 0.796	C	xxxxx 0.796	+ 0.000 V/C
# 2 Rose Dr/Alta Vista St	B	xxxxx 0.634	B	xxxxx 0.634	+ 0.000 V/C
# 3 Rose Dr/Del Cerro Dr	A	xxxxx 0.551	A	xxxxx 0.551	+ 0.000 V/C
# 4 Del Cerro Dr/Orangethorpe Ave	A	xxxxx 0.293	A	xxxxx 0.293	+ 0.000 V/C
# 5 Alta Vista St/Jefferson St	A	xxxxx 0.271	A	xxxxx 0.271	+ 0.000 V/C

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Rose Dr/Buena Vista Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.796
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: C

Table with columns for Street Name (Rose Drive, Buena Vista Avenue), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Rose Dr/Alta Vista St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.634
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: B

Table with columns for Street Name (Rose Drive, Alta Vista Street), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Rose Dr/Del Cerro Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.551
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: A

Table with columns for Street Name (Rose Drive, Del Cerro Drive), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Table for Volume Module showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Table for Capacity Analysis Module showing Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Del Cerro Dr/Orangethorpe Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.293
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: A

Street Name: Del Cerro Drive Orangethorpe Avenue
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Ovl Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes: 0 0 0 0 0 1 0 0 0 2 2 0 3 0 0 0 0 2 1 0

Volume Module:
Base Vol: 0 0 0 94 0 148 159 959 0 0 559 117
Growth 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
Initial Bse: 0 0 0 94 0 148 159 959 0 0 559 117
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 94 0 148 159 959 0 0 559 117
User 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
PHF 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
PHF Volume: 0 0 0 94 0 148 159 959 0 0 559 117
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 0 94 0 148 159 959 0 0 559 117
PCE 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
MLF 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
FinalVolume: 0 0 0 94 0 148 159 959 0 0 559 117
OvlAdjVol: 0

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 0.90 1.00 1.00 1.00 1.00 1.00
Lanes: 0.00 0.00 0.00 1.00 0.00 2.00 2.00 3.00 0.00 0.00 2.48 0.52
Final Sat.: 0 0 0 1700 0 3400 3060 5100 0 0 4217 883

Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.06 0.00 0.04 0.05 0.19 0.00 0.00 0.13 0.13
OvlAdjV/S: 0.00
Crit Moves: ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Alta Vista St/Jefferson St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.271
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: A

Table with columns for Street Name (Alta Vista Street, Jefferson Street), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Scenario Report

Scenario: Existing + Proj AM
Command: Default Command
Volume: Exist+Proj AM
Geometry: Default Geometry
Impact Fee: Default Impact Fee
Trip Generation: Project
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Existing

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C	
# 1 Rose Dr/Buena Vista Ave	D xxxxx	0.809	D xxxxx	0.817	+ 0.008 V/C
# 2 Rose Dr/Alta Vista St	C xxxxx	0.745	C xxxxx	0.744	-0.001 V/C
# 3 Rose Dr/Del Cerro Dr	B xxxxx	0.653	B xxxxx	0.666	+ 0.013 V/C
# 4 Del Cerro Dr/Orangethorpe Ave	A xxxxx	0.347	A xxxxx	0.356	+ 0.009 V/C
# 5 Alta Vista St/Jefferson St	A xxxxx	0.297	A xxxxx	0.299	+ 0.002 V/C

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Rose Dr/Buena Vista Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.817
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: D

Table with columns for Street Name (Rose Drive, Buena Vista Avenue), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Rose Dr/Alta Vista St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.744
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: C

Table with columns for Street Name (Rose Drive, Alta Vista Street), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Rose Dr/Del Cerro Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.666
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: B

Table with columns for Street Name (Rose Drive, Del Cerro Drive), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Table for Volume Module showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Table for Capacity Analysis Module showing Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Del Cerro Dr/Orangethorpe Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.356
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: A

Street Name: Del Cerro Drive Orangethorpe Avenue
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Ovl Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes: 0 0 0 0 0 1 0 0 0 2 2 0 3 0 0 0 0 2 1 0

Volume Module:
Base Vol: 0 0 0 56 0 104 112 500 0 0 765 159
Growth 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
Initial Bse: 0 0 0 56 0 104 112 500 0 0 765 159
Added Vol: 0 0 0 4 0 11 14 0 0 0 0 5
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 60 0 115 126 500 0 0 765 164
User 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
PHF Adj: 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.85
PHF Volume: 0 0 0 71 0 136 149 592 0 0 905 194
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 0 71 0 136 149 592 0 0 905 194
PCE 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
MLF 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
FinalVolume: 0 0 0 71 0 136 149 592 0 0 905 194
OvlAdjVol: 0

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 0.90 1.00 1.00 1.00 1.00 1.00
Lanes: 0.00 0.00 0.00 1.00 0.00 2.00 2.00 3.00 0.00 0.00 2.47 0.53
Final Sat.: 0 0 0 1700 0 3400 3060 5100 0 0 4200 900

Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.04 0.00 0.04 0.05 0.12 0.00 0.00 0.22 0.22
OvlAdjV/S: 0.00
Crit Moves: ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Alta Vista St/Jefferson St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.299
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: A

Table with columns for Street Name (Alta Vista Street, Jefferson Street), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Table for Volume Module showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Table for Capacity Analysis Module showing Vol/Sat and Crit Moves.

