TRAFFIC IMPACT ANALYSIS

IRWINDALE REGIONAL SHOPPING CENTER

CITY OF IRWINDALE

LOS ANGELES COUNTY, CALIFORNIA

LSA

November 2014

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LOS ANGELES COUNTY, CALIFORNIA

Prepared for:

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EXECUTIVE SUMMARY

LSA Associates, Inc. (LSA) has prepared this Traffic Impact Analysis (TIA) to identify the potential traffic and circulation impacts resulting from the development of the proposed regional shopping center located at 500 Speedway Drive in the City of Irwindale. The proposed project considers the development of a 700,000-square foot regional shopping center that includes commercial space and ancillary amenities including a central plaza for public gatherings, entryway features, an outdoor entertainment/performance area, and a food court. The site plan shows the project to be completed in two phases; however, the second phase will be built immediately after the first phase. As a result, LSA has evaluated the shopping center in one phase as there would not be a significant length of time between construction of Phase I and Phase II. It is anticipated that construction of the entire project would be completed by year 2018.

LSA has prepared this analysis in accordance with the objectives and methodologies set forth in the City of Irwindale's Policy Guidelines for Traffic Impact Reports (August 2004), Los Angeles County Metropolitan Transportation Authority "2010 Congestion Management Project," California Department of Transportation (Caltrans) Guide for the Preparation of Traffic Impact Studies, and applicable provisions of the California Environmental Quality Act (CEQA).

This study analyzes the a.m. and p.m. peak-hour levels of service during typical weekday and Saturday peak hours at 21 study area intersections. Project impacts were determined based on the analysis of the following scenarios, consistent with City of Irwindale Guidelines:

- Existing Conditions;
- Existing Conditions plus Any Required Mitigation;
- Existing with Project Conditions;
- Future Baseline without Project Conditions;
- Future Baseline with Project Conditions;
- Future Baseline plus Cumulative Projects without Project Conditions; and
- Future Baseline plus Cumulative Projects with Project Conditions.

Impacts

The following intersections are projected to operate at unacceptable levels of service (LOS):

- Existing Conditions:
  - Driveway 1/Live Oak Avenue (LOS F in the p.m. peak hour); and
  - Interstate 605 Northbound Off-Ramps/Live Oak Avenue (LOS F in the p.m. peak hour).
- Existing (Saturday) Conditions:
  - All intersections are forecast to operate at an acceptable LOS.

- Existing Conditions plus Any Required Mitigation:
  - All intersections are forecast to operate at an acceptable LOS with implementation of recommended improvements.
- Existing (Saturday) Conditions plus Any Required Mitigation:
  - All intersections are forecast to operate at an acceptable LOS.
- Future Baseline without Project Conditions:
  - Driveway 1/Live Oak Avenue (LOS F in the p.m. peak hour);
  - Interstate 605 Northbound Off-Ramps/Live Oak Avenue (LOS F in the p.m. peak hour); and
  - Arrow Highway (East)/Live Oak Avenue (LOS E in the p.m. peak hour).
- Future Baseline (Saturday) without Project Conditions:
  - All intersections are forecast to operate at an acceptable LOS.
- Future Baseline plus Cumulative Projects Conditions:
  - Driveway 1/Live Oak Avenue (LOS F in the p.m. peak hour);
  - Interstate 605 Northbound Off-Ramps/Live Oak Avenue (LOS F in the p.m. peak hour);
  - Arrow Highway(East)/Live Oak Avenue (LOS E in the p.m. peak hour); and
  - Avenida Barbosa/Arrow Highway (LOS E in the a.m. peak hour).
- Future Baseline (Saturday) plus Cumulative Projects Conditions:
  - All intersections are forecast to operate at an acceptable LOS.
- Existing with Project Conditions:
  - Driveway 1/Live Oak Avenue (LOS F in the p.m. peak hour);
  - Driveway 3/Live Oak Avenue (LOS F in the p.m. peak hour); and
  - Interstate 605 Northbound Off-Ramps/Live Oak Avenue (LOS F in the p.m. peak hour).
- Existing (Saturday) with Project Conditions:
  - Driveway 1/Live Oak Avenue (LOS F in the p.m. peak hour);
  - Driveway 3/Live Oak Avenue (LOS F in the p.m. peak hour); and
  - Interstate 605 Northbound Off-Ramps/Live Oak Avenue (LOS F in the p.m. peak hour).
- Future Baseline with Project Conditions:
  - Driveway 1/Live Oak Avenue (LOS F in the p.m. peak hour);
  - Driveway 3/Live Oak Avenue (LOS E in the a.m. peak hour and LOS F in the p.m. peak hour);
  - Interstate 605 Northbound Off-Ramps/Live Oak Avenue (LOS F in the a.m. and p.m. peak hours); and
  - Arrow Highway (East)/Live Oak Avenue (LOS E in the p.m. peak hour).

- Future Baseline (Saturday) with Project Conditions:
  - Driveway 1/Live Oak Avenue (LOS F in the Saturday peak hour);
  - Driveway 3/Live Oak Avenue (LOS F in the Saturday peak hour); and
  - Interstate 605 Northbound Off-Ramps/Live Oak Avenue (LOS F in the Saturday peak hour).
- Future Baseline plus Cumulative Projects with Project Conditions
  - Driveway 1/Live Oak Avenue (LOS E in the a.m. peak hour and LOS F in the p.m. peak hour);
  - Driveway 3/Live Oak Avenue (LOS E in the a.m. peak hour and LOS F in the p.m. peak hour);
  - Interstate 605 Northbound Off-Ramps/Live Oak Avenue (LOS F in the a.m. and p.m. peak hours);
  - Arrow Highway (East)/Live Oak Avenue (LOS E in the p.m. peak hour); and
  - Avenida Barbosa/Arrow Highway (LOS E in the a.m. peak hour).
- Future Baseline (Saturday) plus Cumulative Projects with Project Conditions
  - Driveway 1/Live Oak Avenue (LOS F in the Saturday peak hour);
  - Driveway 3/Live Oak Avenue (LOS F in the Saturday peak hour); and
  - Interstate 605 Northbound Off-Ramps/Live Oak Avenue (LOS F in the Saturday peak hour).

Improvements

The City's TIA guidelines require that a traffic study provide recommendations for circulation improvements when any facility operates at a level of service below the target LOS, regardless of whether the deficiency is a background condition or caused by the project.

Existing Improvements. The following intersection improvements are required under existing conditions for all study intersections to meet the level of service standards:

- Driveway 1/Live Oak Avenue: Install a traffic signal.
- Interstate 605 Northbound Off-Ramps/Live Oak Avenue: Install a traffic signal. Add a second northbound right-turn lane.

Existing with Project Improvements. The following intersection improvements are required under existing with project conditions for all study intersections to meet the level of service standards:

- Driveway 1/Live Oak Avenue: Install a traffic signal.
- Driveway 3/Live Oak Avenue: Install a traffic signal.
- Interstate 605 Northbound Off-Ramps/Live Oak Avenue: Install a traffic signal. Add a second northbound right-turn lane.

Existing (Saturday) with Project Improvements. The following intersection improvements are required under existing (Saturday) with project conditions for all study intersections to meet the level of service standards:

- Driveway 1/Live Oak Avenue: Install a traffic signal.
- Driveway 3/Live Oak Avenue: Install a traffic signal.
- Interstate 605 Northbound Off-Ramps/Live Oak Avenue: Install a traffic signal. Add a second northbound right-turn lane.

Future Baseline with Project Improvements. The following intersection improvements are required under future baseline with project conditions for all study intersections to meet the level of service standards:

- Driveway 1/Live Oak Avenue: Install a traffic signal.
- Driveway 3/Live Oak Avenue: Install a traffic signal.
- Interstate 605 Northbound Off-Ramps/Live Oak Avenue: Install a traffic signal. Add a second northbound right-turn lane.
- Arrow Highway/Live Oak Avenue: Add an eastbound through lane.

Future Baseline (Saturday) with Project Improvements. The following intersection improvements are required under future baseline (Saturday) with project conditions for all study intersections to meet the level of service standards:

- Driveway 1/Live Oak Avenue: Install a traffic signal.
- Driveway 3/Live Oak Avenue: Install a traffic signal.
- Interstate 605 Northbound Off-Ramps/Live Oak Avenue: Install a traffic signal. Add a second northbound right-turn lane.

Future Baseline plus Cumulative Projects with Project Improvements. The following intersection improvements are required under future baseline (Saturday) with project conditions for all study intersections to meet the level of service standards:

- Driveway 1/Live Oak Avenue: Install a traffic signal.
- Driveway 3/Live Oak Avenue: Install a traffic signal.
- Interstate 605 Northbound Off-Ramps/Live Oak Avenue: Install a traffic signal. Add a second northbound right-turn lane.
- Arrow Highway/Live Oak Avenue: Add an eastbound through lane.
- Avenida Barbosa/Arrow Highway: Add a second eastbound left-turn lane.

Future Baseline (Saturday) plus Cumulative Projects with Project Improvements. The following intersection improvements are required under future baseline (Saturday) with project conditions for all study intersections to meet the level of service standards:

- Driveway 1/Live Oak Avenue: Install a traffic signal.
- Driveway 3/Live Oak Avenue: Install a traffic signal.
- Interstate 605 Northbound Off-Ramps/Live Oak Avenue: Install a traffic signal. Add a second northbound right-turn lane.

Freeway Ramps and Segments

An analysis of freeway ramps providing access to the project and freeway segments on the CMP monitoring network was prepared. All freeway segment and ramp junctions operate at a satisfactory LOS D or better under all without and with project scenarios.

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INTRODUCTION

The purpose of this Traffic Impact Analysis (TIA) is to identify the potential circulation impacts associated with the development of the Irwindale Regional Shopping Center Project, located west of Interstate 605 (I-605) at 500 Speedway Drive in the City of Irwindale. Figure 1 shows the location of the project.

This report is intended to satisfy the requirements established by the City of Irwindale "Policy for Traffic Impact Reports," dated August 20, 2004, Los Angeles County Metropolitan Transportation Authority "2010 Congestion Management Project," California Department of Transportation (Caltrans) Guide for the Preparation of Traffic Impact Studies, as well as the requirements for the disclosure of potential impacts and mitigation measures per the California Environmental Quality Act (CEQA).

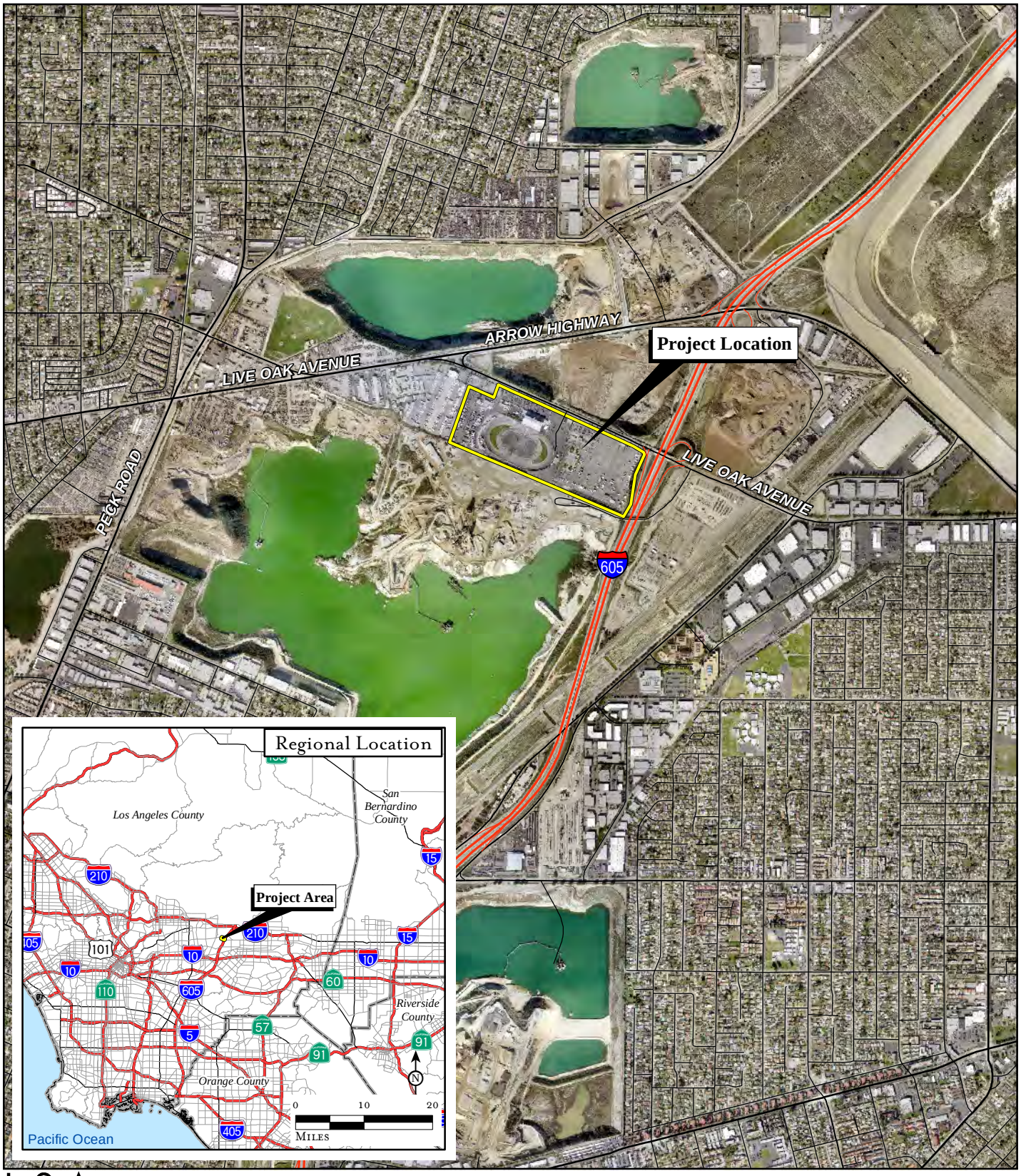
The scope of work for this traffic study, including trip generation, trip distribution, study area, and analysis methodologies have been approved by City staff via the Scoping Agreement process. This study examines traffic operations in the vicinity of the proposed project under the following seven scenarios:

1. Existing Conditions;
2. Existing Conditions plus Any Required Mitigation;
3. Existing with Project Conditions;
4. Future Baseline without Project Conditions;
5. Future Baseline with Project Conditions;
6. Future Baseline plus Cumulative Projects without Project Conditions; and
7. Future Baseline plus Cumulative Projects with Project Conditions.

Traffic conditions were examined for the a.m., p.m. and Saturday peak hour conditions. The a.m. peak hour is defined as the one hour of highest traffic volumes occurring between 7:00 and 9:00 a.m. The p.m. peak hour is the one hour of highest traffic volumes occurring between 4:00 and 6:00 p.m. Because the project is not a traditional commercial use, traffic conditions for the Saturday peak hour have also been included in the analysis.

Project Description

The proposed project is for the development of a 700,000-square foot regional shopping center that includes commercial space and ancillary amenities including a central plaza for public gatherings, entryway features, an outdoor entertainment/performance area, and a food court. Figure 2 shows the project site plan. The site plan shows the project to be completed in two phases; however, the second phase will be built immediately after the first phase. As a result, LSA has evaluated the shopping center in one phase as there would not be a significant length of time between construction of Phase I and Phase II. Access to the project will be provided by three full-access driveways on Live Oak Avenue. It is anticipated that construction of the entire project would be completed by the year 2018.



LSA

FIGURE 1

N

0 1,000 2,000

FEET

Irwindale Regional Shopping Center

SOURCE: LARIAC, 2012; Thomas Bros., 2009

Regional and Project Location

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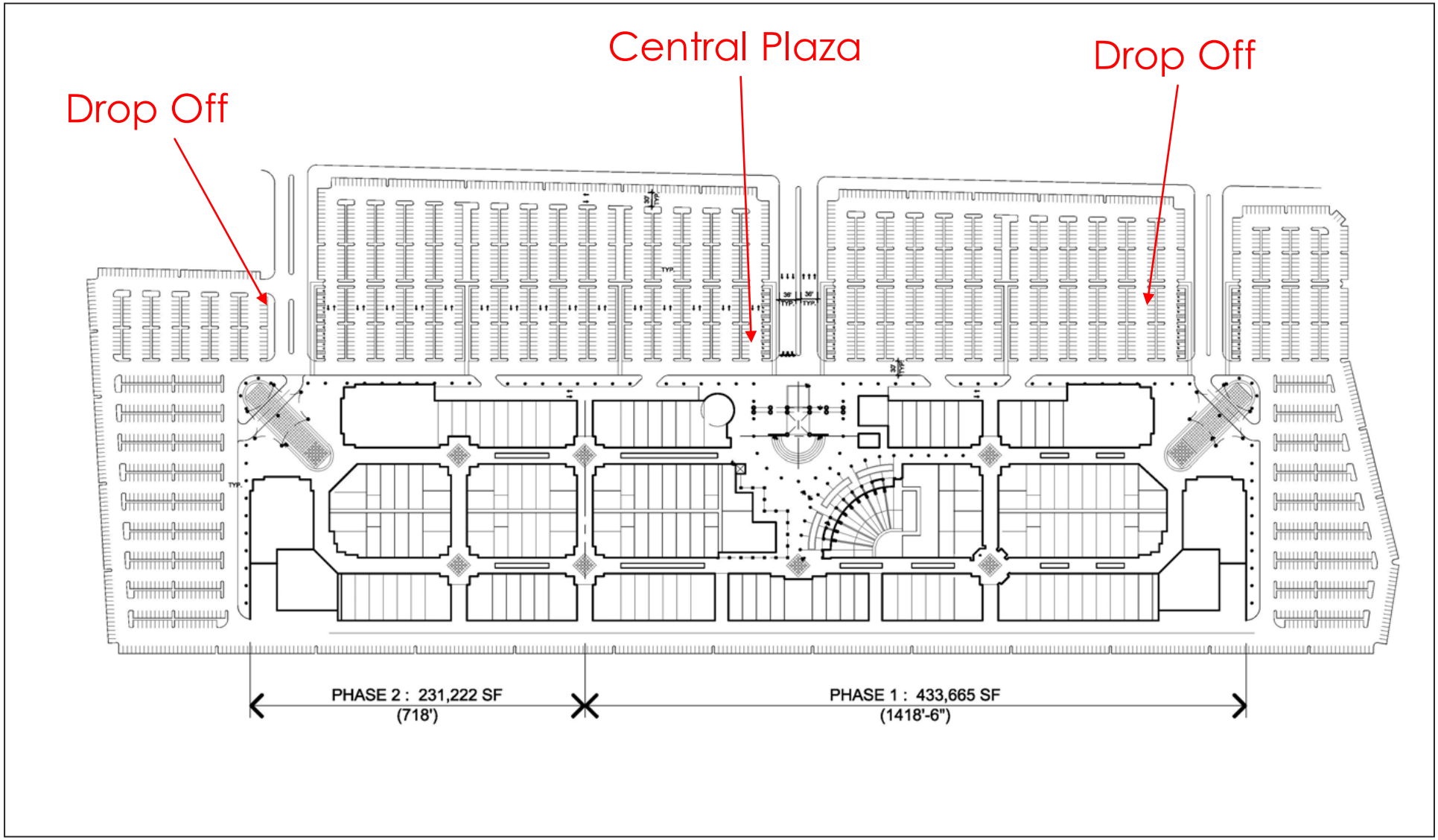

LSA

FIGURE 2

Irwindale Regional Shopping Center

Site Plan

SOURCE: FCGA Architecture, 2014

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Study Area Intersections

The study area includes intersections where the project would add 50 or more trips during the a.m., p.m., or Saturday peak hours. Figure 3 shows the project location and the study area intersections. The study area analyzed in this report includes the following 21 intersections.

1. Peck Road-Myrtle Avenue/Live Oak Avenue
2. Myrtle Avenue/Longden Avenue
3. Longden Avenue/Live Oak Avenue
4. Arrow Highway (West)/Live Oak Avenue
5. Driveway 1/Live Oak Avenue
6. Speedway Drive-Driveway 2/Live Oak Avenue
7. Driveway 3/Live Oak Avenue
8. I-605 Southbound On-Ramp/Live Oak Avenue*
9. I-605 Northbound Off-Ramps/Live Oak Avenue*
10. Graham Road/Live Oak Avenue
11. Live Oak Lane/Live Oak Avenue
12. Rivergrade Road/Live Oak Avenue
13. Commerce Drive/Live Oak Avenue
14. Stewart Avenue/Live Oak Avenue
15. Baldwin Park/Arrow Highway
16. Arrow Highway(East)/Live Oak Avenue
17. Maine Avenue/Arrow Highway
18. Avenida Barbosa/Buena Vista Street
19. Avenida Barbosa Street/Arrow Highway
20. I-605 Southbound Off-Ramp/Arrow Highway*
21. I-605 Northbound On-Ramps/Arrow Highway*

***** State (Caltrans) Facility

Study Area Freeway Segments and Ramp Junctions

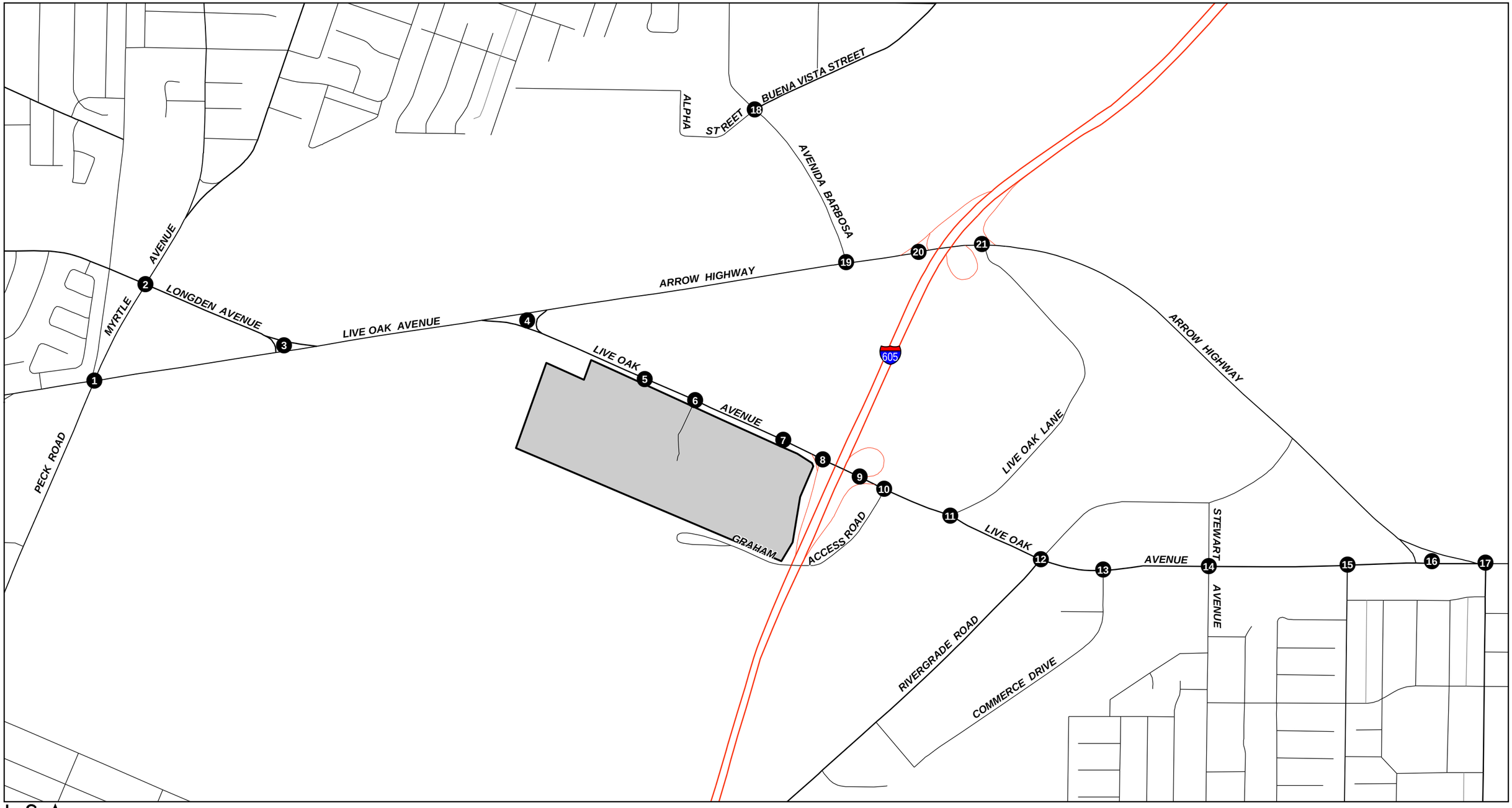
A freeway segment and ramp junction analysis was conducted. The analysis addresses the California Department of Transportation (Caltrans) NOP comments, dated July 18, 2014; and is in accordance with the Los Angeles County Metropolitan Transportation Authority "2010 Congestion Management Project" (CMP). The following freeway segments and ramp junctions were analyzed:

<u>I-605 Northbound:</u>

1. North of Arrow Highway;
2. Arrow Highway Slip On-Ramp;
3. Arrow Highway Loop On-Ramp to Arrow Highway Slip On-Ramp;
4. Arrow Highway Loop On-Ramp;
5. Live Oak Avenue Off-Ramp to Arrow Highway Loop On-Ramp;
6. Live Oak Avenue Off-Ramp; and
7. South of Live Oak Avenue.

<u>I-605 Southbound</u>

8. North of Arrow Highway;
9. Arrow Highway Slip Off-Ramp;
10. Arrow Highway Slip Off-Ramp to Live Oak Avenue Slip On-Ramp;
11. Live Oak Canyon On-Ramp; and
12. South of Arrow Highway.



LSA

FIGURE 3

Project Location

Study Area Intersections

N

0 450 900

FEET

SOURCE:Thomas Bros., 2009

Irwindale Regional Shopping Center

Study Area Intersections

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METHODOLOGY

Signalized Intersections Level of Service Methodology

The Intersection Capacity Utilization (ICU) methodology was used to determine levels of service (LOS) for the signalized study area intersections. This methodology compares the volume-to-capacity (v/c) ratios of conflicting turn movements at an intersection, sums these critical conflicting v/c ratios for each intersection approach, and determines the overall ICU. The resulting ICU is expressed in terms of LOS as shown in Table A, where LOS A represents free-flow activity, and LOS F represents overcapacity operation. LOS is a qualitative assessment of the quantitative effects of such factors as traffic volume, roadway geometrics, speed, delay, and maneuverability on roadway and intersection operations. The LOS criteria for signalized intersections using the ICU methodology are presented below. Table B shows the relationship between LOS and the ICU value (i.e., v/c ratio).

Table A: Level of Service Definitions

LOS	Description
A	No approach phase is fully utilized by traffic, and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turns are made easily, and nearly all drivers find freedom of operation.
B	This service level represents stable operation, where an occasional approach phase is fully utilized, and a substantial number are nearing full use. Many drivers begin to feel restricted within platoons of vehicles.
C	This level still represents stable operating conditions. Occasionally, drivers may have to wait through more than one red signal indication, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so.
D	This level encompasses a zone of increasing restriction approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak period; however, enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive backups.
E	Capacity occurs at the upper end of this service level. It represents the most vehicles that any particular intersection approach can accommodate. Full utilization of every signal cycle is attained no matter how great the demand.
F	This level describes forced flow operations at low speeds, where volumes exceed capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially, and stoppages may occur for short or long periods of time due to the congestion. In the extreme case, speed can drop to zero.

Table B: ICU Level of Service

LOS	Intersection Capacity Utilization
A	< 0.600
B	0.610–0.700
C	0.710–0.800
D	0.810–0.900

Table B: ICU Level of Service

LOS	Intersection Capacity Utilization
E	0.910–1.000
F	> 1.000

The 2000 Highway Capacity Manual (HCM) methodology was used to determine intersection levels of service at signalized intersections under the jurisdiction of Caltrans. The HCM intersection methodology describes level of service in terms of overall control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. At signalized intersections, the average delay is reported. Table C summarizes the relationship of delay and level of service at signalized intersections.

Table C: Level of Service Criteria for Intersections and Freeway Facilities

LOS	Unsignalized Intersection Average Delay per Vehicle (sec.)	Signalized Intersection Average Delay per Vehicle (sec.)	V/C Ratio for Mainline Freeway Facilities at a Free Flow Speed of 70 mph	Density (pc/mi/ln) for Merge-Diverge Areas
A	≤ 10	≤ 10	0.32	0-10
B	> 10 and ≤ 15	> 10 and ≤ 20	0.53	10-20
C	> 15 and ≤ 25	> 20 and ≤ 35	0.74	20-28
D	> 25 and ≤ 35	> 35 and ≤ 55	0.9	28-35
E	> 35 and ≤ 50	> 55 and ≤ 80	1.0	>35 (35-43 for weaving segments)
F	> 50	> 80	> 1.0	Demand Exceeds Capacity (>43 for weaving segments)

Based on the CMP guidelines, the ICU calculations utilize a lane capacity value of 1,600 vehicles per hour (vph) per lane, and a dual-turn lane capacity of 2,880 vph. A clearance adjustment factor of 0.10 was added to each LOS calculation.

Unsignalized Intersections Level of Service Methodology

The HCM methodology was used to determine intersection levels of service at unsignalized intersections. As previously discussed, the HCM intersection methodology describes level of service in terms of overall control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. At all-way stop controlled intersections, the average control delay is reported; and at two-way stop controlled intersections, the worst-case movement delay is reported. The relationship of delay and level of service at unsignalized intersections is summarized in previously referenced Table C.

Level of Service Standard and Determination of Impacts

The City considers intersections with an ICU of 0.90 (LOS D) as the upper limit of satisfactory operations. A project impact at an intersection is considered significant:

- City of Irwindale Intersections:
  - When a signalized intersection operates at mid-range LOS D or better under existing or future baseline conditions and the addition of the project trips degrades the intersection operations to LOS E or F. The project mitigation should bring the facility to operate at mid-range LOS D at minimum.
  - When a signalized intersection operates at mid-range LOS E or better under existing or future baseline conditions and the addition of project trips degrades the intersection operations to LOS F. The project mitigation should bring the facility to operate at mid-range LOS E at minimum.
  - When a signalized intersection operates at LOS F under existing or future baseline conditions and the addition of more than 50 peak hour project trips contributes to the continuing operational failure at the intersection. The project mitigation should bring the facility to pre-project conditions, which typically are defined as existing conditions.
  - At an unsignalized intersection, when the minor stop-controlled approach operates at LOS F and does not have acceptable operation in terms of total control delay, and the addition of project trips increases the total control delay to more than 4.0 vehicle hours for a single lane approach or 5.0 vehicle hours for a multilane approach. The project mitigation should bring the facility to operate at LOS E minimum or to bring the total control delay to less than 4.0 vehicle hours for a single lane approach or 5.0 vehicle hours for a multilane approach at a minimum.
  - At an unsignalized intersection, when the minor stop-controlled approach operates at LOS F and does not have an acceptable operation in terms of total control delay, and the addition of more than 50 peak hour project trips contributes to the continuing operational failure at the minor approach. The project mitigation should bring the facility to pre-project or existing conditions.
- City of Baldwin Park Intersections:
  - Five of the study area intersections are located in the City of Baldwin Park, which also utilizes a significance threshold of LOS D. A significant impact occurs if the project causes LOS to degrade from LOS D or better to LOS E or F, or if an intersection in Baldwin Park is operating at LOS E or F in the no project condition and the project adds 0.01 or greater to the v/c ratio.
- Caltrans Intersections:
  - Caltrans considers acceptable level of service to be between C and D for all intersections under its jurisdiction; therefore, all Caltrans facilities are considered to be operating at satisfactory LOS when the weighted average delay is 45 seconds or less (middle of LOS D).

Freeway Methodology

As previously discussed, a freeway segment and ramp junction analysis was conducted. The analysis addresses the Caltrans NOP comments, dated July 18, 2014; and is in accordance with the Los Angeles County Metropolitan Transportation Authority "2010 Congestion Management Project" (CMP). A copy of the Caltrans NOP comment letter is included in Appendix A. The CMP requires the analysis of freeway segments at mainline monitoring locations where the project will add 150 or more trips (in either direction) during either the a.m. or p.m. weekday peak hours. The 150 trip threshold was used for the Saturday peak hour as well.

For freeway segments and ramp junctions, the Caltrans Guide for the Preparation of Traffic Impact Studies (December 2002) states that Caltrans endeavors to maintain a target LOS at transition between LOS C and LOS D; however, Caltrans has acknowledge that this may not always be feasible. Therefore, for the purposes of this report, LOS D are used has the minimum level of service standard.

Existing Traffic Volumes

Existing traffic volumes at the study intersections are based on peak hour intersection turn movement classification counts collected by National Data and Surveying Services on a weekday and Saturday. Schools were in session at the time the traffic counts were collected. Count sheets are contained in Appendix B.

PCE volumes for study intersections were computed using a PCE factor of 1.5 for 2-axle trucks, 2.0 for 3-axle trucks, and 3.0 for trucks with 4 or more axles. Detailed volume development worksheets are included in Appendix C.

Existing freeway segment volumes are based on Average Annual Daily Traffic (AADT) counts published by Caltrans in 2012. Total peak hour volumes on study area freeway segments have been divided into passenger vehicles and truck volumes based on the truck percentages given in the Caltrans counts for each segment. Consistent with *Highway Capacity Manual* methodologies, PCE volumes for these segments were computed using a PCE factor of 1.5 for all trucks, since the impact of trucks on freeway operations is less than at intersections. The directional split of traffic volumes on each segment was computed using the k-factor and d-factors reported by Caltrans. For the purposes of this analysis, Caltrans AADT counts on I-605, south of Live Oak Avenue were used. Conservation of flow was maintained in the northbound and southbound directions using existing count data collected at Arrow Highway and Live Oak Avenue.

Detailed volume development worksheets are included in Appendix C.

Future Baseline Traffic Volumes

Construction of the entire project would be completed by the year 2018. To develop the future baseline conditions, a recommended growth rate was added to the existing traffic volumes, which is consistent with the City of Irwindale's Policy Guidelines for Traffic Impact Reports (August 2004).

Because growth on freeways is generally dependent on characteristics of the entire region, growth forecasts from the 2010 CMP were used to develop future baseline conditions on freeway segments. Based on the 2015–2020 growth factors contained in the CMP, a 0.4 percent per annum growth was applied to existing without project traffic volumes to develop future baseline without project conditions. Conservation of flow at study area freeway segments was maintained using volumes at Arrow Highway and Live Oak Avenue under future baseline conditions.

Detailed volume development worksheets are included in Appendix C.

Future Baseline plus Cumulative Projects Traffic Volumes

To develop the future baseline with cumulative projects conditions, traffic volumes for other committed and/or approved (cumulative) developments were added to the future baseline traffic volumes. LSA contacted all cities within a 5-mile radius of the project to obtain a list of cumulative projects (Figure 4). The project trip generation for each cumulative project is shown in Table D. The cumulative projects trip assignment is shown in Figure 5.

Cumulative project trips were added to future baseline conditions traffic volumes for freeway mainlines.

Detailed volume development worksheets are included in Appendix C.

With Project Traffic Volumes

To determine the with project traffic volumes for existing, future baseline, and future baseline plus cumulative projects conditions, the existing trips from the Irwindale Speedway were removed from the roadway network and traffic generated by the proposed project was added to each corresponding scenario's background traffic volumes at the study area intersections. Detailed volume development worksheets are included in Appendix C.

For freeway mainlines, project traffic was added to corresponding without project scenario to develop with project freeway volumes.

EXISTING CONDITIONS

Key roadways in the vicinity of the proposed project are as follows:

- **Interstate 605.** I-605, also known as the San Gabriel River Freeway, is located east of the project site. I-605 is a major north-south interstate highway, and runs from Seal Beach to Irwindale parallel to the San Gabriel River. Access to and from the project site from south on the I-605 Freeway is provided via a northbound off-ramp and southbound on-ramp at Live Oak Avenue. Access to and from the project site from north on the I-605 Freeway is provided via a northbound on-ramp and southbound off-ramp at Arrow Highway.

LSA

Project Boundary

City Boundaries

Cumulative Projects

N

0 1,500 3,000

FEET

SOURCE: LARIAC Aerials, 2012; Thomas Bros., 2009

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FIGURE 4

Irwindale Regional Shopping Center

Cumulative Projects

Table D - Cumulative Projects Trip Generation

Proj. No.	Land Use	Units	A.M. Peak Hour In	A.M. Peak Hour Out	A.M. Peak Hour Total	P.M. Peak Hour In	P.M. Peak Hour Out	P.M. Peak Hour Total	Saturday In	Saturday Out	Saturday Total	Daily
1	**Transit Oriented Development/Gold Line Light**											
	Mixed Use [1]											
	Total Net Trip Generation		**499**	**275**	**774**	**293**	**449**	**742**	**259**	**196**	**442**	**7,259**
2	**Materials Recovery Facility & Transfer Station**											
	General Light Industrial [2]											
	Trips/Unit		-	-	-	-	-	-	-	-	-	-
	Auto Trip Generation		**113**	**53**	**166**	**74**	**88**	**162**	**64**	**64**	**128**	**1,441**
	Truck Trip Generation (PCE)		**237**	**261**	**498**	**262**	**240**	**502**	**5**	**7**	**12**	**6,892**
	Total Trip Generation		**350**	**314**	**664**	**336**	**328**	**664**	**69**	**71**	**140**	**8,333**
3	**KARE Youth League/ Santa Fe Dam Sports Park**											
	Athletic Club [3]	17 Acres										
	Trips/Unit		-	-	-	-	-	-	3.27	3.40	6.67	43.00
	Trip Generation		**15**	**13**	**28**	**40**	**40**	**80**	**54**	**56**	**110**	**710**
4	**Commercial**											
	Shopping Center [4]	29 TSF	0.60	0.36	0.96	1.78	1.93	3.71	2.51	2.31	4.82	42.70
	Trip Generation		**17**	**11**	**28**	**52**	**56**	**108**	**73**	**67**	**140**	**1,238**
	Pass-By Trips [5]					**(18)**	**(18)**	**(36)**	**(24)**	**(24)**	**(47)**	**(36)**
	Trip Generation		**17**	**11**	**28**	**34**	**38**	**72**	**49**	**44**	**93**	**1,202**
5	**Residential**											
	Residential Condominium/Townhouse [6]	135 DU										
	Trips/Unit		0.07	0.37	0.44	0.35	0.17	0.52	0.25	0.22	0.47	5.81
	Trip Generation		**10**	**49**	**59**	**47**	**23**	**70**	**34**	**29**	**63**	**784**
6	**Industrial**											
	Warehouse [7]	172 TSF										
	Trips/Unit		-	-	-	-	-	-	-	-	-	-
	Auto Trip Generation		**32**	**9**	**41**	**14**	**30**	**44**	**3**	**1**	**4**	**487**
	Truck Trip Generation (PCE)		**21**	**5**	**26**	**10**	**21**	**31**	**3**	**0**	**3**	**323**
	Total Trip Generation		**53**	**14**	**67**	**24**	**51**	**75**	**6**	**1**	**7**	**810**
7	**Industrial**											
	Warehouse [7]	138 TSF										
	Trips/Unit		-	-	-	-	-	-	-	-	-	-
	Auto Trip Generation		**26**	**7**	**33**	**11**	**24**	**35**	**3**	**1**	**4**	**391**
	Truck Trip Generation (PCE)		**18**	**3**	**21**	**8**	**14**	**22**	**0**	**3**	**3**	**263**
	Total Trip Generation		**44**	**10**	**54**	**19**	**38**	**57**	**3**	**4**	**7**	**654**
8	**Industrial Building**											
	General Light Industrial [8]	41.375 TSF										
	Trips/Unit		-	-	-	-	-	-	-	-	-	-
	Auto Trip Generation		**26**	**4**	**30**	**4**	**28**	**32**	**1**	**1**	**2**	**227**
	Truck Trip Generation (PCE)		**16**	**3**	**19**	**0**	**21**	**21**	**0**	**0**	**0**	**149**
	Total Trip Generation		**42**	**7**	**49**	**4**	**49**	**53**	**1**	**1**	**2**	**376**
9	**Olive Pit Mine and Reclamation Project**											
	Trips/Unit [9]		-	-	-	-	-	-	-	-	-	-
	Auto Trip Generation		**12**	**4**	**16**	**6**	**8**	**14**	**0**	**0**	**0**	**80**
	Truck Trip Generation (PCE)		**60**	**57**	**117**	**39**	**39**	**78**	**0**	**0**	**0**	**786**
	Total Trip Generation		**72**	**61**	**133**	**45**	**47**	**92**	**0**	**0**	**0**	**866**
	Total Net Trip Generation		**1,102**	**754**	**1,856**	**842**	**1,063**	**1,905**	**475**	**402**	**864**	**20,994**

Notes: TSF = Thousand Square Feet, DU=Dwelling Unit

[1] Rates based on Duarte Station Specific Plan Environmental Impact Report -Traffic Impact Analysis, RBF Consulting *(September 2013). Saturday Rates were developed applying reduction rates used in the Duarte Station Specific Plan EIR.*

[2] Rates based on Athens-Irwindale Materials Recovery Facility and Transfer Station Traffic Impact Analysis, *Urban Crossroads (August 29, 2013 revised February 27, 2014).*

[3] Rates based on Land Use 493 - "Athletic Club" from ITE *Trip Generation* , 9th Edition.

[4] Rates based on Land Use 820 - " Shopping Center" from ITE *Trip Generation* , 9th Edition.

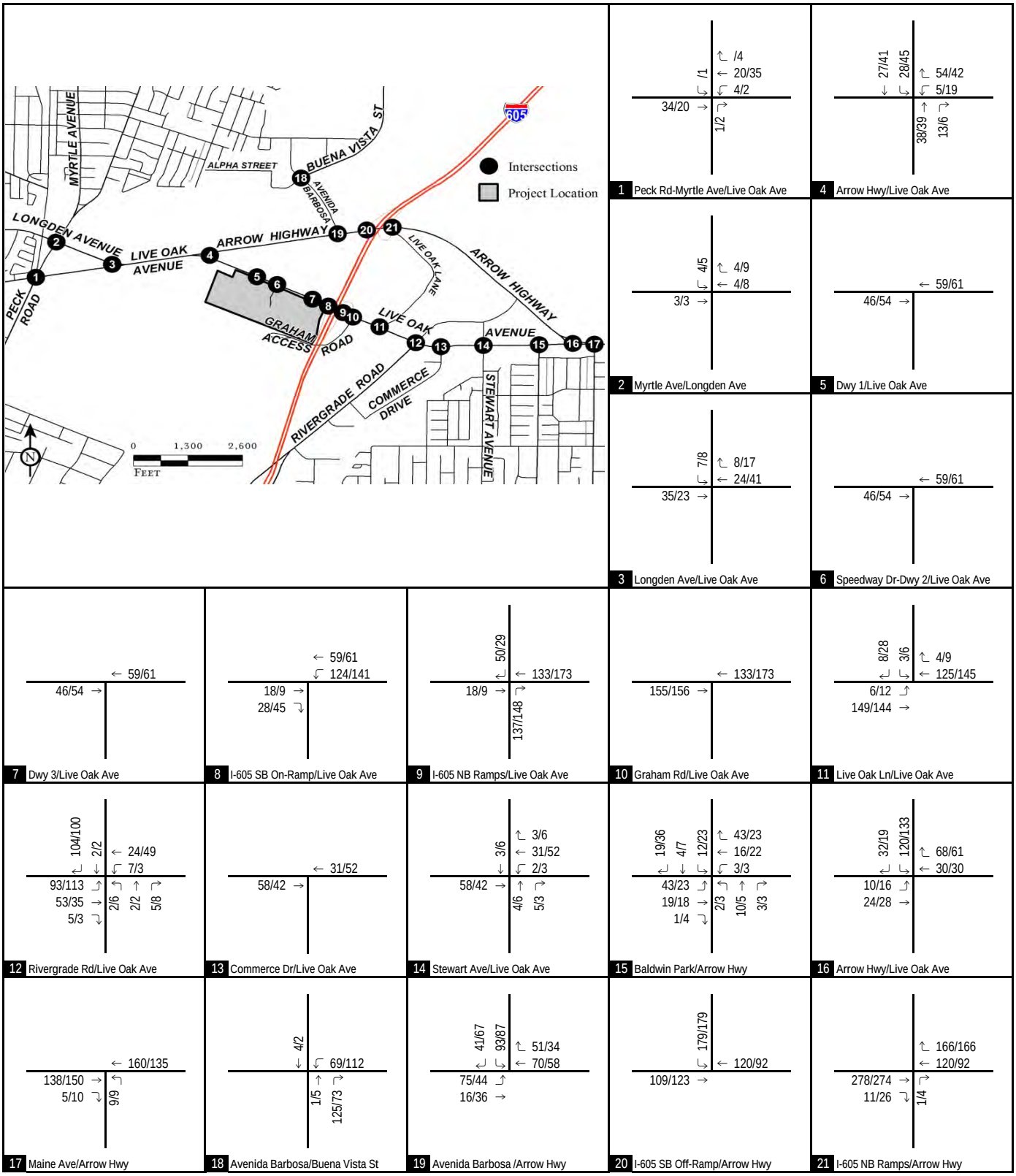
[5] Pass-by rates based on rates for Land Use 820 - "Shopping Center" from ITE Trip Generation Handbook.

[6] Rates based on Land Use 230 - "Residential Condominium/Townhouse" from ITE Trip Generation, 9th Edition.

[7] Rates based on Land Use 150 - "Warehouse" from ITE *Trip Generation* , 9th Edition.

[8] Rates based on Land Use 110 - "General Light Industrial" from ITE *Trip Generation* , 9th Edition.

[9] Rates based on Olive Pit Mine and Reclamation Project Final EIR, October *2014).*



LSA

FIGURE 5

XXX/YYY AM /PM Cumulative Project Trips

Irwindale Regional Shopping Center

Cumulative Projects Trip Assignment

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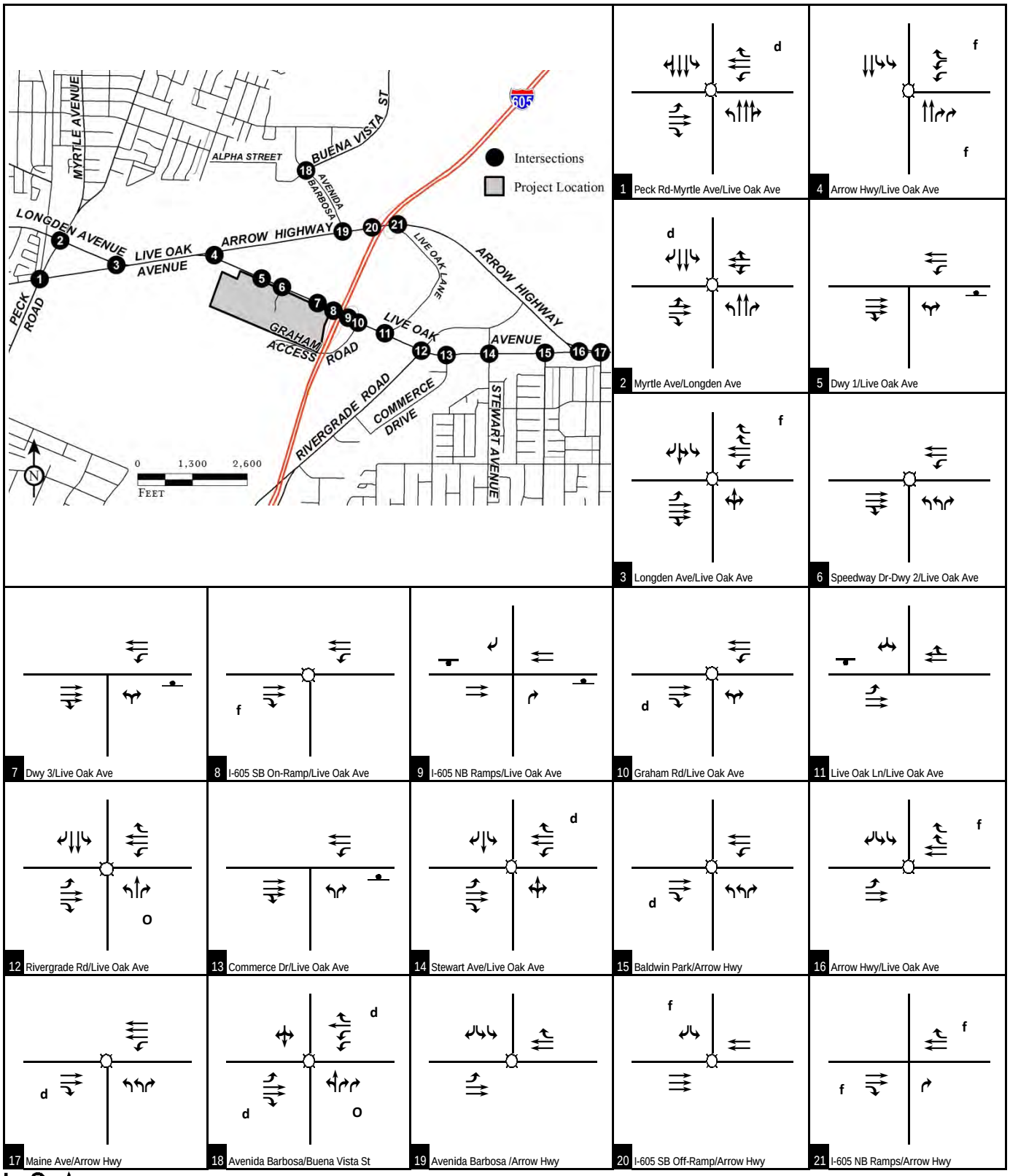
- **Live Oak Avenue.** This roadway is designated as an east-west major arterial highway in the City's General Plan. Live Oak Avenue is currently a five-lane facility with a center divider. This major arterial highway is located adjacent to the project and has two eastbound lanes and three westbound lanes with the exception of a six-lane stretch between Longden Avenue and Arrow Highway that is considered a secondary highway. The approximate curb-to-curb width of this facility ranges from 75 to 80 feet. The speed limit is 45 mph. This roadway provides access to the project site via all three project driveways. Foothill Transit bus stops are located along eastbound and westbound Live Oak Avenue, adjacent to the project site. The road is served by Foothill Transit Routes 272 and 492.
- **Arrow Highway.** Arrow Highway is designated as an east-west major arterial highway between Live Oak Avenue and the eastern boundary of the City of Irwindale in the City's General Plan. Arrow Highway is a secondary arterial highway between the northwest end of Live Oak Avenue and the southeast end of Live Oak Avenue. This roadway is currently a four-lane facility with two lanes in each direction and a center divider. The curb-to-curb width of this facility is approximately 70 feet. The posted speed limit is 45 mph.
- **Myrtle Avenue.** This roadway is designated as a north-south primary arterial road in the City of Monrovia Circulation Element. This roadway is currently a four-lane facility with two lanes in each direction and a center divider. The curb-to-curb width of this facility is approximately 70 feet. The posted speed limit is 40 mph.
- **Longden Avenue.** This roadway is designated as a north-south secondary arterial highway in the City's General Plan. This roadway is currently a four-lane facility with two lanes in each direction and a center divider. The curb-to-curb width of this facility is approximately 75 feet. The posted speed limit is 40 mph. Foothill Transit bus stops are located along the northern end of Longden Avenue. The road is served by Foothill Transit Routes 78, 79, 270, and 378.
- **Avenida Barbosa.** This roadway is designated as a north-south collector street in the City's General Plan. This roadway is currently a four-lane facility with two lanes in each direction and a center divider. The curb-to-curb width of this facility is approximately 70 feet. The posted speed limit is 40 mph.

EXISTING (2014) CONDITIONS

Figure 6 illustrates the existing intersection lane geometrics and stop control at each study intersection. Figure 7 illustrates the existing a.m. and p.m. peak hour traffic volumes for the study intersections.

As stated previously, the ICU methodology was used to determine the Levels of Service for the non-state signalized intersections and the HCM methodology was used to determine the Levels of Service at Caltrans and unsignalized intersections. The existing Levels of Service are presented in two separate tables that report ICU methodology for signalized intersections and HCM methodology for unsignalized intersections and Caltrans facilities. Table E summarizes the results of the existing a.m. and p.m. peak hour LOS analysis for all non-state signalized study area intersections utilizing the ICU methodology. As shown in Table E, all intersections are currently operating at acceptable LOS.



LSA

FIGURE 6

Legend

- Signal
- Stop Sign
- **O** Overlap
- **f** free right-turn
- **d** de-facto right turn

Irwindale Regional Shopping Center

Existing (2014) Intersection Geometrics and Stop Control

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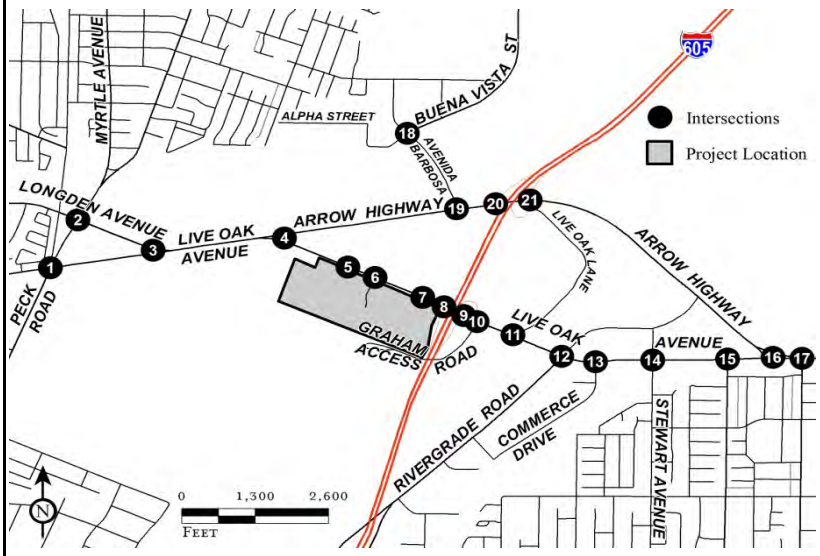

1 Peck Rd-Myrtle Ave/Live Oak Ave

151 / 132	496 / 548	38 / 177
67 / 182	534 / 1153	207 / 184
249 / 220	934 / 766	266 / 174
54 / 20	1133 / 639	156 / 60

4 Arrow Hwy/Live Oak Ave

1331 / 516	120 / 237	
490 / 709	732 / 1819	
197 / 117	912 / 821	

2 Myrtle Ave/Longden Ave

48 / 53	598 / 773	161 / 348
68 / 80	247 / 620	74 / 96
163 / 92	873 / 860	19 / 12
410 / 265	567 / 379	33 / 26

5 Dwy 1/Live Oak Ave

815 / 2036	45 / 23
22 / 7	82 / 60
1098 / 928	28 / 46

3 Longden Ave/Live Oak Ave

12 / 9	1 / 0	418 / 969
36 / 8	805 / 1521	1 / 1
9 / 0	9 / 0	9 / 0
937 / 642	1295 / 684	9 / 1

6 Speedway Dr-Dwy 2/Live Oak Ave

910 / 2035	2 / 53
0 / 10	1 / 5
1131 / 964	20 / 87

7 Dwy 3/Live Oak Ave

909 / 2039	
1143 / 1039	12 / 5

8 I-605 SB On-Ramp/Live Oak Ave

398 / 1063	524 / 978
1149 / 1043	685 / 573

9 I-605 NB Ramps/Live Oak Ave

384 / 660	401 / 1062
366 / 642	1451 / 969

10 Graham Rd/Live Oak Ave

2 / 6	672 / 1673	103 / 44
148 / 17	56 / 21	
1294 / 959	46 / 33	

11 Live Oak Ln/Live Oak Ave

128 / 69	13 / 11	
83 / 45	649 / 1630	
53 / 6	1230 / 912	

12 Rivergrade Rd/Live Oak Ave

70 / 57	74 / 20	29 / 26	
89 / 77	481 / 1549	84 / 20	
40 / 97	49 / 64	104 / 361	
13 / 6	1158 / 767	251 / 81	

13 Commerce Dr/Live Oak Ave

0 / 2	450 / 1928	45 / 6
6 / 24	18 / 197	
1529 / 827	256 / 21	

14 Stewart Ave/Live Oak Ave

76 / 13	26 / 99	13 / 23	
19 / 58	426 / 1814	26 / 264	
210 / 68	118 / 19	32 / 11	
35 / 1	1503 / 751	17 / 38	

15 Baldwin Park/Arrow Hwy

432 / 1341	63 / 522
296 / 94	290 / 84
1295 / 677	131 / 262

16 Arrow Hwy/Live Oak Ave

43 / 110	269 / 971	
138 / 37	585 / 1386	
1548 / 441	1386 / 821	

17 Maine Ave/Arrow Hwy

741 / 1859	97 / 486
612 / 249	104 / 99
2332 / 1008	34 / 63

18 Avenida Barbosa/Buena Vista St

2 / 6	69 / 178	8 / 26	
1 / 6	4 / 20	6 / 82	
50 / 15	151 / 112	701 / 295	
18 / 22	14 / 17	146 / 470	

19 Avenida Barbosa /Arrow Hwy

122 / 310	120 / 361	
288 / 188	390 / 636	
643 / 198	1326 / 448	

20 I-605 SB Off-Ramp/Arrow Hwy

515 / 306	381 / 278	
498 / 997		
1441 / 348		

21 I-605 NB Ramps/Arrow Hwy

567 / 1181	312 / 94
61 / 34	
382 / 232	1441 / 348

LSA

FIGURE 7

XXXX / YYYY AM / PM Peak Hour Volumes

Irwindale Regional Shopping Center

Traffic Impact Study

Existing Peak Hour Traffic Volumes

Table E - Existing Intersection Levels of Service Summary (ICU Methodology)

Intersection	Control	Without Project Conditions				With Project Conditions				Exceeds City Significance Threshold	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
		ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM Peak Hour	PM Peak Hour
1 . Peck Road-Myrtle Avenue/Live Oak Avenue	Signal	0.786	C	0.804	D	0.787	C	0.804	D	N	N
2 . Myrtle Avenue/Longden Avenue	Signal	0.815	D	0.829	D	0.820	D	0.830	D	N	N
3 . Longden Avenue/Live Oak Avenue	Signal	0.675	B	0.721	C	0.680	B	0.714	C	N	N
4 . Arrow Highway/Live Oak Avenue	Signal	0.824	D	0.680	B	0.827	D	0.763	C	N	N
6 . Speedway Drive-Driveway 2/Live Oak Avenue	Signal	0.454	A	0.593	A	0.489	A	0.840	D	N	N
10 . Graham Road/Live Oak Avenue	Signal	0.632	B	0.669	B	0.632	B	0.679	B	N	N
12 . Rivergrade Road/Live Oak Avenue	Signal	0.570	A	0.809	D	0.572	A	0.816	D	N	N
14 . Stewart Avenue/Live Oak Avenue	Signal	0.815	D	0.795	C	0.816	D	0.801	D	N	N
15 . Baldwin Park/Arrow Highway	Signal	0.686	B	0.735	C	0.683	B	0.737	C	N	N
16 . Arrow Highway/Live Oak Avenue	Signal	0.713	C	0.870	D	0.710	C	0.872	D	N	N
17 . Maine Avenue/Arrow Highway	Signal	0.789	C	0.798	C	0.787	C	0.797	C	N	N
18 . Avenida Barbosa/Buena Vista Street	Signal	0.370	A	0.525	A	0.371	A	0.527	A	N	N
19 . Avenida Barbosa/Arrow Highway	Signal	0.771	C	0.551	A	0.818	D	0.626	B	N	N

Notes:

LOS = Level of Service

ICU = Intersection Capacity Utilization

Table F summarizes the results of the existing a.m. and p.m. peak hour LOS analysis for Caltrans facilities and unsignalized intersections utilizing the HCM methodology. As shown in Table F, all study intersections are currently operating at acceptable LOS with the exception of the following:

- Driveway 1/Live Oak Avenue (LOS F in the p.m. peak hour); and
- Interstate 605 Northbound Off-Ramps/Live Oak Avenue (LOS F in the p.m. peak hour).

The unsignalized intersection of Commerce Drive/Live Oak Avenue operates at LOS F in the p.m. peak hour; however, based on the City of Irwindale's Policy Guidelines for Traffic Impact Reports, an unsignalized intersection traffic movement at a stop-controlled approach can be deemed to have acceptable operation if the total delay is less than 4.0 vehicle-hours for single lane movement with low volume. Since the total delay at Commerce Drive/Live Oak Avenue is less than 4.0 vehicle-hours, the LOS is considered acceptable.

Figure 8 illustrates the existing Saturday peak-hour traffic volumes for the study area intersections. Table G summarizes the results of the existing Saturday peak hour LOS analysis for all signalized study area intersections utilizing the ICU methodology. As shown in Table G, all intersections are currently operating at acceptable LOS. Table H summarizes the results of the existing Saturday peak hour LOS analysis for Caltrans facilities and unsignalized intersections utilizing the HCM methodology. As shown in Table H, all study intersections are currently operating at acceptable LOS.

The existing LOS calculation worksheets are contained in Appendix D.

FUTURE BASELINE (2018) WITHOUT PROJECT CONDITIONS

Figure 9 illustrates the future baseline without project a.m. and p.m. peak hour traffic volumes for the study intersections. Table I summarizes the results of the future baseline without project a.m. and p.m. peak hour LOS analysis for all signalized study area intersections utilizing the ICU methodology. As shown in Table I, all study intersections are projected to operate at acceptable LOS with the exception of the following:

- Arrow Highway (East)/Live Oak Avenue (LOS E in the p.m. peak hour).

Table J summarizes the results of the future baseline without project a.m. and p.m. peak hour LOS analysis for Caltrans facilities and unsignalized intersections utilizing the HCM methodology. As shown in Table J, all study intersections are projected to operate at acceptable LOS with the exception of the following:

- Driveway 1/Live Oak Avenue (LOS F in the p.m. peak hour); and
- Interstate 605 Northbound Off-Ramps/Live Oak Avenue (LOS F in the p.m. peak hour).

The unsignalized intersections of Live Oak Lane/Live Oak Avenue and Commerce Drive/Live Oak Avenue operate at LOS E or F; however, based on the City of Irwindale's Policy Guidelines for Traffic Impact Reports, an unsignalized intersection traffic movement at a stop-controlled approach can be deemed to have acceptable operation if the total delay is less than 4.0 vehicle-hours for single

Table F - Existing Intersection Levels of Service (HCM Methodology)

Intersection	Control	Without Project Conditions							With Project Conditions							Exceeds City Significance Threshold	
		AM Peak Hour			PM Peak Hour				AM Peak Hour			PM Peak Hour					
		V/C	Delay	LOS	V/C	Delay	LOS		V/C	Delay	LOS	V/C	Delay	LOS		AM Peak Hour	PM Peak Hour
5 . Driveway 1/Live Oak Avenue	TWSC	-	19.5	C	-	64.0	F	*	-	34.3	D	-	>100	F	*	N	**Y**
7 . Driveway 3/Live Oak Avenue	TWSC	-	9.8	A	-	18.1	C		-	34.1	D	-	>100	F	*	N	**Y**
8 . Interstate 605 Southbound On-Ramp/Live Oak Avenue	Signal	0.57	6.6	A	0.76	11.5	B		0.57	6.5	A	0.88	11.6	B		N	N
9 Interstate 605 Northbound Ramps/Live Oak Avenue	TWSC	-	16.5	C	-	50.5	F	*	-	24.3	C	-	>100	F	*	N	**Y**
11 . Live Oak Lane/Live Oak Avenue	TWSC	-	28.9	D	-	23.1	C		-	29.2	D	-	22.6	C		N	N
13 . Commerce Drive/Live Oak Avenue	TWSC	-	23.7	C	-	55.3	F	†	-	23.8	C	-	56.3	F	†	N	N
20 . Interstate 605 Southbound Off-Ramp/Arrow Highway	Signal	0.71	15.3	B	0.41	15.2	B		0.70	15.4	B	0.46	13.2	B		N	N
21 Interstate 605 Northbound Ramps/Arrow Highway	TWSC	-	10.4	B	-	10.3	B		-	10.3	B	-	10.0	A		N	N

Notes: "*" = Exceeds Levels of Service

TWSC = Two-Way Stop Control

V/C = Volume/capacity ratio

Delay = Average control delay in seconds. At TWSC intersections, worst-case approach is reported.

LOS = Level of Service

†= Based on City of Irwindales Policy Guidelines for Traffic Impact Reports, an intersection traffic movement at a stop-controlled approach can be deemed to have acceptable operation under the following: Total delay less than 4.0 vehicle-hours for sinlge lane movement with low volume.

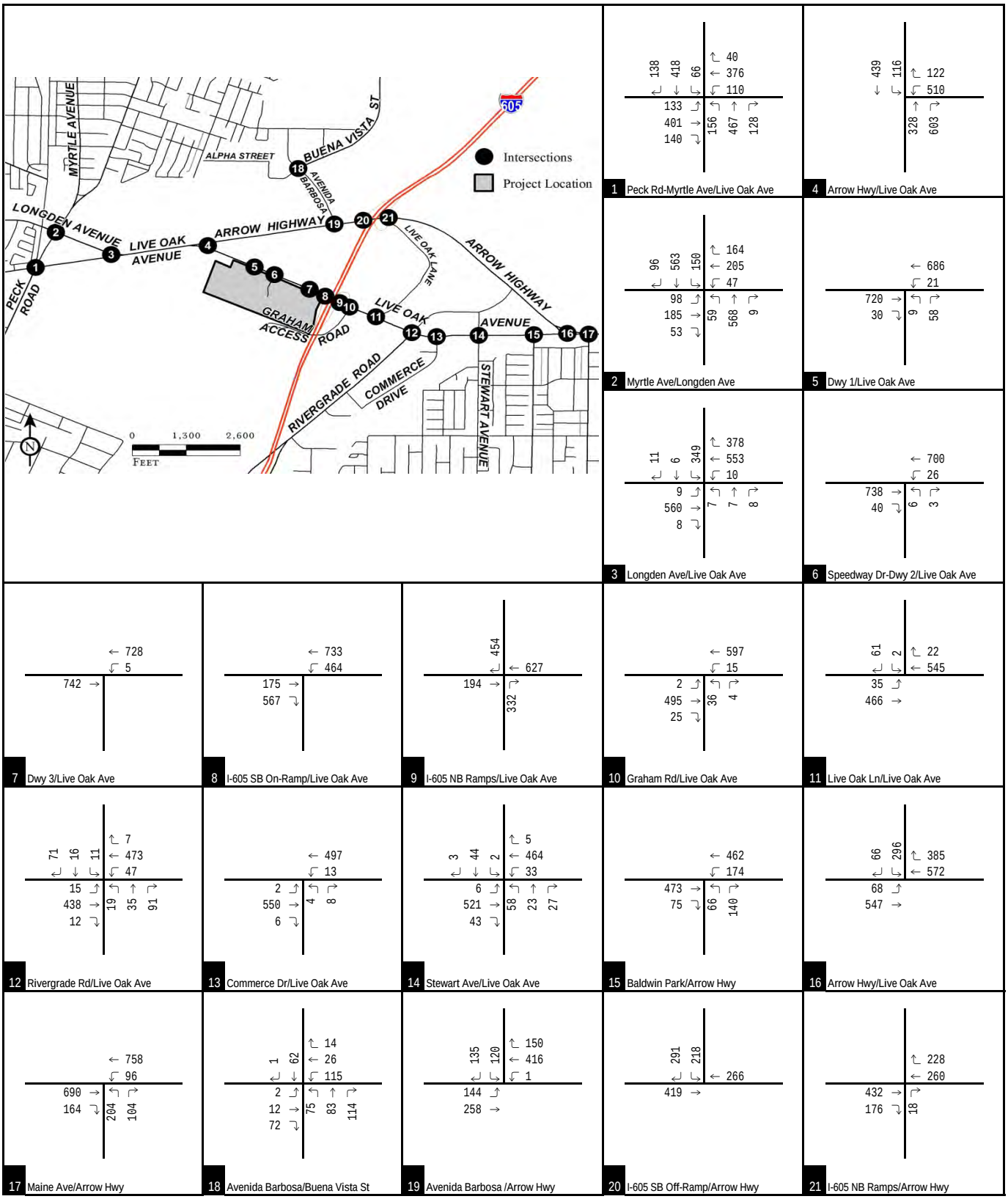

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FIGURE 8

XXX Saturday Peak Hour Volumes

Irwindale Regional Shopping Center

Traffic Impact Study

Existing (Saturday) Peak Hour Traffic Volumes

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Table G - Existing (Saturday) Intersection Levels of Service Summary (ICU Methodology)

Intersection	Control	Without Project Conditions Peak Hour ICU	Without Project Conditions Peak Hour LOS	With Project Conditions Peak Hour ICU	With Project Conditions Peak Hour LOS	Exceeds City Significance Threshold AM Peak Hour	Exceeds City Significance Threshold PM Peak Hour
1 . Peck Road-Myrtle Avenue/Live Oak Avenue	Signal	0.514	A	0.517	A	N	N
2 . Myrtle Avenue/Longden Avenue	Signal	0.546	A	0.552	A	N	N
3 . Longden Avenue/Live Oak Avenue	Signal	0.403	A	0.416	A	N	N
4 . Arrow Highway/Live Oak Avenue	Signal	0.411	A	0.584	A	N	N
6 . Speedway Drive-Driveway 2/Live Oak Avenue	Signal	0.321	A	0.807	D	N	N
10 . Graham Road/Live Oak Avenue	Signal	0.312	A	0.325	A	N	N
12 . Rivergrade Road/Live Oak Avenue	Signal	0.306	A	0.329	A	N	N
14 . Stewart Avenue/Live Oak Avenue	Signal	0.347	A	0.365	A	N	N
15 . Baldwin Park/Arrow Highway	Signal	0.444	A	0.449	A	N	N
16 . Arrow Highway/Live Oak Avenue	Signal	0.424	A	0.426	A	N	N
17 . Maine Avenue/Arrow Highway	Signal	0.437	A	0.442	A	N	N
18 . Avenida Barbosa/Buena Vista Street	Signal	0.323	A	0.329	A	N	N
19 . Avenida Barbosa/Arrow Highway	Signal	0.405	A	0.561	A	N	N

Notes:

LOS = Level of Service

ICU = Intersection Capacity Utilization

Table H - Existing (Saturday) Intersection Levels of Service (HCM Methodology)

Intersection	Control	Without Project Conditions Peak Hour V/C	Delay	LOS	With Project Conditions Peak Hour V/C	Delay	LOS		Exceeds City Significance Threshold AM Peak Hour	PM Peak Hour
5 . Driveway 1/Live Oak Avenue	TWSC	-	12.5	B	-	>100	F	*	N	**Y**
7 . Driveway 3/Live Oak Avenue	TWSC	-	9.1	A	-	>100	F	*	N	**Y**
8 . Interstate 605 Southbound On-Ramp/Live Oak Avenue	Signal	0.41	4.2	A	0.70	4.3	A		N	N
9 Interstate 605 Northbound Ramps/Live Oak Avenue	TWSC	-	15.8	C	-	>100	F	*	N	**Y**
11 . Live Oak Lane/Live Oak Avenue	TWSC	-	10.8	B	-	11.0	B		N	N
13 . Commerce Drive/Live Oak Avenue	TWSC	-	11.9	B	-	12.3	B		N	N
20 . Interstate 605 Southbound Off-Ramp/Arrow Highway	Signal	0.23	14.6	B	0.51	10.9	B		N	N
21 Interstate 605 Northbound Ramps/Arrow Highway	Signal	-	9.1	A	-	9.6	A		N	N

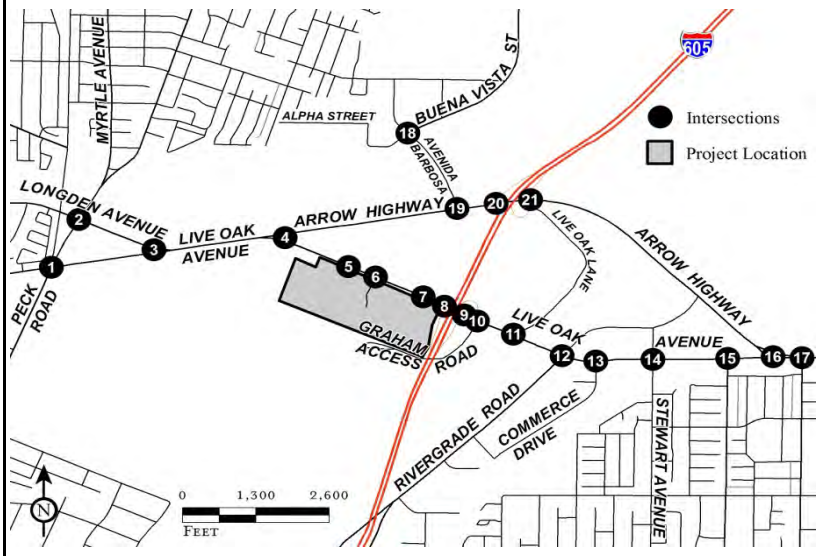
Notes: "*" = Exceeds Levels of Service

TWSC = Two-Way Stop Control

V/C = Volume/capacity ratio

Delay = Average control delay in seconds. At TWSC intersections, worst-case approach is reported.

LOS = Level of Service



1 Peck Rd-Myrtle Ave/Live Oak Ave

	163 / 143	
	536 / 592	
	41 / 191	
72 / 197		58 / 22
577 / 1245		1224 / 690
224 / 199		168 / 65
269 / 238	1009 / 827	287 / 188

4 Arrow Hwy/Live Oak Ave

1437 / 557		
	130 / 256	
		213 / 126
		985 / 887
529 / 766		791 / 1965

2 Myrtle Ave/Longden Ave

	52 / 57	
	646 / 835	
	174 / 376	
73 / 86		443 / 286
267 / 670		612 / 409
80 / 104		36 / 28
176 / 99	943 / 929	21 / 13

5 Dwy 1/Live Oak Ave

		1186 / 1002
		30 / 50
880 / 2199		
49 / 25		
24 / 8		89 / 65

3 Longden Ave/Live Oak Ave

	13 / 10	
	1 / 0	
	451 / 1047	
39 / 9		1012 / 693
869 / 1643		1399 / 739
1 / 1		10 / 1
10 / 0	10 / 0	10 / 0

6 Speedway Dr-Dwy 2/Live Oak Ave

		1221 / 1041
		22 / 94
983 / 2198		
2 / 57		
0 / 11		1 / 5

7 Dwy 3/Live Oak Ave

		1234 / 1122
		13 / 5
982 / 2202		

8 I-605 SB On-Ramp/Live Oak Ave

		1241 / 1126
		740 / 619
430 / 1148		
566 / 1056		

9 I-605 NB Ramps/Live Oak Ave

	415 / 713	
		1567 / 1047
433 / 1147		
	395 / 693	

10 Graham Rd/Live Oak Ave

		1398 / 1036
		50 / 36
2 / 6		
726 / 1807		
111 / 48		
160 / 18	60 / 23	

11 Live Oak Ln/Live Oak Ave

	138 / 75	
	14 / 12	
		57 / 6
		1328 / 985
90 / 49		
701 / 1760		

12 Rivergrade Rd/Live Oak Ave

76 / 62		
80 / 22		
31 / 28		
		14 / 6
		1251 / 828
		271 / 87
96 / 83		
519 / 1673		
91 / 22		
43 / 105	53 / 69	112 / 390

13 Commerce Dr/Live Oak Ave

		1651 / 893
		276 / 23
0 / 2		
486 / 2082		
49 / 6		
6 / 26	19 / 213	

14 Stewart Ave/Live Oak Ave

82 / 14		
28 / 107		
14 / 25		
		38 / 1
		1623 / 811
		18 / 41
21 / 63		
460 / 1959		
28 / 285		
227 / 73	127 / 21	35 / 12

15 Baldwin Park/Arrow Hwy

		1399 / 731
		141 / 283
467 / 1448		
68 / 564		
320 / 102	313 / 91	

16 Arrow Hwy/Live Oak Ave

	46 / 119	
	291 / 1049	
		1672 / 476
		1497 / 887
149 / 40		
632 / 1497		

17 Maine Ave/Arrow Hwy

		2519 / 1089
		37 / 68
800 / 2008		
105 / 525		
661 / 269	112 / 107	

18 Avenida Barbosa/Buena Vista St

2 / 6		
75 / 192		
9 / 28		
		19 / 24
		15 / 18
		158 / 508
1 / 6		
4 / 22		
6 / 89		
54 / 16	163 / 121	757 / 319

19 Avenida Barbosa /Arrow Hwy

	132 / 335	
	130 / 390	
		694 / 214
		1432 / 484
311 / 203		
421 / 687		

20 I-605 SB Off-Ramp/Arrow Hwy

	556 / 330	
	411 / 300	
		1556 / 376
538 / 1077		

21 I-605 NB Ramps/Arrow Hwy

		413 / 251
		1556 / 376
612 / 1275		
337 / 102		
	66 / 37	

LSA

FIGURE 9

XXXX / YYYY AM / PM Peak Hour Volumes

Irwindale Regional Shopping Center

Traffic Impact Study

Future Baseline Without Project Peak Hour Traffic Volumes

Table I - Future Baseline Intersection Levels of Service Summary (ICU Methodology)

Intersection	Control	Without Project Conditions					With Project Conditions					Exceeds City Significance Threshold	
		AM Peak Hour		PM Peak Hour			AM Peak Hour		PM Peak Hour				
		ICU	LOS	ICU	LOS		ICU	LOS	ICU	LOS		AM Peak Hour	PM Peak Hour
1 . Peck Road-Myrtle Avenue/Live Oak Avenue	Signal	0.841	D	0.861	D		0.842	D	0.859	D		N	N
2 . Myrtle Avenue/Longden Avenue	Signal	0.873	D	0.888	D		0.878	D	0.889	D		N	N
3 . Longden Avenue/Live Oak Avenue	Signal	0.722	C	0.770	C		0.727	C	0.763	C		N	N
4 . Arrow Highway/Live Oak Avenue	Signal	0.882	D	0.727	C		0.885	D	0.810	D		N	N
6 . Speedway Drive-Driveway 2/Live Oak Avenue	Signal	0.482	A	0.632	B		0.517	A	0.874	D		N	N
10 . Graham Road/Live Oak Avenue	Signal	0.674	B	0.715	C		0.673	B	0.724	C		N	N
12 . Rivergrade Road/Live Oak Avenue	Signal	0.609	B	0.867	D		0.611	B	0.873	D		N	N
14 . Stewart Avenue/Live Oak Avenue	Signal	0.872	D	0.850	D		0.872	D	0.856	D		N	N
15 Baldwin Park/Arrow Highway	Signal	0.733	C	0.786	C		0.729	C	0.788	C		N	N
16 Arrow Highway/Live Oak Avenue	Signal	0.762	C	0.932	E	*	0.758	C	0.933	E	*	N	N
17 Maine Avenue/Arrow Highway	Signal	0.845	D	0.854	D		0.842	D	0.853	D		N	N
18 Avenida Barbosa/Buena Vista Street	Signal	0.392	A	0.559	A		0.393	A	0.561	A		N	N
19 Avenida Barbosa/Arrow Highway	Signal	0.824	D	0.588	A		0.872	D	0.661	B		N	N

Notes: "*" = Exceeds Levels of Service

LOS = Level of Service

ICU = Intersection Capacity Utilization

Table J - Future Baseline Intersection Levels of Service (HCM Methodology)

Intersection	Control	Without Project Conditions							With Project Conditions							Exceeds City Significance Threshold	
		AM Peak Hour			PM Peak Hour				AM Peak Hour			PM Peak Hour					
		V/C	Delay	LOS	V/C	Delay	LOS		V/C	Delay	LOS	V/C	Delay	LOS		AM Peak Hour	PM Peak Hour
5 . Driveway 1/Live Oak Avenue	TWSC	-	23.2	C	-	>100	F	*	-	40.7	E	*	-	>100	F	*	**Y**	**Y**
7 . Driveway 3/Live Oak Avenue	TWSC	-	10.2	B	-	20.2	C		-	40.9	E	*	-	>100	F	*	**Y**	**Y**
8 . Interstate 605 Southbound On-Ramp/Live Oak Avenue	Signal	0.61	6.9	A	0.81	12.5	B		0.62	7.0	A		0.82	11.8	B		N	N
9 Interstate 605 Northbound Ramps/Live Oak Avenue	TWSC	-	23.5	C	-	92.2	F	*	-	52.3	F	*	-	>100	F	*	**Y**	**Y**
11 . Live Oak Lane/Live Oak Avenue	TWSC	-	39.5	E	†	-	28.8	D		-	39.8	E	†	-	27.9	D		N	N
13 . Commerce Drive/Live Oak Avenue	TWSC	-	27.7	D		-	85.9	F	†	-	27.9	D		-	86.9	F	†	N	N
20 . Interstate 605 Southbound Off-Ramp/Arrow Highway	Signal	0.76	17.0	B		0.44	15.2	B		0.76	16.3	B		0.48	13.8	B		N	N
21 Interstate 605 Northbound Ramps/Arrow Highway	TWSC	-	10.4	B		-	10.6	B		-	10.4	B		-	10.1	B		N	N

Notes: "*" = Exceeds Levels of Service

TWSC = Two-Way Stop Control

V/C = Volume/capacity ratio

Delay = Average control delay in seconds. At TWSC intersections, worst-case approach is reported.

LOS = Level of Service

†= Based on City of Irwindales Policy Guidelines for Traffic Impact Reports, an intersection traffic movement at a stop-controlled approach can be deemed to have acceptable operation under the following: Total delay less than 4.0 vehicle-hours for sinlge lane movement with low volume.

lane movement with low volume. Since the total delay at Live Oak Lane/Live Oak Avenue and Commerce Drive/Live Oak Avenue is less than 4.0 vehicle-hours, the LOS is considered acceptable.

Figure 10 illustrates the future baseline without project Saturday peak-hour traffic volumes for the study area intersections. Table K summarizes the results of the future baseline without project Saturday peak hour LOS analysis for all signalized study area intersections utilizing the ICU methodology. As shown in Table K, all intersections are projected to operate at satisfactory LOS.

Table L summarizes the results of the future baseline Saturday peak hour LOS analysis for Caltrans facilities and unsignalized intersections utilizing the HCM methodology. As shown in Table L, all study intersections are projected to operate at acceptable LOS.

The future baseline without project LOS calculation worksheets are contained in Appendix D.

FUTURE BASELINE (2018) PLUS CUMULATIVE PROJECTS WITHOUT PROJECT CONDITIONS

The future baseline (2018) plus cumulative projects without project a.m. and p.m. peak hour traffic volumes is shown in Figure 11.

Table M summarizes the results of the future baseline plus cumulative projects without project a.m. and p.m. peak hour LOS analysis for all signalized study area intersections utilizing the ICU methodology. As shown in Table M, all intersections are projected to operate at satisfactory LOS, with the exception of the following:

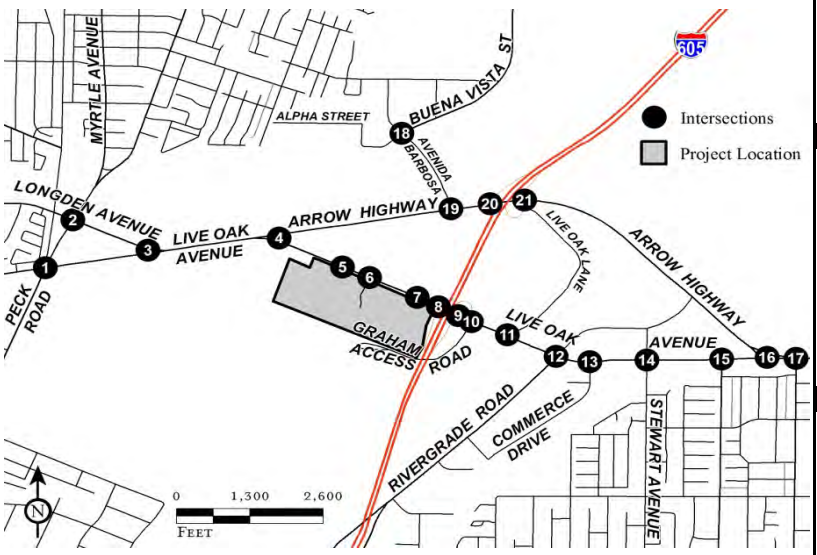
- Arrow Highway (East)/Live Oak Avenue (LOS E in the p.m. peak hour); and
- Avenida Barbosa/Arrow Highway (LOS E in the a.m. peak hour).

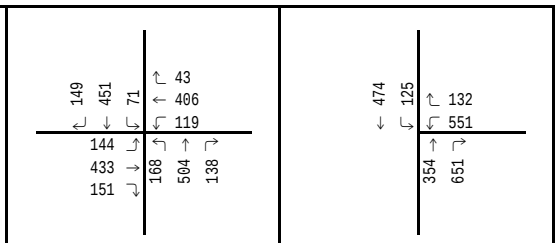
Table N summarizes the results of the future baseline plus cumulative projects without project a.m. and p.m. peak hour LOS analysis for Caltrans facilities and unsignalized intersections utilizing the HCM methodology. As shown in Table N, all study intersections are projected to operate at acceptable LOS with the exception of the following:

- Driveway 1/Live Oak Avenue (LOS F in the p.m. peak hour); and
- Interstate 605 Northbound Off-Ramps/Live Oak Avenue (LOS F in the p.m. peak hour).

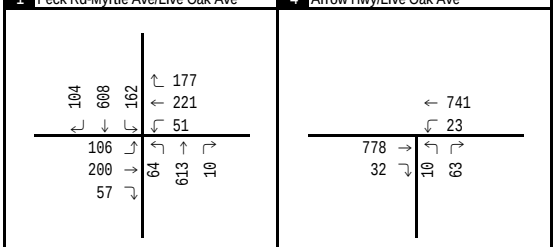
The unsignalized intersections of Live Oak Lane/Live Oak Avenue and Commerce Drive/Live Oak Avenue operate at LOS E or F; however, based on the City of Irwindale's Policy Guidelines for Traffic Impact Reports, an unsignalized intersection traffic movement at a stop-controlled approach can be deemed to have acceptable operation if the total delay is less than 4.0 vehicle-hours for single lane movement with low volume. Since the total delay at Live Oak Lane/Live Oak Avenue and Commerce Drive/Live Oak Avenue is less than 4.0 vehicle-hours, the LOS is considered acceptable.

Figure 12 illustrates the future baseline plus cumulative projects without project Saturday peak hour traffic volumes for the study area intersections. Table O summarizes the results of the future baseline



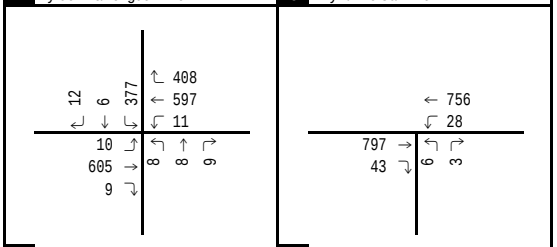


1 Peck Rd-Myrtle Ave/Live Oak Ave



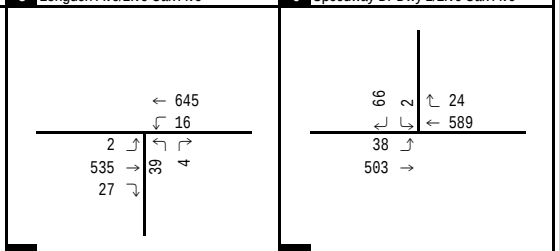
4 Arrow Hwy/Live Oak Ave

2 Myrtle Ave/Longden Ave

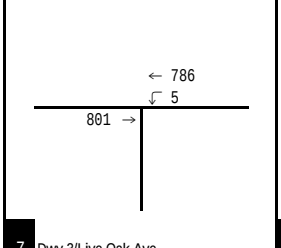


5 Dwy 1/Live Oak Ave

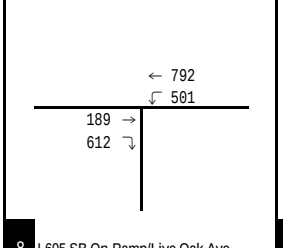
3 Longden Ave/Live Oak Ave



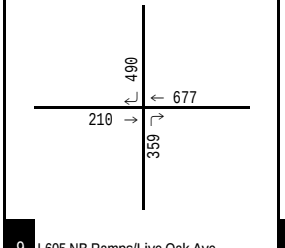
6 Speedway Dr-Dwy 2/Live Oak Ave



7 Dwy 3/Live Oak Ave



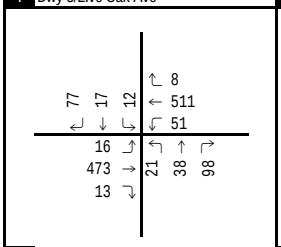
8 I-605 SB On-Ramp/Live Oak Ave



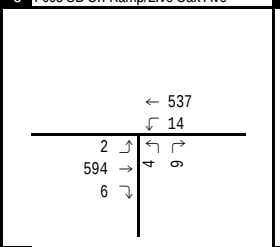
9 I-605 NB Ramps/Live Oak Ave

10 Graham Rd/Live Oak Ave

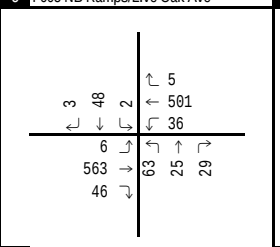
11 Live Oak Ln/Live Oak Ave



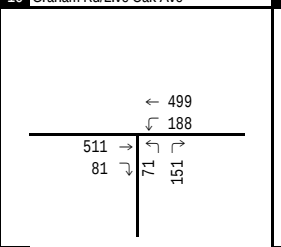
12 Rivergrade Rd/Live Oak Ave



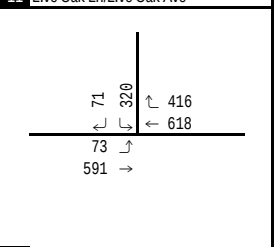
13 Commerce Dr/Live Oak Ave



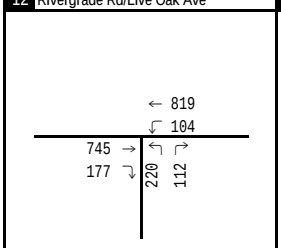
14 Stewart Ave/Live Oak Ave



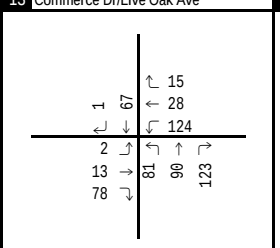
15 Baldwin Park/Arrow Hwy



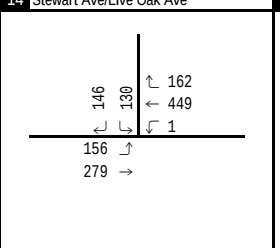
16 Arrow Hwy/Live Oak Ave



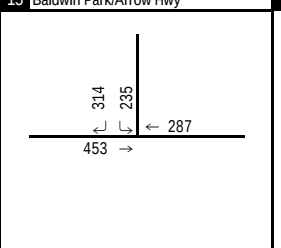
17 Maine Ave/Arrow Hwy



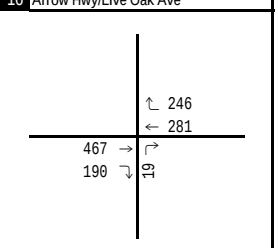
18 Avenida Barbosa/Buena Vista St



19 Avenida Barbosa /Arrow Hwy



20 I-605 SB Off-Ramp/Arrow Hwy



21 I-605 NB Ramps/Arrow Hwy

LSA

FIGURE 10

XXX Saturday Peak Hour Volumes

Irwindale Regional Shopping Center

Traffic Impact Study

Future Baseline (Saturday) Without Project Peak Hour Traffic Volumes

Table K - Future Baseline (Saturday) Intersection Levels of Service Summary (ICU Methodology)

Intersection	Control	Without Project Conditions Peak Hour ICU	Without Project Conditions Peak Hour LOS	With Project Conditions Peak Hour ICU	With Project Conditions Peak Hour LOS	Exceeds City Significance Threshold AM Peak Hour	Exceeds City Significance Threshold PM Peak Hour
1 . Peck Road-Myrtle Avenue/Live Oak Avenue	Signal	0.547	A	0.549	A	N	N
2 . Myrtle Avenue/Longden Avenue	Signal	0.583	A	0.589	A	N	N
3 . Longden Avenue/Live Oak Avenue	Signal	0.428	A	0.441	A	N	N
4 . Arrow Highway/Live Oak Avenue	Signal	0.436	A	0.609	B	N	N
6 . Speedway Drive-Driveway 2/Live Oak Avenue	Signal	0.338	A	0.820	D	N	N
10 . Graham Road/Live Oak Avenue	Signal	0.328	A	0.341	A	N	N
12 . Rivergrade Road/Live Oak Avenue	Signal	0.324	A	0.347	A	N	N
14 . Stewart Avenue/Live Oak Avenue	Signal	0.368	A	0.385	A	N	N
15 Baldwin Park/Arrow Highway	Signal	0.472	A	0.477	A	N	N
16 Arrow Highway/Live Oak Avenue	Signal	0.450	A	0.451	A	N	N
17 Maine Avenue/Arrow Highway	Signal	0.465	A	0.470	A	N	N
18 Avenida Barbosa/Buena Vista Street	Signal	0.341	A	0.347	A	N	N
19 Avenida Barbosa/Arrow Highway	Signal	0.000	A	0.000	A	N	N

Notes:

LOS = Level of Service

ICU = Intersection Capacity Utilization

Table L - Future Baseline (Saturday) Intersection Levels of Service (HCM Methodology)

Intersection	Control	Without Project Conditions Peak Hour V/C	Delay	LOS	With Project Conditions Peak Hour V/C	Delay	LOS		Exceeds City Significance Threshold AM Peak Hour	PM Peak Hour
5 . Driveway 1/Live Oak Avenue	TWSC	-	13.3	B	-	>100	F	*	N	**Y**
7 . Driveway 3/Live Oak Avenue	TWSC	-	9.4	A	-	>100	F	*	N	**Y**
8 . Interstate 605 Southbound On-Ramp/Live Oak Avenue	Signal	0.42	4.3	A	0.62	4.2	A		N	N
9 Interstate 605 Northbound Ramps/Live Oak Avenue	TWSC	-	18.8	C	-	>100	F	*	N	**Y**
11 . Live Oak Lane/Live Oak Avenue	Signal	0.10	11.0	B	0.10	11.3	B		N	N
13 . Commerce Drive/Live Oak Avenue	TWSC	-	12.1	B	-	12.5	B		N	N
20 . Interstate 605 Southbound Off-Ramp/Arrow Highway	Signal	0.25	15.0	B	0.53	11.4	B		N	N
21 Interstate 605 Northbound Ramps/Arrow Highway	TWSC	-	9.2	A	-	9.7	A		N	N

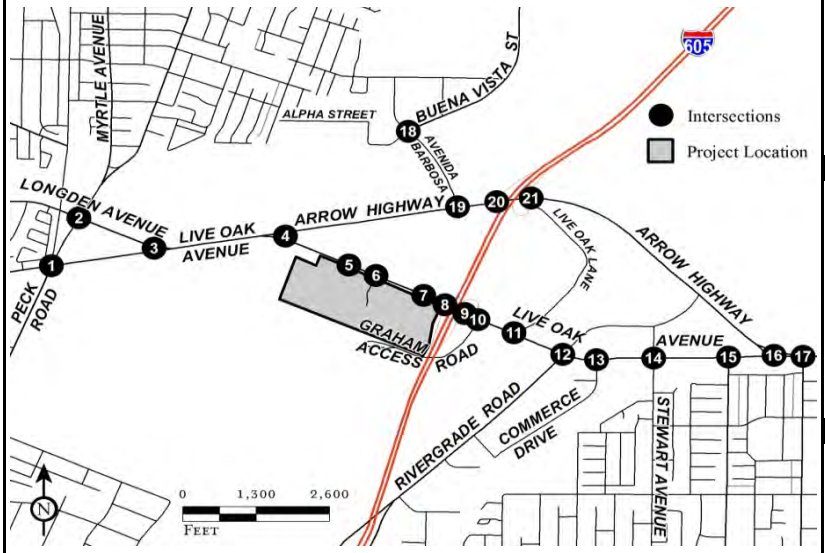
Notes: "*" = Exceeds Levels of Service

TWSC = Two-Way Stop Control

V/C = Volume/capacity ratio

Delay = Average control delay in seconds. At TWSC intersections, worst-case approach is reported.