Scenario Report

Scenario: Existing + Proj PM
Command: Default Command
Volume: Exist+Proj PM
Geometry: Default Geometry
Impact Fee: Default Impact Fee
Trip Generation: Project
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Existing

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C	
# 1 Rose Dr/Buena Vista Ave	D xxxxx	0.828	D xxxxx	0.833	+ 0.005 V/C
# 2 Rose Dr/Alta Vista St	B xxxxx	0.677	B xxxxx	0.697	+ 0.020 V/C
# 3 Rose Dr/Del Cerro Dr	A xxxxx	0.576	A xxxxx	0.600	+ 0.024 V/C
# 4 Del Cerro Dr/Orangethorpe Ave	A xxxxx	0.304	A xxxxx	0.309	+ 0.005 V/C
# 5 Alta Vista St/Jefferson St	A xxxxx	0.293	A xxxxx	0.295	+ 0.002 V/C

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Rose Dr/Buena Vista Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.833
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: D

Street Name:	Rose Drive						Buena Vista Avenue					
	North Bound			South Bound			East Bound			West Bound		
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	1	1	0	2	0	0	0	1	0	0

Volume Module:

Base Vol:	0	1464	285	193	1161	0	0	0	0	169	0	201
Growth 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
Initial Bse:	0	1464	285	193	1161	0	0	0	0	169	0	201
Added Vol:	0	11	4	0	14	0	0	0	0	5	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1475	289	193	1175	0	0	0	0	174	0	201
User 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
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	1538	301	201	1225	0	0	0	0	181	0	210
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1538	301	201	1225	0	0	0	0	181	0	210
PCE 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
MLF 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
FinalVolume:	0	1538	301	201	1225	0	0	0	0	181	0	210

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	1.67	0.33	1.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Final Sat.:	0	2843	557	1700	3400	0	0	0	0	1700	0	1700

Capacity Analysis Module:

Vol/Sat:	0.00	0.54	0.54	0.12	0.36	0.00	0.00	0.00	0.00	0.11	0.00	0.12
Crit Moves:	****			****						****		

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Rose Dr/Alta Vista St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.697
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: B

Table with columns for Street Name (Rose Drive, Alta Vista Street), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Rose Dr/Del Cerro Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.600
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: A

Table with columns for Street Name (Rose Drive, Del Cerro Drive), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Table for Volume Module showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Table for Capacity Analysis Module showing Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Del Cerro Dr/Orangethorpe Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.309
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: A

Street Name: Del Cerro Drive Orangethorpe Avenue
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Ovl Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes: 0 0 0 0 0 1 0 0 0 2 2 0 3 0 0 0 0 2 1 0

Volume Module:
Base Vol: 0 0 0 94 0 148 159 959 0 0 559 117
Growth 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
Initial Bse: 0 0 0 94 0 148 159 959 0 0 559 117
Added Vol: 0 0 0 4 0 11 14 0 0 0 0 5
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 98 0 159 173 959 0 0 559 122
User 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
PHF Adj: 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96
PHF Volume: 0 0 0 102 0 166 181 1002 0 0 584 127
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 0 102 0 166 181 1002 0 0 584 127
PCE 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
MLF 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
FinalVolume: 0 0 0 102 0 166 181 1002 0 0 584 127
OvlAdjVol: 0

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 0.90 1.00 1.00 1.00 1.00 1.00
Lanes: 0.00 0.00 0.00 1.00 0.00 2.00 2.00 3.00 0.00 0.00 2.46 0.54
Final Sat.: 0 0 0 1700 0 3400 3060 5100 0 0 4186 914

Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.06 0.00 0.05 0.06 0.20 0.00 0.00 0.14 0.14
OvlAdjV/S: 0.00
Crit Moves: ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Alta Vista St/Jefferson St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.295
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: A

Table with columns for Street Name (Alta Vista Street, Jefferson Street), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Table for Volume Module showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Table for Capacity Analysis Module showing Vol/Sat and Crit Moves.

Scenario Report

Scenario: Cum AM
Command: Default Command
Volume: Existing AM
Geometry: Default Geometry
Impact Fee: Default Impact Fee
Trip Generation: Cumulative
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Cumulative

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C	
# 1 Rose Dr/Buena Vista Ave	C	xxxxxx 0.766	C	xxxxxx 0.773	+ 0.006 V/C
# 2 Rose Dr/Alta Vista St	B	xxxxxx 0.679	B	xxxxxx 0.683	+ 0.004 V/C
# 3 Rose Dr/Del Cerro Dr	B	xxxxxx 0.625	B	xxxxxx 0.632	+ 0.008 V/C
# 4 Del Cerro Dr/Orangethorpe Ave	A	xxxxxx 0.302	A	xxxxxx 0.313	+ 0.011 V/C
# 5 Alta Vista St/Jefferson St	A	xxxxxx 0.283	A	xxxxxx 0.283	+ 0.000 V/C

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Rose Dr/Buena Vista Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.773
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: C

Table with columns for Street Name (Rose Drive, Buena Vista Avenue), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Rose Dr/Alta Vista St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.683
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: B

Table with columns for Street Name (Rose Drive, Alta Vista Street), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Rose Dr/Del Cerro Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.632
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: B

Table with columns for Street Name (Rose Drive, Del Cerro Drive), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Del Cerro Dr/Orangethorpe Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.313
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: A

Table with columns for Street Name (Del Cerro Drive, Orangethorpe Avenue), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume, and OvlAdjVol.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat, OvlAdjV/S, and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Alta Vista St/Jefferson St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.283
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: A

Table with columns for Street Name (Alta Vista Street, Jefferson Street), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Scenario Report

Scenario:	Cum PM
Command:	Default Command
Volume:	Existing PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	Cumulative
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Cumulative

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C	
# 1 Rose Dr/Buena Vista Ave	D xxxxx	0.811	D xxxxx	0.821	+ 0.010 V/C
# 2 Rose Dr/Alta Vista St	B xxxxx	0.641	B xxxxx	0.648	+ 0.006 V/C
# 3 Rose Dr/Del Cerro Dr	A xxxxx	0.561	A xxxxx	0.571	+ 0.010 V/C
# 4 Del Cerro Dr/Orangethorpe Ave	A xxxxx	0.289	A xxxxx	0.301	+ 0.011 V/C
# 5 Alta Vista St/Jefferson St	A xxxxx	0.275	A xxxxx	0.275	+ 0.000 V/C

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Rose Dr/Buena Vista Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.821
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: D

Table with columns for Street Name (Rose Drive, Buena Vista Avenue), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Rose Dr/Alta Vista St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.648
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: B

Table with columns for Street Name (Rose Drive, Alta Vista Street), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Table for Volume Module showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Table for Capacity Analysis Module showing Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Rose Dr/Del Cerro Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.571
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: A

Table with columns for Street Name (Rose Drive, Del Cerro Drive), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Del Cerro Dr/Orangethorpe Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.301
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: A

Street Name: Del Cerro Drive Orangethorpe Avenue
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Ovl Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes: 0 0 0 0 0 1 0 0 0 2 2 0 3 0 0 0 0 2 1 0

Volume Module:
Base Vol: 0 0 0 94 0 148 159 959 0 0 559 117
Growth Adj: 1.02 1.02 1.02 1.02 1.02 1.02 1.02 1.02 1.02 1.02 1.02 1.02
Initial Bse: 0 0 0 96 0 151 162 978 0 0 570 119
Added Vol: 0 0 0 2 0 0 0 14 0 0 41 11
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 98 0 151 162 992 0 0 611 130
User 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
PHF 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
PHF Volume: 0 0 0 98 0 151 162 992 0 0 611 130
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 0 98 0 151 162 992 0 0 611 130
PCE 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
MLF 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
FinalVolume: 0 0 0 98 0 151 162 992 0 0 611 130
OvlAdjVol: 0

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.00 0.00 0.00 1.00 0.00 2.00 2.00 3.00 0.00 0.00 2.47 0.53
Final Sat.: 0 0 0 1700 0 3400 3400 5100 0 0 4204 896

Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.06 0.00 0.04 0.05 0.19 0.00 0.00 0.15 0.15
OvlAdjV/S: 0.00
Crit Moves: ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Alta Vista St/Jefferson St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.275
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: A

Table with columns for Street Name (Alta Vista Street, Jefferson Street), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Scenario Report

Scenario: Cum + Proj AM
Command: Default Command
Volume: Exist+Proj AM
Geometry: Default Geometry
Impact Fee: Default Impact Fee
Trip Generation: Cum+Proj
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Cumulative

 Impact Analysis Report
 Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C	
# 1 Rose Dr/Buena Vista Ave	D xxxxx	0.824	D xxxxx	0.839	+ 0.015 V/C
# 2 Rose Dr/Alta Vista St	C xxxxx	0.756	C xxxxx	0.760	+ 0.004 V/C
# 3 Rose Dr/Del Cerro Dr	B xxxxx	0.665	B xxxxx	0.686	+ 0.021 V/C
# 4 Del Cerro Dr/Orangethorpe Ave	A xxxxx	0.348	A xxxxx	0.370	+ 0.022 V/C
# 5 Alta Vista St/Jefferson St	A xxxxx	0.302	A xxxxx	0.304	+ 0.002 V/C

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Rose Dr/Buena Vista Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.839
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: D

Table with columns for Street Name (Rose Drive, Buena Vista Avenue), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Table for Volume Module showing Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Table for Saturation Flow Module showing Sat/Lane, Adjustment, Lanes, and Final Sat.