LOS = Level of Service



1 Peck Rd-Myrtle Ave/Live Oak Ave

163 / 143	536 / 592	41 / 192
↰ 58 / 26	← 1244 / 725	↱ 172 / 67
72 / 197 ↱	269 / 238 ↰	
611 / 1265 →	1009 / 827 ↑	
224 / 199 ↳	288 / 190 ↱	

4 Arrow Hwy/Live Oak Ave

1464 / 598	158 / 301	
↰ 267 / 168	↱ 990 / 906	
↓	↳ 567 / 805 ↑	804 / 1971 ↱

2 Myrtle Ave/Longden Ave

52 / 57	646 / 835	178 / 381
↰ 447 / 295	← 616 / 417	↱ 36 / 28
73 / 86 ↱	176 / 99 ↰	
270 / 673 →	943 / 929 ↑	
80 / 104 ↳	21 / 13 ↱	

5 Dwy 1/Live Oak Ave

	← 1245 / 1063	↱ 30 / 50
926 / 2253 →	24 / 8 ↰	89 / 65 ↱
49 / 25 ↳		

3 Longden Ave/Live Oak Ave

13 / 10	1 / 0	458 / 1055
↰ 1020 / 710	← 1423 / 780	↱ 10 / 1
39 / 9 ↱	10 / 0 ↰	
904 / 1666 →	10 / 0 ↑	
1 / 1 ↳	10 / 0 ↱	

6 Speedway Dr-Dwy 2/Live Oak Ave

	← 1280 / 1102	↱ 22 / 94
1029 / 2252 →	0 / 11 ↰	1 / 5 ↱
2 / 57 ↳		

7 Dwy 3/Live Oak Ave

	← 1293 / 1183	↱ 13 / 5
1028 / 2256 →		

8 I-605 SB On-Ramp/Live Oak Ave

	← 1300 / 1187	↱ 864 / 760
448 / 1157 →		
594 / 1101 ↳		

9 I-605 NB Ramps/Live Oak Ave

	465 / 742	
↰	← 1700 / 1220	
451 / 1156 →	↱	
	532 / 841	

10 Graham Rd/Live Oak Ave

	← 1531 / 1209	↱ 50 / 36
2 / 6 ↱	160 / 18 ↰	60 / 23 ↱
881 / 1963 →		
111 / 48 ↳		

11 Live Oak Ln/Live Oak Ave

146 / 103	17 / 18	
↰ 61 / 15	← 1453 / 1130	
96 / 61 ↱		
850 / 1904 →		

12 Rivergrade Rd/Live Oak Ave

180 / 162	82 / 24	31 / 28
↰ 14 / 6	← 1275 / 877	↱ 278 / 90
189 / 196 ↱	45 / 111 ↰	
572 / 1708 →	55 / 71 ↑	
96 / 25 ↳	117 / 398 ↱	

13 Commerce Dr/Live Oak Ave

	← 1682 / 945	↱ 276 / 23
0 / 2 ↱	6 / 26 ↰	19 / 213 ↱
544 / 2124 →		
49 / 6 ↳		

14 Stewart Ave/Live Oak Ave

82 / 14	31 / 113	14 / 25
↰ 41 / 7	← 1654 / 863	↱ 20 / 44
21 / 63 ↱	227 / 73 ↰	
518 / 2001 →	131 / 27 ↑	
28 / 285 ↳	40 / 15 ↱	

15 Baldwin Park/Arrow Hwy

19 / 36	4 / 7	12 / 23
↰ 43 / 23	← 1415 / 753	↱ 144 / 286
43 / 23 ↱	322 / 105 ↰	
486 / 1466 →	10 / 5 ↑	
69 / 568 ↳	316 / 94 ↱	

16 Arrow Hwy/Live Oak Ave

78 / 138	411 / 1182	
↰ 1740 / 537	← 1527 / 917	
159 / 56 ↱		
656 / 1525 →		

17 Maine Ave/Arrow Hwy

	← 2679 / 1224	↱ 37 / 68
938 / 2158 →	670 / 278 ↰	112 / 107 ↱
110 / 535 ↳		

18 Avenida Barbosa/Buena Vista St

2 / 6	79 / 194	9 / 28
↰ 19 / 24	← 15 / 18	↱ 227 / 620
1 / 6 ↱	54 / 16 ↰	
4 / 22 →	164 / 126 ↑	
6 / 89 ↳	882 / 392 ↱	

19 Avenida Barbosa /Arrow Hwy

173 / 402	223 / 477	
↰ 745 / 248	← 1502 / 542	
386 / 247 ↱		
437 / 723 →		

20 I-605 SB Off-Ramp/Arrow Hwy

556 / 330	590 / 479	
↰	↳	← 1676 / 468
647 / 1200 →		

21 I-605 NB Ramps/Arrow Hwy

	↰ 579 / 417	← 1676 / 468
890 / 1549 →	↱	
348 / 128 ↳	67 / 41	

LSA

FIGURE 11

XXXX / YYYY AM / PM Peak Hour Volumes

Irwindale Regional Shopping Center

Traffic Impact Study

Future Baseline Plus Cumulative Projects Without Project Peak Hour Traffic Volumes

Table M - Future Baseline Plus Cumulative Projects Intersection Levels of Service Summary (ICU Methodology)

Intersection	Control	Without Project Conditions				With Project Conditions				Exceeds City Significance Threshold	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
		ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS	AM Peak Hour	PM Peak Hour
1 . Peck Road-Myrtle Avenue/Live Oak Avenue	Signal	0.847	D	0.869	D	0.848	D	0.868	D	N	N
2 . Myrtle Avenue/Longden Avenue	Signal	0.878	D	0.897	D	0.883	D	0.897	D	N	N
3 . Longden Avenue/Live Oak Avenue	Signal	0.731	C	0.778	C	0.737	C	0.770	C	N	N
4 . Arrow Highway/Live Oak Avenue	Signal	0.892	D	0.762	C	0.895	D	0.845	D	N	N
6 . Speedway Drive-Driveway 2/Live Oak Avenue	Signal	0.501	A	0.644	B	0.535	A	0.886	D	N	N
10 . Graham Road/Live Oak Avenue	Signal	0.716	C	0.763	C	0.715	C	0.773	C	N	N
12 . Rivergrade Road/Live Oak Avenue	Signal	0.741	C	0.883	D	0.742	C	0.889	D	N	N
14 . Stewart Avenue/Live Oak Avenue	Signal	0.887	D	0.869	D	0.887	D	0.875	D	N	N
15 Baldwin Park/Arrow Highway	Signal	0.780	C	0.800	D	0.777	C	0.801	D	N	N
16 Arrow Highway/Live Oak Avenue	Signal	0.803	D	0.970	E *	0.799	C	0.972	E *	N	N
17 Maine Avenue/Arrow Highway	Signal	0.874	D	0.897	D	0.871	D	0.896	D	N	N
18 Avenida Barbosa/Buena Vista Street	Signal	0.433	A	0.602	B	0.434	A	0.604	B	N	N
19 Avenida Barbosa/Arrow Highway	Signal	0.919	E *	0.675	B	0.967	E *	0.749	C	N	N

Notes: "*" = Exceeds Levels of Service

LOS = Level of Service

ICU = Intersection Capacity Utilization

Table N - Future Baseline Plus Cumulative Projects Intersection Levels of Service (HCM Methodology)

		Without Project Conditions							With Project Conditions							Exceeds City Significance Threshold	
		AM Peak Hour			PM Peak Hour				AM Peak Hour			PM Peak Hour					
Intersection	**Control**	**V/C**	**Delay**	**LOS**	**V/C**	**Delay**	**LOS**		**V/C**	**Delay**	**LOS**	**V/C**	**Delay**	**LOS**		**AM Peak Hour**	**PM Peak Hour**
5 . Driveway 1/Live Oak Avenue	TWSC	-	25.7	D	-	>100	F	*	-	46.2	E	*	-	>100	F	*	**Y**	**Y**
7 . Driveway 3/Live Oak Avenue	TWSC	-	10.4	B	-	20.9	C		-	46.4	E	*	-	>100	F	*	**Y**	**Y**
8 . Interstate 605 Southbound On-Ramp/Live Oak Avenue	Signal	0.70	7.3	A	0.87	16.4	B		0.70	7.5	A		0.88	15.8	B		N	N
9 Interstate 605 Northbound Ramps/Live Oak Avenue	TWSC	-	19.9	C	-	>100	F	*	-	75.8	F	*	-	>100	F	*	**Y**	**Y**
11 . Live Oak Lane/Live Oak Avenue	TWSC	-	83.3	F	†	-	69.4	F	†	-	84.0	F	†	-	65.2	F	†	N	N
13 . Commerce Drive/Live Oak Avenue	TWSC	-	30.8	D		-	97.6	F	†	-	31.0	D		-	98.8	F	†	N	N
20 . Interstate 605 Southbound Off-Ramp/Arrow Highway	Signal	0.92	26.3	C		0.59	19.7	B		0.91	25.4	C		0.64	18.5	B		N	N
21 Interstate 605 Northbound Ramps/Arrow Highway	TWSC	-	10.9	B		-	10.9	B		-	11.0	B		-	10.1	B		N	N

Notes: "*" = Exceeds Levels of Service

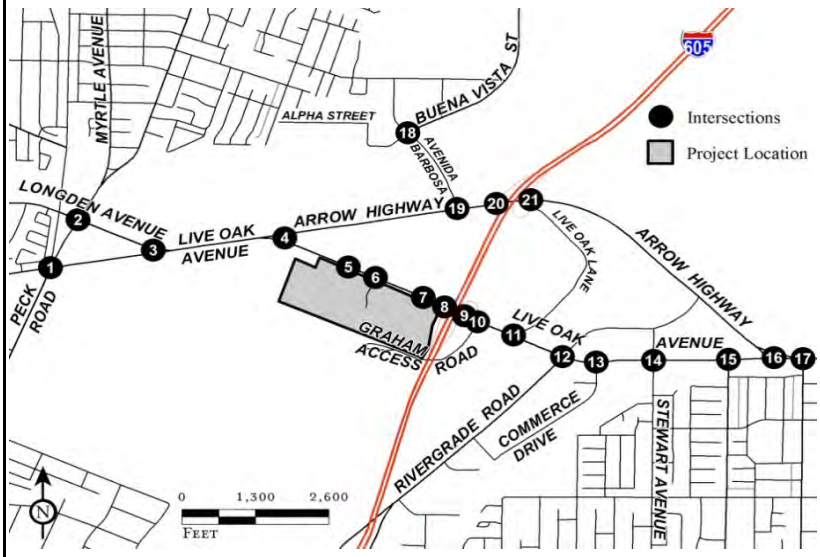
TWSC = Two-Way Stop Control

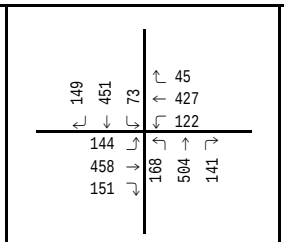
V/C = Volume/capacity ratio

Delay = Average control delay in seconds. At TWSC intersections, worst-case approach is reported.

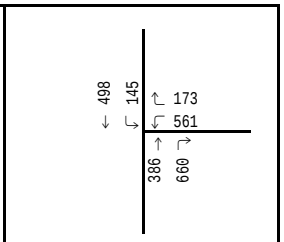
LOS = Level of Service

†= Based on City of Irwindales Policy Guidelines for Traffic Impact Reports, an intersection traffic movement at a stop-controlled approach can be deemed to have acceptable operation under the following: Total delay less than 4.0 vehicle-hours for sinlge lane movement with low volume.

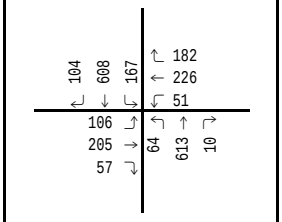




1 Peck Rd-Myrtle Ave/Live Oak Ave



4 Arrow Hwy/Live Oak Ave



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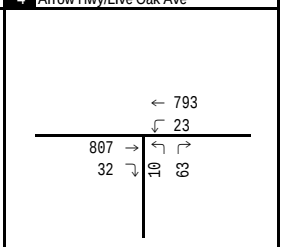
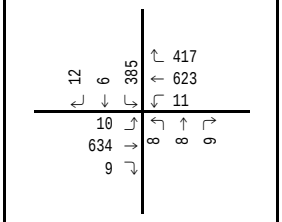
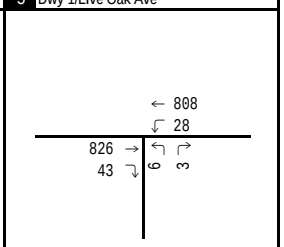


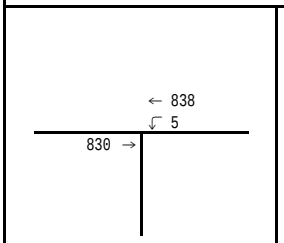
5 Dwy 1/Live Oak Ave



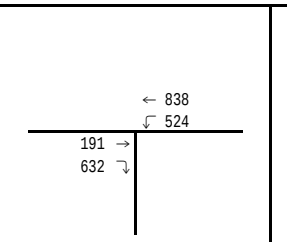
3 Longden Ave/Live Oak Ave



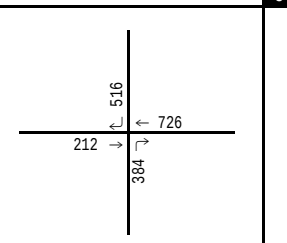
6 Speedway Dr-Dwy 2/Live Oak Ave



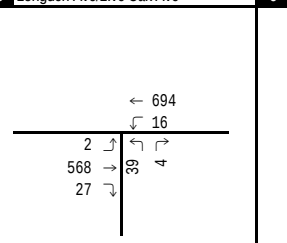
7 Dwy 3/Live Oak Ave



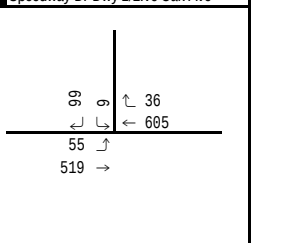
8 I-605 SB On-Ramp/Live Oak Ave



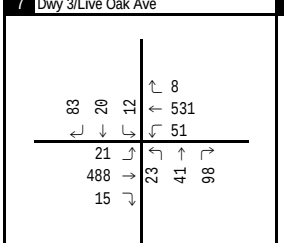
9 I-605 NB Ramps/Live Oak Ave



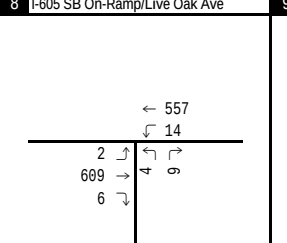
10 Graham Rd/Live Oak Ave



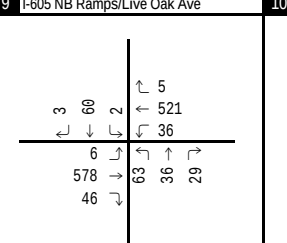
11 Live Oak Ln/Live Oak Ave



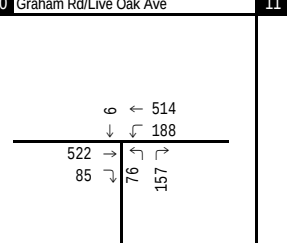
12 Rivergrade Rd/Live Oak Ave



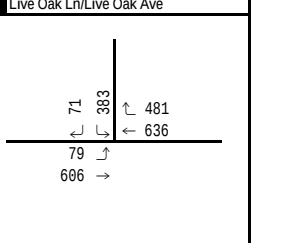
13 Commerce Dr/Live Oak Ave



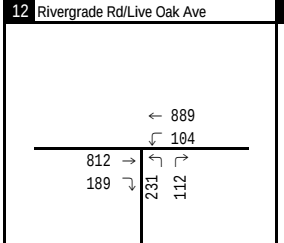
14 Stewart Ave/Live Oak Ave



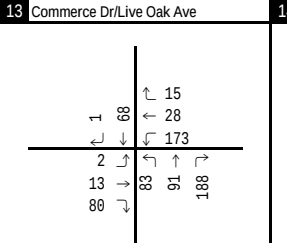
15 Baldwin Park/Arrow Hwy



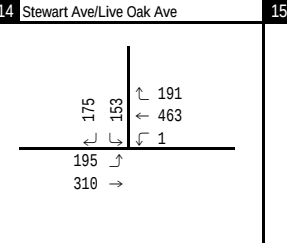
16 Arrow Hwy/Live Oak Ave



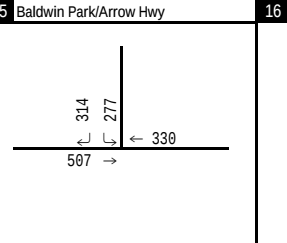
17 Maine Ave/Arrow Hwy



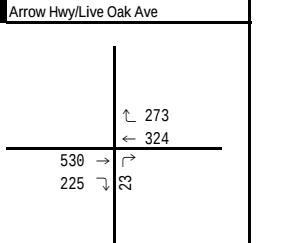
18 Avenida Barbosa/Buena Vista St



19 Avenida Barbosa /Arrow Hwy



20 I-605 SB Off-Ramp/Arrow Hwy



21 I-605 NB Ramps/Arrow Hwy

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FIGURE 12

XXX Saturday Peak Hour Volumes

Irwindale Regional Shopping Center

Traffic Impact Study

Future Baseline (Saturday) Plus Cumulative Projects Without Project Peak Hour Traffic Volumes

Table O - Future Baseline Plus Cumulative Projects (Saturday) Intersection Levels of Service Summary (ICU Methodology)

Intersection	Control	Without Project Conditions Peak Hour ICU	Without Project Conditions Peak Hour LOS	With Project Conditions Peak Hour ICU	With Project Conditions Peak Hour LOS
1 . Peck Road-Myrtle Avenue/Live Oak Avenue	Signal	0.549	A	0.559	A
2 . Myrtle Avenue/Longden Avenue	Signal	0.589	A	0.595	A
3 . Longden Avenue/Live Oak Avenue	Signal	0.439	A	0.451	A
4 . Arrow Highway/Live Oak Avenue	Signal	0.457	A	0.630	B
6 . Speedway Drive-Driveway 2/Live Oak Avenue	Signal	0.355	A	0.826	D
10 . Graham Road/Live Oak Avenue	Signal	0.344	A	0.357	A
12 . Rivergrade Road/Live Oak Avenue	Signal	0.329	A	0.356	A
14 . Stewart Avenue/Live Oak Avenue	Signal	0.380	A	0.397	A
15 Baldwin Park/Arrow Highway	Signal	0.479	A	0.484	A
16 Arrow Highway/Live Oak Avenue	Signal	0.464	A	0.466	A
17 Maine Avenue/Arrow Highway	Signal	0.482	A	0.487	A
18 Avenida Barbosa/Buena Vista Street	Signal	0.362	A	0.368	A
19 Avenida Barbosa/Arrow Highway	Signal	0.476	A	0.632	B

Notes: "*" = Exceeds Levels of Service
LOS = Level of Service
ICU = Intersection Capacity Utilization

plus cumulative projects without project Saturday peak hour LOS analysis for all signalized study area intersections utilizing the ICU methodology. As shown in Table O, all intersections are projected to operate at satisfactory LOS.

Table P summarizes the results of the future baseline plus cumulative projects Saturday peak hour LOS analysis for Caltrans facilities and unsignalized intersections utilizing the HCM methodology. As shown in P, all study intersections are projected to operate at acceptable LOS.

The future baseline plus cumulative projects without project LOS calculation worksheets are contained in Appendix D.

PROJECT CONDITIONS

Trip Generation

Trip generation for the proposed project was developed using trip rates for Land Use 823 "Factory Outlet Center" as contained in the Institute of Traffic Engineers (ITE) *Trip Generation*, 9th Edition. The trip generation also includes applicable adjustments for pass-by and diverted-linked trips using rates for Land Use 820 "Shopping Center." Diverted linked trips are those trips already traveling on Interstate 605, who are diverted from the freeway to patronize the project. Pass-by trips are those trips already traveling on Live Oak Avenue who would then stop at the project. Table Q summarizes the a.m., p.m., and Saturday peak hour and daily project trip generation. As shown in Table Q, the project is expected to generate a total of 469 net new a.m. peak hour trips, 778 net new p.m. peak hour trips, 1,272 net new Saturday peak hour trips, and 17,788 net new daily trips.

Traffic volumes at the project driveways were collected during a typical Thursday on June 26, 2014. The Thursday Night Thunder drag racing event was scheduled for the evening of the counts. Events at the speedway are held two to three nights per week and during some seasons, there is only one event per week. On a typical weekday and Saturday, the existing land use generated nominal trips during the peak hours. Therefore, no trip credit from the existing use was applied to the net trip generation of the proposed project.

Project Trip Distribution and Assignment

Trip distribution for the proposed project was developed based on generalized trip distribution factors contained in the 2010 CMP, discussion with City staff, and the location of the project in relation to the surrounding roadway network and land uses. The CMP generalized trip distribution factors are based on the regional travel demand model and reflect work and non-work trip interactions broken down to the Regional Statistical Area (RSA) level. The project trip distribution is illustrated in Figure 13. The trip assignments for weekday and Saturday are illustrated in Figures 14 and 15, respectively. The pass-by trips for weekday and Saturday are illustrated in Figures 16 and 17, respectively. The diverted linked trips for weekday and Saturday are illustrated in Figures 18 and 19, respectively. The total net project trips for weekday and Saturday are illustrated in Figures 20 and 21, respectively.

Table P - Future Baseline Plus Cumulative Projects (Saturday) Intersection Levels of Service (HCM Methodology)

Intersection	Control	Without Project Conditions Peak Hour V/C	Delay	LOS	With Project Conditions AM Peak Hour V/C	Delay	LOS		Exceeds City Significance Threshold AM Peak Hour	PM Peak Hour
5 . Driveway 1/Live Oak Avenue	TWSC	-	13.7	B	-	>100	F	*	N	**Y**
7 . Driveway 3/Live Oak Avenue	TWSC	-	9.5	A	-	>100	F	*	N	**Y**
8 . Interstate 605 Southbound On-Ramp/Live Oak Avenue	Signal	0.45	4.3	A	0.75	4.5	A		N	N
9 Interstate 605 Northbound Ramps/Live Oak Avenue	TWSC	-	21.9	C	-	>100	F	*	N	**Y**
11 . Live Oak Lane/Live Oak Avenue	Signal	0.15	12.5	B	0.15	12.9	B		N	N
13 . Commerce Drive/Live Oak Avenue	TWSC	-	12.3	B	-	12.7	B		N	N
20 . Interstate 605 Southbound Off-Ramp/Arrow Highway	Signal	0.29	16.0	B	0.53	12.5	B		N	N
21 Interstate 605 Northbound Ramps/Arrow Highway	TWSC	-	9.3	A	-	9.5	A		N	N

Notes: "*" = Exceeds Levels of Service

TWSC = Two-Way Stop Control

V/C = Volume/capacity ratio

Delay = Average control delay in seconds. At TWSC intersections, worst-case approach is reported.

LOS = Level of Service

Table Q - Project Trip Generation

Land Use	Units	A.M. Peak Hour In	A.M. Peak Hour Out	A.M. Peak Hour Total	P.M. Peak Hour In	P.M. Peak Hour Out	P.M. Peak Hour Total	Saturday Peak Hour In	Saturday Peak Hour Out	Saturday Peak Hour Total	Daily
Factory Outlet Center[2]	700 TSF[1]										
Trips/Unit		*0.49*	*0.18*	*0.67*	*1.08*	*1.21*	*2.29*	*1.93*	*1.86*	*3.79*	*26.59*
Gross Trip Generation		342	127	469	753	850	1,603	1,353	1,300	2,653	18,613
Pass-By Trips[3]	(34% P.M., 26% Saturday)	0	0	0	(273)	(273)	(545)	(345)	(345)	(690)	(545)
Diverted Linked Trips[4]	(26.4% P.M., 35.2% Saturday)	0	0	0	(140)	(140)	(280)	(345)	(345)	(691)	(280)
Total Net New Trips		**342**	**127**	**469**	**341**	**438**	**778**	**663**	**610**	**1,272**	**17,788**

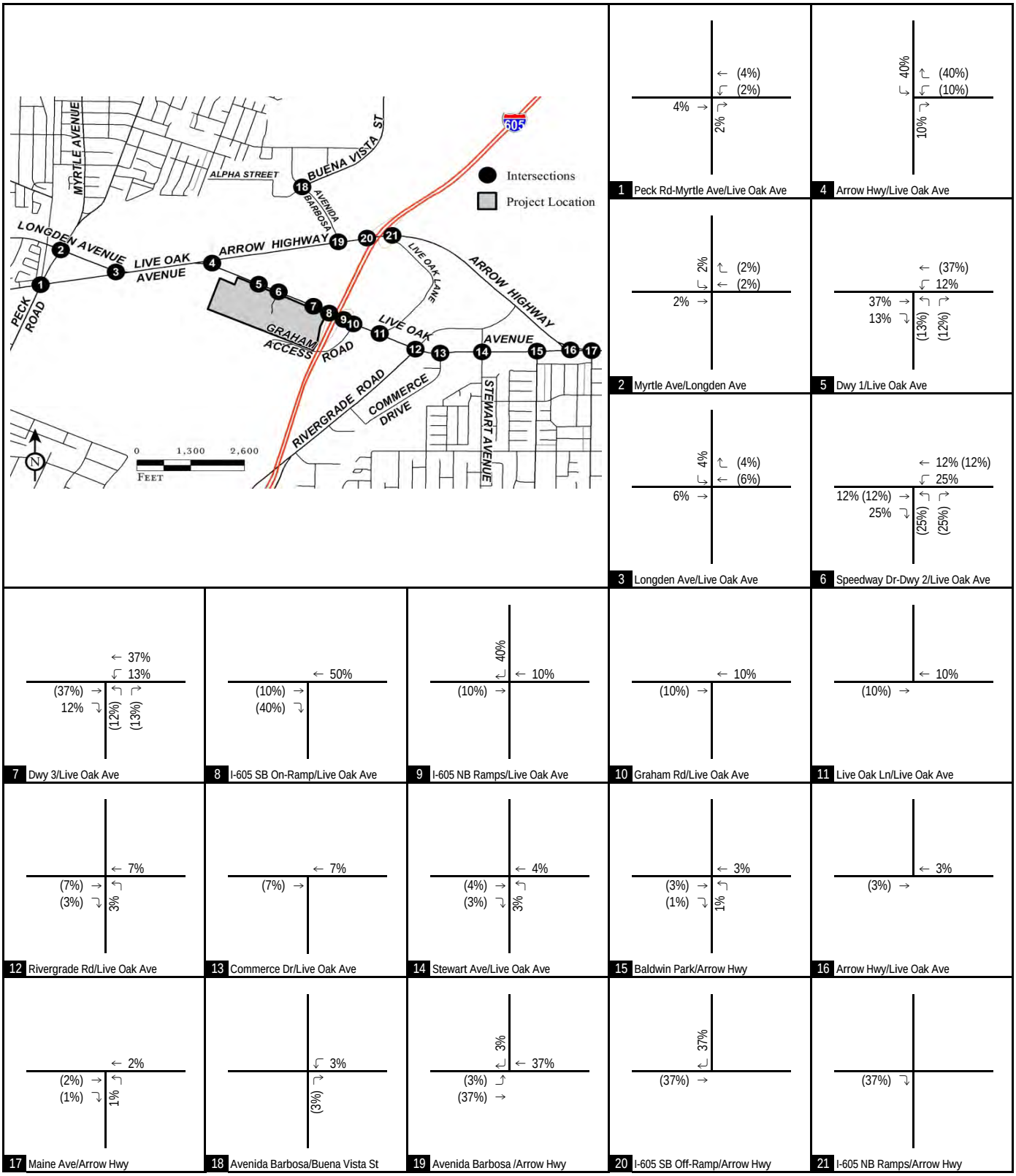
Notes:

[1] TSF = Thousand Square Feet

[2] Trip generation based on rates for Land Use 823 - "Factory Outlet Center" from ITE *Trip Generation* (9th Edition).

[3] Pass-by rates based on rates for Land Use 820 - "Shopping Center" from ITE Trip Generation Handbook (9th Edition). Since there is no data available on a.m. and daily pass-by trips, no reduction has been taken for the a.m. The p.m. pass-by rates have been applied to the daily traffic.

[4] Diverted Linked Trips are based on rates for Land Use 820 - "Shopping Center" from ITE Trip Generation Handbook (9th Edition). Since there is no data available for a.m. and daily diverted linked trips, no reduction has been taken for the a.m. The p.m. diverted link rate has been applied to the daily traffic.



LSA

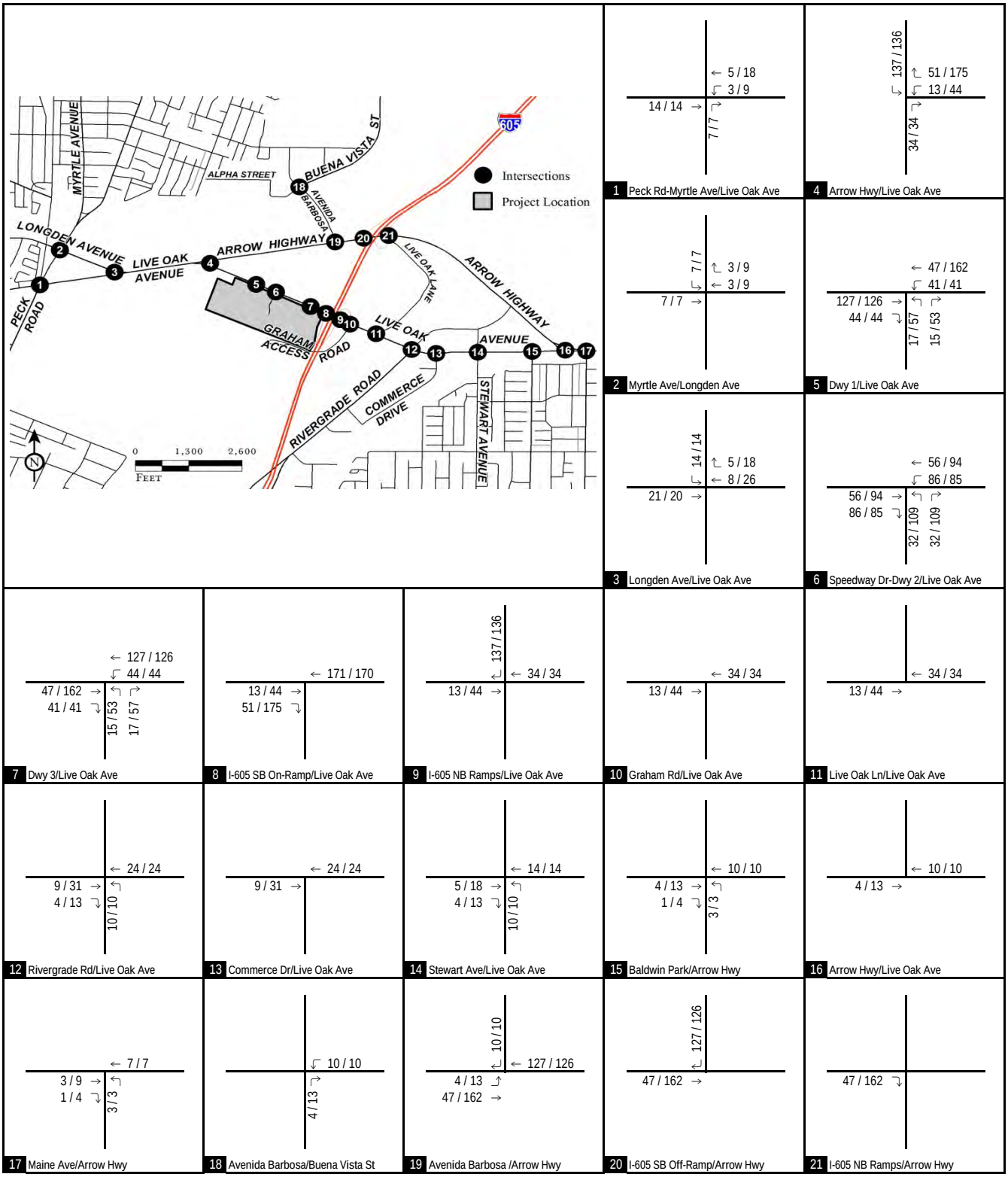
FIGURE 13

XX% (YY%) Inbound (Outbound) Trip Distribution

Irwindale Regional Shopping Center

Project Trip Distribution

R:\COI1401_Irwindale Outlet Center\Traffic\g30-dist_ (8/27/2014)



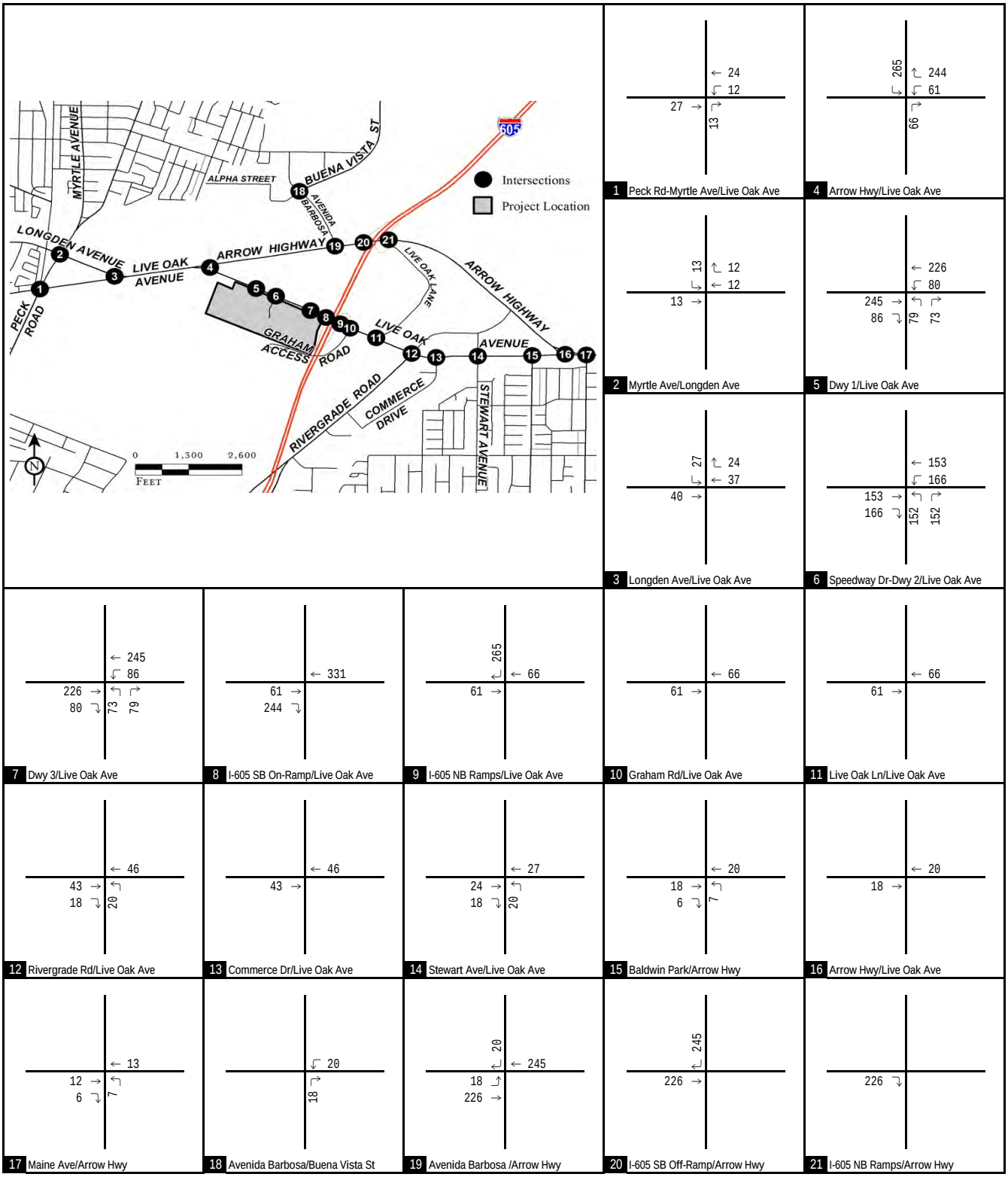
LSA

FIGURE 14

XXX / YYY AM / PM Peak Hour Traffic Volumes

Irwindale Regional Shopping Center

Total Peak Hour Trip Assignment



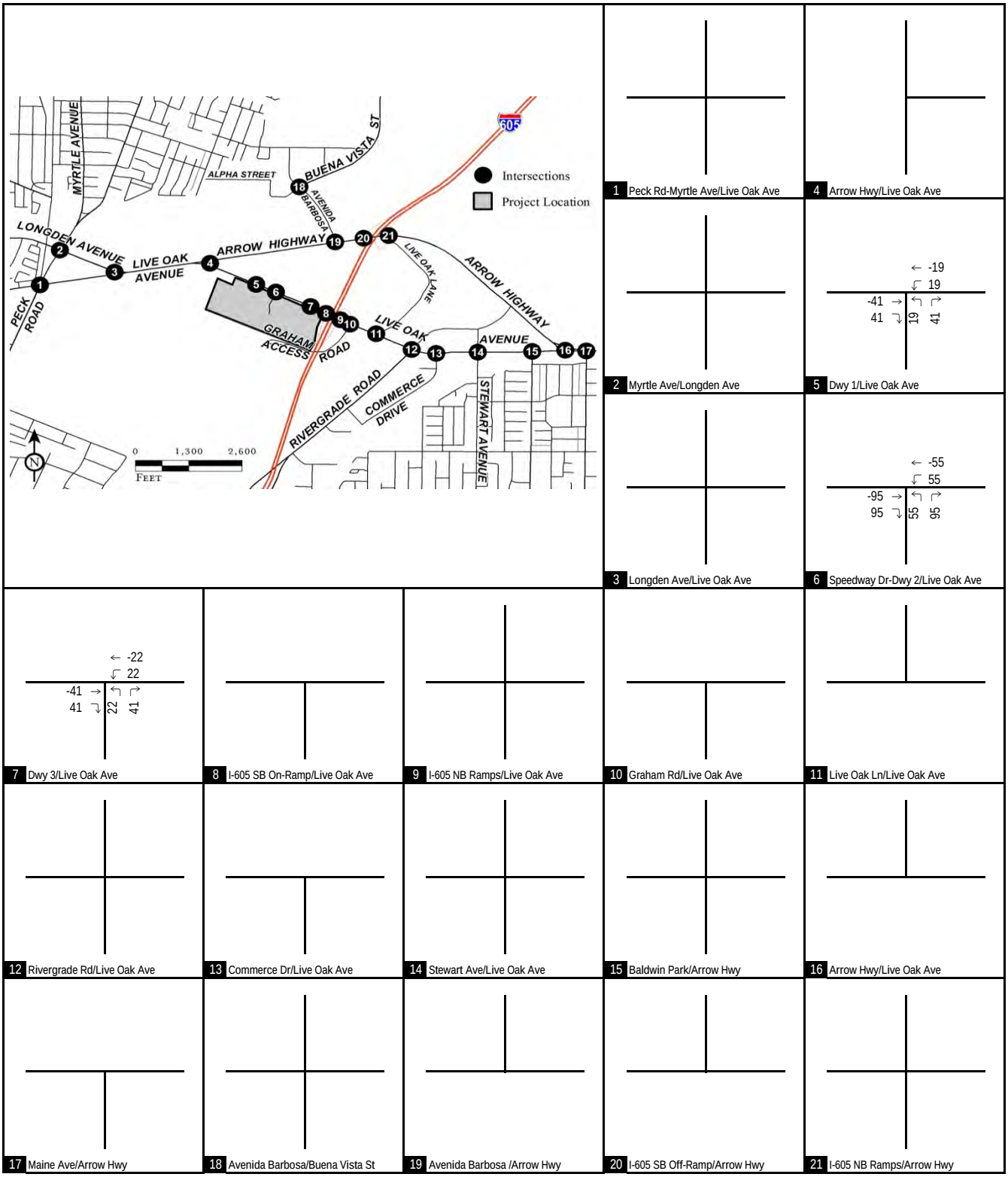
LSA

FIGURE 15

XXX Saturday Peak Hour Traffic Volumes

Irwindale Regional Shopping Center

Total Saturday Peak Hour Trip Assignment



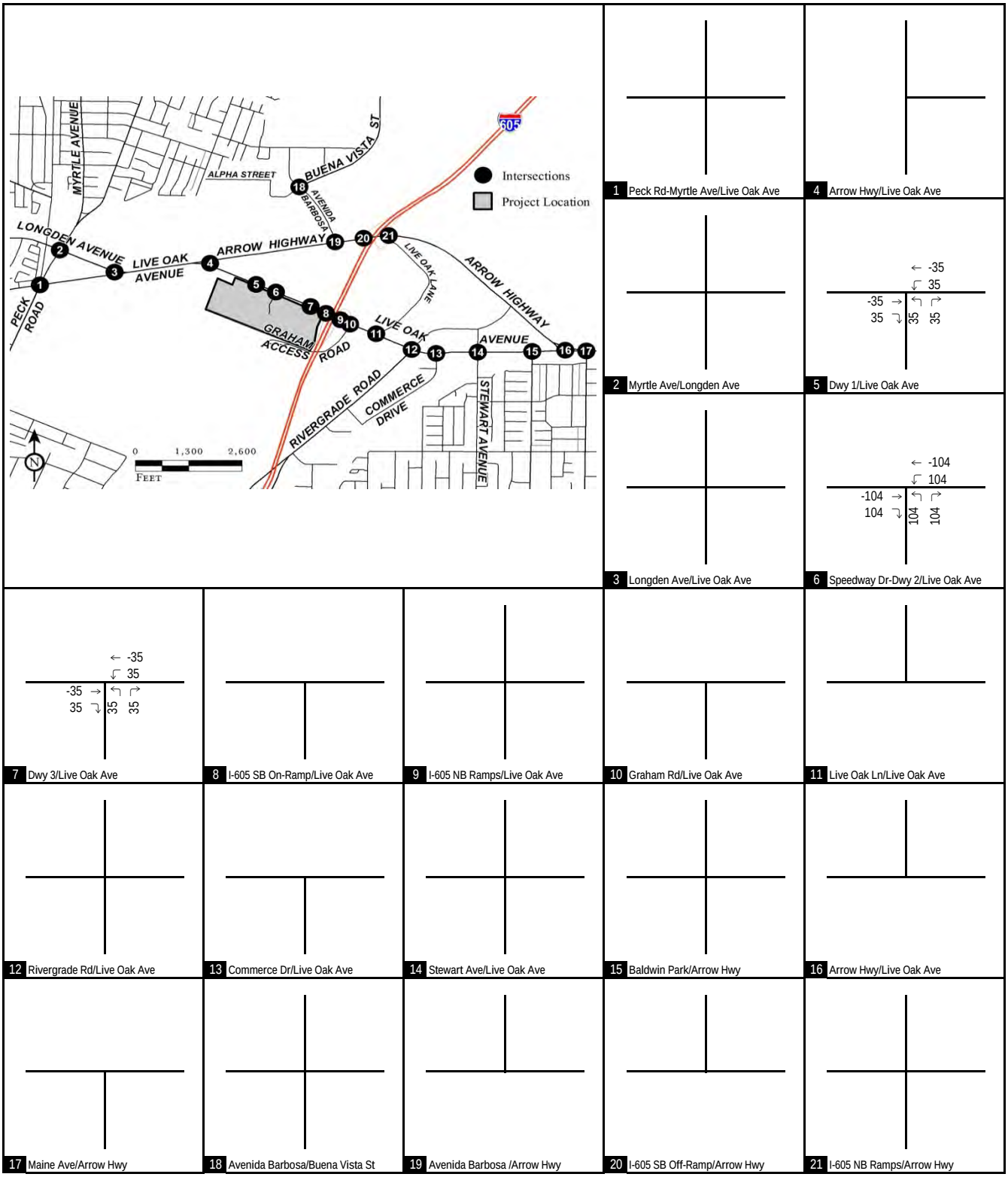
LSA

FIGURE 16

XX PM Peak Hour Traffic Volumes

Irwindale Regional Shopping Center

Total Pass-By Trips



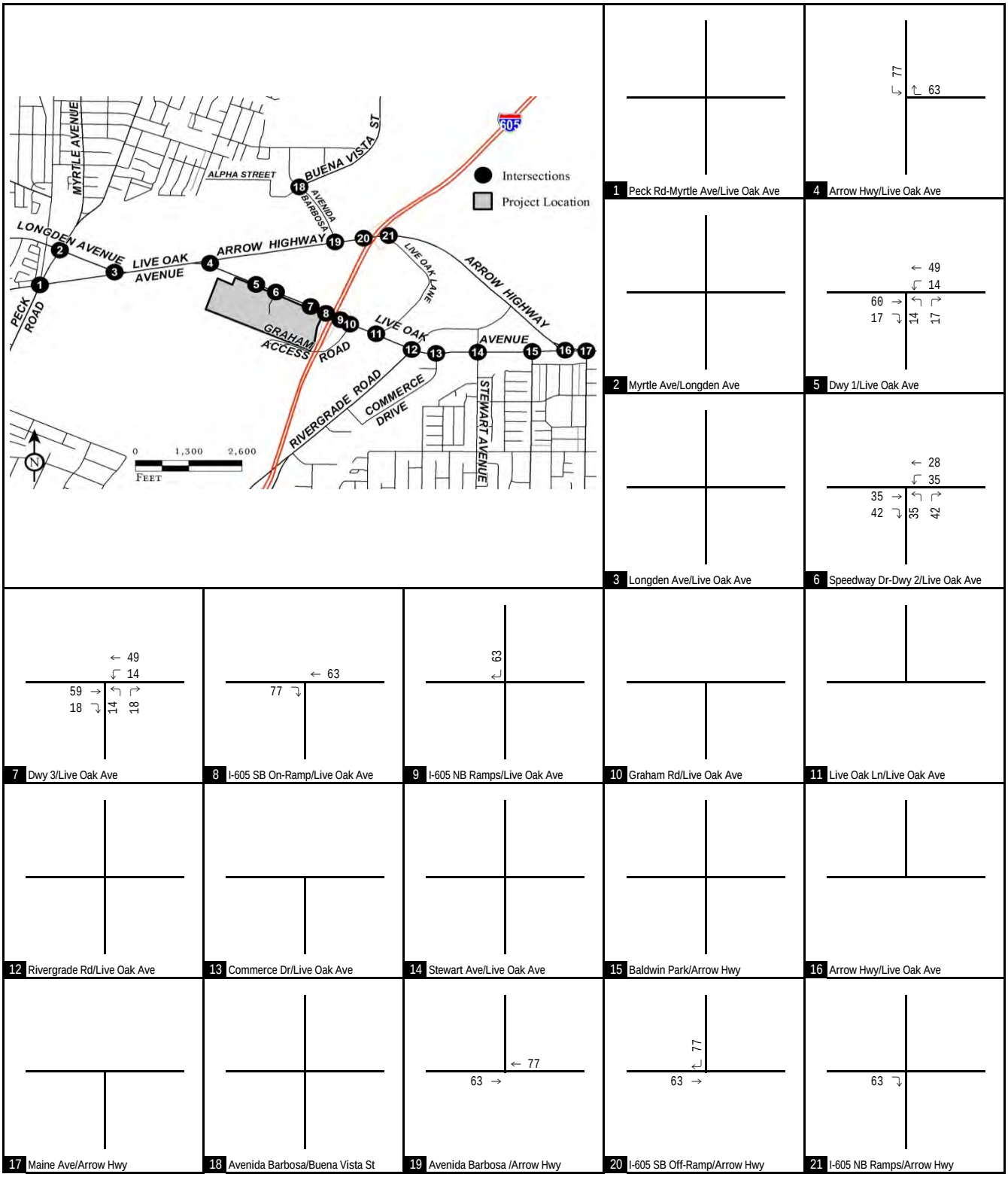
LSA

FIGURE 17

XXX Saturday Peak Hour Traffic Volumes

Irwindale Regional Shopping Center

Total (Saturday) Pass-By Trips



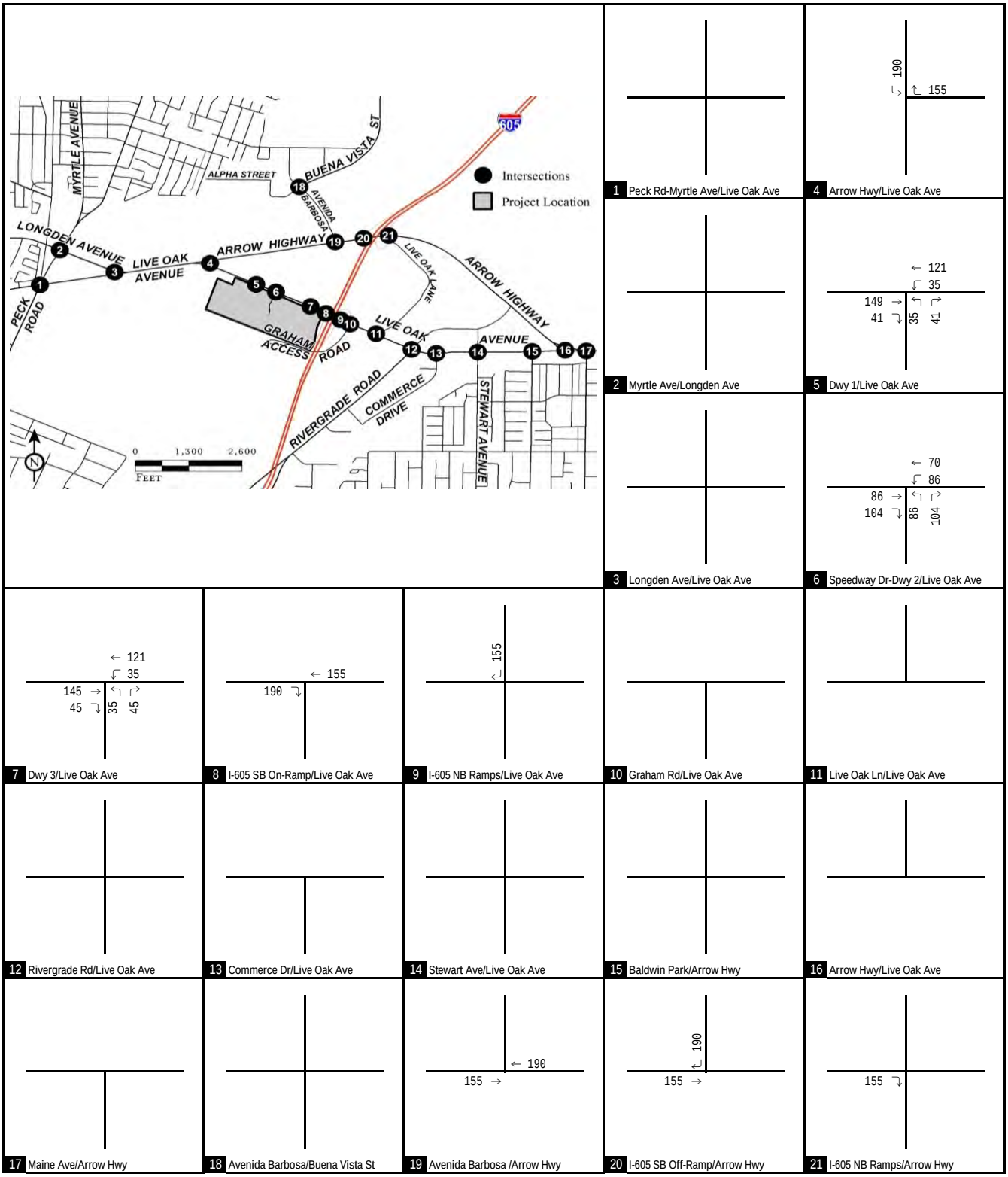
LSA

FIGURE 18

XX PM Peak Hour Traffic Volumes

Irwindale Regional Shopping Center

Total Diverted Linked Trips



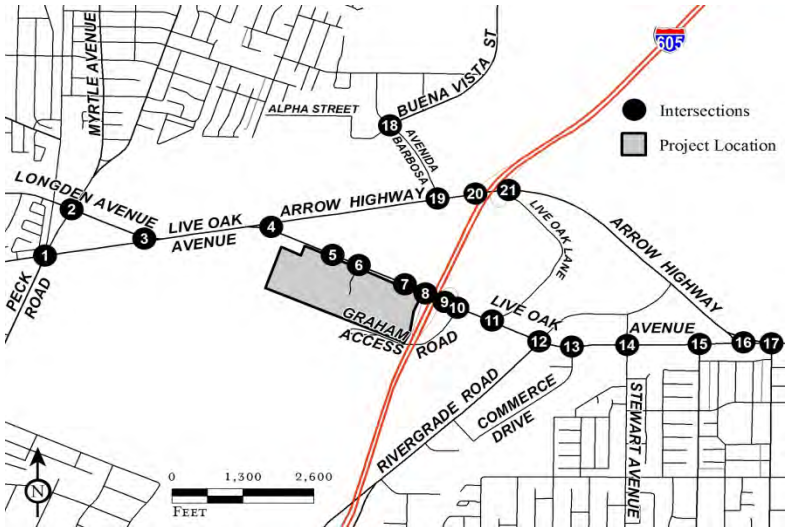
LSA

FIGURE 19

XXX Saturday Peak Hour Traffic Volumes

Irwindale Regional Shopping Center

Total Saturday Diverted Linked Trips



1 Peck Rd-Myrtle Ave/Live Oak Ave
← 5 / 18
↰ 3 / 9
14 / 14 →
7 / 7 ↱

4 Arrow Hwy/Live Oak Ave
137 / 213 ↳
↱ 51 / 238
↰ 13 / 44
34 / 34 ↱

2 Myrtle Ave/Longden Ave
7 / 7 ↳
↱ 3 / 9
← 3 / 9
7 / 7 →

5 Dwy 1/Live Oak Ave
← 47 / 192
↰ 41 / 74
127 / 145 →
44 / 102 ↴
↰ ↱
17 / 90
15 / 111

3 Longden Ave/Live Oak Ave
14 / 14 ↳
↱ 5 / 18
← 8 / 26
21 / 20 →

6 Speedway Dr-Dwy 2/Live Oak Ave
← 56 / 67
↰ 86 / 175
56 / 34 →
86 / 222 ↴
↰ ↱
32 / 199
32 / 246

7 Dwy 3/Live Oak Ave
← 127 / 153
↰ 44 / 80
47 / 180 →
41 / 100 ↴
↰ ↱
15 / 89
17 / 116

8 I-605 SB On-Ramp/Live Oak Ave
← 171 / 233
13 / 44 →
51 / 252 ↴

9 I-605 NB Ramps/Live Oak Ave
137 / 199 ↳
← 34 / 34
13 / 44 →

10 Graham Rd/Live Oak Ave
← 34 / 34
13 / 44 →

11 Live Oak Ln/Live Oak Ave
← 34 / 34
13 / 44 →

12 Rivergrade Rd/Live Oak Ave
← 24 / 24
9 / 31 →
4 / 13 ↴
↰
10 / 10

13 Commerce Dr/Live Oak Ave
← 24 / 24
9 / 31 →

14 Stewart Ave/Live Oak Ave
← 14 / 14
5 / 18 →
4 / 13 ↴
↰
10 / 10

15 Baldwin Park/Arrow Hwy
← 10 / 10
4 / 13 →
1 / 4 ↴
↰
3 / 3

16 Arrow Hwy/Live Oak Ave
← 10 / 10
4 / 13 →

17 Maine Ave/Arrow Hwy
← 7 / 7
3 / 9 →
1 / 4 ↴
↰
3 / 3

18 Avenida Barbosa/Buena Vista St
↰ 10 / 10
↱
4 / 13

19 Avenida Barbosa /Arrow Hwy
10 / 10 ↳
← 127 / 203
4 / 13 ↳
47 / 225 →

20 I-605 SB Off-Ramp/Arrow Hwy
127 / 203 ↳
47 / 225 →

21 I-605 NB Ramps/Arrow Hwy
47 / 225 ↴

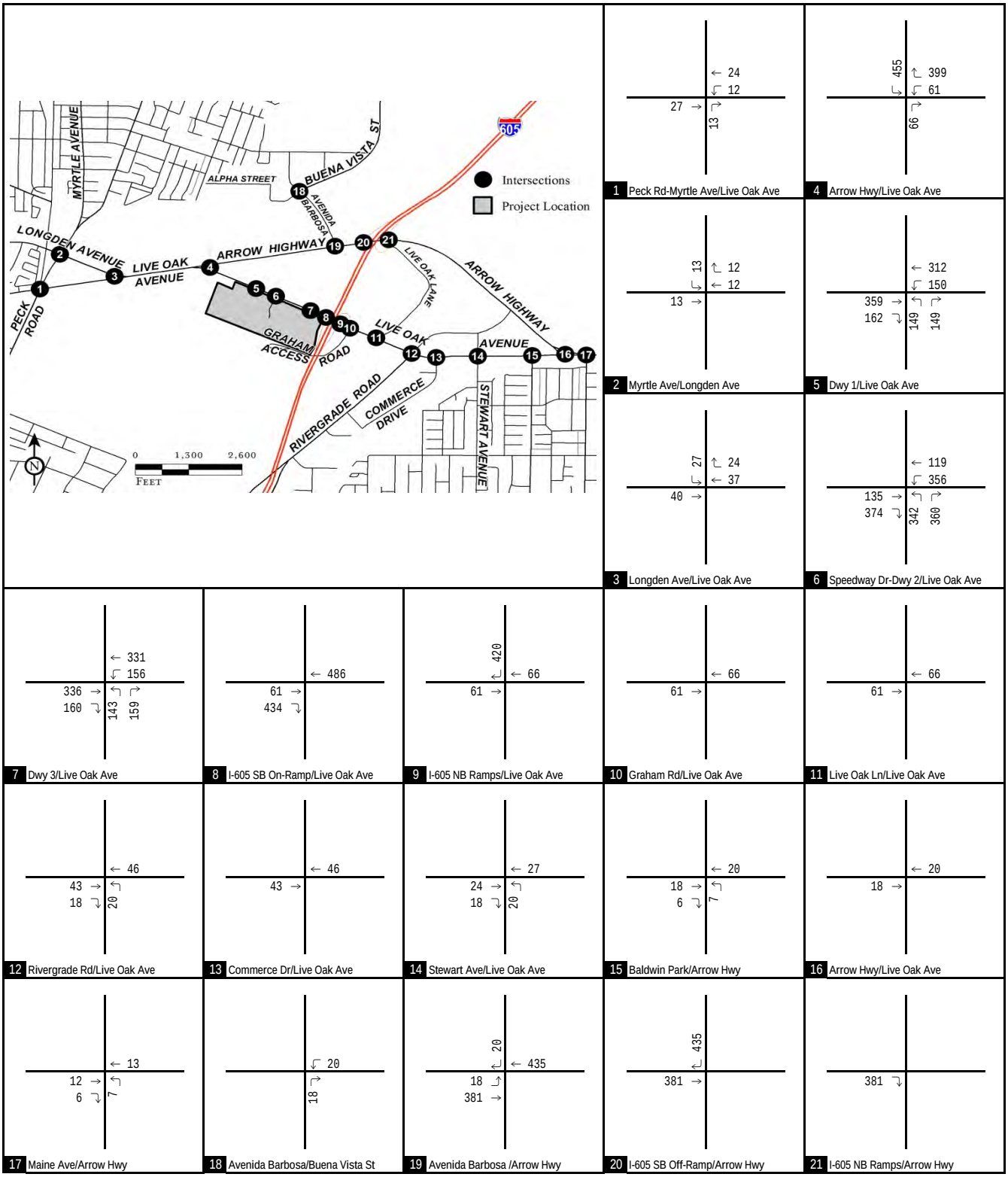
LSA

FIGURE 20

XXX / YYY AM / PM Peak Hour Traffic Volumes

Irwindale Regional Shopping Center

Total Net Peak Hour Trip Assignment



LSA

FIGURE 21

XXX Saturday Peak Hour Traffic Volumes

Irwindale Regional Shopping Center

Total Net Saturday Peak Hour Trip Assignment

EXISTING WITH PROJECT CONDITIONS

Figure 22 illustrates the resulting existing plus project a.m. and p.m. peak-hour traffic volumes at the study area intersections.

Previously referenced Table E summarizes the results of the existing with project a.m. and p.m. peak hour LOS analysis for all signalized study area intersections utilizing the ICU methodology. As shown in Table E, all intersections are projected to operate at acceptable LOS.

Previously referenced Table F summarizes the results of the existing with project a.m. and p.m. peak hour LOS analysis for Caltrans facilities and unsignalized intersections utilizing the HCM methodology. As shown in Table F, all intersections are projected to operate at satisfactory LOS, with the exception of the following intersections:

- Driveway 1/Live Oak Avenue (LOS F in the p.m. peak hour);
- Driveway 3/Live Oak Avenue (LOS F in the p.m. peak hour); and
- Interstate 605 Northbound Off-Ramps/Live Oak Avenue (LOS F in the p.m. peak hour).

The unsignalized intersection of Commerce Drive/Live Oak Avenue operates at LOS F in the p.m. peak hour; however, based on the City of Irwindale's Policy Guidelines for Traffic Impact Reports, an unsignalized intersection traffic movement at a stop-controlled approach can be deemed to have acceptable operation if the total delay is less than 4.0 vehicle-hours for single lane movement with low volume. Since the total delay at Commerce Drive/Live Oak Avenue is less than 4.0 vehicle-hours, the LOS is considered acceptable.

Figure 23 illustrates the existing with project Saturday peak-hour traffic volumes for the study area intersections. Previously referenced Table G summarizes the results of the existing with project Saturday peak hour LOS analysis for all signalized study area intersections utilizing the ICU methodology. As shown in Table G, all intersections are projected to operate at satisfactory LOS.

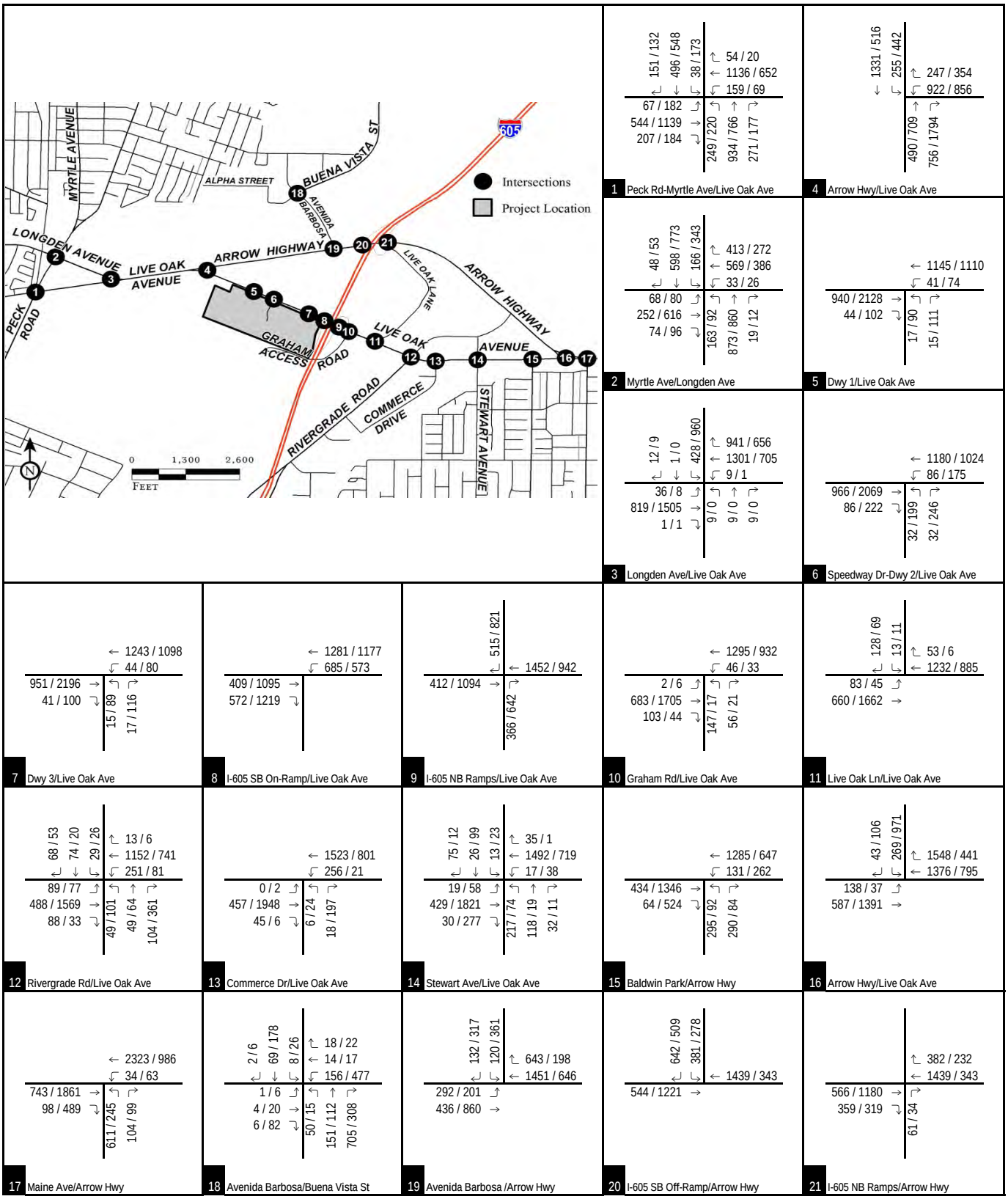
Previously referenced Table H summarizes the results of the existing with project Saturday peak hour LOS analysis for Caltrans facilities and unsignalized intersections utilizing the HCM methodology. As shown in Table H, all study intersections are currently operating at acceptable LOS with the exception of the following intersections:

- Driveway 1/Live Oak Avenue (LOS F in the Saturday peak hour);
- Driveway 3/Live Oak Avenue (LOS F in the Saturday peak hour); and
- Interstate 605 Northbound Off- Ramps/Live Oak Avenue (LOS F in the p.m. peak hour).

The existing with project LOS calculation worksheets are contained in Appendix D.

FUTURE BASELINE (2018) WITH PROJECT CONDITIONS

Figure 24 shows the resulting future baseline with project a.m. and p.m. peak-hour traffic volumes at the study area intersections.



LSA

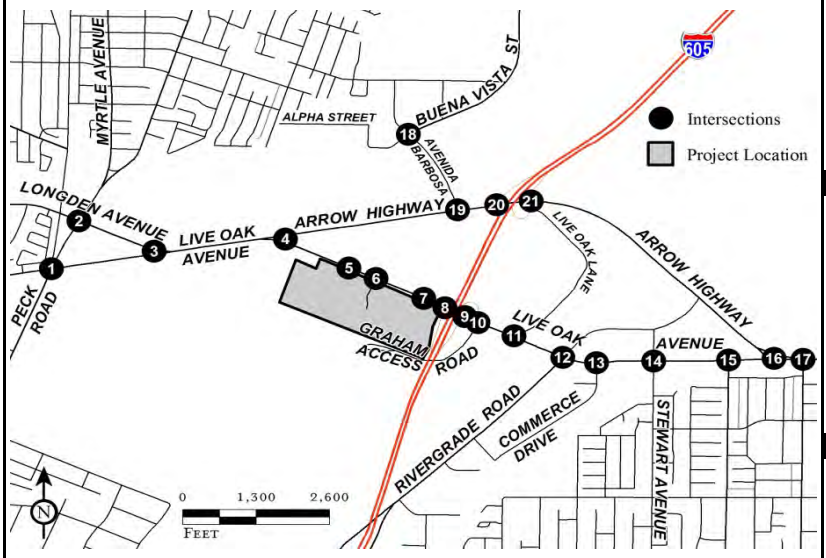
FIGURE 22

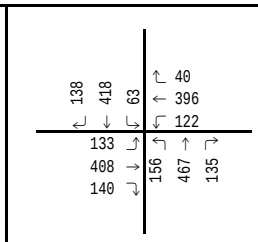
XXXX / YYYY AM / PM Peak Hour Volumes

Irwindale Regional Shopping Center

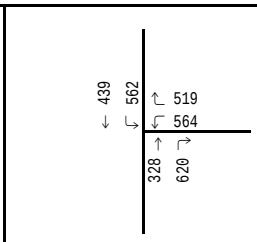
Traffic Impact Study

Existing With Project Peak Hour Traffic Volumes

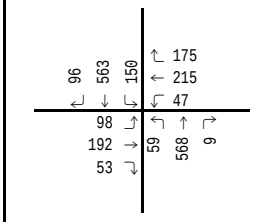




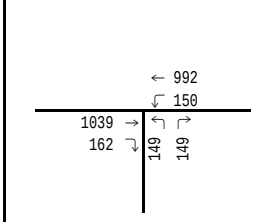
1 Peck Rd-Myrtle Ave/Live Oak Ave



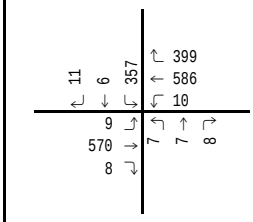
4 Arrow Hwy/Live Oak Ave



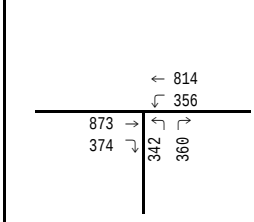
2 Myrtle Ave/Longden Ave



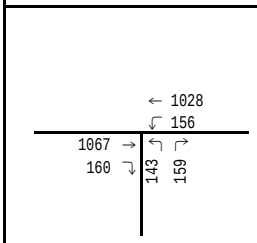
5 Dwy 1/Live Oak Ave



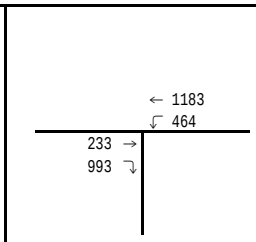
3 Longden Ave/Live Oak Ave



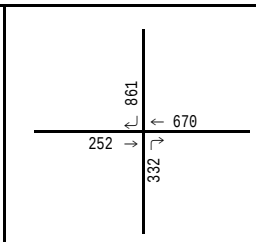
6 Speedway Dr-Dwy 2/Live Oak Ave



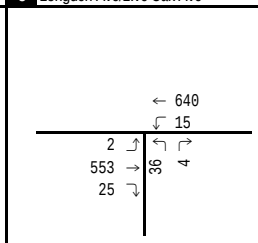
7 Dwy 3/Live Oak Ave



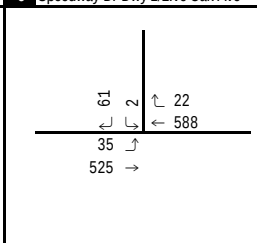
8 I-605 SB On-Ramp/Live Oak Ave



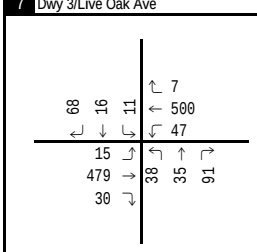
9 I-605 NB Ramps/Live Oak Ave



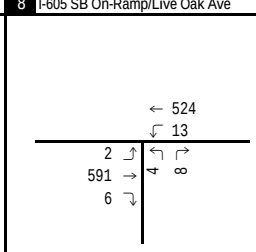
10 Graham Rd/Live Oak Ave



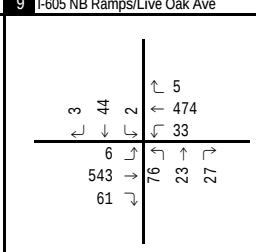
11 Live Oak Ln/Live Oak Ave



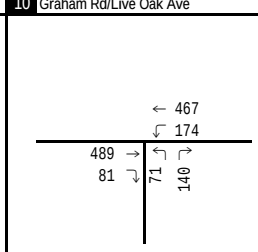
12 Rivergrade Rd/Live Oak Ave



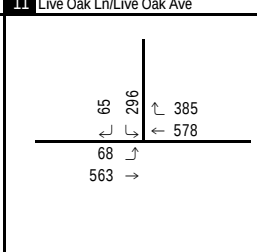
13 Commerce Dr/Live Oak Ave



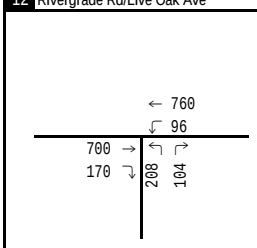
14 Stewart Ave/Live Oak Ave



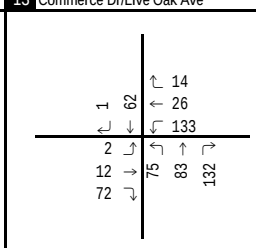
15 Baldwin Park/Arrow Hwy



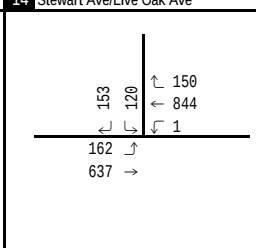
16 Arrow Hwy/Live Oak Ave



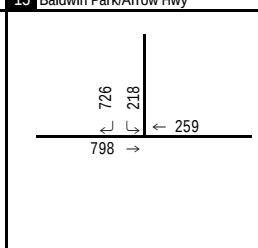
17 Maine Ave/Arrow Hwy



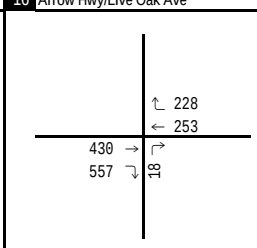
18 Avenida Barbosa/Buena Vista St



19 Avenida Barbosa /Arrow Hwy



20 I-605 SB Off-Ramp/Arrow Hwy



21 I-605 NB Ramps/Arrow Hwy

LSA

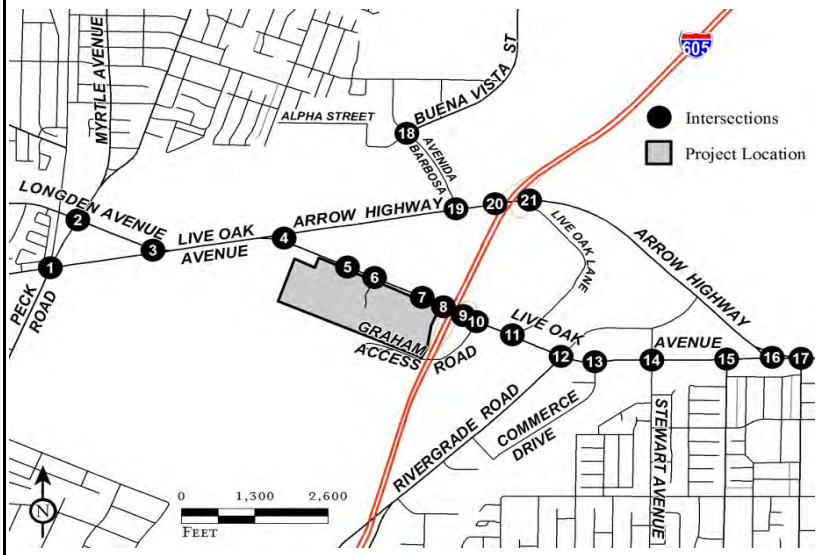
FIGURE 23

XXXX Saturday Peak Hour Volumes

Irwindale Regional Shopping Center

Traffic Impact Study

Existing With Project (Saturday) Peak Hour Traffic Volumes



1 Peck Rd-Myrtle Ave/Live Oak Ave

	163 / 143	58 / 22
	536 / 592	1227 / 703
	41 / 187	171 / 74
72 / 197	269 / 238	
586 / 1229	1009 / 827	
224 / 199	292 / 190	

4 Arrow Hwy/Live Oak Ave

	1437 / 557	263 / 363
	265 / 461	994 / 921
529 / 766		
813 / 1935		

2 Myrtle Ave/Longden Ave

	52 / 57	446 / 293
	646 / 835	614 / 416
	179 / 370	36 / 28
73 / 86	176 / 99	
272 / 665	943 / 929	
80 / 104	21 / 13	

5 Dwy 1/Live Oak Ave

		1233 / 1183
		41 / 74
1005 / 2287	17 / 90	
44 / 102	15 / 111	

3 Longden Ave/Live Oak Ave

	13 / 10	1015 / 707
	1 / 0	1405 / 760
	462 / 1036	10 / 1
39 / 9	10 / 0	
883 / 1624	10 / 0	
1 / 1	10 / 0	

6 Speedway Dr-Dwy 2/Live Oak Ave

		1270 / 1101
		86 / 175
1039 / 2232	32 / 199	
86 / 222	32 / 246	

7 Dwy 3/Live Oak Ave

		1332 / 1174
		44 / 80
1023 / 2357	15 / 89	
41 / 100	17 / 116	

8 I-605 SB On-Ramp/Live Oak Ave

		1370 / 1253
		740 / 619
441 / 1179		
614 / 1296		

9 I-605 NB Ramps/Live Oak Ave

	546 / 871	
		1565 / 1015
444 / 1178		
	395 / 693	

10 Graham Rd/Live Oak Ave

		1396 / 1004
		50 / 36
2 / 6	159 / 18	
736 / 1838	60 / 23	
111 / 48		

11 Live Oak Ln/Live Oak Ave

	139 / 75	57 / 6
	14 / 12	1328 / 954
89 / 48		
712 / 1792		

12 Rivergrade Rd/Live Oak Ave

74 / 58		14 / 6
80 / 22		1243 / 798
31 / 28		271 / 87
96 / 83	52 / 108	
527 / 1692	53 / 69	
95 / 35	112 / 390	

13 Commerce Dr/Live Oak Ave

		1643 / 863
		276 / 23
0 / 2	6 / 26	
493 / 2101	19 / 213	
49 / 6		

14 Stewart Ave/Live Oak Ave

81 / 13		38 / 1
28 / 107		1610 / 776
14 / 25		18 / 41
21 / 63	233 / 79	
463 / 1965	127 / 21	
32 / 298	35 / 12	

15 Baldwin Park/Arrow Hwy

		1387 / 698
		141 / 283
469 / 1453	318 / 99	
69 / 565	313 / 91	

16 Arrow Hwy/Live Oak Ave

	46 / 114	1672 / 476
	291 / 1049	1485 / 858
149 / 40		
634 / 1501		

17 Maine Ave/Arrow Hwy

		2509 / 1065
		37 / 68
802 / 2010	659 / 264	
106 / 527	112 / 107	

18 Avenida Barbosa/Buena Vista St

2 / 6		19 / 24
75 / 192		15 / 18
9 / 28		168 / 514
1 / 6	54 / 16	
4 / 22	163 / 121	
6 / 89	761 / 332	

19 Avenida Barbosa /Arrow Hwy

	142 / 341	
	130 / 390	
		694 / 214
		1557 / 682
315 / 216		
467 / 911		

20 I-605 SB Off-Ramp/Arrow Hwy

	683 / 533	
	411 / 300	
		1555 / 371
584 / 1300		

21 I-605 NB Ramps/Arrow Hwy

		413 / 251
		1555 / 371
612 / 1274		
384 / 327	66 / 37	

LSA

FIGURE 24

XXXX / YYYY AM / PM Peak Hour Volumes

Irwindale Regional Shopping Center

Traffic Impact Study

Future Baseline With Project Peak Hour Traffic Volumes

Previously referenced Table I summarizes the results of the future baseline with project a.m. and p.m. peak hour LOS analysis for all signalized study area intersections utilizing the ICU methodology. As shown in Table I, all intersections are projected to operate at satisfactory LOS with the exception of the following:

- Arrow Highway (East)/Live Oak Avenue (LOS E in the p.m. peak hour).

Previously referenced Table J summarizes the results of the future baseline with project a.m. and p.m. peak hour LOS analysis for Caltrans facilities and unsignalized intersections utilizing the HCM methodology. As shown in Table J, all study intersections are projected to operate at acceptable LOS with the exception of the following:

- Driveway 1/Live Oak Avenue (LOS F in the p.m. peak hour);
- Driveway 3/Live Oak Avenue (LOS E in the a.m. peak hour and LOS F in the p.m. peak hour); and
- Interstate 605 Northbound Off-Ramps/Live Oak Avenue (LOS F in the a.m. and p.m. peak hours).

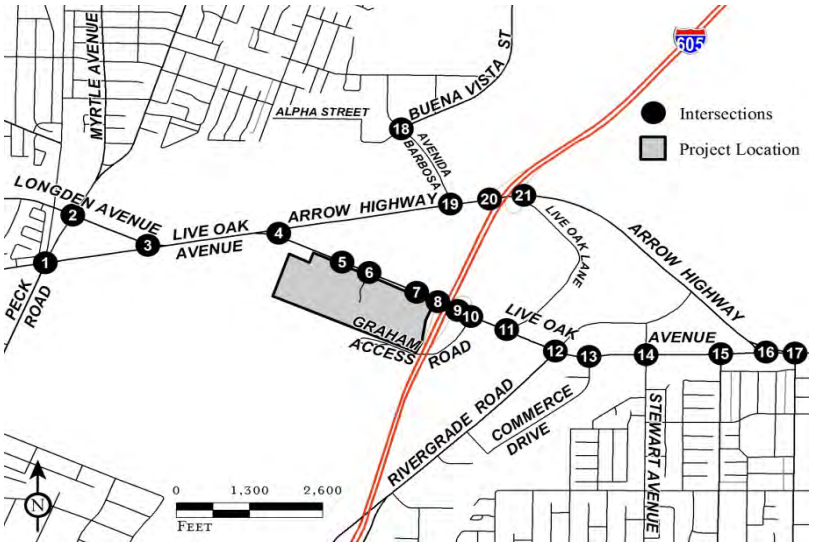
The unsignalized intersections of Live Oak Lane/Live Oak Avenue and Commerce Drive/Live Oak Avenue operate at LOS E or F; however, based on the City of Irwindale's Policy Guidelines for Traffic Impact Reports, an unsignalized intersection traffic movement at a stop-controlled approach can be deemed to have acceptable operation if the total delay is less than 4.0 vehicle-hours for single lane movement with low volume. Since the total delay at Live Oak Lane/Live Oak Avenue and Commerce Drive/Live Oak Avenue is less than 4.0 vehicle-hours, the LOS is considered acceptable.

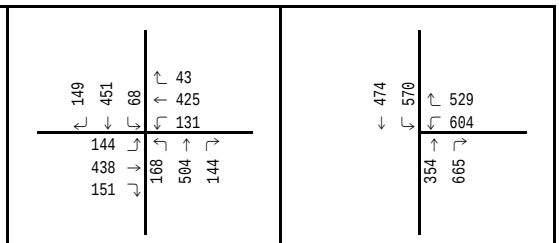
Figure 25 illustrates the future baseline with project Saturday peak-hour traffic volumes for the study area intersections. Previously referenced Table K summarizes the results of the future baseline with project Saturday peak hour LOS analysis for all signalized study area intersections utilizing the ICU methodology. As shown in Table K, all intersections are projected to operate at satisfactory LOS.

Previously referenced Table L summarizes the results of the future baseline Saturday peak hour LOS analysis for Caltrans facilities and unsignalized intersections utilizing the HCM methodology. As shown in Table L, all study intersections are projected to operate at acceptable LOS with the exception of the following:

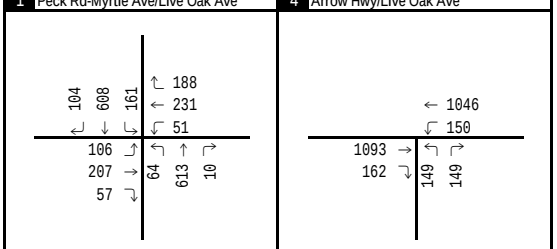
- Driveway 1/Live Oak Avenue (LOS F in the Saturday peak hour);
- Driveway 3/Live Oak Avenue (LOS F in the Saturday peak hour); and
- Interstate 605 Northbound Off-Ramps/Live Oak Avenue (LOS F in the Saturday peak hour).

The future baseline with project LOS calculation worksheets are contained in Appendix D.



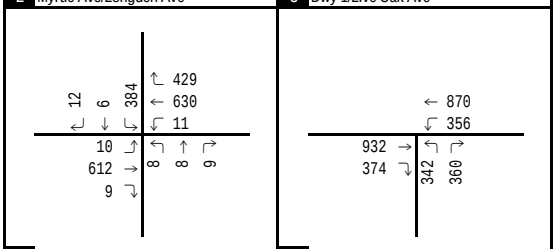


1 Peck Rd-Myrtle Ave/Live Oak Ave



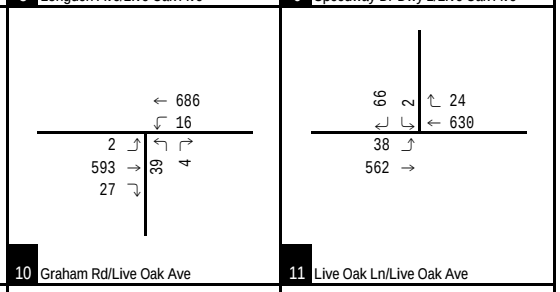
4 Arrow Hwy/Live Oak Ave

2 Myrtle Ave/Longden Ave

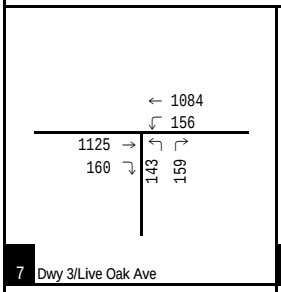


5 Dwy 1/Live Oak Ave

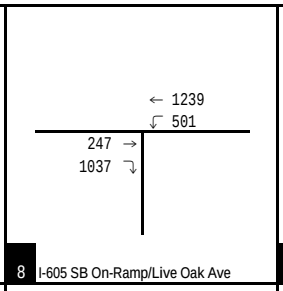
3 Longden Ave/Live Oak Ave



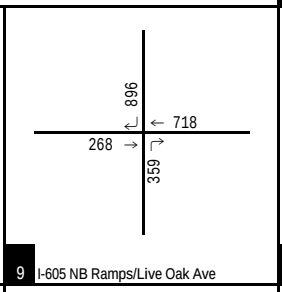
6 Speedway Dr-Dwy 2/Live Oak Ave



7 Dwy 3/Live Oak Ave



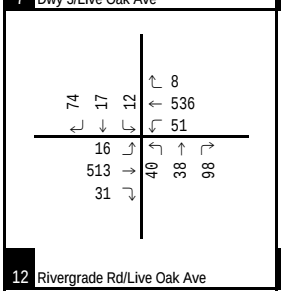
8 I-605 SB On-Ramp/Live Oak Ave



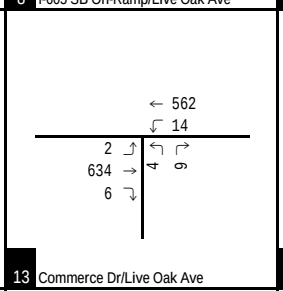
9 I-605 NB Ramps/Live Oak Ave

10 Graham Rd/Live Oak Ave

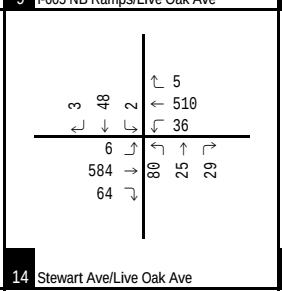
11 Live Oak Ln/Live Oak Ave



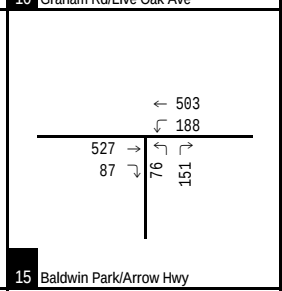
12 Rivergrade Rd/Live Oak Ave



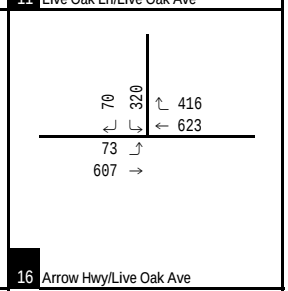
13 Commerce Dr/Live Oak Ave



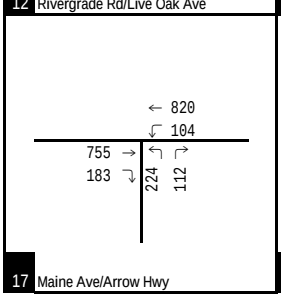
14 Stewart Ave/Live Oak Ave



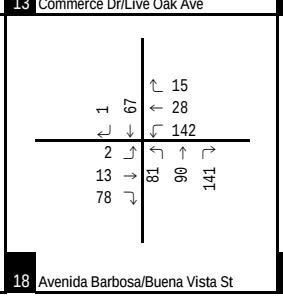
15 Baldwin Park/Arrow Hwy



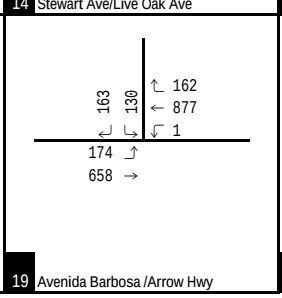
16 Arrow Hwy/Live Oak Ave



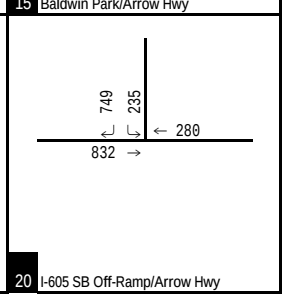
17 Maine Ave/Arrow Hwy



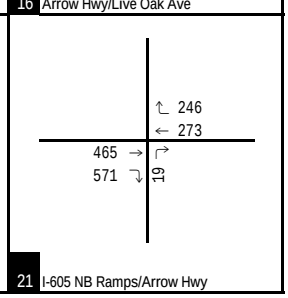
18 Avenida Barbosa/Buena Vista St



19 Avenida Barbosa /Arrow Hwy



20 I-605 SB Off-Ramp/Arrow Hwy



21 I-605 NB Ramps/Arrow Hwy

LSA

FIGURE 25

XXXX Saturday Peak Hour Volumes

Irwindale Regional Shopping Center

Traffic Impact Study

Future Baseline With Project (Saturday) Peak Hour Traffic Volumes

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FUTURE BASELINE (2018) PLUS CUMULATIVE PROJECTS WITH PROJECT CONDITIONS

Figure 26 shows the resulting future baseline plus cumulative projects with project a.m. and p.m. peak-hour traffic volumes at the study area intersections.

Previously referenced Table M summarizes the results of the future baseline plus cumulative projects with project a.m. and p.m. peak hour LOS analysis for all signalized study area intersections utilizing the ICU methodology. As shown in Table M, all intersections are projected to operate at acceptable LOS with the exception of the following:

- Arrow Highway (East)/Live Oak Avenue (LOS E in the p.m. peak hour); and
- Avenida Barbosa/Arrow Highway (LOS E in the a.m. peak hour).

Previously referenced Table N summarizes the results of the future baseline plus cumulative projects with project a.m. and p.m. peak hour LOS analysis for Caltrans facilities and unsignalized intersections utilizing the HCM methodology. As shown in Table N, all study intersections are projected to operate at acceptable LOS with the exception of the following:

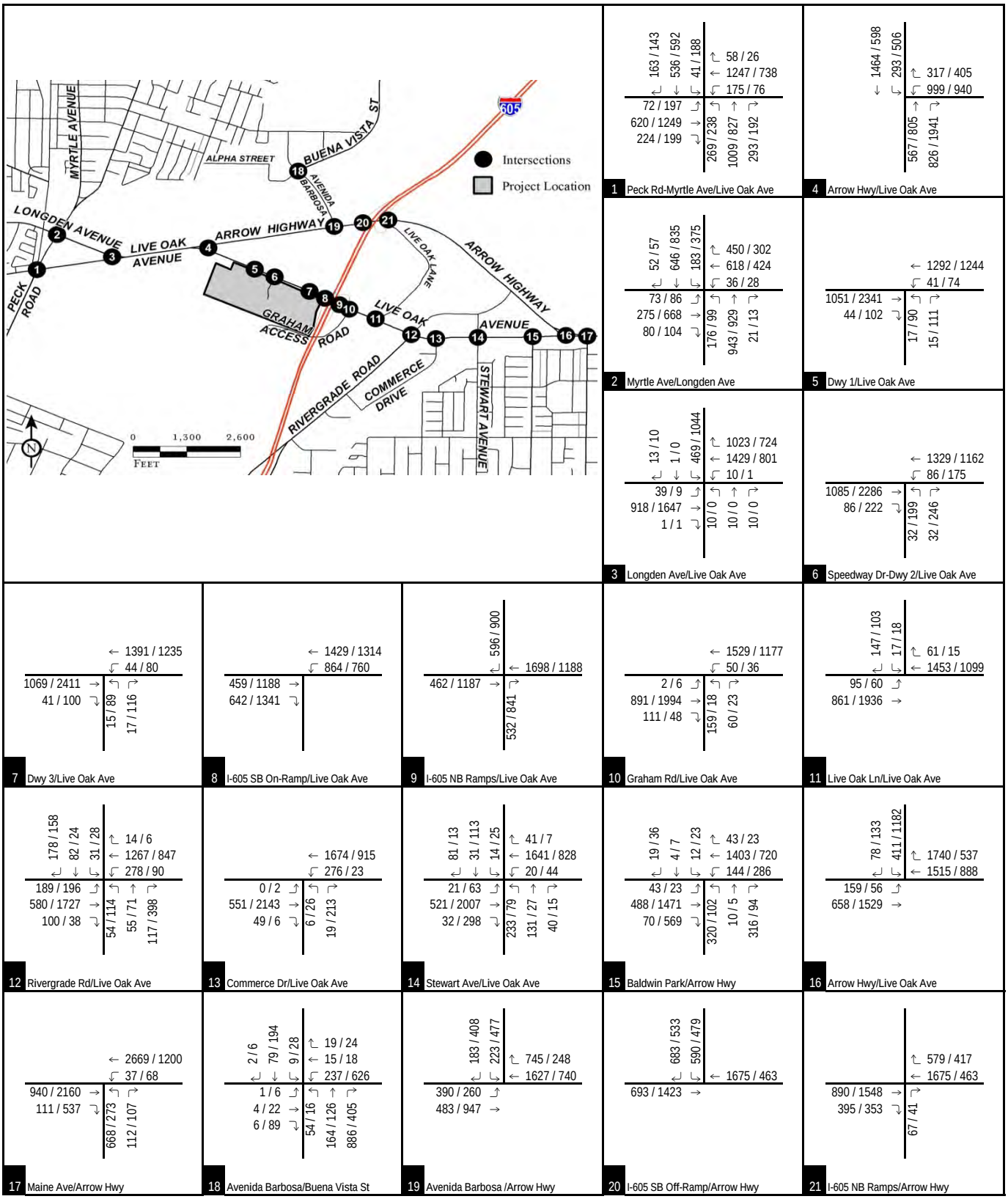
- Driveway 1/Live Oak Avenue (LOS E in the a.m. peak hour and LOS F in the p.m. peak hour);
- Driveway 3/Live Oak Avenue (LOS E in the a.m. peak hour and LOS F in the p.m. peak hour); and
- Interstate 605 Northbound Off-Ramps/Live Oak Avenue (LOS F in the a.m. and p.m. peak hours).