Table for Capacity Analysis Module showing Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Rose Dr/Alta Vista St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.760
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: C

Table with columns for Street Name (Rose Drive, Alta Vista Street), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Rose Dr/Del Cerro Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.686
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: B

Street Name: Rose Drive Del Cerro Drive
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes: 0 0 2 0 1 1 0 2 0 0 0 0 0 0 0 1 0 1 0 1

Volume Module:
Base Vol: 0 578 76 76 1730 0 0 0 0 185 0 90
Growth Adj: 1.02 1.02 1.02 1.02 1.02 1.02 1.02 1.02 1.02 1.02 1.02 1.02
Initial Bse: 0 590 78 78 1765 0 0 0 0 189 0 92
Added Vol: 0 60 0 16 49 0 0 0 0 0 0 30
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 650 78 94 1814 0 0 0 0 189 0 122
User 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
PHF Adj: 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93
PHF Volume: 0 695 83 100 1942 0 0 0 0 202 0 130
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 695 83 100 1942 0 0 0 0 202 0 130
PCE 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
MLF 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
FinalVolume: 0 695 83 100 1942 0 0 0 0 202 0 130

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.00 2.00 1.00 1.00 2.00 0.00 0.00 0.00 0.00 1.82 xxxx 1.18
Final Sat.: 0 3400 1700 1700 3400 0 0 0 0 3099 0 2001

Capacity Analysis Module:
Vol/Sat: 0.00 0.20 0.05 0.06 0.57 0.00 0.00 0.00 0.00 0.07 0.00 0.07
Crit Moves: **** **** ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Del Cerro Dr/Orangethorpe Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.370
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: A

Street Name: Del Cerro Drive Orangethorpe Avenue
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Ovl Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes: 0 0 0 0 0 1 0 0 0 2 2 0 3 0 0 0 0 2 1 0

Volume Module:
Base Vol: 0 0 0 56 0 104 112 500 0 0 765 159
Growth Adj: 1.02 1.02 1.02 1.02 1.02 1.02 1.02 1.02 1.02 1.02 1.02 1.02
Initial Bse: 0 0 0 57 0 106 114 510 0 0 780 162
Added Vol: 0 0 0 5 0 11 14 14 0 0 41 16
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 62 0 117 128 524 0 0 821 178
User 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
PHF Adj: 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.85
PHF Volume: 0 0 0 74 0 139 152 620 0 0 972 211
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 0 74 0 139 152 620 0 0 972 211
PCE 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
MLF 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
FinalVolume: 0 0 0 74 0 139 152 620 0 0 972 211
OvlAdjVol: 0

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.00 0.00 0.00 1.00 0.00 2.00 2.00 3.00 0.00 0.00 2.47 0.53
Final Sat.: 0 0 0 1700 0 3400 3400 5100 0 0 4191 909

Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.04 0.00 0.04 0.04 0.12 0.00 0.00 0.23 0.23
OvlAdjV/S: 0.00
Crit Moves: ****

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Alta Vista St/Jefferson St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.304
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: A

Table with columns for Street Name (Alta Vista Street, Jefferson Street), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Scenario Report

Scenario: Cum + Proj PM
Command: Default Command
Volume: Exist+Proj PM
Geometry: Default Geometry
Impact Fee: Default Impact Fee
Trip Generation: Cum+Proj
Trip Distribution: Project
Paths: Default Path
Routes: Default Route
Configuration: Cumulative

 Impact Analysis Report
 Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C	
# 1 Rose Dr/Buena Vista Ave	D xxxxx	0.844	D xxxxx	0.858	+ 0.015 V/C
# 2 Rose Dr/Alta Vista St	B xxxxx	0.684	C xxxxx	0.711	+ 0.027 V/C
# 3 Rose Dr/Del Cerro Dr	A xxxxx	0.586	B xxxxx	0.621	+ 0.035 V/C
# 4 Del Cerro Dr/Orangethorpe Ave	A xxxxx	0.309	A xxxxx	0.319	+ 0.010 V/C
# 5 Alta Vista St/Jefferson St	A xxxxx	0.298	A xxxxx	0.300	+ 0.002 V/C

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Rose Dr/Buena Vista Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.858
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: D

Table with columns for Street Name (Rose Drive, Buena Vista Avenue), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Rose Dr/Alta Vista St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.711
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: C

Table with columns for Street Name (Rose Drive, Alta Vista Street), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Rose Dr/Del Cerro Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.621
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: B

Table with columns for Street Name (Rose Drive, Del Cerro Drive), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Del Cerro Dr/Orangethorpe Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.319
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: A

Table with columns for Street Name (Del Cerro Drive, Orangethorpe Avenue), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume, and OvlAdjVol.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat, OvlAdjV/S, and Crit Moves.