The unsignalized intersections of Live Oak Lane/Live Oak Avenue and Commerce Drive/Live Oak Avenue operate at LOS E or F; however, based on the City of Irwindale's Policy Guidelines for Traffic Impact Reports, an unsignalized intersection traffic movement at a stop-controlled approach can be deemed to have acceptable operation if the total delay is less than 4.0 vehicle-hours for single lane movement with low volume. Since the total delay at Live Oak Lane/Live Oak Avenue and Commerce Drive/Live Oak Avenue is less than 4.0 vehicle-hours, the LOS is considered acceptable.

Figure 27 illustrates the future baseline plus cumulative projects with project Saturday peak-hour traffic volumes for the study area intersections. Previously referenced Table O summarizes the results of the future baseline plus cumulative projects with project Saturday peak hour LOS analysis for all signalized study area intersections utilizing the ICU methodology. As shown in Table O, all intersections are projected to operate at satisfactory LOS.

Previously referenced Table P summarizes the results of the future baseline plus cumulative projects with project Saturday peak hour LOS analysis for Caltrans facilities and unsignalized intersections utilizing the HCM methodology. As shown in Table P, all study intersections are projected to operate at acceptable LOS with the exception of the following:

- Driveway 1/Live Oak Avenue (LOS F in the Saturday peak hour);
- Driveway 3/Live Oak Avenue (LOS F in the Saturday peak hour); and



LSA

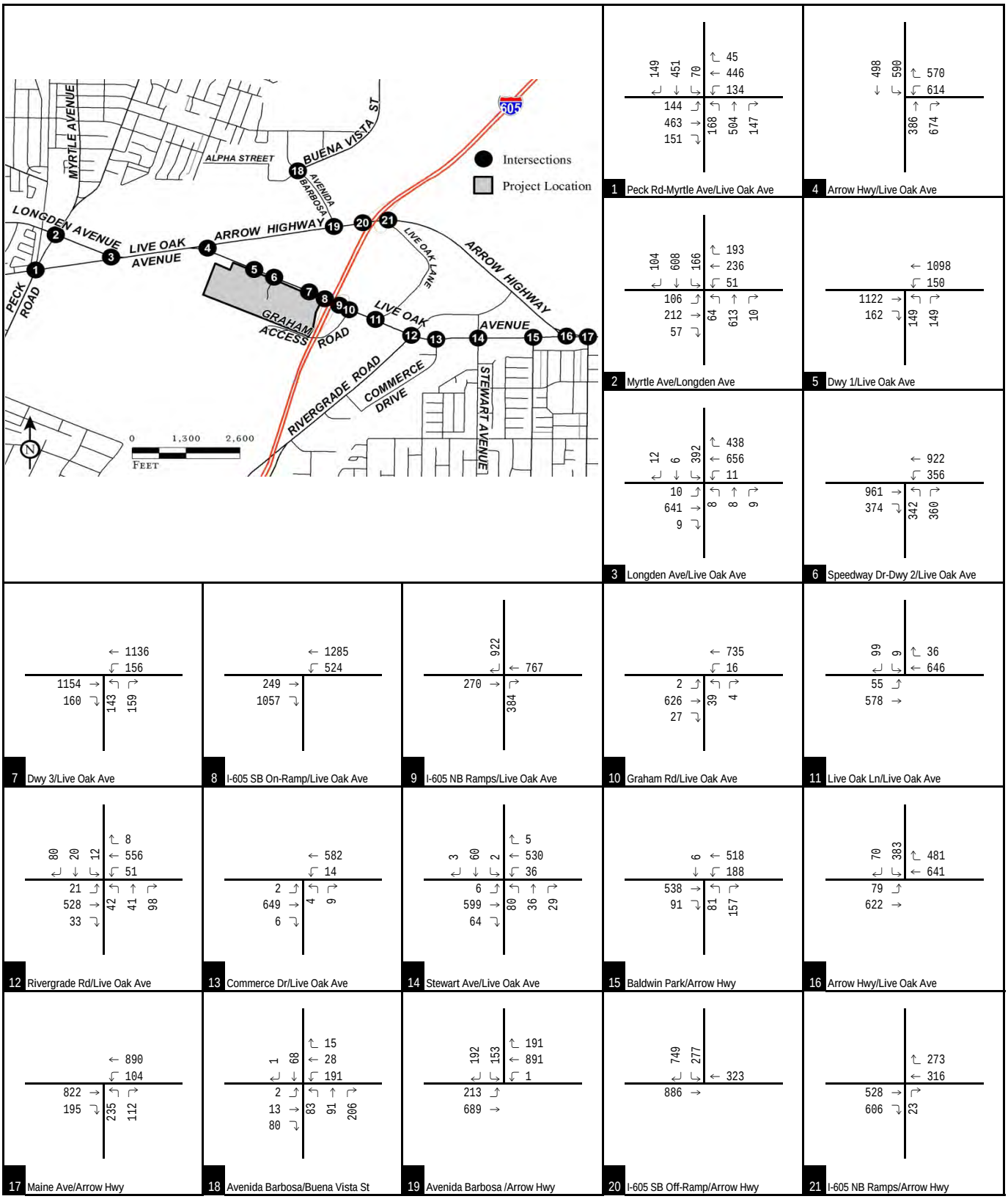
FIGURE 26

XXXX / YYYY AM / PM Peak Hour Volumes

Irwindale Regional Shopping Center

Traffic Impact Study

Future Baseline Plus Cumulative Projects With Project Peak Hour Traffic Volumes



LSA

FIGURE 27

XXXX Saturday Peak Hour Volumes

Irwindale Regional Shopping Center

Traffic Impact Study

Future Baseline Plus Cumulative Projects With Project (Saturday) Peak Hour Traffic Volumes

- Interstate 605 Northbound Off-Ramps/Live Oak Avenue (LOS F in the Saturday peak hour).

The future baseline plus cumulative projects with project LOS calculation worksheets are contained in Appendix D.

CIRCULATION IMPROVEMENTS

The Traffic Impact Analysis guidelines require that a traffic study provide recommendations for circulation improvements when any facility operates at a level of service below the target LOS, regardless of whether the deficiency is a background condition or caused by the project.

Existing Intersection Improvements

The following intersection improvements are required under existing conditions for all study intersections to meet the level of service standards:

- Driveway 1/Live Oak Avenue: Install a traffic signal.
- Interstate 605 Northbound Off-Ramps/Live Oak Avenue: Install a traffic signal and add a second northbound right-turn lane. It should be noted that these improvements are a joint improvement project between Caltrans and the City of Irwindale.

Table R shows the levels of service with improvements at study intersections for existing conditions. Figure 28 illustrates the intersection geometrics with the recommended improvements for existing conditions. With the implementation of the recommended circulation improvements, all intersections operate at satisfactory levels of service. The existing with improvements LOS calculation worksheets are contained in Appendix D.

Existing with Project Intersection Improvements

The following intersection improvements are required under existing with project conditions for all study intersections to meet the level of service standards:

- Driveway 1/Live Oak Avenue: Install a traffic signal.
- Driveway 3/Live Oak Avenue: Install a traffic signal.
- Interstate 605 Northbound Off-Ramps/Live Oak Avenue: Install a traffic signal and add a second northbound right-turn lane. It should be noted that these improvements are a joint improvement project between Caltrans and the City of Irwindale. The project's fair share of these improvements is listed later in this report under Project Fair Share.

Table S shows the levels of service with improvements at study intersections for existing with project conditions. Figure 29 illustrates the intersection geometrics with the recommended improvements for existing with project conditions. With the implementation of the recommended circulation improvements, all intersections operate at satisfactory levels of service. The LOS calculation worksheets are contained in Appendix D.

Table R - Existing Intersection Levels of Service (HCM Methodology) With Improvements

		Without Improvements[1]							With Improvements					
		AM Peak Hour			PM Peak Hour				AM Peak Hour			PM Peak Hour		
Intersection	Control	V/C	Delay	LOS	V/C	Delay	LOS		V/C	Delay	LOS	V/C	Delay	LOS
5 . Driveway 1/Live Oak Avenue	Signal	-	19.5	C	-	64.0	F	*	0.41	17.2	B	0.52	5.4	A
9 Interstate 605 Northbound Ramps/Live Oak Avenue	Signal	-	16.5	C	-	50.5	F	*	0.73	15.5	B	0.77	19.2	B

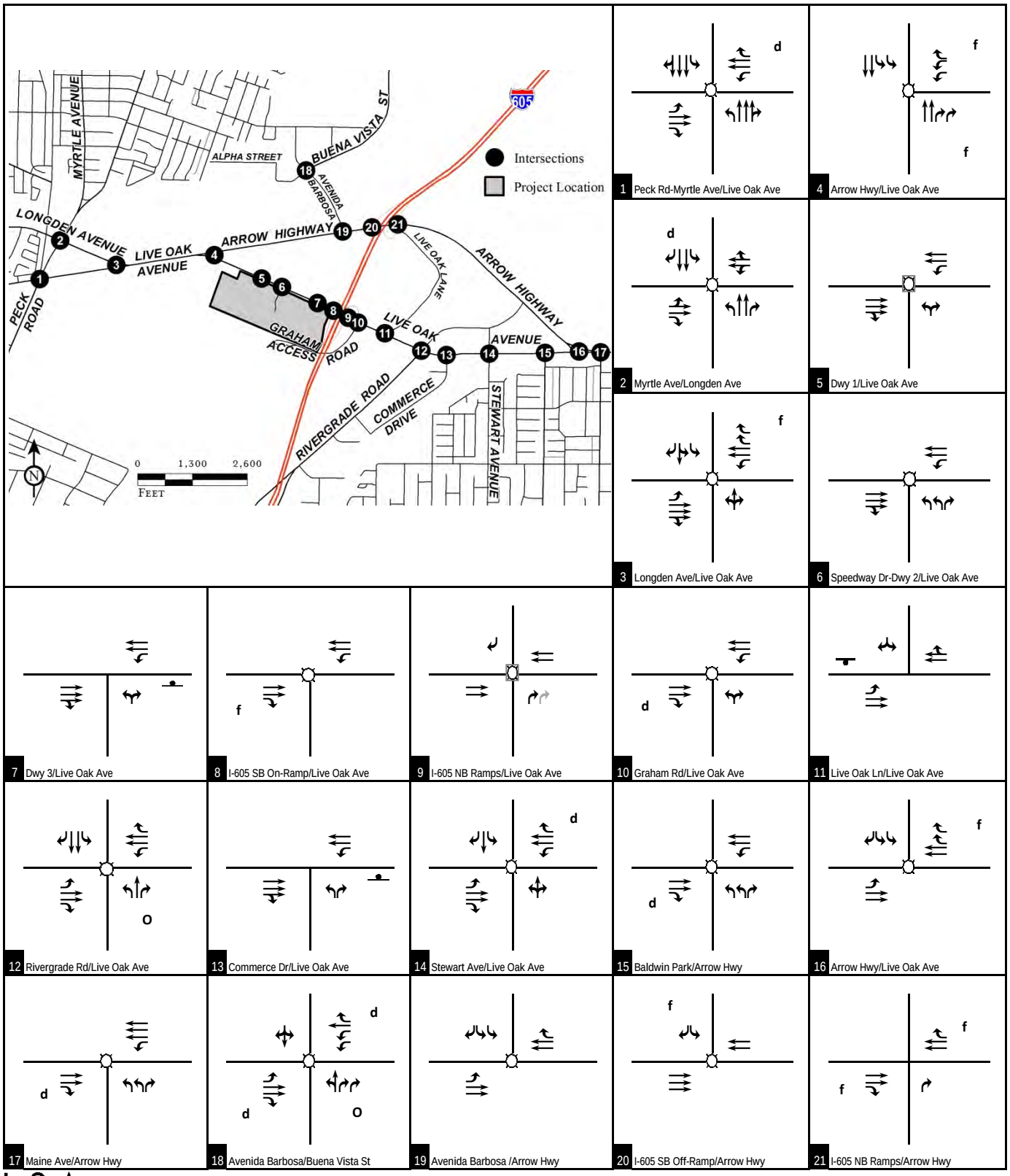
Notes: "*" = Exceeds Levels of Service

1 Under without improvement conditions, the intersections of Driveway 1/Live Oak Avenue and Interstate 605 NB Ramps/Live Oak Avenue are two-way stop controlled.

V/C = Volume/capacity ratio

Delay = Average control delay in seconds. At TWSC intersections, worst-case approach is reported.

LOS = Level of Service



LSA

FIGURE 28

Legend

Signal — Improvement

Stop Sign

O Overlap

f free right-turn

d de-facto right turn

Irwindale Regional Shopping Center

Existing (2014) With Improvements Intersection Geometrics and Stop Control

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Table S - Existing With Project Intersection Levels of Service (HCM Methodology) With Improvements

		Without Improvements[1]							With Improvements					
		AM Peak Hour			PM Peak Hour				AM Peak Hour			PM Peak Hour		
Intersection	Control	V/C	Delay	LOS	V/C	Delay	LOS		V/C	Delay	LOS	V/C	Delay	LOS
5 . Driveway 1/Live Oak Avenue	Signal	-	34.3	D	-	>100	F	*	0.37	4.0	A	0.66	12.0	B
7 . Driveway 3/Live Oak Avenue	Signal	-	34.1	D	-	>100	F	*	0.40	14.8	B	0.68	12.4	B
9 Interstate 605 Northbound Ramps/Live Oak Avenue	Signal	-	24.3	C	-	>100	F	*	0.82	19.4	B	0.89	23.2	C

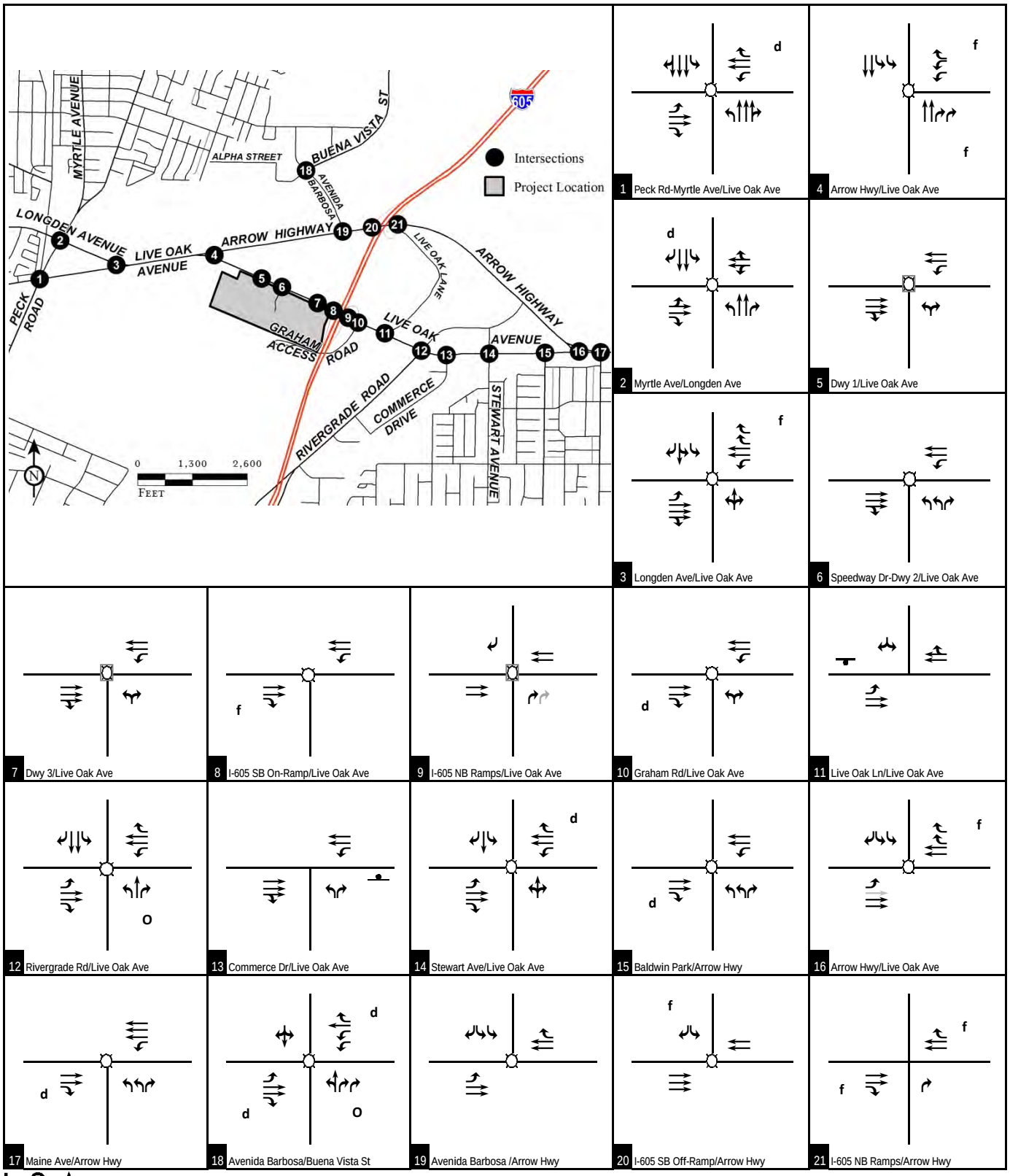
Notes: "*" = Exceeds Levels of Service

1 Under without improvement conditions, the intersections of Driveway 1/Live Oak Avenue, Driveway 3/Live Oak Avenue and Interstate 605 NB Ramps/Live Oak Avenue are two-way stop controlled.

V/C = Volume/capacity ratio

Delay = Average control delay in seconds. At TWSC intersections, worst-case approach is reported.

LOS = Level of Service



LSA

FIGURE 29

Legend

Signal — Improvement

Stop Sign

O Overlap

f free right-turn

d de-facto right turn

Irwindale Regional Shopping Center

Existing, Existing (Saturday), Future Baseline, Future Baseline (Saturday), and Future Baseline (Saturday) Plus Cumulative Projects With Project With Improvements Intersection Geometrics and Stop Control

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Existing (Saturday) with Project Intersection Improvements

The following intersection improvements are required under existing (Saturday) with project conditions for all study intersections to meet the level of service standards:

- Driveway 1/Live Oak Avenue: Install a traffic signal.
- Driveway 3/Live Oak Avenue: Install a traffic signal.
- Interstate 605 Northbound Off-Ramps/Live Oak Avenue: Install a traffic signal and add a second northbound right-turn lane. It should be noted that these improvements are a joint improvement project between Caltrans and the City of Irwindale. The project's fair share of these improvements is listed later in this report under Project Fair Share.

Table T shows the levels of service with improvements at study intersections for existing (Saturday) with project conditions. Previously referenced Figure 29 illustrates the intersection geometrics with the recommended improvements for existing (Saturday) with project conditions. With the implementation of the recommended circulation improvements, all intersections operate at satisfactory levels of service. The LOS calculation worksheets are contained in Appendix D.

Future Baseline with Project Intersection Improvements

The following intersection improvements are required under future baseline with project conditions for all study intersections to meet the level of service standards:

- Driveway 1/Live Oak Avenue: Install a traffic signal.
- Driveway 3/Live Oak Avenue: Install a traffic signal.
- Interstate 605 Northbound Off-Ramps/Live Oak Avenue: Install a traffic signal and add a second northbound right-turn lane. It should be noted that these improvements are a joint improvement project between Caltrans and the City of Irwindale. The project's fair share of these improvements is listed later in this report under Project Fair Share.
- Arrow Highway/Live Oak Avenue: Add an eastbound through lane. It should be noted on-street parking will be prohibited to accommodate a third eastbound through lane.

Table U shows the levels of service with improvements at the project driveways and I-605 Northbound Off-Ramps/Live Oak Avenue study intersections for future baseline with project conditions. Table V shows the levels of service with improvements at Arrow Highway/Live Oak Avenue for future baseline with project conditions. Previously referenced Figure 29 illustrates the intersection geometrics with the recommended improvements for future baseline with project conditions. With the implementation of the recommended circulation improvements, all intersections operate at satisfactory levels of service. The LOS calculation worksheets are contained in Appendix D.

Table T - Existing (Saturday) Intersection Levels of Service (HCM Methodology) With Improvements

Intersection	Control	Without Improvements[1] Peak Hour V/C	Delay	LOS		With Improvements Peak Hour V/C	Delay	LOS
5 . Driveway 1/Live Oak Avenue	Signal	-	>100	F	*	0.55	19.9	C
7 . Driveway 3/Live Oak Avenue	Signal	-	>100	F	*	0.56	20.1	C
9 Interstate 605 Northbound Ramps/Live Oak Avenue	Signal	-	>100	F	*	0.82	20.2	C

Notes: "*" = Exceeds Levels of Service

1 Under without improvement conditions, the intersections of Driveway 1/Live Oak Avenue, Driveway 3/Live Oak Avenue and Interstate 605 NB Ramps/Live Oak Avenue are two-way stop controlled.

V/C = Volume/capacity ratio

Delay = Average control delay in seconds. At TWSC intersections, worst-case approach is reported.

LOS = Level of Service

Table U - Future Baseline With Project Intersection Levels of Service (HCM Methodology) With Improvements

		Without Improvements[1]								With Improvements					
		AM Peak Hour				PM Peak Hour				AM Peak Hour			PM Peak Hour		
Intersection	Control	V/C	Delay	LOS		V/C	Delay	LOS		V/C	Delay	LOS	V/C	Delay	LOS
5 . Driveway 1/Live Oak Avenue	Signal	-	40.7	E	*	-	>100	F	*	0.40	14.9	B	0.69	12.0	B
7 . Driveway 3/Live Oak Avenue	Signal	-	40.9	E	*	-	>100	F	*	0.43	15.2	B	0.71	12.4	B
9 Interstate 605 Northbound Ramps/Live Oak Avenue	Signal	-	52.3	F	*	-	>100	F	*	0.88	22.8	C	0.95	26.6	C

Notes: "*" = Exceeds Levels of Service

1 Under without improvement conditions, the intersections of Driveway 1/Live Oak Avenue, Driveway 3/Live Oak Avenue and Interstate 605 NB Ramps/Live Oak Avenue are two-way stop controlled.

V/C = Volume/capacity ratio

Delay = Average control delay in seconds. At TWSC intersections, worst-case approach is reported.

LOS = Level of Service

Table V - Future Baseline With Project Intersection Levels of Service Summary (ICU Methodology) With Improvements

			Without Improvements					With Improvements			
			AM Peak Hour		PM Peak Hour			AM Peak Hour		PM Peak Hour	
	Intersection	Control	ICU	LOS	ICU	LOS		ICU	LOS	ICU	LOS
16	Arrow Highway/Live Oak Avenue	Signal	0.758	C	0.933	E	*	0.742	C	0.760	C

Notes: "*" = Exceeds Levels of Service

LOS = Level of Service

ICU = Intersection Capacity Utilization

Future Baseline (Saturday) with Project Intersection Improvements

The following intersection improvements are required under future baseline (Saturday) with project conditions for all study intersections to meet the level of service standards:

- Driveway 1/Live Oak Avenue: Install a traffic signal.
- Driveway 3/Live Oak Avenue: Install a traffic signal.
- Interstate 605 Northbound Off-Ramps/Live Oak Avenue: Install a traffic signal and add a second northbound right-turn lane. It should be noted that these improvements are a joint improvement project between Caltrans and the City of Irwindale. The project's fair share of these improvements is listed later in this report under Project Fair Share.

Table W shows the levels of service with improvements at study intersections for future baseline (Saturday) with project conditions. Previously referenced Figure 29 illustrates the intersection geometrics with the recommended improvements for future baseline (Saturday) with project conditions. With the implementation of the recommended circulation improvements, all intersections operate at satisfactory levels of service. The LOS calculation worksheets are contained in Appendix D.

Future Baseline plus Cumulative Projects with Project Intersection Improvements

The following intersection improvements are required under future baseline plus cumulative projects with project conditions for all study intersections to meet the level of service standards:

- Driveway 1/Live Oak Avenue: Install a traffic signal.
- Driveway 3/Live Oak Avenue: Install a traffic signal.
- Interstate 605 Northbound Off-Ramps/Live Oak Avenue: Install a traffic signal and add a second northbound right-turn lane. It should be noted that these improvements are a joint improvement project between Caltrans and the City of Irwindale. The project's fair share of these improvements is listed later in this report under Project Fair Share.
- Arrow Highway/Live Oak Avenue: Add an eastbound through lane. It should be noted on-street parking will be prohibited to accommodate a third eastbound through lane.
- Avenida Barbosa/Arrow Highway: Add a second eastbound left-turn lane.

Table X shows the levels of service with improvements at the project driveways and I-605 Northbound Off-Ramps/Live Oak Avenue for future baseline plus cumulative projects with project conditions. Table Y shows the levels of service with improvements at Arrow Highway/Live Oak Avenue and Avenida Barbosa/Arrow Highway for future baseline plus cumulative projects with project conditions. Figure 30 illustrates the intersection geometrics with the recommended improvements for future baseline plus cumulative projects with project conditions. With the implementation of the recommended circulation improvements, all intersections operate at satisfactory levels of service. The LOS calculation worksheets are contained in Appendix D.

Table W - Future Baseline With Project (Saturday) Intersection Levels of Service (HCM Methodology) With Improvements

Intersection	Control	Without Improvments[1] Peak Hour V/C	Delay	LOS		With Improvements Peak Hour V/C	Delay	LOS
5 . Driveway 1/Live Oak Avenue	Signal	-	>100	F	*	0.56	19.7	B
7 . Driveway 3/Live Oak Avenue	Signal	-	>100	F	*	0.57	19.8	B
9 Interstate 605 Northbound Ramps/Live Oak Avenue	Signal	-	>100	F	*	0.88	24.1	C

Notes: "*" = Exceeds Levels of Service

1 Under without improvement conditions, the intersections of Driveway 1/Live Oak Avenue, Driveway 3/Live Oak Avenue and Interstate 605 NB Ramps/Live Oak Avenue are two-way stop controlled.

V/C = Volume/capacity ratio

Delay = Average control delay in seconds. At TWSC intersections, worst-case approach is reported.

LOS = Level of Service

Table X - Future Baseline With Cumulative Projects With Project Intersection Levels of Service (HCM Methodology) With Improvements

		Without Improvements[1]								With Improvements					
		AM Peak Hour				PM Peak Hour				AM Peak Hour			PM Peak Hour		
Intersection	Control	V/C	Delay	LOS		V/C	Delay	LOS		V/C	Delay	LOS	V/C	Delay	LOS
5 . Driveway 1/Live Oak Avenue	Signal	-	46.20	E	*	-	>100	F	*	0.42	15.2	B	0.70	11.9	B
7 . Driveway 3/Live Oak Avenue	Signal	-	46.40	E	*	-	>100	F	*	0.45	15.5	B	0.72	12.4	B
9 Interstate 605 Northbound Ramps/Live Oak A	Signal	-	75.80	F	*	-	>100	F	*	0.96	30.8	C	0.98	30.7	C

Notes: "*" = Exceeds Levels of Service

1 Under without improvement conditions, the intersections of Driveway 1/Live Oak Avenue and Interstate 605 NB Ramps/Live Oak Avenue are two-way stop controlled.

V/C = Volume/capacity ratio

Delay = Average control delay in seconds. At TWSC intersections, worst-case approach is reported.

LOS = Level of Service

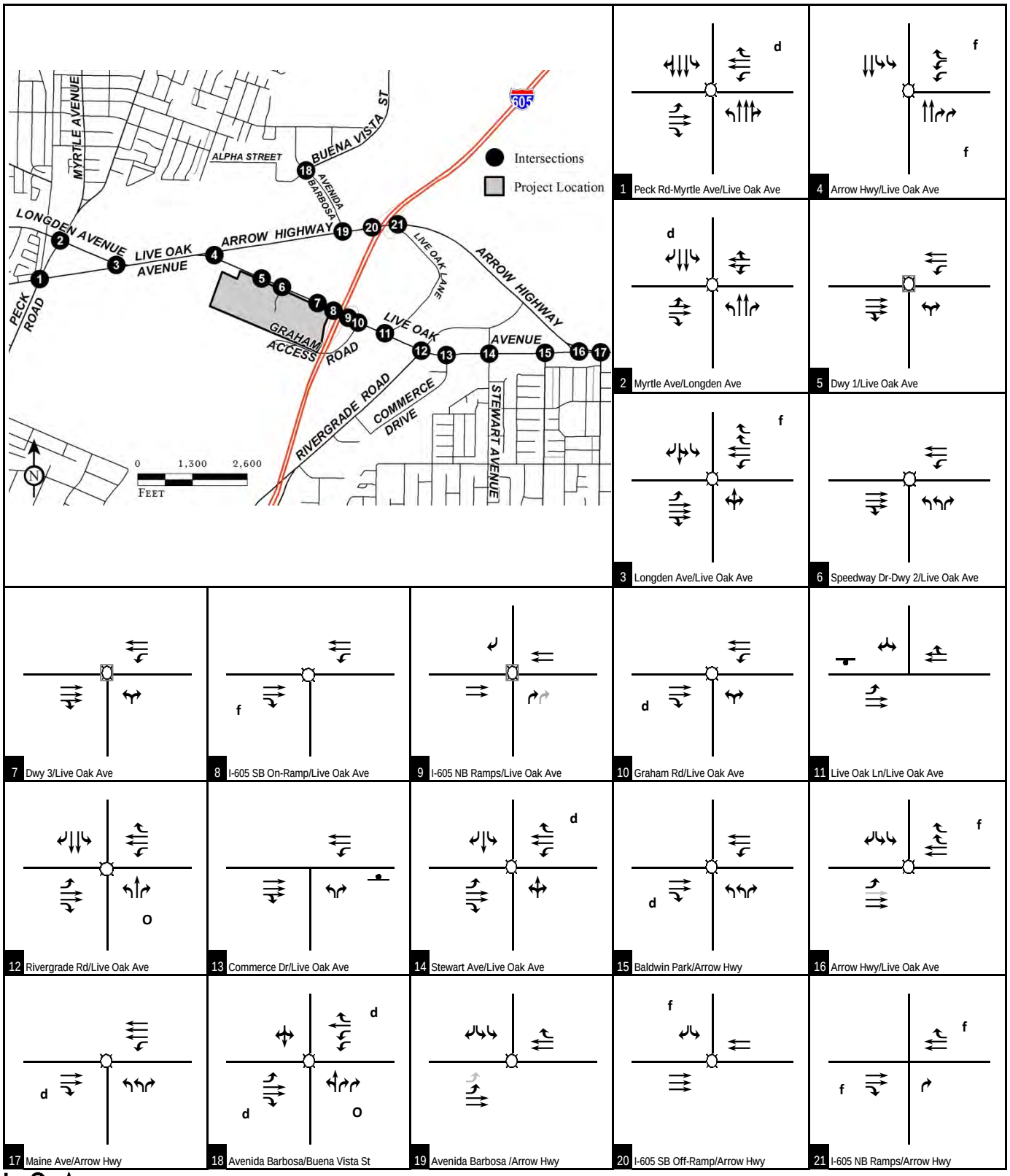
Table Y - Future Baseline With Cumulative Projects Intersection Levels of Service Summary (ICU Methodology) With Improvements

			Without Improvements						With Improvements				
			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour	
	Intersection	Control	ICU	LOS		ICU	LOS		ICU	LOS		ICU	LOS
16	Arrow Highway/Live Oak Avenue	*	0.799	C		0.972	E	*	0.799	C		0.806	D
19	Avenida Barbosa/Arrow Highway	Signal	0.967	E	*	0.749	C		0.858	D		0.677	B

Notes: "*" = Exceeds Levels of Service

LOS = Level of Service

ICU = Intersection Capacity Utilization



LSA

FIGURE 30

Legend

Signal — Improvement

Stop Sign

O Overlap

f free right-turn

d de-facto right turn

Irwindale Regional Shopping Center

Future Baseline Plus Cumulative Projects With Project With Improvements

Intersection Geometrics and Stop Control

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Future Baseline (Saturday) plus Cumulative Projects with Project Intersection Improvements

The following intersection improvements are required under future baseline (Saturday) with project conditions for all study intersections to meet the level of service standards:

- Driveway 1/Live Oak Avenue: Install a traffic signal.
- Driveway 3/Live Oak Avenue: Install a traffic signal.
- Interstate 605 Northbound Off- Ramps/Live Oak Avenue: Install a traffic signal and add a second northbound right-turn lane. It should be noted that these improvements are a joint improvement project between Caltrans and the City of Irwindale. The project's fair share of these improvements is listed later in this report under Project Fair Share.

Table Z shows the levels of service with improvements at study intersections for future baseline (Saturday) plus cumulative projects with project conditions. Previously referenced Figure 29 illustrates the intersection geometrics with the recommended improvements for future baseline plus cumulative projects with project conditions. With the implementation of the recommended circulation improvements, all intersections operate at satisfactory levels of service. The LOS calculation worksheets are contained in Appendix D.

PROJECT FAIR SHARE

The project fair-share contribution for affected intersections is based on the City's Policy Guidelines for Traffic Impact Reports. The fair share for the project was calculated at the ratio of the project trips over the trips under existing with project conditions. Table AA shows the project fair share at each affected location.

FREEWAY SEGMENT AND RAMP JUNCTION LEVEL OF SERVICE ANALYSIS

A level of service analysis was conducted to evaluate freeway segment and ramp junctions based on HCM methodologies. Performance is measured by a density (pc/mi/ln) range that measures passenger cars per mile per lane. Speed of travel, density and volume are the factors that evaluate freeway mainline performance. The LOS calculation worksheets are contained in Appendix D.

Existing Conditions

Table BB summarizes a.m. and p.m. peak hour freeway mainline and ramp junction traffic volumes and levels of service under existing conditions. Table CC summarizes Saturday peak hour freeway mainline and ramp junction traffic volumes and levels of service. As Tables BB and CC show, all freeway segments and ramp junctions operate at a satisfactory LOS D or better under existing without and with project conditions.

Table Z - Future Baseline Saturday With Cumulative Projects With Project
Intersection Levels of Service (HCM Methodology)

Intersection	Control	Without Improvements				With Improvements		
		Peak Hour				AM Peak Hour		
		V/C	Delay	LOS		V/C	Delay	LOS
5 . Driveway 1/Live Oak Avenue	TWSC	-	>100	F	*	-	19.5	C
7 . Driveway 3/Live Oak Avenue	TWSC	-	>100	F	*	-	19.7	C
9 Interstate 605 Northbound Ramps/Live Oak Avenue	Signal	-	>100	F	*	0.92	27.2	C

Notes: "*" = Exceeds Levels of Service
TWSC = Two-Way Stop Control
V/C = Volume/capacity ratio
Delay = Average control delay in seconds. At TWSC intersections, worst-case approach is reported.
LOS = Level of Service

Table AA - Project Fair Share

Intersection	A.M. Peak Hour			P.M. Peak Hour			Saturday			
	Existing WP Volume	Project Trips	Project %	Existing WP Volume	Project Trips	Project %	Existing WP Volume	Project Trips	Project %	Worst Case
5 . Driveway 1/Live Oak Avenue	2,381	291	12.2%	3,814	714	18.7%	2,805	1,281	45.7%	45.7%
7 . Driveway 3/Live Oak Avenue	2,355	291	12.4%	3,801	718	18.9%	2,760	1,285	46.6%	46.6%
9 . Interstate 605 Northbound Ramps/Live Oak Avenue	2,786	184	6.6%	3,610	277	7.7%	2,154	547	25.4%	25.4%
16 . Arrow Highway/Live Oak Avenue	3,983	14	0.4%	3,789	23	0.6%	1,972	38	1.9%	1.9%
19 . Avenida Barbosa/Arrow Highway	3,077	188	6.1%	2,592	451	17.4%	2,078	854	41.1%	41.1%

Table BB - Existing Freeway Segment and Ramp Junction Levels of Service Analysis

			Without Project								With Project							
			AM Peak Hour				PM Peak Hour				AM Peak Hour				PM Peak Hour			
I-605 Freeway	Type	Mainline Lanes	PCE Vol.	Speed (m/hr)	Density (pc/m/ln)	LOS	PCE Vol.	Speed (m/hr)	Density (pc/m/ln)	LOS	PCE Vol.	Speed (m/hr)	Density (pc/m/ln)	LOS	PCE Vol.	Speed (m/hr)	Density (pc/m/ln)	LOS
Northbound																		
1 North of Arrow Highway	Basic	4	4902	70	19.0	C	4298	70	16.7	B	4949	70	19.2	C	4523	70	17.6	B
2 . Arrow Highway Slip On-Ramp	1 Lane On	4	382	61	17.9	B	232	61	16.1	B	382	61	18.0	B	232	61	16.8	B
3 . Arrow Highway Loop On-Ramp to Arrow Highway Slip On-Ramp	Basic	4	4520	70	17.5	B	4066	70	15.8	B	4567	70	17.7	B	4291	70	16.7	B
4 . Arrow Highway Loop On-Ramp	1 Lane On	4	312	61	16.8	B	94	61	15.4	B	359	61	16.9	B	319	61	16.1	B
5 . Live Oak Avenue Off-Ramp to Arrow Highway Loop On-Ramp	Basic	4	4208	70	16.3	B	3972	70	15.4	B	4208	70	16.9	B	3972	70	15.4	B
6 . Live Oak Avenue Off-Ramp	1 Lane Off	4	750	56	27.1	C	1302	55	31.3	D	881	56	28.3	D	1463	54	32.8	D
7 . South of Live Oak Avenue	Basic	4	4958	70	19.2	C	5274	70	20.5	C	5089	70	19.8	C	5435	70	21.1	C
Southbound																		
8 . North of Arrow Highway	Basic	4	6341	69	25.1	C	5041	70	19.6	C	6468	68	25.7	C	5244	70	20.4	C
9 . Arrow Highway Slip Off-Ramp	1 Lane Off	4	896	56	31.7	D	584	56	24.7	C	1023	55	32.9	D	787	56	26.6	C
10 . Arrow Highway Slip Off-Ramp to Live Oak Avenue Slip On-Ramp	Basic	4	5445	70	21.2	C	4457	70	17.3	B	5445	70	21.2	C	4457	70	17.3	B
11 . Live Oak Canyon On-Ramp	1 Lane On	4	1209	60	23.2	C	1551	61	22.0	C	1257	60	23.3	C	1792	60	22.7	C
12 . South of Arrow Highway	Basic	4	6654	68	26.7	D	6008	69	23.6	C	6702	68	26.9	D	6249	69	24.7	C

Notes:
m/hr : miles per hour
pc/m/ln: passanger cars per hour per lane

Table CC - Existing Freeway Segment and Ramp Junction Levels of Service Analysis

			Saturday Peak Hour							
			Without Project				With Project			
I-605 Freeway	Type	Mainline Lanes	PCE Vol.	Speed (m/hr)	Density (pc/m/ln)	LOS	PCE Vol.	Speed (m/hr)	Density (pc/m/ln)	LOS
Northbound										
1 North of Arrow Highway	Basic	4	4814	70	18.7	C	5195	70	20.2	C
2 . Arrow Highway Slip On-Ramp	1 Lane On	4	228	61	17.6	B	228	61	18.7	B
3 . Arrow Highway Loop On-Ramp to Arrow Highway Slip On-Ramp	Basic	4	4586	70	17.8	B	4967	70	19.3	C
4 . Arrow Highway Loop On-Ramp	1 Lane On	4	176	61	16.9	B	557	61	18.1	B
5 . Live Oak Avenue Off-Ramp to Arrow Highway Loop On-Ramp	Basic	4	4410	70	17.1	B	4410	70	17.1	B
6 . Live Oak Avenue Off-Ramp	1 Lane Off	4	786	56	28.2	D	1193	55	32.0	D
7 . South of Live Oak Avenue	Basic	4	5196	70	20.2	C	5603	70	21.8	C
Southbound										
8 . North of Arrow Highway	Basic	4	5152	70	20.0	C	5587	70	21.8	C
9 . Arrow Highway Slip Off-Ramp	1 Lane Off	4	509	57	24.8	C	944	55	28.8	D
10 . Arrow Highway Slip Off-Ramp to Live Oak Avenue Slip On-Ramp	Basic	4	4643	70	18.0	C	4643	70	18.0	C
11 . Live Oak Canyon On-Ramp	1 Lane On	4	1031	61	21.0	C	1457	61	22.1	C
12 . South of Arrow Highway	Basic	4	5674	70	22.1	C	6100	69	24.0	C

Notes:
m/hr : miles per hour
pc/m/ln: passanger cars per hour per lane

Future Baseline Conditions

Table DD summarizes a.m. and p.m. peak hour freeway mainline and ramp junction traffic volumes and levels of service under future baseline conditions. Table EE summarizes Saturday peak hour freeway mainline and ramp junction traffic volumes and levels of service. As Tables DD and EE show, all freeway segments and ramp junctions operate at a satisfactory LOS D or better under future baseline conditions without and with project conditions.

Future Baseline plus Cumulative Project Conditions

Table FF summarizes a.m. and p.m. peak hour freeway mainline and ramp junction traffic volumes and levels of service under future baseline plus cumulative project conditions. Table GG summarizes Saturday peak hour freeway mainline and ramp junction traffic volumes and levels of service. As Tables FF and GG show, all freeway segments and ramp junctions operate at a satisfactory LOS D or better under future baseline plus cumulative conditions without and with project conditions.

CONGESTION MANAGEMENT PROGRAM ANALYSIS

The City of Irwindale is within the jurisdiction of Los Angeles County; consequently, all CMP requirements have been addressed to be consistent with the program's purposes described below:

- To link local land use decisions with their impacts on regional transportation, and air quality; and
- To develop a partnership among transportation decision-makers on devising appropriate transportation solutions that include all modes of travel.

To reach these objectives, the Los Angeles County Metropolitan Transportation Authority CMP provides:

- Tracking and analysis to determine how the regional highway and transit systems are performing;
- Local analysis of the impacts of local land use decisions on regional transportation;
- Local implementation of Transportation Demand Management (TDM) design guidelines that ensure new development includes improvements supportive of transit and TDM; and
- Tracking new building activity throughout Los Angeles County.

Per the CMP Traffic Impact Analysis Guidelines, a traffic impact analysis must be conducted where:

- The proposed project will add 50 or more trips at CMP arterial monitoring intersections during the a.m. and p.m. weekday peak hours; or
- The proposed project will add 150 or more trips, in either direction, at CMP mainline monitoring locations during the a.m. or p.m. weekday peak hours.

Since there are no CMP intersections included in the study area, a CMP analysis for intersections is not required.