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Alta Vista St/Jefferson St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.300
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: A

Table with columns for Street Name (Alta Vista Street, Jefferson Street), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and Final Volume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves.

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑						↔	
Traffic Vol, veh/h	12	337	0	0	534	20	0	0	0	34	0	22
Future Vol, veh/h	12	337	0	0	534	20	0	0	0	34	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16965	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	366	0	0	580	22	0	0	0	37	0	24

Major/Minor	Major1			Major2			Minor2			
Conflicting Flow All	602	0	-	-	-	0		800	983	301
Stage 1	-	-	-	-	-	-		591	591	-
Stage 2	-	-	-	-	-	-		209	392	-
Critical Hdwy	4.14	-	-	-	-	-		6.84	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-		5.84	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.84	5.54	-
Follow-up Hdwy	2.22	-	-	-	-	-		3.52	4.02	3.32
Pot Cap-1 Maneuver	971	-	0	0	-	-		322	247	695
Stage 1	-	-	0	0	-	-		516	493	-
Stage 2	-	-	0	0	-	-		806	605	-
Platoon blocked, %		-			-	-				
Mov Cap-1 Maneuver	971	-	-	-	-	-		318	0	695
Mov Cap-2 Maneuver	-	-	-	-	-	-		415	0	-
Stage 1	-	-	-	-	-	-		509	0	-
Stage 2	-	-	-	-	-	-		806	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	13.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	971	-	-	-	493
HCM Lane V/C Ratio	0.013	-	-	-	0.123
HCM Control Delay (s)	8.8	-	-	-	13.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↑↑			↑↑						↕	
Traffic Vol, veh/h	39	448	0	0	495	36	0	0	0	63	0	69
Future Vol, veh/h	39	448	0	0	495	36	0	0	0	63	0	69
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16965	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	487	0	0	538	39	0	0	0	68	0	75

Major/Minor	Major1			Major2			Minor2			
Conflicting Flow All	577	0	-	-	-	0		886	1129	289
Stage 1	-	-	-	-	-	-		558	558	-
Stage 2	-	-	-	-	-	-		328	571	-
Critical Hdwy	4.14	-	-	-	-	-		6.84	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-		5.84	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.84	5.54	-
Follow-up Hdwy	2.22	-	-	-	-	-		3.52	4.02	3.32
Pot Cap-1 Maneuver	993	-	0	0	-	-		284	203	708
Stage 1	-	-	0	0	-	-		537	510	-
Stage 2	-	-	0	0	-	-		702	503	-
Platoon blocked, %		-			-	-				
Mov Cap-1 Maneuver	993	-	-	-	-	-		272	0	708
Mov Cap-2 Maneuver	-	-	-	-	-	-		384	0	-
Stage 1	-	-	-	-	-	-		514	0	-
Stage 2	-	-	-	-	-	-		702	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	14.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	993	-	-	-	505
HCM Lane V/C Ratio	0.043	-	-	-	0.284
HCM Control Delay (s)	8.8	-	-	-	14.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.2

Intersection						
Int Delay, s/veh	0.4					
Movement	NBL	NBR	SET	SER	NWL	NWT
Lane Configurations	TT		TT		T	TT
Traffic Vol, veh/h	27	3	342	9	1	540
Future Vol, veh/h	27	3	342	9	1	540
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	-	-	-	25	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	3	372	10	1	587

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	673	191	0	0	382
Stage 1	377	-	-	-	-
Stage 2	296	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22
Pot Cap-1 Maneuver	389	818	-	-	1173
Stage 1	663	-	-	-	-
Stage 2	729	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	389	818	-	-	1173
Mov Cap-2 Maneuver	493	-	-	-	-
Stage 1	662	-	-	-	-
Stage 2	729	-	-	-	-

Approach	NB	SE	NW
HCM Control Delay, s	12.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBLn1	NWL	NWT	SET	SER
Capacity (veh/h)	513	1173	-	-	-
HCM Lane V/C Ratio	0.064	0.001	-	-	-
HCM Control Delay (s)	12.5	8.1	-	-	-
HCM Lane LOS	B	A	-	-	-
HCM 95th %tile Q(veh)	0.2	0	-	-	-