Table DD - Future Baseline Freeway Segment and Ramp Junction Levels of Service Analysis

			Without Project								With Project							
			AM Peak Hour				PM Peak Hour				AM Peak Hour				PM Peak Hour			
I-605 Freeway	Type	Mainline Lanes	PCE Vol.	Speed (m/hr)	Density (pc/m/ln)	LOS	PCE Vol.	Speed (m/hr)	Density (pc/m/ln)	LOS	PCE Vol.	Speed (m/hr)	Density (pc/m/ln)	LOS	PCE Vol.	Speed (m/hr)	Density (pc/m/ln)	LOS
Northbound																		
1 North of Arrow Highway	Basic	4	4989	70	19.4	C	4317	70	16.8	B	5036	70	19.5	C	4542	70	17.6	B
2 . Arrow Highway Slip On-Ramp	1 Lane On	4	413	61	18.1	B	251	61	16.2	B	413	61	18.2	B	251	61	18.2	B
3 . Arrow Highway Loop On-Ramp to Arrow Highway Slip On-Ramp	Basic	4	4576	70	17.8	B	4066	70	15.8	B	4623	70	17.9	B	4291	70	16.7	B
4 . Arrow Highway Loop On-Ramp	1 Lane On	4	337	61	16.9	B	102	61	15.4	B	384	61	17.1	B	327	61	16.1	B
5 . Live Oak Avenue Off-Ramp to Arrow Highway Loop On-Ramp	Basic	4	4239	70	16.5	B	3964	70	15.4	B	4239	70	18.2	C	3964	70	15.4	B
6 . Live Oak Avenue Off-Ramp	1 Lane Off	4	810	56	27.7	C	1406	54	32.2	D	941	55	29.0	D	1567	54	33.5	D
7 . South of Live Oak Avenue	Basic	4	5049	70	19.6	C	5370	70	20.9	C	5180	70	20.1	C	5531	70	21.5	C
Southbound																		
8 . North of Arrow Highway	Basic	4	6436	68	25.6	C	5072	70	20.9	C	6563	68	26.2	D	5275	70	20.5	C
9 . Arrow Highway Slip Off-Ramp	1 Lane Off	4	967	55	32.4	D	630	56	25.1	C	1094	55	33.6	D	833	56	27.0	C
10 . Arrow Highway Slip Off-Ramp to Live Oak Avenue Slip On-Ramp	Basic	4	5469	70	21.3	C	4442	70	17.2	B	5469	69	21.3	C	4442	70	17.2	B
11 . Live Oak Canyon On-Ramp	1 Lane On	4	1306	60	23.5	C	1675	61	22.3	C	1357	60	23.6	C	1927	60	23.0	C
12 . South of Arrow Highway	Basic	4	6775	67	27.3	D	6117	69	24.1	C	6826	67	27.6	D	6369	69	25.3	C

Notes:
m/hr : miles per hour
pc/m/ln: passanger cars per hour per lane

Table EE - Future Baseline Freeway Segment and Ramp Junction Levels of Service Analysis

			Saturday Peak Hour							
			Without Project				With Project			
I-605 Freeway	Type	Mainline Lanes	PCE Vol.	Speed (m/hr)	Density (pc/m/ln)	LOS	PCE Vol.	Speed (m/hr)	Density (pc/m/ln)	LOS
Northbound										
1 North of Arrow Highway	Basic	4	4879	70	18.9	C	5260	70	20.4	C
2 . Arrow Highway Slip On-Ramp	1 Lane On	4	246	61	17.8	B	246	61	18.9	B
3 . Arrow Highway Loop On-Ramp to Arrow Highway Slip On-Ramp	Basic	4	4633	70	18.0	B	5014	70	19.5	C
4 . Arrow Highway Loop On-Ramp	1 Lane On	4	190	61	17.1	B	571	61	18.2	B
5 . Live Oak Avenue Off-Ramp to Arrow Highway Loop On-Ramp	Basic	4	4443	70	17.2	B	4443	70	17.2	B
6 . Live Oak Avenue Off-Ramp	1 Lane Off	4	849	56	28.9	D	1256	55	32.8	D
7 . South of Live Oak Avenue	Basic	4	5292	70	20.6	C	5699	70	22.2	C
Southbound										
8 . North of Arrow Highway	Basic	4	5210	70	20.2	C	5645	70	22.0	C
9 . Arrow Highway Slip Off-Ramp	1 Lane Off	4	549	57	25.2	C	984	55	29.3	D
10 . Arrow Highway Slip Off-Ramp to Live Oak Avenue Slip On-Ramp	Basic	4	4661	70	18.1	C	4661	70	18.1	C
11 . Live Oak Canyon On-Ramp	1 Lane On	4	1113	61	21.2	C	1539	61	22.3	C
12 . South of Arrow Highway	Basic	4	5774	70	22.6	C	6199	69	24.5	C

Notes:
m/hr : miles per hour
pc/m/ln: passanger cars per hour per lane

Table FF - Future Baseline Plus Cumulative Projects Segment and Ramp Junction Levels of Service Analysis

			Without Project								With Project							
			AM Peak Hour				PM Peak Hour				AM Peak Hour				PM Peak Hour			
I-605 Freeway	Type	Mainline Lanes	PCE Vol.	Speed (m/hr)	Density (pc/m/ln)	LOS	PCE Vol.	Speed (m/hr)	Density (pc/m/ln)	LOS	PCE Vol.	Speed (m/hr)	Density (pc/m/ln)	LOS	PCE Vol.	Speed (m/hr)	Density (pc/m/ln)	LOS
Northbound																		
1 North of Arrow Highway	Basic	4	4979	70	19.3	C	4332	70	16.8	B	5026	70	19.5	C	4557	70	17.7	B
2 . Arrow Highway Slip On-Ramp	1 Lane On	4	579	61	18.1	B	417	61	16.3	B	579	61	18.2	B	417	61	16.9	B
3 . Arrow Highway Loop On-Ramp to Arrow Highway Slip On-Ramp	Basic	4	4400	70	17.1	B	3915	70	15.2	B	4447	70	17.3	B	4140	70	16.1	B
4 . Arrow Highway Loop On-Ramp	1 Lane On	4	348	61	16.4	B	128	61	14.9	B	395	61	16.6	B	353	61	15.7	B
5 . Live Oak Avenue Off-Ramp to Arrow Highway Loop On-Ramp	Basic	4	4052	70	15.7	B	3787	70	14.7	B	4052	70	15.7	B	3787	70	14.7	B
6 . Live Oak Avenue Off-Ramp	1 Lane Off	4	997	55	28.7	D	1583	54	33.1	D	1128	55	30.0	D	1744	53	34.6	D
7 . South of Live Oak Avenue	Basic	4	5049	70	19.6	C	5370	70	20.9	C	5180	70	20.1	C	5531	70	21.5	C
Southbound																		
8 . North of Arrow Highway	Basic	4	6463	68	25.7	C	5065	70	19.7	C	6590	68	26.4	D	5268	70	20.5	C
9 . Arrow Highway Slip Off-Ramp	1 Lane Off	4	1146	55	33.5	D	809	56	26.8	C	1273	55	34.7	D	1012	55	27.9	C
10 . Arrow Highway Slip Off-Ramp to Live Oak Avenue Slip On-Ramp	Basic	4	5317	70	20.7	C	4256	70	16.5	B	5317	70	20.7	C	4256	70	16.5	B
11 . Live Oak Canyon On-Ramp	1 Lane On	4	1458	60	23.4	C	1861	60	22.6	C	1506	60	23.5	C	2102	60	23.3	C
12 . South of Arrow Highway	Basic	4	6775	67	27.3	D	6117	69	24.1	C	6823	67	27.6	D	6358	69	25.2	C

Notes:
m/hr : miles per hour
pc/m/ln: passanger cars per hour per lane

Table GG - Future Baseline Plus Cumulative Projects Segment and Ramp Junction Levels of Service Analysis

			Saturday Peak Hour							
			Without Project				With Project			
I-605 Freeway	**Type**	**Mainline Lanes**	**PCE Vol.**	**Speed (m/hr)**	**Density (pc/m/ln)**	**LOS**	**PCE Vol.**	**Speed (m/hr)**	**Density (pc/m/ln)**	**LOS**
Northbound										
1 North of Arrow Highway	Basic	4	4156	70	16.1	B	4537	70	17.6	B
2 . Arrow Highway Slip On-Ramp	1 Lane On	4	273	61	15.7	B	273	61	16.8	B
3 . Arrow Highway Loop On-Ramp to Arrow Highway Slip On-Ramp	Basic	4	3883	70	15.1	B	4264	70	16.6	B
4 . Arrow Highway Loop On-Ramp	1 Lane On	4	225	61	14.9	B	606	61	16.3	B
5 . Live Oak Avenue Off-Ramp to Arrow Highway Loop On-Ramp	Basic	4	3658	70	14.2	B	3658	70	14.2	B
6 . Live Oak Avenue Off-Ramp	1 Lane Off	4	900	56	26.2	C	1307	54	30.0	D
7 . South of Live Oak Avenue	Basic	4	4558	70	17.7	B	4965	70	19.3	C
Southbound										
8 . North of Arrow Highway	Basic	4	4807	70	18.7	C	5242	70	20.4	C
9 . Arrow Highway Slip Off-Ramp	1 Lane Off	4	591	56	23.8	C	1026	55	27.9	C
10 . Arrow Highway Slip Off-Ramp to Live Oak Avenue Slip On-Ramp	Basic	4	4216	70	16.4	B	4216	70	16.4	B
11 . Live Oak Canyon On-Ramp	1 Lane On	4	1156	61	20.3	C	1582	61	21.6	C
12 . South of Arrow Highway	Basic	4	5372	70	20.9	C	5797	70	22.6	C

Notes:
m/hr : miles per hour
pc/m/ln: passanger cars per hour per lane

For freeway segments, a regional trip distribution and assignment were developed to determine the need for a CMP analysis. Based on the trip distribution factors included in the 2010 CMP, 68 percent of all project trips would remain inside Regional Statistical Area (RSA) 26, an area generally bounded by the Cities of Azusa, Glendora, Diamond Bar, and Hacienda Heights. Therefore, 68 percent of all freeway trips would travel inside the RSA 26 via SR-210, I-605, I-10, and SR-60. Table HH summarizes the regional project trip distribution and assignment used for analysis. Table II illustrates the regional trip assignment at nearby CMP monitoring locations during the a.m. and p.m. peak hours. As Table II shows, the project would not add 150 or more trips (in either direction) to a CMP monitoring location during the a.m. and p.m. peak hours; therefore, no CMP monitoring locations were analyzed.

Pedestrian Circulation

Under existing conditions, the project site has extremely limited pedestrian access as there are no sidewalks in the vicinity of or adjacent to the project site. The project incorporates on-site sidewalks to connect the shopping center to Live Oak Avenue.

Bicycle Circulation

The closest bicycle route to the project is the San Gabriel River Trail. This trail currently provides bicycle access approximately half a mile east of the project between the intersections of Live Oak Lane/Live Oak Avenue and Rivergrade Road/Live Oak Avenue. The San Gabriel River Trail extends through Irwindale's neighboring cities starting at the south end near Whittier Narrows Recreation Area into El Monte, Baldwin Park, and Azusa. The San Gabriel River Trail is approximately 28 miles and is mainly used for recreational purposes; however, it could be used to travel from Azusa and Duarte to Irwindale or from El Monte and Baldwin Park to Irwindale as an alternative means of transportation to the project site. There are no bike lanes on Live Oak Avenue in the project vicinity. However, bicycle travel can occur along these routes to employment, shopping, or recreational destinations. There are no future plans to incorporate future bicycle lanes; however, roads are feasible for cyclists and motorists to share the road.

Transit Impact Review

As required by the 2010 Los Angeles County CMP, LSA reviewed existing transit services within the project area. Foothill Transit serves the San Gabriel and Pomona Valleys, including the City of Irwindale. Three Foothill transit bus routes (Routes 270, 272 and 492) exist along Longden Avenue and Live Oak Avenue. The San Bernardino line of Metrolink provides weekday and Saturday train service to and from Los Angeles. The nearest station is located approximately 3 miles southeast of the project in the City of Baldwin Park. Based on the 2009 CMP Transit Monitoring Network (Exhibit 3-2 in the LA CMP), there are no CMP transit routes within the project site.

To estimate transit trip generation for the project, the project trip generation (previously referenced Table Q) was adjusted by the values set forth in the CMP (i.e., person trips equal 1.4 times vehicle trips, and transit trips equal 3.5% of total person trips). Based on this methodology, the proposed

Table HH - Regional Freeway Trip Distribution

Destination	RSA %/ Distribution[1]	A.M. Peak Hour			P.M. Peak Hour			Saturday Peak Hour			
		In	Out	Total	In	Out	Total	In	Out	Total	Daily
Number of Project Inside RSA 26	68.0%	233	86	319	232	298	529	451	414	865	12,096
Number of project Trips on Local Roadways (Inside RSA 26)	23.0%	79	29	108	78	101	179	152	140	293	4,091
Number of Trips on Freeway											
North of Arrow Highway	37.0%	127	47	174	126	162	288	245	226	471	6,582
South of Live Oak Avenue	40.0%	137	51	188	136	175	311	265	244	509	7,115
Total Freeway	77.0%	263	98	361	262	337	599	510	469	979	13,697
Number of Freeway Trips Inside RSA 26	45.0%	154	57	211	153	197	350	298	274	572	8,005
Number of Freeway Trips Outside RSA 26	32.0%	109	41	150	109	140	249	212	195	407	5,692
Number of Freeway Trips Inside RSA 26 (Northbound on I-605	48.1%	74	27	101	74	95	168	143	132	275	3,846
Number of Freeway Trips Inside RSA 26 (Southbound on I-605	51.9%	80	30	110	80	102	182	155	142	297	4,158
Number of Freeway Trips Outside RSA 26 (Northbound on I-6	48.1%	53	20	72	52	67	120	102	94	196	2,735
Number of Freeway Trips Outside RSA 26 (Southbound on I-6	51.9%	57	21	78	57	73	129	110	101	211	2,957

Notes:

[1] Freeway distribution percentages are based on the transportation impact analysis guidelines included in the Los Angeles County Metropolitan Authority 2010 Congestion Management Program (CMP). Based on the trip distribution percentages included in the 2010 CMP for Regional Statistical Area (RSA) 26, 68% of non-work trips will stay inside RSA 26.

Table II - Project Trip Assignment at CMP Freeway Monitoring Locations

CMP Monitoring Location	A.M. Peak Hour			P.M. Peak Hour			Saturday Peak Hour			Daily
	In	Out	Total	In	Out	Total	In	Out	Total	
Interstate 605										
North of State Route 60	53	20	73	53	68	121	103	96	199	2775
Interstate 10										
East of Peck Rd.	43	16	59	43	55	98	82	75	157	2206
East of Puente Ave.	41	15	56	41	53	94	79	73	152	2134
East of Grand Ave.	27	10	37	27	35	62	53	48	101	1423
West of Dudley St.	14	5	19	14	17	31	26	24	50	712
State Route 210										
Rosemead Bl	38	22	60	44	48	92	74	68	142	1975
West of Interstate 605	74	27	101	86	94	180	142	130	272	3817
West of San Dimas Ave										
State Route 60										
West of Peck Rd	17	7	24	17	21	38	32	29	61	861
East of Interstate 605	17	7	24	17	21	38	32	29	61	861
East of Nogales St	13	5	18	13	16	29	24	22	46	653
East of Brea Canyon Rd	9	4	13	9	11	20	16	15	31	445
East of State Route 57	7	3	10	7	9	16	13	12	25	358
State Route 57										
South of Pathfinder Rd	3	1	4	3	4	7	7	6	13	179
South of Interstate 210 and 10 Interchanges	3	1	4	3	4	7	7	6	13	179

project is forecast to generate approximately 872 daily transit trips, 23 a.m. peak-hour transit trips (17 inbound and 6 outbound), and 38 p.m. peak-hour transit trips (18 inbound and 20 outbound).

It is anticipated that the existing transit services within the project area would be able to accommodate the project-generated transit trips. There is a minimum of seven buses, which equates to a feasible assignment of 4 passengers per bus, when distributed evenly among all routes. As stated previously, the project site is currently serviced by Foothill Transit Service, which includes bus stops on Routes 78, 79, 270, 272, 378, and 492 located adjacent to the intersections of Myrtle Avenue/ Longden Avenue, Live Oak Avenue/Stewart Avenue, and Live Oak Avenue/Longden Avenue. The nearest bus stop is located within a mile from the proposed project.

Queuing Analysis

Queuing analysis has been conducted for the unsignalized project driveways and the study intersections under Caltrans jurisdiction. Table JJ shows the queuing for the without and with project conditions for all analysis scenarios. Table KK shows the queuing for the existing and with project conditions with recommended improvements for all analysis scenarios. As shown in previously referenced Table KK, vehicle queuing improves for all the study intersections with the exception of the intersection of I-605 Northbound Off-Ramps/Live Oak Avenue. As such, overall traffic operations (LOS and delay) at this intersection improve significantly due to the implementation of a new traffic signal. The queuing deteriorates for the eastbound and westbound through movements, which were previously unsignalized.

Parking Analysis

The Irwindale Regional Shopping Center’s site plan provided by the applicant shows an approximate proposed supply of 3,417 parking spaces on site. The peak parking demand for the proposed project was calculated using parking generation from Chapter 17.64.030 of the City Irwindale Municipal Code. Based on discussions and in accordance with the Municipal Code, the proposed shopping center would generate a peak parking demand of 2,800 parking spaces (1 space per 250 square feet). In agreement and coordination with City staff, the proposed project would provide parking at a more conservative rate of 1 space per 200 square feet or 1 stall per 1,000 square feet of gross floor area. The parking supply of 3,417 parking spaces would be sufficient to accommodate the peak parking demand of 2,800 spaces.

Table JJ - Queuing Analysis

Intersection	Movement	Existing Storage Length[1] (feet)	Existing Conditions 95th Percentile Queue (Vehicles/lane)[2]			Existing Plus Project Conditions 95th Percentile Queue (Vehicles/lane)[2]			Future Baseline (2018) Without Project Conditions 95th Percentile Queue (Vehicles/lane)[2]			Future Baseline (2018) With Project Conditions 95th Percentile Queue (Vehicles/lane)[2]			Future Baseline (2018) Plus Cumulative Projects Without Project Conditions 95th Percentile Queue (Vehicles/lane)[2]			Future Baseline (2018) Plus Cumulative Projects With Project Conditions 95th Percentile Queue (Vehicles/lane)[2]		
			A.M. Peak Hour	P.M. Peak Hour	Saturday Peak Hour	A.M. Peak Hour	P.M. Peak Hour	Saturday Peak Hour	A.M. Peak Hour	P.M. Peak Hour	Saturday Peak Hour	A.M. Peak Hour	P.M. Peak Hour	Saturday Peak Hour	A.M. Peak Hour	P.M. Peak Hour	Saturday Peak Hour	A.M. Peak Hour	P.M. Peak Hour	Saturday Peak Hour
5 . Dwy 1/Live Oak Ave																				
	NBLTR	125	30	65	10	20	635*	745*	45	110	15	25	655*	775*	50	125	15	30	660*	795*
	WBL	150	5	15	5	5	35	25	5	20	5	5	40	30	5	25	5	5	45	30
7 . Dwy 3/Live Oak Ave																				
	NBLTR	155	0	0	0	20	655*	770*	0	0	0	25	675*	800*	0	0	0	30	680*	820*
	WBL	150	5	5	5	5	40	30	5	5	5	5	50	30	5	5	5	10	50	30
8 . I-605 SB On-Ramp/Live																				
	EBT	1200	170	395	80	175	410	100	190	440	85	195	440	110	205	470	90	205	*	110
	EBR	670	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBL	350	190	465*	130	215	470*	200	145	510*	220	330	510*	215	110	*	220	520*	*	225
	WBT	545	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 . I-605 NB Ramps/Live Oak																				
	NBR	835	50	205	45	50	215	45	55	300	50	420	345	50	100	660	60	100	690	50
	SBR	1560	90	670	105	180	715	760	145	540	140	585	1060	940	140	560	175	435	930	1040*
	EBT	545	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBT	545	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20 . I-605 SB Off-Ramp/Arrow																				
	SBL	980	325	190	120	315	210	145	350	215	125	350	220	155	*	320	145	*	345	180
	SBR	1060	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EBT	1300	75	200	95	85	230	150	79	215	105	90	250	160	110	285	120	117	335	180
	WBT	1160	440	105	95	460	90	75	515	110	105	515	100	85	*	160	120	*	145	100
21 . I-605 NB Ramps/Arrow																				
	EBR	210	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	350	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Notes:
* Queue exceeds storage length
1 Existing Storage Length or segment distance available for turn or through movements
2 The 95th-percentile queue is defined to be the queue length that has only a 5-percent probability of exceeding available storage during the analysis time period.
3 Traffix 8 was used to determined driveway queues, and Synchro 8 for Caltrans intersection queues.

Table KK - Queuing Analysis With Improvements

Intersection	Movement	Existing Storage Length[1] (feet)	Existing Conditions 95th Percentile Queue (Vehicles/lane)[2] A.M. Peak Hour	Existing Conditions P.M. Peak Hour	Existing Plus Project Conditions 95th Percentile Queue (Vehicles/lane)[2] A.M. Peak Hour	Existing Plus Project Conditions P.M. Peak Hour	Existing Plus Project Conditions Saturday Peak Hour	Future Baseline (2018) With Project Conditions 95th Percentile Queue (Vehicles/lane)[2] A.M. Peak Hour	Future Baseline (2018) With Project Conditions P.M. Peak Hour	Future Baseline (2018) With Project Conditions Saturday Peak Hour	Future Baseline (2018) Plus Cumulative Projects With Project Conditions 95th Percentile Queue (Vehicles/lane)[2] A.M. Peak Hour	Future Baseline (2018) Plus Cumulative Projects With Project Conditions P.M. Peak Hour	Future Baseline (2018) Plus Cumulative Projects With Project Conditions Saturday Peak Hour
5 . Dwy 1/Live Oak Ave													
	NBLTR	125	105	70	35	175*	200*	50	180*	205*	55	185*	205*
	WBL	150	10	35	30	60	110	15	60	110	15	60	110
7 . Dwy 3/Live Oak Ave													
	NBLTR	155	0	0	50	180*	205*	55	190*	210*	55	190*	210*
	WBL	150	5	5	15	65	110	15	65	115	15	65	115
8 . I-605 SB On-Ramp/Live													
	EBT	1200	170	392	175	408	101	192	446	106	205	*	110
	EBR	670	0	0	0	0	0	0	0	0	0	0	0
	WBL	350	318	464*	234	427*	235	189	449*	234	145	515*	215
	WBT	545	0	0	0	0	0	0	0	0	0	0	0
9 . I-605 NB Ramps/Live Oak													
	NBR	835	0	173	0	164	1	0	190	10	35	245	15
	SBR	1560	310	461	*	*	598	*	*	826	*	*	*
	EBT	350	0	3	0	*	7	214	*	12	235	*	15
	WBT	225	173	360*	557*	365*	176	605*	389*	345*	*	*	*
20 . I-605 SB Off-Ramp/Arrow													
	SBL	980	320	195	320	210	150	350	230	155	*	345	180
	SBR	1060	0	0	0	0	0	0	0	0	0	0	0
	EBT	1300	75	200	80	230	150	90	250	160	110	325	180
	WBT	1160	450	100	450	90	75	515	100	85	*	135	100
21 . I-605 NB Ramps/Arrow													
	EBR	210	0	0	0	0	0	0	0	0	0	0	0
	WBR	350	0	0	0	0	0	0	0	0	0	0	0

Notes:
* Queue exceeds storage length
1 Existing Storage Length or segment distance available for turn or through movements
2 The 95th-percentile queue is defined to be the queue length that has only a 5-percent probability of exceeding available storage during the analysis time period.
3 Traffix 8 was used to determined driveway queues, and Synchro 8 for Caltrans intersection queues.

APPENDIX A:

CALTRANS NOP COMMENT LETTER

DEPARTMENT OF TRANSPORTATION
DISTRICT 7
100 S. MAIN STREET, SUITE 100
LOS ANGELES, CA 90012-3606
PHONE (213) 897-0362
FAX (213) 897-0360
TTY (213) 897-4937

Flex your power!
Be energy efficient!

July 18, 2014

Ms. Paula Kelly
City of Irwindale
5050 N. Irwindale Ave.
Irwindale, CA. 91706

RE: Irwindale Shopping Center
Notice of Preparation (NOP)
IGR/CEQA No. 140729/NY
SCH# 2014071042
Vicinity: LA/SR-605 / PM- 23.52-23.96

Dear Ms. Kelly:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Irwindale Shopping Center, consisting of 700,000 SF of retail shopping space in the City of Irwindale.

To fully analyze and evaluate the impacts of this project on the State transportation system, a traffic study in advance of the DEIR should be prepared. Please reference the Caltrans Traffic Impact Study Guide, which can be accessed on the Internet at:

http://www.dot.ca.gov/hq/tpp/offices/ocp/igr_ceqa_files/tisguide.pdf

Listed below are some elements of what should be included in the traffic study:

1. Presentations of assumptions and methods used to develop trip generation, trip distribution, choice of travel mode, and assignments of trips to the Interstate 605 (I-605) and Live Oak Avenue off ramps and Arrow Highway on ramps impacted by this project.

2. Consistency of project travel modeling with other regional and local modeling forecasts and with travel data. The IGR/CEQA office may use indices to check results. Differences or inconsistencies must be thoroughly explained.

3. Analysis of ADT, AM, and PM peak-hour volumes for both existing and future conditions in the affected area. This should include freeways, interchanges, and intersections, and all HOV facilities. Interchange Level of Service should be specified (HCM2000 method requested). Utilization of transit lines and vehicles, and of all facilities, should be realistically estimated. Future conditions would include build-out of Phase 1 & Phase 2 and all projects (see next item) and any plan-horizon years.

4. Inclusion of all appropriate traffic volumes. Analysis should include traffic from the project, **cumulative traffic generated from all specific approved developments in the area**, and traffic growth other than from the project and developments. For example: existing + project + other projects + other growth.

5. Discussion of mitigation measures appropriate to alleviate anticipated traffic impacts. These mitigation discussions should include, but not be limited to, the following:

   - description of transportation infrastructure improvements
   - financial costs, funding sources and financing
   - sequence and scheduling considerations
   - implementation responsibilities, controls and monitoring

   Any mitigation involving transit, HOV, or TDM must be justified and its effects conservatively estimated.

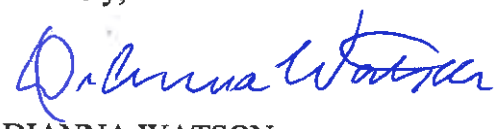
6. Specification of developer's percent share of the cost, as well as a plan of realistic mitigation measures under the control of the developer. The following ratio should be estimated: Additional traffic volume due to project implementation is divided by the total increase in the traffic volume (see Appendix "B" of the Guidelines). That ratio would be the projects equitable share responsibility.

   For purposes of determining project share of costs, the number of trips from the project on each traveling segment or element is estimated in the context of forecasted traffic volumes which include build-out of all approved and not yet approved projects, and other sources of growth.

We look forward to reviewing the DEIR and expect to receive a copy from the State Clearinghouse. However, to expedite the review process, you may send a copy in advance to the undersigned.

If you have any questions regarding these comments or would like to schedule a meeting, please contact Mr. Nerses Yerjanian, the Project Engineer/Coordinator, at (213) 897-6536 and refer to IGR/CEQA # 140729/NY.

Sincerely,



DIANNA WATSON
IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse

APPENDIX B:

EXISTING COUNT DATA

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Peck Rd-Myrtle Ave and Live Oak Ave , Irwindale

Date: 6/5/2014

Day: Thursday

Project #: 14-5367-018

City: Irwindale

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (Peck Rd-Myrtle Ave)

Lanes	0	2	1		
AM	145	477	34	1029	AM
NOON	0	0	0	0	NOON
PM	131	544	176	958	PM

Eastbound Approach (Live Oak Ave)

Lanes	AM	NOON	PM
	1493	0	974
1	66	0	179
2	518	0	1128
1	205	0	181

Westbound Approach

AM	NOON	PM	Lanes
47	0	18	0.5
1101	0	624	1.5
146	0	58	1
775	0	1473	

Northbound Approach

AM	828	247	916	223	AM
NOON	0	0	0	0	NOON
PM	783	219	761	169	PM
Lanes		1	2	0	Lanes

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	656	1029	AM
	0	0	NOON
	851	958	PM

West Leg			East Leg		
AM	NOON	PM			
1493	0	974	1294	0	700
789	0	1488	775	0	1473
			AM	NOON	PM

	South Leg	
AM	828	1386
NOON	0	0
PM	783	1149

Total Volume Per Leg

	North Leg
AM	1685
NOON	0
PM	1809

West Leg			East Leg		
AM	NOON	PM			
2282	0	2462	2069	0	2173
			AM	NOON	PM

	South Leg
AM	2214
NOON	0
PM	1932

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Myrtle Ave and Longden Ave , Irwindale

Date: 6/5/2014

Day: Thursday

Project #: 14-5367-001

City: Irwindale

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (Myrtle Ave)

Lanes	0	2	1		
AM	48	580	141	1293	AM
NOON	0	0	0	0	NOON
PM	53	769	336	1190	PM

Eastbound Approach (Longden Ave)

	AM	NOON	PM
	770	0	523
0	66	0	80
2	237	0	615
1	73	0	96
Lanes	AM	NOON	PM

Westbound Approach

AM	NOON	PM	Lanes
373	0	258	0
559	0	378	2
21	0	25	0
393	0	961	
AM	NOON	PM	

Northbound Approach

AM	674	163	854	15	AM
NOON	0	0	0	0	NOON
PM	890	92	852	10	PM
		1	2	0	Lanes

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	769	1293	AM
	0	0	NOON
	1158	1190	PM

West Leg	AM	NOON	PM
	770	0	523
	376	0	791

East Leg	AM	NOON	PM
	953	0	661
	393	0	961

	South Leg	
AM	674	1032
NOON	0	0
PM	890	954

Total Volume Per Leg

	North Leg
AM	2062
NOON	0
PM	2348

West Leg	AM	NOON	PM
	1146	0	1314

East Leg	AM	NOON	PM
	1346	0	1622

	South Leg
AM	1706
NOON	0
PM	1844

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Longden Ave and Live Oak Ave , Irwindale

Date: 6/5/2014

Day: Thursday

Project #: 14-5367-002

City: Irwindale

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (Longden Ave)

Lanes	1	0.5	1.5		
AM	8	1	377	934	AM
NOON	0	0	0	0	NOON
PM	6	0	955	643	PM

Eastbound Approach (Live Oak Ave)

Lanes	AM	NOON	PM
	1262	0	675
1	30	0	8
3	752	0	1484
0	1	0	1

Westbound Approach

	AM	NOON	PM	Lanes
	898	0	635	2
	1247	0	669	2
	7	0	1	1
	1134	0	2439	

Northbound Approach

AM	9	7	6	5	AM
NOON	0	0	0	0	NOON
PM	2	0	0	0	PM
		0	0	0	Lanes

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	386	934	AM
	0	0	NOON
	961	643	PM

West Leg AM	West Leg NOON	West Leg PM		East Leg AM	East Leg NOON	East Leg PM
1262	0	675		2152	0	1305
783	0	1493		1134	0	2439

	South Leg	
AM	9	18
NOON	0	0
PM	2	0

Total Volume Per Leg

	North Leg
AM	1320
NOON	0
PM	1604

West Leg AM	West Leg NOON	West Leg PM	East Leg AM	East Leg NOON	East Leg PM
2045	0	2168	3286	0	3744

	South Leg
AM	27
NOON	0
PM	2

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Live Oak Ave and Arrow Hwy , Irwindale

Date: 6/5/2014

Day: Thursday

Project #: 14-5367-003

City: Irwindale

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (Live Oak Ave)

	Lanes 0	0	0		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM

Eastbound Approach (Arrow Hwy)

Lanes	AM	NOON	PM
	2138	0	1299
0	0	0	0
2	453	0	695
0	673	0	1768

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
1297	0	505	3
71	0	227	1
614	0	795	

Northbound Approach

AM	744	841	0	161	AM
NOON	0	0	0	0	NOON
PM	1995	794	0	100	PM
		2	0	1	Lanes

CONTROL: Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
AM	0	0	AM
NOON	0	0	NOON
PM	0	0	PM

West Leg	AM	NOON	PM
	2138	0	1299
	1126	0	2463

East Leg	AM	NOON	PM
	1368	0	732
	614	0	795

	South Leg	
AM	744	1002
NOON	0	0
PM	1995	894

Total Volume Per Leg

	North Leg
AM	0
NOON	0
PM	0

West Leg	AM	NOON	PM
	3264	0	3762

East Leg	AM	NOON	PM
	1982	0	1527

	South Leg
AM	1746
NOON	0
PM	2889

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Driveway 1 and Live Oak Ave , Irwindale

Date: 6/5/2014

Day: Thursday

Project #: 14-5367-004

City: Irwindale

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (Driveway 1)

	Lanes 0	0	0		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM

Eastbound Approach (Live Oak Ave)

Lanes	AM	NOON	PM
	1010	0	894
0	0	0	0
2	722	0	1982
0	24	0	17

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
998	0	890	2
18	0	21	1
757	0	2017	

Northbound Approach

AM	42	12	0	35	AM
NOON	0	0	0	0	NOON
PM	38	4	0	35	PM
		0	1	0	Lanes

CONTROL

1-Way Stop (NB)

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	0	0	AM
	0	0	NOON
	0	0	PM

West Leg	AM	NOON	PM
	1010	0	894
	746	0	1999

East Leg	AM	NOON	PM
	1016	0	911
	757	0	2017

South Leg		
AM	42	47
NOON	0	0
PM	38	39

Total Volume Per Leg

	North Leg	
	0	AM
	0	NOON
	0	PM

West Leg	AM	NOON	PM
	1756	0	2893

East Leg	AM	NOON	PM
	1773	0	2928

South Leg	
AM	89
NOON	0
PM	77

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Speedway Dr-Driveway 2 and Live Oak Ave , Irwindale

Date: 6/5/2014

Day: Thursday

Project #: 14-5367-005

City: Irwindale

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (Speedway Dr-Driveway 2)

Lanes	0	0	0		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM

Eastbound Approach (Live Oak Ave)

Lanes	AM	NOON	PM
	1022	0	907
0	0	0	0
3	771	0	1960
0	2	0	53

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
1022	0	897	2
4	0	75	1
772	0	1965	

Northbound Approach

AM	6	0	0	1	AM
NOON	0	0	0	0	NOON
PM	128	10	0	5	PM
		2	0	1	Lanes

CONTROL: Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
AM	0	0	AM
NOON	0	0	NOON
PM	0	0	PM

West Leg	AM	NOON	PM
	1022	0	907
	773	0	2013

East Leg	AM	NOON	PM
	1026	0	972
	772	0	1965

South Leg		
AM	6	1
NOON	0	0
PM	128	15

Total Volume Per Leg

North Leg	
0	AM
0	NOON
0	PM

West Leg	AM	NOON	PM
	1795	0	2920

East Leg	AM	NOON	PM
	1798	0	2937

South Leg	
AM	7
NOON	0
PM	143

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Driveway 3 and Live Oak Ave , Irwindale

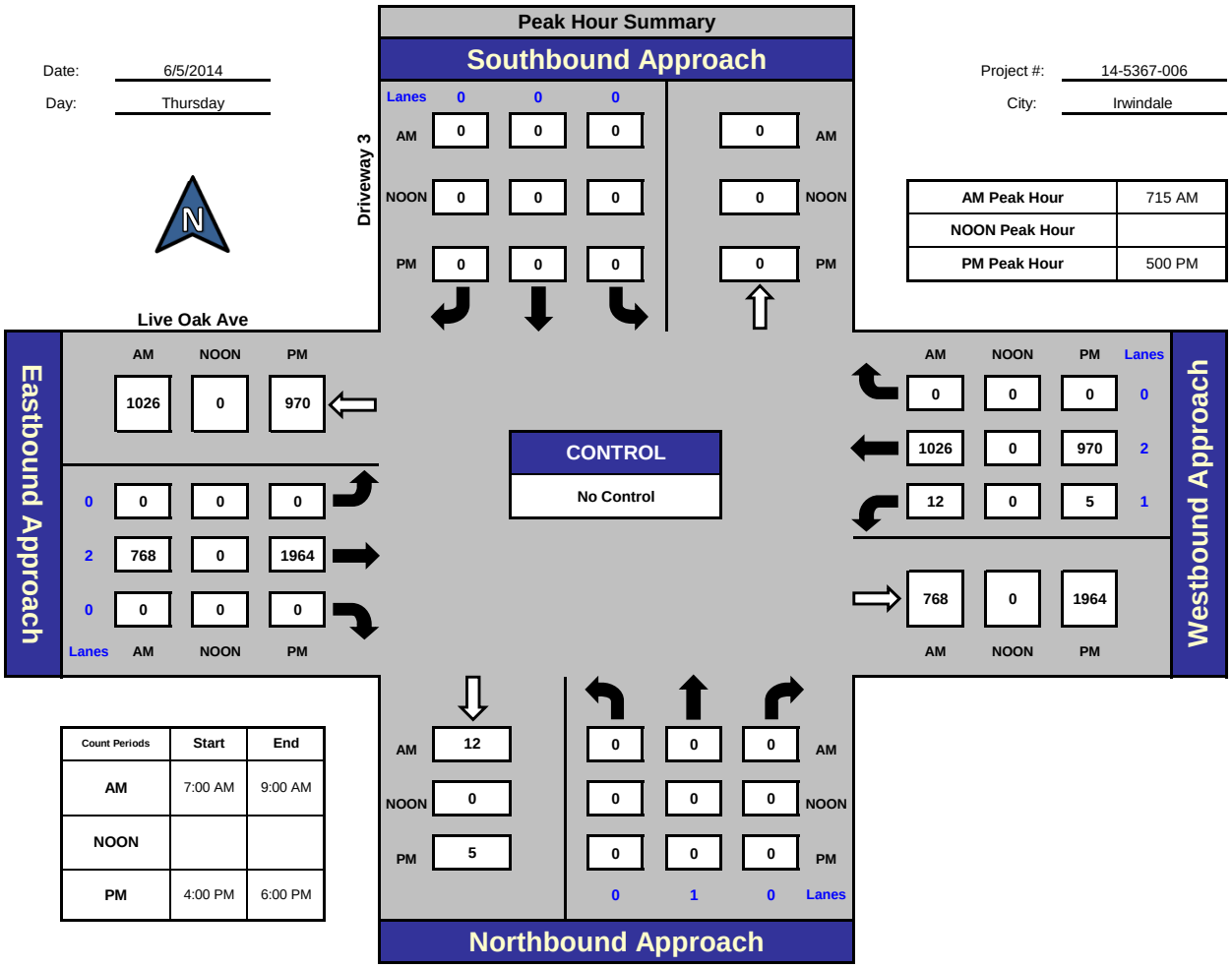
Date: 6/5/2014

Day: Thursday

Project #: 14-5367-006

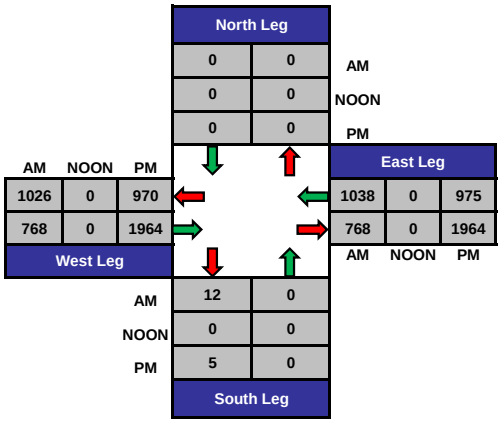
City: Irwindale

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

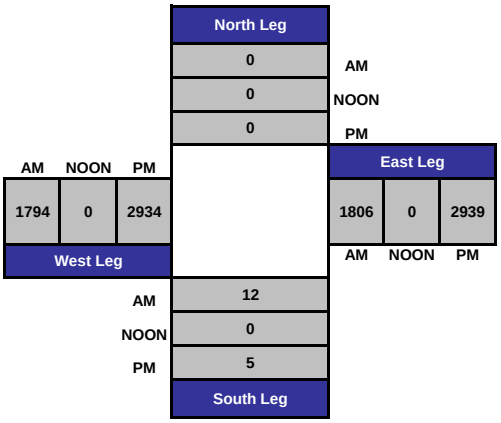


Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Interstate 605 SB On-Ramp and Live Oak Ave , Irwindale

Date: 6/5/2014

Day: Thursday

Project #: 14-5367-007

City: Irwindale

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (Interstate 605 SB On-Ramp)

	Lanes 0	0	0		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM

Eastbound Approach (Live Oak Ave)

Lanes	AM	NOON	PM
	1030	0	975
0	0	0	0
2	337	0	1024
1	440	0	942

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
1030	0	975	2
547	0	535	1
337	0	1024	

Northbound Approach

AM	987	0	0	0	AM
NOON	0	0	0	0	NOON
PM	1477	0	0	0	PM
		0	0	0	Lanes

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
AM	0	0	
NOON	0	0	
PM	0	0	

West Leg	AM	NOON	PM
	1030	0	975
	777	0	1966

East Leg	AM	NOON	PM
	1577	0	1510
	337	0	1024

South Leg		
AM	987	0
NOON	0	0
PM	1477	0

Total Volume Per Leg

North Leg
AM 0
NOON 0
PM 0

West Leg	AM	NOON	PM
	1807	0	2941

East Leg	AM	NOON	PM
	1914	0	2534

South Leg	
AM	987
NOON	0
PM	1477

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Interstate 605 NB Ramps and Live Oak Ave , Irwindale

Date: 6/5/2014

Day: Thursday

Project #: 14-5367-008

City: Irwindale

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (Interstate 605 NB Ramps)

	Lanes 1	0	0		
AM	334	0	0	0	AM
NOON	0	0	0	0	NOON
PM	595	0	0	0	PM

Eastbound Approach (Live Oak Ave)

Lanes	AM	NOON	PM
	1574	0	1521
0	0	0	0
2	339	0	1025
0	0	0	0

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
1240	0	926	2
0	0	0	0
628	0	1631	

Northbound Approach

AM	0	0	0	289	AM
NOON	0	0	0	0	NOON
PM	0	0	0	606	PM
		0	0	1	Lanes

CONTROL: 2-Way Stop (NB/SB)

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

North Leg

334	0	AM
0	0	NOON
595	0	PM

West Leg

AM	NOON	PM
1574	0	1521
339	0	1025

East Leg

AM	NOON	PM
1240	0	926
628	0	1631

South Leg

AM	0	289
NOON	0	0
PM	0	606

Total Volume Per Leg

North Leg

334	AM
0	NOON
595	PM

West Leg

AM	NOON	PM
1913	0	2546

East Leg

AM	NOON	PM
1868	0	2557

South Leg

AM	289
NOON	0
PM	606

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Budmark Rd and Live Oak Ave , Irwindale

Date: 6/5/2014

Day: Thursday

Project #: 14-5367-009

City: Irwindale

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (Budmark Rd)

	Lanes 0	0	0		
AM	0	0	0	1	AM
NOON	0	0	0	0	NOON
PM	0	0	0	3	PM

Eastbound Approach (Live Oak Ave)

Lanes	AM	NOON	PM
	1230	0	923
0	1	0	3
2	586	0	1609
0	48	0	29

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
1158	0	906	2
22	0	15	1
616	0	1629	

Northbound Approach

AM	70	72	0	30	AM
NOON	0	0	0	0	NOON
PM	44	17	0	20	PM
		0	1	0	Lanes

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	0	1	AM
	0	0	NOON
	0	3	PM

West Leg	AM	NOON	PM
	1230	0	923
	635	0	1641

East Leg	AM	NOON	PM
	1180	0	921
	616	0	1629

	South Leg	
AM	70	102
NOON	0	0
PM	44	37

Total Volume Per Leg

	North Leg
AM	1
NOON	0
PM	3

West Leg	AM	NOON	PM
	1865	0	2564

East Leg	AM	NOON	PM
	1796	0	2550

	South Leg
AM	172
NOON	0
PM	81

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Live Oak Lane and Live Oak Ave , Irwindale

Date: 6/5/2014

Day: Thursday

Project #: 14-5367-010

City: Irwindale

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	445 PM

Peak Hour Summary

Southbound Approach (Live Oak Lane)

	Lanes 0	1	0		
AM	61	0	6	87	AM
NOON	0	0	0	0	NOON
PM	52	0	9	34	PM

Eastbound Approach (Live Oak Ave)

Lanes	AM	NOON	PM
	1203	0	927
1	51	0	28
2	570	0	1571
0	0	0	0

Westbound Approach

AM	NOON	PM	Lanes
36	0	6	0
1142	0	875	2
0	0	0	0
576	0	1580	

Northbound Approach

AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM
		0	0	0	Lanes

CONTROL

No Control

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	AM	NOON	PM
North Leg	67	0	61
	87	0	34
West Leg	1203	0	927
	621	0	1599
East Leg	1178	0	881
	576	0	1580
South Leg	0	0	0
	0	0	0

Total Volume Per Leg

	AM	NOON	PM
North Leg	154	0	95
West Leg	1824	0	2526
East Leg	1754	0	2461
South Leg	0	0	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Rivergrade Rd and Live Oak Ave , Irwindale

Date:	6/5/2014
Day:	Thursday

Project #:	14-5367-011
City:	Irwindale

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	445 PM

Peak Hour Summary

Southbound Approach (Rivergrade Rd)

Lanes	1	2	1		
AM	39	67	27	105	AM
NOON	0	0	0	0	NOON
PM	49	18	24	129	PM

Eastbound Approach (Live Oak Ave)

	AM	NOON	PM
	1164	0	885
1	64	0	63
2	430	0	1497
1	72	0	20
Lanes	AM	NOON	PM

Westbound Approach

AM	NOON	PM	Lanes
8	0	6	1
1092	0	743	2
230	0	79	1
555	0	1874	
AM	NOON	PM	

Northbound Approach

AM	369	33	33	98	AM
NOON	0	0	0	0	NOON
PM	117	93	60	353	PM
		1	1	1	Lanes

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	133	105	AM
	0	0	NOON
	91	129	PM

West Leg			East Leg		
AM	NOON	PM			
1164	0	885	1330	0	828
566	0	1580	555	0	1874
			AM	NOON	PM

	South Leg	
AM	369	164
NOON	0	0
PM	117	506

Total Volume Per Leg

	North Leg
AM	238
NOON	0
PM	220

West Leg			East Leg		
AM	NOON	PM			
1730	0	2465	1885	0	2702
			AM	NOON	PM

	South Leg
AM	533
NOON	0
PM	623

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Commerce Dr and Live Oak Ave , Irwindale

Date: 6/5/2014

Day: Thursday

Project #: 14-5367-012

City: Irwindale

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	445 PM

Peak Hour Summary

Southbound Approach (Commerce Dr)

	Lanes					
	0	0	0			
AM	0	0	0	0		AM
NOON	0	0	0	0		NOON
PM	0	0	0	1		PM

Eastbound Approach (Live Oak Ave)

	AM	NOON	PM
	1426	0	826
0	0	0	1
3	417	0	1867
0	43	0	6
Lanes	AM	NOON	PM

Westbound Approach

	AM	NOON	PM	Lanes
	0	0	0	0
	1422	0	805	2
	253	0	15	1
	433	0	2060	
	AM	NOON	PM	

Northbound Approach

AM	296	4	0	16	AM
NOON	0	0	0	0	NOON
PM	21	21	0	193	PM
		1	0	1	Lanes

CONTROL

1-Way Stop (NB)

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	0	0	AM
	0	0	NOON
	0	1	PM

West Leg	AM	NOON	PM
	1426	0	826
	460	0	1874

East Leg	AM	NOON	PM
	1675	0	820
	433	0	2060

South Leg		
AM	296	20
NOON	0	0
PM	21	214

Total Volume Per Leg

North Leg	
0	AM
0	NOON
1	PM

West Leg	AM	NOON	PM
	1886	0	2700

East Leg	AM	NOON	PM
	2108	0	2880

South Leg	
AM	316
NOON	0
PM	235

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Stewart Ave and Live Oak Ave , Irwindale

Date: 6/5/2014

Day: Thursday

Project #: 14-5367-013

City: Irwindale

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	445 PM

Peak Hour Summary

Southbound Approach (Stewart Ave)

	Lanes 1	Lanes 1	Lanes 1		
AM	72	26	12	160	AM
NOON	0	0	0	0	NOON
PM	13	96	20	68	PM

Eastbound Approach (Live Oak Ave)

Lanes	AM	NOON	PM
	1684	0	807
1	13	0	48
2	395	0	1750
1	24	0	263

Westbound Approach

Lanes	AM	NOON	PM
0	32	0	1
2	1405	0	729
1	16	0	34
	439	0	1781

Northbound Approach

AM	66	207	115	32	AM
NOON	0	0	0	0	NOON
PM	393	65	19	11	PM
		0	1	0	Lanes

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	AM	NOON	PM
North Leg	110	0	129
	160	0	68
East Leg	1453	0	764
	439	0	1781
South Leg	66	0	393
	354	0	95
West Leg	1684	0	807
	432	0	2061

Total Volume Per Leg

	AM	NOON	PM
North Leg	270	0	197
West Leg	2116	0	2868
East Leg	1892	0	2545
South Leg	420	0	488

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Baldwin Park Blvd and Arrow Hwy , Irwindale

Date: 6/5/2014

Day: Thursday

Project #: 14-5367-020

City: Irwindale

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	445 PM

Peak Hour Summary

Southbound Approach (Baldwin Park Blvd)

	Lanes 0	0	0		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM

Eastbound Approach (Arrow Hwy)

Lanes	AM	NOON	PM
	1487	0	742
0	0	0	0
2	405	0	1292
0	58	0	506

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
1208	0	653	2
115	0	251	1
664	0	1374	

CONTROL: Signalized

Northbound Approach

AM	173	279	0	259	AM
NOON	0	0	0	0	NOON
PM	757	89	0	82	PM
		2	0	1	Lanes

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	0	0	AM
	0	0	NOON
	0	0	PM

West Leg AM	NOON	PM		East Leg AM	NOON	PM
1487	0	742		1323	0	904
463	0	1798		664	0	1374

	South Leg	
AM	173	538
NOON	0	0
PM	757	171

Total Volume Per Leg

	North Leg
AM	0
NOON	0
PM	0

West Leg AM	NOON	PM	East Leg AM	NOON	PM
1950	0	2540	1987	0	2278

	South Leg
AM	711
NOON	0
PM	928

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Arrow Hwy and Live Oak Ave , Irwindale

Date: 6/5/2014

Day: Thursday

Project #: 14-5367-017

City: Irwindale

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach (Arrow Hwy)