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	12	346	50	11	556	20	75	0	5	34	0	22
Future Vol, veh/h	12	346	50	11	556	20	75	0	5	34	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	75	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	376	54	12	604	22	82	0	5	37	0	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	626	0	0	430	0	0	755	1079	215	853	1095	313
Stage 1	-	-	-	-	-	-	429	429	-	639	639	-
Stage 2	-	-	-	-	-	-	326	650	-	214	456	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	952	-	-	1126	-	-	298	217	790	253	212	683
Stage 1	-	-	-	-	-	-	574	582	-	431	469	-
Stage 2	-	-	-	-	-	-	661	463	-	768	567	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	952	-	-	1126	-	-	282	212	790	247	207	683
Mov Cap-2 Maneuver	-	-	-	-	-	-	282	212	-	247	207	-
Stage 1	-	-	-	-	-	-	566	574	-	425	464	-
Stage 2	-	-	-	-	-	-	631	458	-	752	559	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.2			22.3			18.4		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	294	952	-	-	1126	-	-	330
HCM Lane V/C Ratio	0.296	0.014	-	-	0.011	-	-	0.184
HCM Control Delay (s)	22.3	8.8	-	-	8.2	-	-	18.4
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0	-	-	0.7

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑ ↑ ↑	↑ ↑ ↑			↑ ↑ ↑
Traffic Vol, veh/h	0	12	640	42	0	1641
Future Vol, veh/h	0	12	640	42	0	1641
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	13	696	46	0	1784

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	371	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-
Pot Cap-1 Maneuver	0	535	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	535	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	535
HCM Lane V/C Ratio	-	-	0.024
HCM Control Delay (s)	-	-	11.9
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1

Intersection						
Int Delay, s/veh	0.3					
Movement	NBL	NBR	SET	SER	NWL	NWT
Lane Configurations	↔		↕		↔	↕
Traffic Vol, veh/h	18	2	453	31	3	501
Future Vol, veh/h	18	2	453	31	3	501
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	-	-	-	25	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	2	492	34	3	545

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	788	263	0	0	526
Stage 1	509	-	-	-	-
Stage 2	279	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22
Pot Cap-1 Maneuver	328	735	-	-	1037
Stage 1	569	-	-	-	-
Stage 2	743	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	327	735	-	-	1037
Mov Cap-2 Maneuver	437	-	-	-	-
Stage 1	567	-	-	-	-
Stage 2	743	-	-	-	-

Approach	NB	SE	NW
HCM Control Delay, s	13.3	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBLn1	NWL	NWT	SET	SER
Capacity (veh/h)	455	1037	-	-	-
HCM Lane V/C Ratio	0.048	0.003	-	-	-
HCM Control Delay (s)	13.3	8.5	-	-	-
HCM Lane LOS	B	A	-	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-	-

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕		↵	↕			↕			↕	
Traffic Vol, veh/h	39	479	33	11	508	36	59	0	5	63	0	69
Future Vol, veh/h	39	479	33	11	508	36	59	0	5	63	0	69
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	75	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	521	36	12	552	39	64	0	5	68	0	75

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	591	0	0	557	0	0	923	1238	279	941	1237	296
Stage 1	-	-	-	-	-	-	623	623	-	596	596	-
Stage 2	-	-	-	-	-	-	300	615	-	345	641	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	981	-	-	1010	-	-	225	174	718	218	175	700
Stage 1	-	-	-	-	-	-	440	476	-	457	490	-
Stage 2	-	-	-	-	-	-	684	480	-	644	468	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	981	-	-	1010	-	-	193	165	718	207	166	700
Mov Cap-2 Maneuver	-	-	-	-	-	-	193	165	-	207	166	-
Stage 1	-	-	-	-	-	-	421	456	-	437	484	-
Stage 2	-	-	-	-	-	-	603	474	-	612	448	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.2			31.3			24.2		
HCM LOS							D			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	205	981	-	-	1010	-	-	328
HCM Lane V/C Ratio	0.339	0.043	-	-	0.012	-	-	0.437
HCM Control Delay (s)	31.3	8.8	-	-	8.6	-	-	24.2
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.4	0.1	-	-	0	-	-	2.1

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑ ↑↑	↑ ↑↑			↑ ↑↑
Traffic Vol, veh/h	0	32	1491	66	0	1085
Future Vol, veh/h	0	32	1491	66	0	1085
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	35	1621	72	0	1179

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	847	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.14	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.92	-
Pot Cap-1 Maneuver	0	262	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	-	262	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	262
HCM Lane V/C Ratio	-	-	0.133
HCM Control Delay (s)	-	-	20.8
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.5

HCM 6th TWSC
 7: Commercial Drive/Shopping Ctr & Alta Vista St.

Cum AM.syn
 11/17/2017

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↑↑			↑↑						↕	
Traffic Vol, veh/h	12	344	0	0	545	20	0	0	0	34	0	22
Future Vol, veh/h	12	344	0	0	545	20	0	0	0	34	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16965	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	374	0	0	592	22	0	0	0	37	0	24

Major/Minor	Major1			Major2			Minor2			
Conflicting Flow All	614	0	-	-	-	0		816	1003	307
Stage 1	-	-	-	-	-	-		603	603	-
Stage 2	-	-	-	-	-	-		213	400	-
Critical Hdwy	4.14	-	-	-	-	-		6.84	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-		5.84	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.84	5.54	-
Follow-up Hdwy	2.22	-	-	-	-	-		3.52	4.02	3.32
Pot Cap-1 Maneuver	961	-	0	0	-	-		315	241	689
Stage 1	-	-	0	0	-	-		509	487	-
Stage 2	-	-	0	0	-	-		802	600	-
Platoon blocked, %		-			-	-				
Mov Cap-1 Maneuver	961	-	-	-	-	-		311	0	689
Mov Cap-2 Maneuver	-	-	-	-	-	-		409	0	-
Stage 1	-	-	-	-	-	-		502	0	-
Stage 2	-	-	-	-	-	-		802	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	961	-	-	-	487
HCM Lane V/C Ratio	0.014	-	-	-	0.125
HCM Control Delay (s)	8.8	-	-	-	13.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↑↑			↑↑						↕	
Traffic Vol, veh/h	39	457	0	0	505	36	0	0	0	63	0	69
Future Vol, veh/h	39	457	0	0	505	36	0	0	0	63	0	69
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16965	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	497	0	0	549	39	0	0	0	68	0	75

Major/Minor	Major1			Major2			Minor2			
Conflicting Flow All	588	0	-	-	-	0		902	1150	294
Stage 1	-	-	-	-	-	-		569	569	-
Stage 2	-	-	-	-	-	-		333	581	-
Critical Hdwy	4.14	-	-	-	-	-		6.84	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-		5.84	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.84	5.54	-
Follow-up Hdwy	2.22	-	-	-	-	-		3.52	4.02	3.32
Pot Cap-1 Maneuver	983	-	0	0	-	-		277	197	702
Stage 1	-	-	0	0	-	-		530	504	-
Stage 2	-	-	0	0	-	-		698	498	-
Platoon blocked, %		-			-	-				
Mov Cap-1 Maneuver	983	-	-	-	-	-		265	0	702
Mov Cap-2 Maneuver	-	-	-	-	-	-		378	0	-
Stage 1	-	-	-	-	-	-		507	0	-
Stage 2	-	-	-	-	-	-		698	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	15.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	983	-	-	-	498
HCM Lane V/C Ratio	0.043	-	-	-	0.288
HCM Control Delay (s)	8.8	-	-	-	15.1
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.2

Intersection						
Int Delay, s/veh	0.4					
Movement	NBL	NBR	SET	SER	NWL	NWT
Lane Configurations	Y		↑↑		Y	↑↑
Traffic Vol, veh/h	27	3	349	9	1	551
Future Vol, veh/h	27	3	349	9	1	551
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	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	3	379	10	1	599

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	686	195	0	0	389
Stage 1	384	-	-	-	-
Stage 2	302	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22
Pot Cap-1 Maneuver	381	814	-	-	1166
Stage 1	658	-	-	-	-
Stage 2	724	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	381	814	-	-	1166
Mov Cap-2 Maneuver	487	-	-	-	-
Stage 1	657	-	-	-	-
Stage 2	724	-	-	-	-

Approach	NB	SE	NW
HCM Control Delay, s	12.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBLn1	NWL	NWT	SET	SER
Capacity (veh/h)	507	1166	-	-	-
HCM Lane V/C Ratio	0.064	0.001	-	-	-
HCM Control Delay (s)	12.6	8.1	-	-	-
HCM Lane LOS	B	A	-	-	-
HCM 95th %tile Q(veh)	0.2	0	-	-	-

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	12	353	50	11	567	20	75	0	5	34	0	22
Future Vol, veh/h	12	353	50	11	567	20	75	0	5	34	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	75	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	384	54	12	616	22	82	0	5	37	0	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	638	0	0	438	0	0	769	1099	219	869	1115	319
Stage 1	-	-	-	-	-	-	437	437	-	651	651	-
Stage 2	-	-	-	-	-	-	332	662	-	218	464	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	942	-	-	1118	-	-	291	211	785	246	207	677
Stage 1	-	-	-	-	-	-	568	578	-	424	463	-
Stage 2	-	-	-	-	-	-	655	457	-	764	562	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	942	-	-	1118	-	-	276	206	785	240	202	677
Mov Cap-2 Maneuver	-	-	-	-	-	-	276	206	-	240	202	-
Stage 1	-	-	-	-	-	-	560	570	-	418	458	-
Stage 2	-	-	-	-	-	-	625	452	-	748	554	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.2			22.8			18.8		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	288	942	-	-	1118	-	-	322
HCM Lane V/C Ratio	0.302	0.014	-	-	0.011	-	-	0.189
HCM Control Delay (s)	22.8	8.9	-	-	8.3	-	-	18.8
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0	-	-	0.7

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑ ↑↑	↑ ↑↑			↑ ↑↑
Traffic Vol, veh/h	0	12	669	42	0	2013
Future Vol, veh/h	0	12	669	42	0	2013
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	13	727	46	0	2188

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	387	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-
Pot Cap-1 Maneuver	0	522	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	522	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	522
HCM Lane V/C Ratio	-	-	0.025
HCM Control Delay (s)	-	-	12.1
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1