	Lanes 1	0	2		
AM	40	0	255	1659	AM
NOON	0	0	0	0	NOON
PM	109	0	956	459	PM

Eastbound Approach (Live Oak Ave)

Lanes	AM	NOON	PM
	1326	0	899
1	132	0	35
2	531	0	1350
0	0	0	0

Westbound Approach

	AM	NOON	PM	Lanes
	1527	0	424	2
	1286	0	790	2
	0	0	0	0
	786	0	2306	

Northbound Approach

AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM
		0	0	0	Lanes

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	295	1659	AM
	0	0	NOON
	1065	459	PM

West Leg AM	NOON	PM	East Leg AM	NOON	PM
1326	0	899	2813	0	1214
663	0	1385	786	0	2306

	South Leg	
AM	0	0
NOON	0	0
PM	0	0

Total Volume Per Leg

	North Leg
	1954 AM
	0 NOON
	1524 PM

West Leg AM	NOON	PM	East Leg AM	NOON	PM
1989	0	2284	3599	0	3520

	South Leg
AM	0
NOON	0
PM	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Maine Ave and Arrow Hwy , Irwindale

Date: 6/5/2014

Day: Thursday

Project #: 14-5367-019

City: Irwindale

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach (Maine Ave)

	Lanes 0	0	0		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM

Eastbound Approach (Arrow Hwy)

Lanes	AM	NOON	PM
	2814	0	1216
0	0	0	0
2	680	0	1803
0	92	0	482

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
2214	0	977	3
32	0	62	1
778	0	1899	

Northbound Approach

AM	124	600	0	98	AM
NOON	0	0	0	0	NOON
PM	544	239	0	96	PM
		2	0	1	Lanes

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	0	0	AM
	0	0	NOON
	0	0	PM

West Leg AM	NOON	PM	East Leg AM	NOON	PM
2814	0	1216	2246	0	1039
772	0	2285	778	0	1899

	South Leg	
AM	124	698
NOON	0	0
PM	544	335

Total Volume Per Leg

	North Leg
AM	0
NOON	0
PM	0

West Leg AM	NOON	PM	East Leg AM	NOON	PM
3586	0	3501	3024	0	2938

	South Leg
AM	822
NOON	0
PM	879

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Avenida Barbosa and Buena Vista St , Irwindale

Date: 6/5/2014

Day: Thursday

Project #: 14-5367-021

City: Irwindale

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach (Avenida Barbosa)

	Lanes 0	1	0	
AM	2	68	7	163
NOON	0	0	0	0
PM	6	177	26	136

Eastbound Approach (Buena Vista St)

	AM	NOON	PM
	61	0	35
1	1	0	5
2	4	0	19
0	6	0	82

Westbound Approach

	AM	NOON	PM	Lanes
	17	0	22	0
	12	0	14	1
	138	0	467	2
	704	0	332	

Northbound Approach

AM	212	47	145	693
NOON	0	0	0	0
PM	726	15	109	287
Lanes		0.5	0.5	2

CONTROL: Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg	
AM	77	163
NOON	0	0
PM	209	136

West Leg	AM	NOON	PM
	61	0	35
	11	0	106

East Leg	AM	NOON	PM
	167	0	503
	704	0	332

South Leg		
AM	212	885
NOON	0	0
PM	726	411

Total Volume Per Leg

North Leg	
AM	240
NOON	0
PM	345

West Leg	AM	NOON	PM
	72	0	141

East Leg	AM	NOON	PM
	871	0	835

South Leg	
AM	1097
NOON	0
PM	1137

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Avenida Barbosa and Arrow Hwy , Irwindale

Date: 6/5/2014

Day: Thursday

Project #: 14-5367-014

City: Irwindale

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (Avenida Barbosa)

Lanes	1	0	2		
AM	102	0	111	896	AM
NOON	0	0	0	0	NOON
PM	307	0	360	379	PM

Eastbound Approach (Arrow Hwy)

Lanes	AM	NOON	PM
	1364	0	736
1	276	0	182
2	339	0	608
0	0	0	0

Westbound Approach

Lanes	AM	NOON	PM
1	620	0	197
2	1262	0	429
0	0	0	0
	450	0	968

Northbound Approach

AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM
		0	0	0	Lanes

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	213	896	AM
	0	0	NOON
	667	379	PM

West Leg AM	West Leg NOON	West Leg PM		East Leg AM	East Leg NOON	East Leg PM
1364	0	736		1882	0	626
615	0	790		450	0	968

	South Leg	
AM	0	0
NOON	0	0
PM	0	0

Total Volume Per Leg

	North Leg
AM	1109
NOON	0
PM	1046

West Leg AM	West Leg NOON	West Leg PM	East Leg AM	East Leg NOON	East Leg PM
1979	0	1526	2332	0	1594

	South Leg
AM	0
NOON	0
PM	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Interstate 605 SB Off-Ramp and Arrow Hwy , Irwindale

Date: 6/5/2014

Day: Thursday

Project #: 14-5367-015

City: Irwindale

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Southbound Approach (Interstate 605 SB Off-Ramp)

	Left	Thru	Right	
Lanes	1	0	1	
AM	464	0	337	0 AM
NOON	0	0	0	0 NOON
PM	287	0	261	0 PM

Eastbound Approach (Arrow Hwy)

	AM	NOON	PM
	1880	0	630
0	0	0	0
3	442	0	968
0	0	0	0
Lanes	AM	NOON	PM

Westbound Approach

	AM	NOON	PM	Lanes
	0	0	0	0
	1416	0	343	2
	0	0	0	0
	779	0	1229	
	AM	NOON	PM	

Northbound Approach

	Left	Thru	Right	
AM	0	0	0	0 AM
NOON	0	0	0	0 NOON
PM	0	0	0	0 PM
Lanes		0	0	0 Lanes

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	801	0	AM
	0	0	NOON
	548	0	PM

West Leg	AM	NOON	PM
	1880	0	630
	442	0	968

East Leg	AM	NOON	PM
	1416	0	343
	779	0	1229

	South Leg	
AM	0	0
NOON	0	0
PM	0	0

Total Volume Per Leg

	North Leg
AM	801
NOON	0
PM	548

West Leg	AM	NOON	PM
	2322	0	1598

East Leg	AM	NOON	PM
	2195	0	1572

	South Leg
AM	0
NOON	0
PM	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Interstate 605 NB Ramps_Live Oak Ln and Arrow Hwy , Irwindale

Date: 6/5/2014

Day: Thursday

Project #: 14-5367-016

City: Irwindale

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Southbound Approach — Interstate 605 NB Ramps_Live Oak Ln

	Lanes 0	Lanes 0	Lanes 0		
AM	0	0	0	328	AM
NOON	0	0	0	0	NOON
PM	0	0	0	221	PM

Eastbound Approach — Arrow Hwy

Lanes	AM	NOON	PM
	1449	0	387
0	0	0	0
2	474	0	1085
1	233	0	79

Westbound Approach

Lanes	AM	NOON	PM
1	328	0	221
2	1449	0	387
0	0	0	0
	503	0	1116

CONTROL: No Control

Northbound Approach

AM	233	0	0	29	AM
NOON	0	0	0	0	NOON
PM	79	0	0	31	PM
		0	1	0	Lanes

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	0	328	AM
	0	0	NOON
	0	221	PM

West Leg AM	West Leg NOON	West Leg PM		East Leg AM	East Leg NOON	East Leg PM
1449	0	387		1777	0	608
707	0	1164		503	0	1116

	South Leg	
AM	233	29
NOON	0	0
PM	79	31

Total Volume Per Leg

	North Leg	
	328	AM
	0	NOON
	221	PM

West Leg AM	West Leg NOON	West Leg PM		East Leg AM	East Leg NOON	East Leg PM
2156	0	1551		2280	0	1724

	South Leg
AM	262
NOON	0
PM	110

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Peck Rd-Myrtle Ave and Live Oak Ave , Irwindale

Date:	6/7/2014
Day:	Saturday

Project #:	14-5367-018
City:	Irwindale

AM Peak Hour	
NOON Peak Hour	1200 PM
PM Peak Hour	

Peak Hour Summary

Southbound Approach — Peck Rd-Myrtle Ave

Lanes	0	2	1		
AM	0	0	0	0	AM
NOON	136	417	62	630	NOON
PM	0	0	0	0	PM

Eastbound Approach — Live Oak Ave

Lanes	AM	NOON	PM
	0	657	0
1	0	130	0
2	0	395	0
1	0	138	0

Westbound Approach

AM	NOON	PM	Lanes
0	35	0	0.5
0	366	0	1.5
0	106	0	1
0	568	0	

CONTROL: Signalized

Northbound Approach

AM	0	0	0	0	AM
NOON	661	155	465	111	NOON
PM	0	0	0	0	PM
		1	2	0	Lanes

Count Periods	Start	End
AM		
NOON	11:00 AM	1:00 PM
PM		

Total Ins & Outs

	North Leg		East Leg			West Leg		
						AM	NOON	PM
AM	0	0	0	507	0	0	657	0
NOON	615	630	0	568	0	0	663	0
PM	0	0						
	AM	NOON	PM					
	0	0						
	661	731						
	0	0						
	South Leg							

Total Volume Per Leg

	North Leg	East Leg			West Leg		
					AM	NOON	PM
AM	0	0	1075	0	0	1320	0
NOON	1245						
PM	0						
	AM	NOON	PM				
	0						
	1392						
	0						
	South Leg						

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Myrtle Ave and Longden Ave , Irwindale

Date:	6/7/2014
Day:	Saturday

Project #:	14-5367-001
City:	Irwindale

AM Peak Hour	
NOON Peak Hour	1200 PM
PM Peak Hour	

Peak Hour Summary

Southbound Approach (Myrtle Ave)

Lanes	0	2	1		
AM	0	0	0	0	AM
NOON	95	559	135	820	NOON
PM	0	0	0	0	PM

Eastbound Approach (Longden Ave)

	AM	NOON	PM
	0	356	0
0	0	97	0
2	0	183	0
1	0	53	0
Lanes	AM	NOON	PM

Westbound Approach

AM	NOON	PM	Lanes
0	161	0	0
0	203	0	2
0	45	0	0
0	326	0	
AM	NOON	PM	

CONTROL

Signalized

Northbound Approach

AM	0	0	0	0	AM
NOON	657	58	562	8	NOON
PM	0	0	0	0	PM
		1	2	0	Lanes

Count Periods	Start	End
AM		
NOON	11:00 AM	1:00 PM
PM		

Total Ins & Outs

	North Leg		
	0	0	AM
	789	820	NOON
	0	0	PM

West Leg			East Leg		
AM	NOON	PM			
0	356	0	0	409	0
0	333	0	0	326	0
			AM	NOON	PM

	South Leg	
AM	0	0
NOON	657	628
PM	0	0

Total Volume Per Leg

	North Leg
	0
	1609
	0

West Leg			East Leg		
AM	NOON	PM			
0	689	0	0	735	0
			AM	NOON	PM

	South Leg
AM	0
NOON	1285
PM	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Live Oak Ave and Longden Ave , Irwindale

Date: 6/7/2014

Day: Saturday

Project #: 14-5367-002

City: Irwindale

AM Peak Hour	
NOON Peak Hour	1200 PM
PM Peak Hour	

Peak Hour Summary

Southbound Approach (Live Oak Ave)

Lanes	1	0.5	1.5		
AM	0	0	0	0	AM
NOON	10	6	324	382	NOON
PM	0	0	0	0	PM

Eastbound Approach (Longden Ave)

Lanes	AM	NOON	PM
	0	532	0
1	0	9	0
3	0	530	0
0	0	8	0

Westbound Approach

AM	NOON	PM	Lanes
0	366	0	2
0	515	0	2
0	10	0	1
0	862	0	

Northbound Approach

AM	0	0	0	0	AM
NOON	24	7	7	8	NOON
PM	0	0	0	0	PM
		0	0	0	Lanes

CONTROL

Signalized

Count Periods	Start	End
AM		
NOON	11:00 AM	1:00 PM
PM		

Total Ins & Outs

	AM	NOON	PM
North Leg	0	340	0
	0	382	0
East Leg	0	891	0
	0	862	0
South Leg	0	24	0
	0	22	0
West Leg	0	532	0
	0	547	0

Total Volume Per Leg

	AM	NOON	PM
North Leg	0	722	0
East Leg	0	1753	0
South Leg	0	46	0
West Leg	0	1079	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Arrow Hwy and Live Oak Ave , Irwindale

Date: 6/7/2014

Day: Saturday

Project #: 14-5367-003

City: Irwindale

AM Peak Hour	
NOON Peak Hour	1200 PM
PM Peak Hour	

Peak Hour Summary

Southbound Approach (Arrow Hwy)

	Lanes 0	0	0		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM

Eastbound Approach (Live Oak Ave)

Lanes	AM	NOON	PM
	0	897	0
0	0	0	0
2	0	304	0
0	0	572	0

Westbound Approach

Lanes	AM	NOON	PM
0	0	0	0
3	0	422	0
1	0	95	0
	0	392	0

Northbound Approach

AM	0	0	0	0	AM
NOON	667	475	0	88	NOON
PM	0	0	0	0	PM
Lanes		2	0	1	

CONTROL

Signalized

Count Periods	Start	End
AM		
NOON	11:00 AM	1:00 PM
PM		

Total Ins & Outs

	AM	NOON	PM
North Leg	0	0	0
East Leg	0	0	0
West Leg	0	897	0
	0	876	0
South Leg	0	667	0
	0	563	0

Total Volume Per Leg

	AM	NOON	PM
North Leg	0	0	0
East Leg	0	909	0
West Leg	0	1773	0
South Leg	0	1230	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Driveway 1 and Live Oak Ave , Irwindale

Date: 6/7/2014

Day: Saturday

Project #: 14-5367-004

City: Irwindale

AM Peak Hour	
NOON Peak Hour	1100 AM
PM Peak Hour	

Peak Hour Summary

Southbound Approach (Driveway 1)

	Lanes 0	0	0		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM

Eastbound Approach (Live Oak Ave)

Lanes	AM	NOON	PM
	0	597	0
0	0	0	0
2	0	653	0
0	0	22	0

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
0	592	0	2
0	11	0	1
0	678	0	

Northbound Approach

					Lanes
AM	0	0	0	0	AM
NOON	33	5	0	25	NOON
PM	0	0	0	0	PM
		0	1	0	Lanes

CONTROL

1-Way Stop (NB)

Count Periods	Start	End
AM		
NOON	11:00 AM	1:00 PM
PM		

Total Ins & Outs

	North Leg		
	0	0	AM
	0	0	NOON
	0	0	PM

West Leg AM	NOON	PM		East Leg AM	NOON	PM
0	597	0		0	603	0
0	675	0		0	678	0

	South Leg	
AM	0	0
NOON	33	30
PM	0	0

Total Volume Per Leg

	North Leg
AM	0
NOON	0
PM	0

West Leg AM	NOON	PM		East Leg AM	NOON	PM
0	1272	0		0	1281	0

	South Leg
AM	0
NOON	63
PM	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Speedway Dr-Driveway 2 and Live Oak Ave , Irwindale

Date:	6/7/2014
Day:	Saturday

Project #:	14-5367-005
City:	Irwindale

AM Peak Hour	
NOON Peak Hour	1100 AM
PM Peak Hour	

Peak Hour Summary

Southbound Approach (Speedway Dr-Driveway 2)

	Lanes 0	0	0		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM

Eastbound Approach (Live Oak Ave)

Lanes	AM	NOON	PM
	0	602	0
0	0	0	0
3	0	637	0
0	0	40	0

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
0	596	0	2
0	25	0	1
0	640	0	

CONTROL: Signalized

Northbound Approach

AM	0	0	0	0	AM
NOON	65	6	0	3	NOON
PM	0	0	0	0	PM
		2	0	1	Lanes

Count Periods	Start	End
AM		
NOON	11:00 AM	1:00 PM
PM		

Total Ins & Outs

	North Leg		
	0	0	AM
	0	0	NOON
	0	0	PM

West Leg	AM	NOON	PM
	0	602	0
	0	677	0

East Leg	AM	NOON	PM
	0	621	0
	0	640	0

South Leg		
AM	0	0
NOON	65	9
PM	0	0

Total Volume Per Leg

North Leg	
0	AM
0	NOON
0	PM

West Leg	AM	NOON	PM
	0	1279	0

East Leg	AM	NOON	PM
	0	1261	0

South Leg	
AM	0
NOON	74
PM	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Driveway 3 and Live Oak Ave , Irwindale

Date:	6/7/2014
Day:	Saturday

Project #:	14-5367-006
City:	Irwindale

AM Peak Hour	
NOON Peak Hour	1100 AM
PM Peak Hour	

Peak Hour Summary

Southbound Approach (Driveway 3)

	Lanes 0	0	0		
AM	0	0	0	0	AM
NOON	0	0	0	3	NOON
PM	0	0	0	0	PM

Eastbound Approach (Live Oak Ave)

Lanes	AM	NOON	PM
	0	618	0
0	0	3	0
2	0	636	0
0	0	0	0

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
0	618	0	2
0	5	0	1
0	636	0	

Northbound Approach

AM	0	0	0	0	AM
NOON	5	0	0	0	NOON
PM	0	0	0	0	PM
		0	1	0	Lanes

CONTROL

No Control

Count Periods	Start	End
AM		
NOON	11:00 AM	1:00 PM
PM		

Total Ins & Outs

	North Leg		
	0	0	AM
	0	3	NOON
	0	0	PM

West Leg			East Leg		
AM	NOON	PM			
0	618	0	0	623	0
0	639	0	0	636	0
			AM	NOON	PM

	South Leg	
AM	0	0
NOON	5	0
PM	0	0

Total Volume Per Leg

	North Leg
	0
	3
	0

West Leg			East Leg		
AM	NOON	PM			
0	1257	0	0	1259	0
			AM	NOON	PM

	South Leg
AM	0
NOON	5
PM	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Interstate 605 SB On-Ramp and Live Oak Ave , Irwindale

Date: 6/7/2014

Day: Saturday

Project #: 14-5367-007

City: Irwindale

AM Peak Hour	
NOON Peak Hour	1100 AM
PM Peak Hour	

Peak Hour Summary

Southbound Approach (Interstate 605 SB On-Ramp)

Lanes	0	0	0		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM

Eastbound Approach (Live Oak Ave)

Lanes	AM	NOON	PM
	0	623	0
0	0	0	0
2	0	157	0
1	0	484	0

Westbound Approach

Lanes	AM	NOON	PM
0	0	0	0
2	0	623	0
1	0	348	0
	0	157	0

Northbound Approach

AM	0	0	0	0	AM
NOON	832	0	0	0	NOON
PM	0	0	0	0	PM
		0	0	0	Lanes

CONTROL

Signalized

Count Periods	Start	End
AM		
NOON	11:00 AM	1:00 PM
PM		

Total Ins & Outs

	North Leg		
	0	0	AM
	0	0	NOON
	0	0	PM

West Leg	AM	NOON	PM
	0	623	0
	0	641	0

East Leg	AM	NOON	PM
	0	971	0
	0	157	0

South Leg		
AM	0	0
NOON	832	0
PM	0	0

Total Volume Per Leg

North Leg	
0	AM
0	NOON
0	PM

West Leg	AM	NOON	PM
	0	1264	0

East Leg	AM	NOON	PM
	0	1128	0

South Leg	
AM	0
NOON	832
PM	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Interstate 605 NB Ramps and Live Oak Ave , Irwindale

Date:	6/7/2014
Day:	Saturday

Project #:	14-5367-008
City:	Irwindale

AM Peak Hour	
NOON Peak Hour	1200 PM
PM Peak Hour	

Peak Hour Summary

Southbound Approach (Interstate 605 NB Ramps)

Lanes	1	0	0		
AM	0	0	0	0	AM
NOON	391	0	0	0	NOON
PM	0	0	0	0	PM

Eastbound Approach (Live Oak Ave)

Lanes	AM	NOON	PM
	0	951	0
0	0	0	0
2	0	185	0
0	0	0	0

Westbound Approach

Lanes	AM	NOON	PM
0	0	0	0
2	0	560	0
0	0	0	0
	0	487	0

Northbound Approach

Lanes	0	0	1	
AM	0	0	0	0	AM
NOON	0	0	0	302	NOON
PM	0	0	0	0	PM

CONTROL

2-Way Stop (NB/SB)

Count Periods	Start	End
AM		
NOON	11:00 AM	1:00 PM
PM		

Total Ins & Outs

	North Leg		
AM	0	0	AM
NOON	391	0	NOON
PM	0	0	PM

West Leg	AM	NOON	PM
	0	951	0
	0	185	0

East Leg	AM	NOON	PM
	0	560	0
	0	487	0

South Leg		
AM	0	0
NOON	0	302
PM	0	0

Total Volume Per Leg

North Leg	
0	AM
391	NOON
0	PM

West Leg	AM	NOON	PM
	0	1136	0

East Leg	AM	NOON	PM
	0	1047	0

South Leg	
AM	0
NOON	302
PM	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Budmark Rd and Live Oak Ave , Irwindale

Date:	6/7/2014
Day:	Saturday

Project #:	14-5367-009
City:	Irwindale

AM Peak Hour	
NOON Peak Hour	1200 PM
PM Peak Hour	

Peak Hour Summary

Southbound Approach (Budmark Rd)

	Lanes 0	0	0		
AM	0	0	0	0	AM
NOON	0	0	0	1	NOON
PM	0	0	0	0	PM

Eastbound Approach (Live Oak Ave)

Lanes	AM	NOON	PM
	0	560	0
0	0	1	0
2	0	464	0
0	0	17	0

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
0	542	0	2
0	7	0	1
0	468	0	

CONTROL: Signalized

Northbound Approach

AM	0	0	0	0	AM
NOON	24	18	0	4	NOON
PM	0	0	0	0	PM
		0	1	0	Lanes

Count Periods	Start	End
AM		
NOON	11:00 AM	1:00 PM
PM		

Total Ins & Outs

	North Leg		
	0	0	AM
	0	1	NOON
	0	0	PM

West Leg			East Leg		
AM	NOON	PM			
0	560	0	0	549	0
0	482	0	0	468	0
			AM	NOON	PM

	South Leg	
AM	0	0
NOON	24	22
PM	0	0

Total Volume Per Leg

	North Leg
	0
	1
	0

West Leg			East Leg		
AM	NOON	PM			
0	1042	0	0	1017	0
			AM	NOON	PM

	South Leg
AM	0
NOON	46
PM	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Live Oak Lane and Live Oak Ave , Irwindale

Date: 6/7/2014

Day: Saturday

Project #: 14-5367-010

City: Irwindale

AM Peak Hour	
NOON Peak Hour	1200 PM
PM Peak Hour	

Peak Hour Summary

Southbound Approach

Live Oak Lane

Lanes	0	1	0		
AM	0	0	0	0	AM
NOON	38	0	2	37	NOON
PM	0	0	0	0	PM

Eastbound Approach

Live Oak Ave

Lanes	AM	NOON	PM
	0	549	0
1	0	24	0
2	0	442	0
0	0	0	0

Westbound Approach

Lanes	AM	NOON	PM
0	0	13	0
2	0	511	0
0	0	0	0
	0	444	0

CONTROL

No Control

Northbound Approach

Lanes	0	0	0	
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM

Count Periods	Start	End
AM		
NOON	11:00 AM	1:00 PM
PM		

Total Ins & Outs

	North Leg		
	0	0	AM
	40	37	NOON
	0	0	PM

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
0	549	0	0	524	0
0	466	0	0	444	0

	South Leg	
AM	0	0
NOON	0	0
PM	0	0

Total Volume Per Leg

	North Leg	
	0	AM
	77	NOON
	0	PM

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
0	1015	0	0	968	0

	South Leg
AM	0
NOON	0
PM	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Rivergrade Rd and Live Oak Ave , Irwindale

Date:	6/7/2014
Day:	Saturday

Project #:	14-5367-011
City:	Irwindale

AM Peak Hour	
NOON Peak Hour	1200 PM
PM Peak Hour	

Peak Hour Summary

Southbound Approach

Rivergrade Rd

Lanes	1	2	1		
AM	0	0	0	0	AM
NOON	49	10	11	43	NOON
PM	0	0	0	0	PM

Eastbound Approach

Live Oak Ave

	AM	NOON	PM
	0	526	0
1	0	13	0
2	0	418	0
1	0	9	0
Lanes	AM	NOON	PM

Westbound Approach

	AM	NOON	PM	Lanes
	0	7	0	1
	0	462	0	2
	0	44	0	1
	0	517	0	
	AM	NOON	PM	

CONTROL

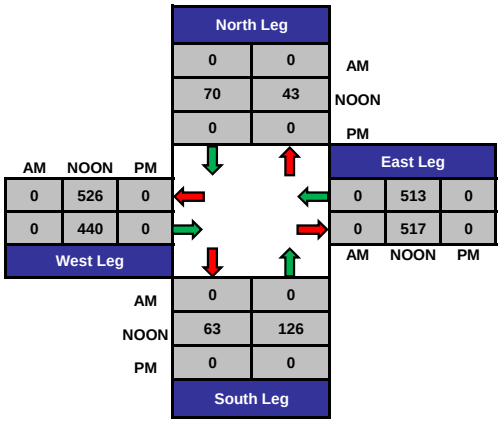
Signalized

Northbound Approach

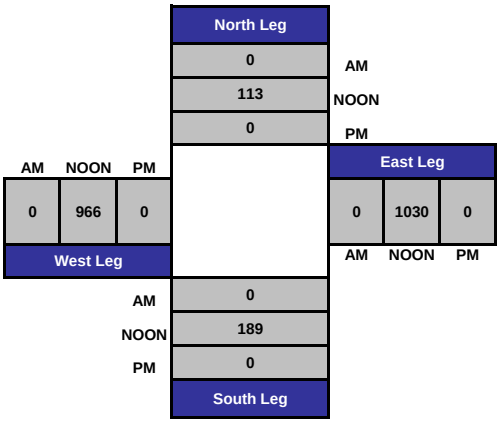
AM	0	0	0	0	AM
NOON	63	15	23	88	NOON
PM	0	0	0	0	PM
		1	1	1	Lanes

Count Periods	Start	End
AM		
NOON	11:00 AM	1:00 PM
PM		

Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Commerce Dr and Live Oak Ave , Irwindale

Date: 6/7/2014

Day: Saturday

Project #: 14-5367-012

City: Irwindale

AM Peak Hour	
NOON Peak Hour	1200 PM
PM Peak Hour	

Peak Hour Summary

Southbound Approach (Commerce Dr)

	Lanes 0	0	0		
AM	0	0	0	0	AM
NOON	0	0	0	1	NOON
PM	0	0	0	0	PM

Eastbound Approach (Live Oak Ave)

Lanes	AM	NOON	PM
	0	483	0
0	0	1	0
3	0	528	0
0	0	6	0

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
0	479	0	2
0	11	0	1
0	535	0	

Northbound Approach

AM	0	0	0	0	AM
NOON	17	4	0	7	NOON
PM	0	0	0	0	PM
		1	0	1	Lanes

CONTROL

1-Way Stop (NB)

Count Periods	Start	End
AM		
NOON	11:00 AM	1:00 PM
PM		

Total Ins & Outs

	North Leg		
	0	0	AM
	0	1	NOON
	0	0	PM

West Leg			East Leg		
AM	NOON	PM			
0	483	0	0	490	0
0	535	0	0	535	0
			AM	NOON	PM

	South Leg	
AM	0	0
NOON	17	11
PM	0	0

Total Volume Per Leg

	North Leg
	0
	1
	0

West Leg			East Leg		
AM	NOON	PM			
0	1018	0	0	1025	0
			AM	NOON	PM

	South Leg
AM	0
NOON	28
PM	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Stewart Ave and Live Oak Ave , Irwindale

Date:	6/7/2014
Day:	Saturday

Project #:	14-5367-013
City:	Irwindale

AM Peak Hour	
NOON Peak Hour	1200 PM
PM Peak Hour	

Peak Hour Summary

Southbound Approach (Stewart Ave)

Lanes	1	1	1		
AM	0	0	0	0	AM
NOON	3	44	2	33	NOON
PM	0	0	0	0	PM

Eastbound Approach (Live Oak Ave)

Lanes	AM	NOON	PM
	0	503	0
1	0	6	0
2	0	499	0
1	0	41	0

Westbound Approach

AM	NOON	PM	Lanes
0	5	0	0
0	443	0	2
0	31	0	1
0	527	0	

CONTROL: Signalized

Northbound Approach

AM	0	0	0	0	AM
NOON	116	57	22	26	NOON
PM	0	0	0	0	PM
		0	1	0	Lanes

Count Periods	Start	End
AM		
NOON	11:00 AM	1:00 PM
PM		

Total Ins & Outs

	North Leg		
	0	0	AM
	49	33	NOON
	0	0	PM

West Leg	AM	NOON	PM
	0	503	0
	0	546	0

East Leg	AM	NOON	PM
	0	479	0
	0	527	0

	South Leg	
AM	0	0
NOON	116	105
PM	0	0

Total Volume Per Leg

	North Leg
AM	0
NOON	82
PM	0

West Leg	AM	NOON	PM
	0	1049	0

East Leg	AM	NOON	PM
	0	1006	0

	South Leg
AM	0
NOON	221
PM	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Baldwin Park Blvd and Arrow Hwy , Irwindale

Date: 6/7/2014

Day: Saturday

Project #: 14-5367-020

City: Irwindale

AM Peak Hour	
NOON Peak Hour	1200 PM
PM Peak Hour	

Peak Hour Summary

Southbound Approach (Baldwin Park Blvd)

	Lanes 0	0	0		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM

Eastbound Approach (Arrow Hwy)

Lanes	AM	NOON	PM
	0	507	0
0	0	0	0
2	0	451	0
0	0	74	0

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
0	442	0	2
0	167	0	1
0	589	0	

CONTROL: Signalized

Northbound Approach

AM	0	0	0	0	AM
NOON	241	65	0	138	NOON
PM	0	0	0	0	PM
		2	0	1	Lanes

Count Periods	Start	End
AM		
NOON	11:00 AM	1:00 PM
PM		

Total Ins & Outs

North Leg		
0	0	AM
0	0	NOON
0	0	PM

West Leg			East Leg		
AM	NOON	PM			
0	507	0	0	609	0
0	525	0	0	589	0
			AM	NOON	PM

South Leg		
0	0	AM
241	203	NOON
0	0	PM

Total Volume Per Leg

North Leg		
0		AM
0		NOON
0		PM

West Leg			East Leg		
AM	NOON	PM			
0	1032	0	0	1198	0
			AM	NOON	PM

South Leg	
0	AM
444	NOON
0	PM

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Arrow Hwy and Live Oak Ave , Irwindale

Date: 6/7/2014

Day: Saturday

Project #: 14-5367-017

City: Irwindale

AM Peak Hour	
NOON Peak Hour	1200 PM
PM Peak Hour	

Peak Hour Summary

Southbound Approach (Arrow Hwy)

Lanes	1	0	2		
AM	0	0	0	0	AM
NOON	65	0	289	443	NOON
PM	0	0	0	0	PM

Eastbound Approach (Live Oak Ave)

Lanes	AM	NOON	PM
	0	613	0
1	0	67	0
2	0	521	0
0	0	0	0

Westbound Approach

Lanes	AM	NOON	PM
2	0	376	0
2	0	548	0
0	0	0	0
	0	810	0

Northbound Approach

Lanes	0	0	0	
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM

CONTROL

Signalized

Count Periods	Start	End
AM		
NOON	11:00 AM	1:00 PM
PM		

Total Ins & Outs

	North Leg		East Leg		West Leg		South Leg
AM	0	0	0	924	0	613	0
NOON	354	443	0	810	0	588	0
PM	0	0	0	0	0	0	0

Total Volume Per Leg

	North Leg	East Leg	West Leg	South Leg
AM	0	0	0	0
NOON	797	1734	1201	0
PM	0	0	0	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Maine Ave and Arrow Hwy , Irwindale

Date: 6/7/2014

Day: Saturday

Project #: 14-5367-019

City: Irwindale

AM Peak Hour	
NOON Peak Hour	1200 PM
PM Peak Hour	

Peak Hour Summary

Southbound Approach (Maine Ave)

	Lanes 0	0	0		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM

Eastbound Approach (Arrow Hwy)

Lanes	AM	NOON	PM
	0	929	0
0	0	0	0
2	0	661	0
0	0	159	0

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
0	737	0	3
0	95	0	1
0	763	0	

Northbound Approach

AM	0	0	0	0	AM
NOON	254	192	0	102	NOON
PM	0	0	0	0	PM
		2	0	1	Lanes

CONTROL

Signalized

Count Periods	Start	End
AM		
NOON	11:00 AM	1:00 PM
PM		

Total Ins & Outs

	North Leg		
	0	0	AM
	0	0	NOON
	0	0	PM

West Leg AM	West Leg NOON	West Leg PM		East Leg AM	East Leg NOON	East Leg PM
0	929	0		0	832	0
0	820	0		0	763	0

	South Leg	
AM	0	0
NOON	254	294
PM	0	0

Total Volume Per Leg

	North Leg
AM	0
NOON	0
PM	0

West Leg AM	West Leg NOON	West Leg PM		East Leg AM	East Leg NOON	East Leg PM
0	1749	0		0	1595	0

	South Leg
AM	0
NOON	548
PM	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Avenida Barbosa and Buena Vista St , Irwindale

Date:	6/7/2014
Day:	Saturday

Project #:	14-5367-021
City:	Irwindale

AM Peak Hour	
NOON Peak Hour	1200 PM
PM Peak Hour	

Peak Hour Summary

Southbound Approach

Avenida Barbosa

Lanes	0	1	0		
AM	0	0	0	0	AM
NOON	1	60	0	96	NOON
PM	0	0	0	0	PM

Buena Vista St

Eastbound Approach

Lanes	AM	NOON	PM
	0	100	0
1	0	2	0
2	0	12	0
0	0	71	0

Westbound Approach

Lanes	AM	NOON	PM
0	0	14	0
1	0	25	0
2	0	112	0
	0	124	0

CONTROL

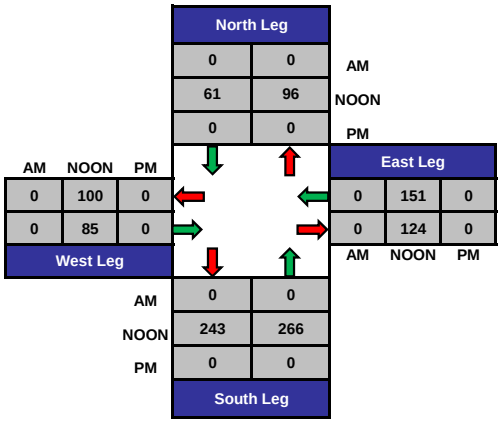
Signalized

Count Periods	Start	End
AM		
NOON	11:00 AM	1:00 PM
PM		

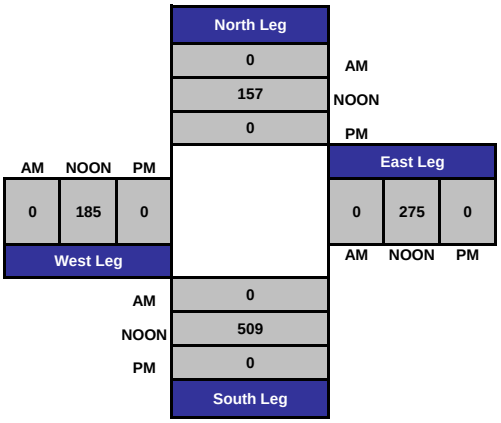
Northbound Approach

AM	0	0	0	0	AM
NOON	243	74	80	112	NOON
PM	0	0	0	0	PM
		0.5	0.5	2	Lanes

Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Avenida Barbosa and Arrow Hwy , Irwindale

Date: 6/7/2014

Day: Saturday

Project #: 14-5367-014

City: Irwindale

AM Peak Hour	
NOON Peak Hour	1200 PM
PM Peak Hour	

Peak Hour Summary

Southbound Approach

Avenida Barbosa

Lanes	1	0	2		
AM	0	0	0	0	AM
NOON	132	0	116	275	NOON
PM	0	0	0	0	PM

Eastbound Approach

Arrow Hwy

Lanes	AM	NOON	PM
	0	510	0
1	0	132	0
2	0	239	0
0	0	0	0

Westbound Approach

Lanes	AM	NOON	PM
1	0	143	0
2	0	378	0
0	0	1	0
	0	355	0

CONTROL

Signalized

Count Periods	Start	End
AM		
NOON	11:00 AM	1:00 PM
PM		

Northbound Approach

AM	0	0	0	0	AM
NOON	1	0	0	0	NOON
PM	0	0	0	0	PM
Lanes		0	0	0	Lanes

Total Ins & Outs

	North Leg		
	0	0	AM
	248	275	NOON
	0	0	PM

West Leg			East Leg		
AM	NOON	PM			
0	510	0	0	522	0
0	371	0	0	355	0
			AM	NOON	PM

	South Leg	
AM	0	0
NOON	1	0
PM	0	0

Total Volume Per Leg

	North Leg
	0
	523
	0

West Leg			East Leg		
AM	NOON	PM			
0	881	0	0	877	0
			AM	NOON	PM

	South Leg
AM	0
NOON	1
PM	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Interstate 605 SB Off-Ramp and Arrow Hwy , Irwindale

Date: 6/7/2014

Day: Saturday

Project #: 14-5367-015

City: Irwindale

AM Peak Hour	
NOON Peak Hour	1200 PM
PM Peak Hour	

Peak Hour Summary

Southbound Approach — Interstate 605 SB Off-Ramp

Lanes	1	0	1		
AM	0	0	0	0	AM
NOON	258	0	208	0	NOON
PM	0	0	0	0	PM

Eastbound Approach — Arrow Hwy

Lanes	AM	NOON	PM
	0	514	0
0	0	0	0
3	0	371	0
0	0	0	0

Westbound Approach

Lanes	AM	NOON	PM
0	0	0	0
2	0	256	0
0	0	0	0
	0	579	0

Northbound Approach

Lanes	0	0	0	
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM

CONTROL

Signalized

Count Periods	Start	End
AM		
NOON	11:00 AM	1:00 PM
PM		

Total Ins & Outs

	North Leg		
	0	0	AM
	466	0	NOON
	0	0	PM

West Leg	AM	NOON	PM
	0	514	0
	0	371	0

East Leg	AM	NOON	PM
	0	256	0
	0	579	0

	South Leg	
AM	0	0
NOON	0	0
PM	0	0

Total Volume Per Leg

	North Leg
AM	0
NOON	466
PM	0

West Leg	AM	NOON	PM
	0	885	0

East Leg	AM	NOON	PM
	0	835	0

	South Leg
AM	0
NOON	0
PM	0

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Interstate 605 NB Ramps_Live Oak Ln and Arrow Hwy , Irwindale

Date: 6/7/2014

Day: Saturday

Project #: 14-5367-016

City: Irwindale

AM Peak Hour	
NOON Peak Hour	1200 PM
PM Peak Hour	

Peak Hour Summary

Southbound Approach

Interstate 605 NB Ramps_Live Oak Ln

Lanes	0	0	0		
AM	0	0	0	0	AM
NOON	0	0	0	218	NOON
PM	0	0	0	0	PM

Eastbound Approach

Arrow Hwy

Lanes	AM	NOON	PM
	0	252	0
0	0	0	0
2	0	407	0
1	0	156	0

Westbound Approach

Lanes	AM	NOON	PM
1	0	218	0
2	0	252	0
0	0	0	0
	0	421	0

CONTROL

No Control

Northbound Approach

AM	0	0	0	0	AM
NOON	156	0	0	14	NOON
PM	0	0	0	0	PM
		0	1	0	Lanes

Count Periods	Start	End
AM		
NOON	11:00 AM	1:00 PM
PM		

Total Ins & Outs

North Leg		
0	0	AM
0	218	NOON
0	0	PM

West Leg				East Leg		
AM	NOON	PM		AM	NOON	PM
0	252	0		0	470	0
0	563	0		0	421	0

South Leg		
0	0	AM
156	14	NOON
0	0	PM

Total Volume Per Leg

North Leg	
0	AM
218	NOON
0	PM

West Leg				East Leg		
AM	NOON	PM		AM	NOON	PM
0	815	0		0	891	0

South Leg	
0	AM
170	NOON
0	PM

APPENDIX C:

VOLUME DEVELOPMENT WORKSHEETS

Table C-1 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
1 Peck Road-Myrtle Avenue/Live Oak Avenue												
NBL	244	3	0	0	5	249	218	1	0	0	2	220
NBT	893	16	4	3	41	934	754	6	0	1	12	766
NBR	190	5	16	12	76	266	160	8	1	0	14	174
SBL	31	1	1	1	7	38	175	1	0	0	2	177
SBT	459	11	1	6	37	496	538	5	1	0	10	548
SBR	139	2	3	1	12	151	130	1	0	0	2	132
EBL	64	2	0	0	3	67	173	6	0	0	9	182
EBT	501	10	3	4	33	534	1,096	19	11	2	57	1,153
EBR	202	3	0	0	5	207	179	1	0	1	5	184
WBL	135	5	5	1	21	156	55	3	0	0	5	60
WBT	1,073	12	6	10	60	1,133	606	14	0	4	33	639
WBR	41	3	1	2	13	54	16	1	1	0	4	20
North Leg												
Approach	629	14	5	8	56	685	843	7	1	0	14	857
Departure	998	21	5	5	57	1,055	943	13	1	1	25	968
Total	1,627	35	10	13	113	1,740	1,786	20	2	1	39	1,825
South Leg												
Approach	1,327	24	20	15	122	1,449	1,132	15	1	1	28	1,160
Departure	796	19	6	7	63	859	772	9	1	1	20	792
Total	2,123	43	26	22	185	2,308	1,904	24	2	2	48	1,952
East Leg												
Approach	1,249	20	12	13	94	1,343	677	18	1	4	42	719
Departure	722	16	20	17	116	838	1,431	28	12	2	73	1,504
Total	1,971	36	32	30	210	2,181	2,108	46	13	6	115	2,223
West Leg												
Approach	767	15	3	4	41	808	1,448	26	11	3	71	1,519
Departure	1,456	17	9	11	77	1,533	954	16	0	4	37	991
Total	2,223	32	12	15	118	2,341	2,402	42	11	7	108	2,510
Total Approaches												
Approach	3,972	73	40	40	313	4,285	4,100	66	14	8	155	4,255
Departure	3,972	73	40	40	313	4,285	4,100	66	14	8	155	4,255
Total	7,944	146	80	80	626	8,570	8,200	132	28	16	310	8,510

Table C-1 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
2 Myrtle Avenue/Longden Avenue												
NBL	163	0	0	0	0	163	92	0	0	0	0	92
NBT	830	18	2	4	43	873	841	9	1	1	19	860
NBR	10	2	3	0	9	19	7	3	0	0	5	12
SBL	128	1	5	7	33	161	319	13	3	1	29	348
SBT	562	11	2	5	36	598	762	6	1	0	11	773
SBR	48	0	0	0	0	48	53	0	0	0	0	53
EBL	63	3	0	0	5	68	80	0	0	0	0	80
EBT	228	5	1	3	19	247	606	9	0	0	14	620
EBR	72	0	1	0	2	74	96	0	0	0	0	96
WBL	11	3	4	3	22	33	24	1	0	0	2	26
WBT	551	5	1	2	16	567	376	2	0	0	3	379
WBR	345	12	1	15	65	410	252	3	1	2	13	265
North Leg												
Approach	738	12	7	12	69	807	1,134	19	4	1	40	1,174
Departure	1,238	33	3	19	113	1,351	1,173	12	2	3	32	1,205
Total	1,976	45	10	31	182	2,158	2,307	31	6	4	72	2,379
South Leg												
Approach	1,003	20	5	4	52	1,055	940	12	1	1	24	964
Departure	645	14	7	8	60	705	882	7	1	0	13	895
Total	1,648	34	12	12	112	1,760	1,822	19	2	1	37	1,859
East Leg												
Approach	907	20	6	20	103	1,010	652	6	1	2	18	670
Departure	366	8	9	10	61	427	932	25	3	1	48	980
Total	1,273	28	15	30	164	1,437	1,584	31	4	3	66	1,650
West Leg												
Approach	363	8	2	3	26	389	782	9	0	0	14	796
Departure	762	5	1	2	16	778	521	2	0	0	3	524
Total	1,125	13	3	5	42	1,167	1,303	11	0	0	17	1,320
Total Approaches												
Approach	3,011	60	20	39	250	3,261	3,508	46	6	4	96	3,604
Departure	3,011	60	20	39	250	3,261	3,508	46	6	4	96	3,604
Total	6,022	120	40	78	500	6,522	7,016	92	12	8	192	7,208

Table C-1 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
3 Longden Avenue/Live Oak Avenue												
NBL	3	4	0	0	6	9	0	0	0	0	0	0
NBT	3	2	0	1	6	9	0	0	0	0	0	0
NBR	3	0	0	2	6	9	0	0	0	0	0	0
SBL	347	7	9	14	71	418	933	19	2	1	36	969
SBT	1	0	0	0	0	1	0	0	0	0	0	0
SBR	4	2	1	1	8	12	1	5	0	0	8	9
EBL	26	1	1	2	10	36	8	0	0	0	0	8
EBT	706	15	17	14	99	805	1,439	26	14	5	82	1,521
EBR	1	0	0	0	0	1	1	0	0	0	0	1
WBL	6	0	0	1	3	9	1	0	0	0	0	1
WBT	1,210	10	11	16	85	1,295	653	11	1	4	31	684
WBR	867	13	4	14	70	937	628	4	1	2	14	642
North Leg												
Approach	352	9	10	15	79	431	934	24	2	1	44	978
Departure	896	16	5	17	86	982	636	4	1	2	14	650
Total	1,248	25	15	32	165	1,413	1,570	28	3	3	58	1,628
South Leg												
Approach	9	6	0	3	18	27	0	0	0	0	0	0
Departure	8	0	0	1	3	11	2	0	0	0	0	2
Total	17	6	0	4	21	38	2	0	0	0	0	2
East Leg												
Approach	2,083	23	15	31	158	2,241	1,282	15	2	6	45	1,327
Departure	1,056	22	26	30	176	1,232	2,372	45	16	6	118	2,490
Total	3,139	45	41	61	334	3,473	3,654	60	18	12	163	3,817
West Leg												
Approach	733	16	18	16	109	842	1,448	26	14	5	82	1,530
Departure	1,217	16	12	17	99	1,316	654	16	1	4	39	693
Total	1,950	32	30	33	208	2,158	2,102	42	15	9	121	2,223
Total Approaches												
Approach	3,177	54	43	65	364	3,541	3,664	65	18	12	171	3,835
Departure	3,177	54	43	65	364	3,541	3,664	65	18	12	171	3,835
Total	6,354	108	86	130	728	7,082	7,328	130	36	24	342	7,670