Intersection						
Int Delay, s/veh	0.3					
Movement	NBL	NBR	SET	SER	NWL	NWT
Lane Configurations	↔		↑↓		↔	↑↑
Traffic Vol, veh/h	18	2	462	31	3	511
Future Vol, veh/h	18	2	462	31	3	511
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	-	-	-	25	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	2	502	34	3	555

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	803	268	0	0	536
Stage 1	519	-	-	-	-
Stage 2	284	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22
Pot Cap-1 Maneuver	321	730	-	-	1028
Stage 1	562	-	-	-	-
Stage 2	739	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	320	730	-	-	1028
Mov Cap-2 Maneuver	431	-	-	-	-
Stage 1	560	-	-	-	-
Stage 2	739	-	-	-	-

Approach	NB	SE	NW
HCM Control Delay, s	13.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBLn1	NWL	NWT	SET	SER
Capacity (veh/h)	449	1028	-	-	-
HCM Lane V/C Ratio	0.048	0.003	-	-	-
HCM Control Delay (s)	13.4	8.5	-	-	-
HCM Lane LOS	B	A	-	-	-
HCM 95th %tile Q(veh)	0.2	0	-	-	-

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕		↵	↕			↕			↕	
Traffic Vol, veh/h	39	488	33	11	518	36	59	0	5	63	0	69
Future Vol, veh/h	39	488	33	11	518	36	59	0	5	63	0	69
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	75	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	530	36	12	563	39	64	0	5	68	0	75

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	602	0	0	566	0	0	938	1258	283	956	1257	301
Stage 1	-	-	-	-	-	-	632	632	-	607	607	-
Stage 2	-	-	-	-	-	-	306	626	-	349	650	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	971	-	-	1002	-	-	219	170	714	213	170	695
Stage 1	-	-	-	-	-	-	435	472	-	450	485	-
Stage 2	-	-	-	-	-	-	679	475	-	640	463	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	971	-	-	1002	-	-	187	161	714	203	161	695
Mov Cap-2 Maneuver	-	-	-	-	-	-	187	161	-	203	161	-
Stage 1	-	-	-	-	-	-	416	452	-	431	479	-
Stage 2	-	-	-	-	-	-	598	469	-	608	443	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.2			32.7			24.9		
HCM LOS							D			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	198	971	-	-	1002	-	-	322
HCM Lane V/C Ratio	0.351	0.044	-	-	0.012	-	-	0.446
HCM Control Delay (s)	32.7	8.9	-	-	8.6	-	-	24.9
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.5	0.1	-	-	0	-	-	2.2

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑ ↑↑	↑↑↑			↑↑↑
Traffic Vol, veh/h	0	32	1555	66	0	1128
Future Vol, veh/h	0	32	1555	66	0	1128
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	35	1690	72	0	1226

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	881	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-
Pot Cap-1 Maneuver	0	249	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	249	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	249
HCM Lane V/C Ratio	-	-	0.14
HCM Control Delay (s)	-	-	21.8
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.5

Queues
3: Rose Dr. & Alta Vista St.

Cum+Proj AM.syn
11/20/2017



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	321	514	215	489	82	658	176	1707	338
v/c Ratio	0.79	0.57	0.68	0.79	0.46	0.42	0.53	0.89	0.42
Control Delay	47.3	18.1	44.9	40.8	51.2	26.7	44.8	36.2	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.3	18.1	44.9	40.8	51.2	26.7	44.8	36.2	4.5
Queue Length 50th (ft)	170	62	115	116	24	115	49	~388	0
Queue Length 95th (ft)	254	121	175	#191	#56	152	82	#483	58
Internal Link Dist (ft)		866		404		239		710	
Turn Bay Length (ft)	135		185		215		175		
Base Capacity (vph)	481	902	481	643	180	1567	347	1910	805
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	0.67	0.57	0.45	0.76	0.46	0.42	0.51	0.89	0.42

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
3: Rose Dr. & Alta Vista St.

Cum+Proj PM.syn
11/20/2017



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	307	402	168	464	190	1538	176	968	250
v/c Ratio	0.81	0.53	0.62	0.83	0.55	0.83	0.76	0.57	0.36
Control Delay	50.5	31.9	45.0	47.5	44.8	30.7	66.1	27.0	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.5	31.9	45.0	47.5	44.8	30.7	66.1	27.0	4.9
Queue Length 50th (ft)	163	94	90	120	53	287	-54	172	0
Queue Length 95th (ft)	#260	151	146	#206	87	348	#121	216	52
Internal Link Dist (ft)		866		404		239		710	
Turn Bay Length (ft)	135		185		215		175		
Base Capacity (vph)	430	753	462	562	366	1857	231	1696	694
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	0.71	0.53	0.36	0.83	0.52	0.83	0.76	0.57	0.36

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.