Table C-1 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
4 Arrow Highway/Live Oak Avenue												
NBL	0	0	0	0	0	0	0	0	0	0	0	0
NBT	421	11	11	10	69	490	684	4	2	5	25	709
NBR	629	10	14	20	103	732	1,704	39	19	6	115	1,819
SBL	36	5	14	16	84	120	220	2	1	4	17	237
SBT	1,269	13	3	12	62	1,331	495	6	0	4	21	516
SBR	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0	0	0	0	0	0
WBL	792	10	12	27	120	912	772	9	4	9	49	821
WBT	0	0	0	0	0	0	0	0	0	0	0	0
WBR	139	3	4	15	58	197	88	4	1	7	29	117
North Leg												
Approach	1,305	18	17	28	146	1,451	715	8	1	8	38	753
Departure	560	14	15	25	127	687	772	8	3	12	54	826
Total	1,865	32	32	53	273	2,138	1,487	16	4	20	92	1,579
South Leg												
Approach	1,050	21	25	30	172	1,222	2,388	43	21	11	140	2,528
Departure	2,061	23	15	39	182	2,243	1,267	15	4	13	70	1,337
Total	3,111	44	40	69	354	3,465	3,655	58	25	24	210	3,865
East Leg												
Approach	931	13	16	42	178	1,109	860	13	5	16	78	938
Departure	665	15	28	36	187	852	1,924	41	20	10	132	2,056
Total	1,596	28	44	78	365	1,961	2,784	54	25	26	210	2,994
West Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Total Approaches												
Approach	3,286	52	58	100	496	3,782	3,963	64	27	35	256	4,219
Departure	3,286	52	58	100	496	3,782	3,963	64	27	35	256	4,219
Total	6,572	104	116	200	992	7,564	7,926	128	54	70	512	8,438

Table C-1 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
5 Driveway 1/Live Oak Avenue												
NBL	4	4	0	4	18	22	0	3	1	0	7	7
NBT	0	0	0	0	0	0	0	0	0	0	0	0
NBR	4	8	3	20	78	82	18	0	9	8	42	60
SBL	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0
EBT	653	12	27	30	162	815	1,915	41	19	7	121	2,036
EBR	10	4	1	9	35	45	14	0	0	3	9	23
WBL	7	5	5	1	21	28	7	2	0	12	39	46
WBT	933	10	15	40	165	1,098	863	9	3	15	65	928
WBR	0	0	0	0	0	0	0	0	0	0	0	0
North Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
South Leg												
Approach	8	12	3	24	96	104	18	3	10	8	49	67
Departure	17	9	6	10	56	73	21	2	0	15	48	69
Total	25	21	9	34	152	177	39	5	10	23	97	136
East Leg												
Approach	940	15	20	41	186	1,126	870	11	3	27	104	974
Departure	657	20	30	50	240	897	1,933	41	28	15	163	2,096
Total	1,597	35	50	91	426	2,023	2,803	52	31	42	267	3,070
West Leg												
Approach	663	16	28	39	197	860	1,929	41	19	10	130	2,059
Departure	937	14	15	44	183	1,120	863	12	4	15	72	935
Total	1,600	30	43	83	380	1,980	2,792	53	23	25	202	2,994
Total Approaches												
Approach	1,611	43	51	104	479	2,090	2,817	55	32	45	283	3,100
Departure	1,611	43	51	104	479	2,090	2,817	55	32	45	283	3,100
Total	3,222	86	102	208	958	4,180	5,634	110	64	90	566	6,200

Table C-1 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
6 Speedway Drive-Driveway 2/Live Oak Avenue												
NBL	0	0	0	0	0	0	10	0	0	0	0	10
NBT	0	0	0	0	0	0	0	0	0	0	0	0
NBR	1	0	0	0	0	1	5	0	0	0	0	5
SBL	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0
EBT	672	20	29	50	238	910	1,876	44	27	13	159	2,035
EBR	2	0	0	0	0	2	53	0	0	0	0	53
WBL	6	3	0	3	14	20	77	0	2	2	10	87
WBT	948	12	21	41	183	1,131	852	13	4	28	112	964
WBR	0	0	0	0	0	0	0	0	0	0	0	0
North Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
South Leg												
Approach	1	0	0	0	0	1	15	0	0	0	0	15
Departure	8	3	0	3	14	22	130	0	2	2	10	140
Total	9	3	0	3	14	23	145	0	2	2	10	155
East Leg												
Approach	954	15	21	44	197	1,151	929	13	6	30	122	1,051
Departure	673	20	29	50	238	911	1,881	44	27	13	159	2,040
Total	1,627	35	50	94	435	2,062	2,810	57	33	43	281	3,091
West Leg												
Approach	674	20	29	50	238	912	1,929	44	27	13	159	2,088
Departure	948	12	21	41	183	1,131	862	13	4	28	112	974
Total	1,622	32	50	91	421	2,043	2,791	57	31	41	271	3,062
Total Approaches												
Approach	1,629	35	50	94	435	2,064	2,873	57	33	43	281	3,154
Departure	1,629	35	50	94	435	2,064	2,873	57	33	43	281	3,154
Total	3,258	70	100	188	870	4,128	5,746	114	66	86	562	6,308

Table C-1 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
7 Driveway 3/Live Oak Avenue												
NBL	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0	0	0
SBL	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0
EBT	667	21	30	50	242	909	1,881	44	25	14	158	2,039
EBR	0	0	0	0	0	0	0	0	0	0	0	0
WBL	12	0	0	0	0	12	5	0	0	0	0	5
WBT	945	17	20	44	198	1,143	924	13	4	29	115	1,039
WBR	0	0	0	0	0	0	0	0	0	0	0	0
North Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
South Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	12	0	0	0	0	12	5	0	0	0	0	5
Total	12	0	0	0	0	12	5	0	0	0	0	5
East Leg												
Approach	957	17	20	44	198	1,155	929	13	4	29	115	1,044
Departure	667	21	30	50	242	909	1,881	44	25	14	158	2,039
Total	1,624	38	50	94	440	2,064	2,810	57	29	43	273	3,083
West Leg												
Approach	667	21	30	50	242	909	1,881	44	25	14	158	2,039
Departure	945	17	20	44	198	1,143	924	13	4	29	115	1,039
Total	1,612	38	50	94	440	2,052	2,805	57	29	43	273	3,078
Total Approaches												
Approach	1,624	38	50	94	440	2,064	2,810	57	29	43	273	3,083
Departure	1,624	38	50	94	440	2,064	2,810	57	29	43	273	3,083
Total	3,248	76	100	188	880	4,128	5,620	114	58	86	546	6,166

Table C-1 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
8 Interstate 605 Southbound On-Ramp/Live Oak Avenue												
NBL	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0	0	0
SBL	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0
EBT	291	6	22	18	107	398	984	17	16	7	79	1,063
EBR	384	13	9	34	140	524	898	29	9	6	80	978
WBL	456	24	8	59	229	685	509	2	11	13	64	573
WBT	946	18	22	44	203	1,149	929	14	3	29	114	1,043
WBR	0	0	0	0	0	0	0	0	0	0	0	0
North Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
South Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	840	37	17	93	369	1,209	1,407	31	20	19	144	1,551
Total	840	37	17	93	369	1,209	1,407	31	20	19	144	1,551
East Leg												
Approach	1,402	42	30	103	432	1,834	1,438	16	14	42	178	1,616
Departure	291	6	22	18	107	398	984	17	16	7	79	1,063
Total	1,693	48	52	121	539	2,232	2,422	33	30	49	257	2,679
West Leg												
Approach	675	19	31	52	247	922	1,882	46	25	13	159	2,041
Departure	946	18	22	44	203	1,149	929	14	3	29	114	1,043
Total	1,621	37	53	96	450	2,071	2,811	60	28	42	273	3,084
Total Approaches												
Approach	2,077	61	61	155	679	2,756	3,320	62	39	55	337	3,657
Departure	2,077	61	61	155	679	2,756	3,320	62	39	55	337	3,657
Total	4,154	122	122	310	1,358	5,512	6,640	124	78	110	674	7,314

Table C-1 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
9 Interstate 605 Northbound Ramps/Live Oak Avenue												
NBL	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0
NBR	240	5	14	30	126	366	567	21	11	7	75	642
SBL	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0
SBR	303	2	9	20	81	384	553	8	7	27	107	660
EBL	0	0	0	0	0	0	0	0	0	0	0	0
EBT	292	6	23	18	109	401	985	18	16	6	77	1,062
EBR	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0	0	0
WBT	1,094	40	21	85	357	1,451	895	8	7	16	74	969
WBR	0	0	0	0	0	0	0	0	0	0	0	0
North Leg												
Approach	303	2	9	20	81	384	553	8	7	27	107	660
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	303	2	9	20	81	384	553	8	7	27	107	660
South Leg												
Approach	240	5	14	30	126	366	567	21	11	7	75	642
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	240	5	14	30	126	366	567	21	11	7	75	642
East Leg												
Approach	1,094	40	21	85	357	1,451	895	8	7	16	74	969
Departure	532	11	37	48	235	767	1,552	39	27	13	152	1,704
Total	1,626	51	58	133	592	2,218	2,447	47	34	29	226	2,673
West Leg												
Approach	292	6	23	18	109	401	985	18	16	6	77	1,062
Departure	1,397	42	30	105	438	1,835	1,448	16	14	43	181	1,629
Total	1,689	48	53	123	547	2,236	2,433	34	30	49	258	2,691
Total Approaches												
Approach	1,929	53	67	153	673	2,602	3,000	55	41	56	333	3,333
Departure	1,929	53	67	153	673	2,602	3,000	55	41	56	333	3,333
Total	3,858	106	134	306	1,346	5,204	6,000	110	82	112	666	6,666

Table C-1 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
10 Graham Road/Live Oak Avenue												
NBL	23	14	1	34	125	148	17	0	0	0	0	17
NBT	0	0	0	0	0	0	0	0	0	0	0	0
NBR	13	2	5	10	43	56	19	1	0	0	2	21
SBL	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0
EBL	2	0	0	0	0	2	6	0	0	0	0	6
EBT	522	9	29	26	150	672	1,548	24	22	15	125	1,673
EBR	14	3	9	22	89	103	9	13	6	1	35	44
WBL	15	0	2	9	31	46	20	1	1	3	13	33
WBT	1,060	27	20	51	234	1,294	872	9	2	23	87	959
WBR	0	0	0	0	0	0	0	0	0	0	0	0
North Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	2	0	0	0	0	2	6	0	0	0	0	6
Total	2	0	0	0	0	2	6	0	0	0	0	6
South Leg												
Approach	36	16	6	44	168	204	36	1	0	0	2	38
Departure	29	3	11	31	120	149	29	14	7	4	48	77
Total	65	19	17	75	288	353	65	15	7	4	50	115
East Leg												
Approach	1,075	27	22	60	265	1,340	892	10	3	26	100	992
Departure	535	11	34	36	193	728	1,567	25	22	15	127	1,694
Total	1,610	38	56	96	458	2,068	2,459	35	25	41	227	2,686
West Leg												
Approach	538	12	38	48	239	777	1,563	37	28	16	160	1,723
Departure	1,083	41	21	85	359	1,442	889	9	2	23	87	976
Total	1,621	53	59	133	598	2,219	2,452	46	30	39	247	2,699
Total Approaches												
Approach	1,649	55	66	152	672	2,321	2,491	48	31	42	262	2,753
Departure	1,649	55	66	152	672	2,321	2,491	48	31	42	262	2,753
Total	3,298	110	132	304	1,344	4,642	4,982	96	62	84	524	5,506

Table C-1 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
11 Live Oak Lane/Live Oak Avenue												
NBL	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0	0	0
SBL	0	1	4	1	13	13	8	0	0	1	3	11
SBT	0	0	0	0	0	0	0	0	0	0	0	0
SBR	19	6	8	28	109	128	42	2	0	8	27	69
EBL	27	1	18	6	56	83	21	3	2	5	24	45
EBT	519	9	10	32	130	649	1,516	22	18	15	114	1,630
EBR	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0	0	0
WBT	1,077	19	14	32	153	1,230	850	6	4	15	62	912
WBR	25	2	2	7	28	53	6	0	0	0	0	6
North Leg												
Approach	19	7	12	29	122	141	50	2	0	9	30	80
Departure	52	3	20	13	84	136	27	3	2	5	24	51
Total	71	10	32	42	206	277	77	5	2	14	54	131
South Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
East Leg												
Approach	1,102	21	16	39	181	1,283	856	6	4	15	62	918
Departure	519	10	14	33	143	662	1,524	22	18	16	117	1,641
Total	1,621	31	30	72	324	1,945	2,380	28	22	31	179	2,559
West Leg												
Approach	546	10	28	38	186	732	1,537	25	20	20	138	1,675
Departure	1,096	25	22	60	262	1,358	892	8	4	23	89	981
Total	1,642	35	50	98	448	2,090	2,429	33	24	43	227	2,656
Total Approaches												
Approach	1,667	38	56	106	489	2,156	2,443	33	24	44	230	2,673
Departure	1,667	38	56	106	489	2,156	2,443	33	24	44	230	2,673
Total	3,334	76	112	212	978	4,312	4,886	66	48	88	460	5,346

Table C-1 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
12 Rivergrade Road/Live Oak Avenue												
NBL	28	1	2	2	12	40	91	0	0	2	6	97
NBT	23	3	0	7	26	49	57	1	1	1	7	64
NBR	95	0	0	3	9	104	344	6	1	2	17	361
SBL	26	0	0	1	3	29	23	0	0	1	3	26
SBT	62	2	0	3	12	74	15	2	1	0	5	20
SBR	19	4	3	13	51	70	45	0	0	4	12	57
EBL	49	1	4	10	40	89	54	1	3	5	23	77
EBT	393	9	10	18	88	481	1,447	20	18	12	102	1,549
EBR	66	0	0	6	18	84	20	0	0	0	0	20
WBL	217	2	2	9	34	251	78	0	0	1	3	81
WBT	1,045	13	9	25	113	1,158	725	6	3	9	42	767
WBR	5	1	0	2	8	13	6	0	0	0	0	6
North Leg												
Approach	107	6	3	17	66	173	83	2	1	5	20	103
Departure	77	5	4	19	74	151	117	2	4	6	30	147
Total	184	11	7	36	140	324	200	4	5	11	50	250
South Leg												
Approach	146	4	2	12	47	193	492	7	2	5	30	522
Departure	345	4	2	18	64	409	113	2	1	1	8	121
Total	491	8	4	30	111	602	605	9	3	6	38	643
East Leg												
Approach	1,267	16	11	36	155	1,422	809	6	3	10	45	854
Departure	514	9	10	22	100	614	1,814	26	19	15	122	1,936
Total	1,781	25	21	58	255	2,036	2,623	32	22	25	167	2,790
West Leg												
Approach	508	10	14	34	146	654	1,521	21	21	17	125	1,646
Departure	1,092	18	14	40	176	1,268	861	6	3	15	60	921
Total	1,600	28	28	74	322	1,922	2,382	27	24	32	185	2,567
Total Approaches												
Approach	2,028	36	30	99	414	2,442	2,905	36	27	37	220	3,125
Departure	2,028	36	30	99	414	2,442	2,905	36	27	37	220	3,125
Total	4,056	72	60	198	828	4,884	5,810	72	54	74	440	6,250

Table C-1 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
13 Commerce Drive/Live Oak Avenue												
NBL	3	0	0	1	3	6	19	1	0	1	5	24
NBT	0	0	0	0	0	0	0	0	0	0	0	0
NBR	13	3	0	0	5	18	186	7	0	0	11	197
SBL	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	2	0	0	0	0	2
EBT	390	9	8	10	60	450	1,808	27	17	15	120	1,928
EBR	42	0	0	1	3	45	6	0	0	0	0	6
WBL	250	2	0	1	6	256	10	7	0	0	11	21
WBT	1,346	17	20	39	183	1,529	789	5	3	8	38	827
WBR	0	0	0	0	0	0	0	0	0	0	0	0
North Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	2	0	0	0	0	2
Total	0	0	0	0	0	0	2	0	0	0	0	2
South Leg												
Approach	16	3	0	1	8	24	205	8	0	1	16	221
Departure	292	2	0	2	9	301	16	7	0	0	11	27
Total	308	5	0	3	17	325	221	15	0	1	27	248
East Leg												
Approach	1,596	19	20	40	189	1,785	799	12	3	8	49	848
Departure	403	12	8	10	65	468	1,994	34	17	15	131	2,125
Total	1,999	31	28	50	254	2,253	2,793	46	20	23	180	2,973
West Leg												
Approach	432	9	8	11	63	495	1,816	27	17	15	120	1,936
Departure	1,349	17	20	40	186	1,535	808	6	3	9	43	851
Total	1,781	26	28	51	249	2,030	2,624	33	20	24	163	2,787
Total Approaches												
Approach	2,044	31	28	52	260	2,304	2,820	47	20	24	185	3,005
Departure	2,044	31	28	52	260	2,304	2,820	47	20	24	185	3,005
Total	4,088	62	56	104	520	4,608	5,640	94	40	48	370	6,010

Table C-1 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
14 Stewart Avenue/Live Oak Avenue												
NBL	203	2	2	0	7	210	62	2	0	1	6	68
NBT	113	1	0	1	5	118	19	0	0	0	0	19
NBR	32	0	0	0	0	32	11	0	0	0	0	11
SBL	11	1	0	0	2	13	18	1	0	1	5	23
SBT	26	0	0	0	0	26	93	1	2	0	6	99
SBR	70	0	0	2	6	76	13	0	0	0	0	13
EBL	16	0	0	1	3	19	58	0	0	0	0	58
EBT	366	14	6	9	60	426	1,684	33	19	14	130	1,814
EBR	22	1	1	0	4	26	261	2	0	0	3	264
WBL	17	0	0	0	0	17	30	0	4	0	8	38
WBT	1,335	16	18	36	168	1,503	709	10	3	7	42	751
WBR	30	0	1	1	5	35	1	0	0	0	0	1
North Leg												
Approach	107	1	0	2	8	115	124	2	2	1	11	135
Departure	159	1	1	3	13	172	78	0	0	0	0	78
Total	266	2	1	5	21	287	202	2	2	1	11	213
South Leg												
Approach	348	3	2	1	12	360	92	2	0	1	6	98
Departure	65	1	1	0	4	69	384	3	6	0	17	401
Total	413	4	3	1	16	429	476	5	6	1	23	499
East Leg												
Approach	1,382	16	19	37	173	1,555	740	10	7	7	50	790
Departure	409	15	6	9	62	471	1,713	34	19	15	135	1,848
Total	1,791	31	25	46	235	2,026	2,453	44	26	22	185	2,638
West Leg												
Approach	404	15	7	10	67	471	2,003	35	19	14	133	2,136
Departure	1,608	18	20	38	181	1,789	784	12	3	8	48	832
Total	2,012	33	27	48	248	2,260	2,787	47	22	22	181	2,968
Total Approaches												
Approach	2,241	35	28	50	260	2,501	2,959	49	28	23	200	3,159
Departure	2,241	35	28	50	260	2,501	2,959	49	28	23	200	3,159
Total	4,482	70	56	100	520	5,002	5,918	98	56	46	400	6,318

Table C-1 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
15 Baldwin Park/Arrow Highway												
NBL	264	5	6	4	32	296	85	1	2	1	9	94
NBT	0	0	0	0	0	0	0	0	0	0	0	0
NBR	239	6	0	14	51	290	80	0	2	0	4	84
SBL	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0
EBT	382	9	6	8	50	432	1,248	20	9	15	93	1,341
EBR	52	5	0	1	11	63	484	12	10	0	38	522
WBL	108	1	3	5	23	131	252	5	1	0	10	262
WBT	1,148	13	14	33	147	1,295	631	10	5	7	46	677
WBR	0	0	0	0	0	0	0	0	0	0	0	0
North Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
South Leg												
Approach	503	11	6	18	83	586	165	1	4	1	13	178
Departure	160	6	3	6	34	194	736	17	11	0	48	784
Total	663	17	9	24	117	780	901	18	15	1	61	962
East Leg												
Approach	1,256	14	17	38	170	1,426	883	15	6	7	56	939
Departure	621	15	6	22	101	722	1,328	20	11	15	97	1,425
Total	1,877	29	23	60	271	2,148	2,211	35	17	22	153	2,364
West Leg												
Approach	434	14	6	9	61	495	1,732	32	19	15	131	1,863
Departure	1,412	18	20	37	179	1,591	716	11	7	8	55	771
Total	1,846	32	26	46	240	2,086	2,448	43	26	23	186	2,634
Total Approaches												
Approach	2,193	39	29	65	314	2,507	2,780	48	29	23	200	2,980
Departure	2,193	39	29	65	314	2,507	2,780	48	29	23	200	2,980
Total	4,386	78	58	130	628	5,014	5,560	96	58	46	400	5,960

Table C-1 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
16 Arrow Highway/Live Oak Avenue												
NBL	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0	0	0
SBL	242	7	2	4	27	269	944	4	3	5	27	971
SBT	0	0	0	0	0	0	0	0	0	0	0	0
SBR	37	0	3	0	6	43	107	2	0	0	3	110
EBL	129	0	0	3	9	138	34	0	0	1	3	37
EBT	489	14	9	19	96	585	1,310	22	11	7	76	1,386
EBR	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0	0	0
WBT	1,217	14	17	38	169	1,386	764	9	8	9	57	821
WBR	1,499	22	2	4	49	1,548	411	6	0	7	30	441
North Leg												
Approach	279	7	5	4	33	312	1,051	6	3	5	30	1,081
Departure	1,628	22	2	7	58	1,686	445	6	0	8	33	478
Total	1,907	29	7	11	91	1,998	1,496	12	3	13	63	1,559
South Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
East Leg												
Approach	2,716	36	19	42	218	2,934	1,175	15	8	16	87	1,262
Departure	731	21	11	23	123	854	2,254	26	14	12	103	2,357
Total	3,447	57	30	65	341	3,788	3,429	41	22	28	190	3,619
West Leg												
Approach	618	14	9	22	105	723	1,344	22	11	8	79	1,423
Departure	1,254	14	20	38	175	1,429	871	11	8	9	60	931
Total	1,872	28	29	60	280	2,152	2,215	33	19	17	139	2,354
Total Approaches												
Approach	3,613	57	33	68	356	3,969	3,570	43	22	29	196	3,766
Departure	3,613	57	33	68	356	3,969	3,570	43	22	29	196	3,766
Total	7,226	114	66	136	712	7,938	7,140	86	44	58	392	7,532

Table C-1 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
17 Maine Avenue/Arrow Highway												
NBL	582	12	6	0	30	612	231	2	3	3	18	249
NBT	0	0	0	0	0	0	0	0	0	0	0	0
NBR	93	2	1	2	11	104	92	2	2	0	7	99
SBL	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0
EBT	632	19	7	22	109	741	1,749	26	13	15	110	1,859
EBR	85	4	3	0	12	97	479	1	1	1	7	486
WBL	29	3	0	0	5	34	61	1	0	0	2	63
WBT	2,132	23	12	47	200	2,332	951	11	5	10	57	1,008
WBR	0	0	0	0	0	0	0	0	0	0	0	0
North Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
South Leg												
Approach	675	14	7	2	41	716	323	4	5	3	25	348
Departure	114	7	3	0	17	131	540	2	1	1	9	549
Total	789	21	10	2	58	847	863	6	6	4	34	897
East Leg												
Approach	2,161	26	12	47	205	2,366	1,012	12	5	10	59	1,071
Departure	725	21	8	24	120	845	1,841	28	15	15	117	1,958
Total	2,886	47	20	71	325	3,211	2,853	40	20	25	176	3,029
West Leg												
Approach	717	23	10	22	121	838	2,228	27	14	16	117	2,345
Departure	2,714	35	18	47	230	2,944	1,182	13	8	13	75	1,257
Total	3,431	58	28	69	351	3,782	3,410	40	22	29	192	3,602
Total Approaches												
Approach	3,553	63	29	71	367	3,920	3,563	43	24	29	201	3,764
Departure	3,553	63	29	71	367	3,920	3,563	43	24	29	201	3,764
Total	7,106	126	58	142	734	7,840	7,126	86	48	58	402	7,528

Table C-1 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
18 Avenida Barbosa/Buena Vista Street												
NBL	45	0	1	1	5	50	15	0	0	0	0	15
NBT	138	5	1	1	13	151	105	3	1	0	7	112
NBR	684	6	1	2	17	701	275	11	0	1	20	295
SBL	6	1	0	0	2	8	26	0	0	0	0	26
SBT	66	2	0	0	3	69	176	1	0	0	2	178
SBR	2	0	0	0	0	2	6	0	0	0	0	6
EBL	1	0	0	0	0	1	4	1	0	0	2	6
EBT	4	0	0	0	0	4	18	1	0	0	2	20
EBR	6	0	0	0	0	6	82	0	0	0	0	82
WBL	126	10	1	1	20	146	464	2	0	1	6	470
WBT	9	3	0	0	5	14	11	2	0	1	6	17
WBR	16	1	0	0	2	18	22	0	0	0	0	22
North Leg												
Approach	74	3	0	0	5	79	208	1	0	0	2	210
Departure	155	6	1	1	15	170	131	4	1	0	9	140
Total	229	9	1	1	20	249	339	5	1	0	11	350
South Leg												
Approach	867	11	3	4	35	902	395	14	1	1	27	422
Departure	198	12	1	1	23	221	722	3	0	1	8	730
Total	1,065	23	4	5	58	1,123	1,117	17	1	2	35	1,152
East Leg												
Approach	151	14	1	1	27	178	497	4	0	2	12	509
Departure	694	7	1	2	19	713	319	12	0	1	22	341
Total	845	21	2	3	46	891	816	16	0	3	34	850
West Leg												
Approach	11	0	0	0	0	11	104	2	0	0	4	108
Departure	56	3	1	1	10	66	32	2	0	1	6	38
Total	67	3	1	1	10	77	136	4	0	1	10	146
Total Approaches												
Approach	1,103	28	4	5	67	1,170	1,204	21	1	3	45	1,249
Departure	1,103	28	4	5	67	1,170	1,204	21	1	3	45	1,249
Total	2,206	56	8	10	134	2,340	2,408	42	2	6	90	2,498

Table C-1 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
19 Avenida Barbosa/Arrow Highway												
NBL	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0	0	0
SBL	103	5	0	3	17	120	358	2	0	0	3	361
SBT	0	0	0	0	0	0	0	0	0	0	0	0
SBR	86	5	5	6	36	122	305	1	0	1	5	310
EBL	268	3	3	3	20	288	180	5	0	0	8	188
EBT	300	10	12	17	90	390	590	4	2	12	46	636
EBR	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0	0	0
WBT	1,215	11	14	22	111	1,326	413	8	1	7	35	448
WBR	603	6	2	9	40	643	195	2	0	0	3	198
North Leg												
Approach	189	10	5	9	53	242	663	3	0	1	8	671
Departure	871	9	5	12	60	931	375	7	0	0	11	386
Total	1,060	19	10	21	113	1,173	1,038	10	0	1	19	1,057
South Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
East Leg												
Approach	1,818	17	16	31	151	1,969	608	10	1	7	38	646
Departure	403	15	12	20	107	510	948	6	2	12	49	997
Total	2,221	32	28	51	258	2,479	1,556	16	3	19	87	1,643
West Leg												
Approach	568	13	15	20	110	678	770	9	2	12	54	824
Departure	1,301	16	19	28	147	1,448	718	9	1	8	40	758
Total	1,869	29	34	48	257	2,126	1,488	18	3	20	94	1,582
Total Approaches												
Approach	2,575	40	36	60	314	2,889	2,041	22	3	20	100	2,141
Departure	2,575	40	36	60	314	2,889	2,041	22	3	20	100	2,141
Total	5,150	80	72	120	628	5,778	4,082	44	6	40	200	4,282

Table C-1 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
20 Interstate 605 Southbound Off-Ramp/Arrow Highway												
NBL	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0	0	0
SBL	311	1	7	18	70	381	251	1	2	7	27	278
SBT	0	0	0	0	0	0	0	0	0	0	0	0
SBR	431	4	9	20	84	515	273	5	2	7	33	306
EBL	0	0	0	0	0	0	0	0	0	0	0	0
EBT	398	14	11	19	100	498	949	5	2	12	48	997
EBR	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0	0	0
WBT	1,391	14	4	7	50	1,441	337	5	0	1	11	348
WBR	0	0	0	0	0	0	0	0	0	0	0	0
North Leg												
Approach	742	5	16	38	154	896	524	6	4	14	60	584
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	742	5	16	38	154	896	524	6	4	14	60	584
South Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
East Leg												
Approach	1,391	14	4	7	50	1,441	337	5	0	1	11	348
Departure	709	15	18	37	170	879	1,200	6	4	19	75	1,275
Total	2,100	29	22	44	220	2,320	1,537	11	4	20	86	1,623
West Leg												
Approach	398	14	11	19	100	498	949	5	2	12	48	997
Departure	1,822	18	13	27	134	1,956	610	10	2	8	44	654
Total	2,220	32	24	46	234	2,454	1,559	15	4	20	92	1,651
Total Approaches												
Approach	2,531	33	31	64	304	2,835	1,810	16	6	27	119	1,929
Departure	2,531	33	31	64	304	2,835	1,810	16	6	27	119	1,929
Total	5,062	66	62	128	608	5,670	3,620	32	12	54	238	3,858

Table C-1 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	AM Peak Hour						PM Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
21 Interstate 605 Northbound Ramps/Arrow Highway												
NBL	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0
NBR	10	2	3	14	51	61	28	1	2	0	6	34
SBL	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0
EBT	456	5	4	9	43	499	1,069	7	2	7	36	1,105
EBR	206	4	6	17	69	275	74	0	1	4	14	88
WBL	0	0	0	0	0	0	0	0	0	0	0	0
WBT	1,425	16	5	3	43	1,468	375	7	1	4	25	400
WBR	297	3	4	24	85	382	212	2	4	3	20	232
North Leg												
Approach	0	0	0	0	0	0	0	0	0	0	0	0
Departure	297	3	4	24	85	382	212	2	4	3	20	232
Total	297	3	4	24	85	382	212	2	4	3	20	232
South Leg												
Approach	10	2	3	14	51	61	28	1	2	0	6	34
Departure	206	4	6	17	69	275	74	0	1	4	14	88
Total	216	6	9	31	120	336	102	1	3	4	20	122
East Leg												
Approach	1,722	19	9	27	128	1,850	587	9	5	7	45	632
Departure	466	7	7	23	94	560	1,097	8	4	7	42	1,139
Total	2,188	26	16	50	222	2,410	1,684	17	9	14	87	1,771
West Leg												
Approach	662	9	10	26	112	774	1,143	7	3	11	50	1,193
Departure	1,425	16	5	3	43	1,468	375	7	1	4	25	400
Total	2,087	25	15	29	155	2,242	1,518	14	4	15	75	1,593
Total Approaches												
Approach	2,394	30	22	67	291	2,685	1,758	17	10	18	101	1,859
Departure	2,394	30	22	67	291	2,685	1,758	17	10	18	101	1,859
Total	4,788	60	44	134	582	5,370	3,516	34	20	36	202	3,718

Table C-2 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	Saturday Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
1 Peck Road-Myrtle Avenue/Live Oak Avenue						
NBL	154	1	0	0	2	156
NBT	461	4	0	0	6	467
NBR	96	7	3	5	32	128
SBL	60	1	2	0	6	66
SBT	415	2	0	0	3	418
SBR	132	4	0	0	6	138
EBL	133	0	0	0	0	133
EBT	388	5	1	1	13	401
EBR	136	1	1	0	4	140
WBL	101	6	0	0	9	110
WBT	354	9	1	2	22	376
WBR	31	1	2	1	9	40
North Leg						
Approach	607	7	2	0	15	622
Departure	625	5	2	1	15	640
Total	1,232	12	4	1	30	1,262
South Leg						
Approach	711	12	3	5	40	751
Departure	652	9	1	0	16	668
Total	1,363	21	4	5	56	1,419
East Leg						
Approach	486	16	3	3	40	526
Departure	544	13	6	6	51	595
Total	1,030	29	9	9	91	1,121
West Leg						
Approach	657	6	2	1	17	674
Departure	640	14	1	2	30	670
Total	1,297	20	3	3	47	1,344
Total Approaches						
Approach	2,461	41	10	9	112	2,573
Departure	2,461	41	10	9	112	2,573
Total	4,922	82	20	18	224	5,146

Table C-2 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	Saturday Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
2 Myrtle Avenue/Longden Avenue						
NBL	57	1	0	0	2	59
NBT	555	4	2	1	13	568
NBR	7	1	0	0	2	9
SBL	121	3	9	2	29	150
SBT	552	7	0	0	11	563
SBR	94	1	0	0	2	96
EBL	95	2	0	0	3	98
EBT	182	0	0	1	3	185
EBR	53	0	0	0	0	53
WBL	43	1	1	0	4	47
WBT	200	2	1	0	5	205
WBR	159	1	0	1	5	164
North Leg						
Approach	767	11	9	2	42	809
Departure	809	7	2	2	21	830
Total	1,576	18	11	4	63	1,639
South Leg						
Approach	619	6	2	1	17	636
Departure	648	8	1	0	15	663
Total	1,267	14	3	1	32	1,299
East Leg						
Approach	402	4	2	1	14	416
Departure	310	4	9	3	34	344
Total	712	8	11	4	48	760
West Leg						
Approach	330	2	0	1	6	336
Departure	351	4	1	0	9	360
Total	681	6	1	1	15	696
Total Approaches						
Approach	2,118	23	13	5	79	2,197
Departure	2,118	23	13	5	79	2,197
Total	4,236	46	26	10	158	4,394

Table C-2 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	Saturday Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
3 Longden Avenue/Live Oak Avenue						
NBL	7	0	0	0	0	7
NBT	7	0	0	0	0	7
NBR	8	0	0	0	0	8
SBL	304	4	9	7	45	349
SBT	6	0	0	0	0	6
SBR	9	1	0	0	2	11
EBL	9	0	0	0	0	9
EBT	504	11	6	9	56	560
EBR	8	0	0	0	0	8
WBL	10	0	0	0	0	10
WBT	480	16	8	11	73	553
WBR	356	4	2	4	22	378
North Leg						
Approach	319	5	9	7	47	366
Departure	372	4	2	4	22	394
Total	691	9	11	11	69	760
South Leg						
Approach	22	0	0	0	0	22
Departure	24	0	0	0	0	24
Total	46	0	0	0	0	46
East Leg						
Approach	846	20	10	15	95	941
Departure	816	15	15	16	101	917
Total	1,662	35	25	31	196	1,858
West Leg						
Approach	521	11	6	9	56	577
Departure	496	17	8	11	75	571
Total	1,017	28	14	20	131	1,148
Total Approaches						
Approach	1,708	36	25	31	198	1,906
Departure	1,708	36	25	31	198	1,906
Total	3,416	72	50	62	396	3,812

Table C-2 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	Saturday Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
4 Arrow Highway/Live Oak Avenue						
NBL	0	0	0	0	0	0
NBT	285	5	7	7	43	328
NBR	547	9	6	10	56	603
SBL	81	4	1	9	35	116
SBT	405	9	4	4	34	439
SBR	0	0	0	0	0	0
EBL	0	0	0	0	0	0
EBT	0	0	0	0	0	0
EBR	0	0	0	0	0	0
WBL	445	11	9	10	65	510
WBT	0	0	0	0	0	0
WBR	70	0	2	16	52	122
North Leg						
Approach	486	13	5	13	69	555
Departure	355	5	9	23	95	450
Total	841	18	14	36	164	1,005
South Leg						
Approach	832	14	13	17	99	931
Departure	850	20	13	14	99	949
Total	1,682	34	26	31	198	1,880
East Leg						
Approach	515	11	11	26	117	632
Departure	628	13	7	19	91	719
Total	1,143	24	18	45	208	1,351
West Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
Total Approaches						
Approach	1,833	38	29	56	285	2,118
Departure	1,833	38	29	56	285	2,118
Total	3,666	76	58	112	570	4,236

Table C-2 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	Saturday Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
5 Driveway 1/Live Oak Avenue						
NBL	3	0	0	2	6	9
NBT	0	0	0	0	0	0
NBR	8	1	0	16	50	58
SBL	0	0	0	0	0	0
SBT	0	0	0	0	0	0
SBR	0	0	0	0	0	0
EBL	0	0	0	0	0	0
EBT	604	14	10	25	116	720
EBR	18	0	0	4	12	30
WBL	5	1	1	4	16	21
WBT	532	11	10	39	154	686
WBR	0	0	0	0	0	0
North Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
South Leg						
Approach	11	1	0	18	56	67
Departure	23	1	1	8	28	51
Total	34	2	1	26	84	118
East Leg						
Approach	537	12	11	43	170	707
Departure	612	15	10	41	166	778
Total	1,149	27	21	84	336	1,485
West Leg						
Approach	622	14	10	29	128	750
Departure	535	11	10	41	160	695
Total	1,157	25	20	70	288	1,445
Total Approaches						
Approach	1,170	27	21	90	354	1,524
Departure	1,170	27	21	90	354	1,524
Total	2,340	54	42	180	708	3,048

Table C-2 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	Saturday Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
6 Speedway Drive-Driveway 2/Live Oak Avenue						
NBL	6	0	0	0	0	6
NBT	0	0	0	0	0	0
NBR	3	0	0	0	0	3
SBL	0	0	0	0	0	0
SBT	0	0	0	0	0	0
SBR	0	0	0	0	0	0
EBL	0	0	0	0	0	0
EBT	571	15	9	42	167	738
EBR	40	0	0	0	0	40
WBL	24	1	0	0	2	26
WBT	529	11	14	42	171	700
WBR	0	0	0	0	0	0
North Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
South Leg						
Approach	9	0	0	0	0	9
Departure	64	1	0	0	2	66
Total	73	1	0	0	2	75
East Leg						
Approach	553	12	14	42	173	726
Departure	574	15	9	42	167	741
Total	1,127	27	23	84	340	1,467
West Leg						
Approach	611	15	9	42	167	778
Departure	535	11	14	42	171	706
Total	1,146	26	23	84	338	1,484
Total Approaches						
Approach	1,173	27	23	84	340	1,513
Departure	1,173	27	23	84	340	1,513
Total	2,346	54	46	168	680	3,026

Table C-2 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	Saturday Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
7 Driveway 3/Live Oak Avenue						
NBL	0	0	0	0	0	0
NBT	0	0	0	0	0	0
NBR	0	0	0	0	0	0
SBL	0	0	0	0	0	0
SBT	0	0	0	0	0	0
SBR	0	0	0	0	0	0
EBL	0	0	0	0	0	0
EBT	570	16	11	42	172	742
EBR	0	0	0	0	0	0
WBL	5	0	0	0	0	5
WBT	546	14	13	45	182	728
WBR	0	0	0	0	0	0
North Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
South Leg						
Approach	0	0	0	0	0	0
Departure	5	0	0	0	0	5
Total	5	0	0	0	0	5
East Leg						
Approach	551	14	13	45	182	733
Departure	570	16	11	42	172	742
Total	1,121	30	24	87	354	1,475
West Leg						
Approach	570	16	11	42	172	742
Departure	546	14	13	45	182	728
Total	1,116	30	24	87	354	1,470
Total Approaches						
Approach	1,121	30	24	87	354	1,475
Departure	1,121	30	24	87	354	1,475
Total	2,242	60	48	174	708	2,950

Table C-2 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	Saturday Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
8	**Interstate 605 Southbound On-Ramp/Live Oak Avenue**					
NBL	0	0	0	0	0	0
NBT	0	0	0	0	0	0
NBR	0	0	0	0	0	0
SBL	0	0	0	0	0	0
SBT	0	0	0	0	0	0
SBR	0	0	0	0	0	0
EBL	0	0	0	0	0	0
EBT	144	4	2	7	31	175
EBR	430	11	9	34	137	567
WBL	280	8	8	52	184	464
WBT	550	15	14	44	183	733
WBR	0	0	0	0	0	0
North Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
South Leg						
Approach	0	0	0	0	0	0
Departure	710	19	17	86	321	1,031
Total	710	19	17	86	321	1,031
East Leg						
Approach	830	23	22	96	367	1,197
Departure	144	4	2	7	31	175
Total	974	27	24	103	398	1,372
West Leg						
Approach	574	15	11	41	168	742
Departure	550	15	14	44	183	733
Total	1,124	30	25	85	351	1,475
Total Approaches						
Approach	1,404	38	33	137	535	1,939
Departure	1,404	38	33	137	535	1,939
Total	2,808	76	66	274	1,070	3,878

Table C-2 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	Saturday Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
9 Interstate 605 Northbound Ramps/Live Oak Avenue						
NBL	0	0	0	0	0	0
NBT	0	0	0	0	0	0
NBR	279	6	7	10	53	332
SBL	0	0	0	0	0	0
SBT	0	0	0	0	0	0
SBR	351	8	5	27	103	454
EBL	0	0	0	0	0	0
EBT	177	4	1	3	17	194
EBR	0	0	0	0	0	0
WBL	0	0	0	0	0	0
WBT	515	7	13	25	112	627
WBR	0	0	0	0	0	0
North Leg						
Approach	351	8	5	27	103	454
Departure	0	0	0	0	0	0
Total	351	8	5	27	103	454
South Leg						
Approach	279	6	7	10	53	332
Departure	0	0	0	0	0	0
Total	279	6	7	10	53	332
East Leg						
Approach	515	7	13	25	112	627
Departure	456	10	8	13	70	526
Total	971	17	21	38	182	1,153
West Leg						
Approach	177	4	1	3	17	194
Departure	866	15	18	52	215	1,081
Total	1,043	19	19	55	232	1,275
Total Approaches						
Approach	1,322	25	26	65	285	1,607
Departure	1,322	25	26	65	285	1,607
Total	2,644	50	52	130	570	3,214

Table C-2 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	Saturday Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
10 Graham Road/Live Oak Avenue						
NBL	8	1	1	8	28	36
NBT	0	0	0	0	0	0
NBR	4	0	0	0	0	4
SBL	0	0	0	0	0	0
SBT	0	0	0	0	0	0
SBR	0	0	0	0	0	0
EBL	2	0	0	0	0	2
EBT	439	8	7	10	56	495
EBR	11	2	1	3	14	25
WBL	6	0	0	3	9	15
WBT	501	8	15	18	96	597
WBR	0	0	0	0	0	0
North Leg						
Approach	0	0	0	0	0	0
Departure	2	0	0	0	0	2
Total	2	0	0	0	0	2
South Leg						
Approach	12	1	1	8	28	40
Departure	17	2	1	6	23	40
Total	29	3	2	14	51	80
East Leg						
Approach	507	8	15	21	105	612
Departure	443	8	7	10	56	499
Total	950	16	22	31	161	1,111
West Leg						
Approach	452	10	8	13	70	522
Departure	509	9	16	26	124	633
Total	961	19	24	39	194	1,155
Total Approaches						
Approach	971	19	24	42	203	1,174
Departure	971	19	24	42	203	1,174
Total	1,942	38	48	84	406	2,348

Table C-2 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	Saturday Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
11 Live Oak Lane/Live Oak Avenue						
NBL	0	0	0	0	0	0
NBT	0	0	0	0	0	0
NBR	0	0	0	0	0	0
SBL	2	0	0	0	0	2
SBT	0	0	0	0	0	0
SBR	22	1	8	7	39	61
EBL	23	0	3	2	12	35
EBT	422	8	4	8	44	466
EBR	0	0	0	0	0	0
WBL	0	0	0	0	0	0
WBT	486	7	6	12	59	545
WBR	6	1	4	2	16	22
North Leg						
Approach	24	1	8	7	39	63
Departure	29	1	7	4	28	57
Total	53	2	15	11	67	120
South Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
East Leg						
Approach	492	8	10	14	75	567
Departure	424	8	4	8	44	468
Total	916	16	14	22	119	1,035
West Leg						
Approach	445	8	7	10	56	501
Departure	508	8	14	19	98	606
Total	953	16	21	29	154	1,107
Total Approaches						
Approach	961	17	25	31	170	1,131
Departure	961	17	25	31	170	1,131
Total	1,922	34	50	62	340	2,262

Table C-2 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	Saturday Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
12 Rivergrade Road/Live Oak Avenue						
NBL	11	2	1	1	8	19
NBT	15	3	0	5	20	35
NBR	86	0	1	1	5	91
SBL	11	0	0	0	0	11
SBT	5	2	1	2	11	16
SBR	36	1	3	9	35	71
EBL	12	0	0	1	3	15
EBT	401	7	4	6	37	438
EBR	7	1	0	1	5	12
WBL	47	0	0	0	0	47
WBT	453	3	3	3	20	473
WBR	7	0	0	0	0	7
North Leg						
Approach	52	3	4	11	46	98
Departure	34	3	0	6	23	57
Total	86	6	4	17	69	155
South Leg						
Approach	112	5	2	7	33	145
Departure	59	3	1	3	16	75
Total	171	8	3	10	49	220
East Leg						
Approach	507	3	3	3	20	527
Departure	498	7	5	7	42	540
Total	1,005	10	8	10	62	1,067
West Leg						
Approach	420	8	4	8	45	465
Departure	500	6	7	13	63	563
Total	920	14	11	21	108	1,028
Total Approaches						
Approach	1,091	19	13	29	144	1,235
Departure	1,091	19	13	29	144	1,235
Total	2,182	38	26	58	288	2,470

Table C-2 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	Saturday Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
13 Commerce Drive/Live Oak Avenue						
NBL	4	0	0	0	0	4
NBT	0	0	0	0	0	0
NBR	5	2	0	0	3	8
SBL	0	0	0	0	0	0
SBT	0	0	0	0	0	0
SBR	0	0	0	0	0	0
EBL	2	0	0	0	0	2
EBT	510	7	4	7	40	550
EBR	6	0	0	0	0	6
WBL	11	1	0	0	2	13
WBT	465	4	4	6	32	497
WBR	0	0	0	0	0	0
North Leg						
Approach	0	0	0	0	0	0
Departure	2	0	0	0	0	2
Total	2	0	0	0	0	2
South Leg						
Approach	9	2	0	0	3	12
Departure	17	1	0	0	2	19
Total	26	3	0	0	5	31
East Leg						
Approach	476	5	4	6	34	510
Departure	515	9	4	7	43	558
Total	991	14	8	13	77	1,068
West Leg						
Approach	518	7	4	7	40	558
Departure	469	4	4	6	32	501
Total	987	11	8	13	72	1,059
Total Approaches						
Approach	1,003	14	8	13	77	1,080
Departure	1,003	14	8	13	77	1,080
Total	2,006	28	16	26	154	2,160

Table C-2 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	Saturday Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
14 Stewart Avenue/Live Oak Avenue						
NBL	56	1	0	0	2	58
NBT	21	1	0	0	2	23
NBR	25	0	1	0	2	27
SBL	2	0	0	0	0	2
SBT	44	0	0	0	0	44
SBR	3	0	0	0	0	3
EBL	6	0	0	0	0	6
EBT	480	8	4	7	41	521
EBR	39	1	1	0	4	43
WBL	30	0	0	1	3	33
WBT	426	5	6	6	38	464
WBR	5	0	0	0	0	5
North Leg						
Approach	49	0	0	0	0	49
Departure	32	1	0	0	2	34
Total	81	1	0	0	2	83
South Leg						
Approach	102	2	1	0	6	108
Departure	113	1	1	1	7	120
Total	215	3	2	1	13	228
East Leg						
Approach	461	5	6	7	41	502
Departure	507	8	5	7	43	550
Total	968	13	11	14	84	1,052
West Leg						
Approach	525	9	5	7	45	570
Departure	485	6	6	6	40	525
Total	1,010	15	11	13	85	1,095
Total Approaches						
Approach	1,137	16	12	14	92	1,229
Departure	1,137	16	12	14	92	1,229
Total	2,274	32	24	28	184	2,458

Table C-2 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	Saturday Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
15 Baldwin Park/Arrow Highway						
NBL	64	1	0	0	2	66
NBT	0	0	0	0	0	0
NBR	135	3	0	0	5	140
SBL	0	0	0	0	0	0
SBT	0	0	0	0	0	0
SBR	0	0	0	0	0	0
EBL	0	0	0	0	0	0
EBT	433	6	5	7	40	473
EBR	73	1	0	0	2	75
WBL	171	2	0	0	3	174
WBT	425	6	5	6	37	462
WBR	0	0	0	0	0	0
North Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
South Leg						
Approach	199	4	0	0	7	206
Departure	244	3	0	0	5	249
Total	443	7	0	0	12	455
East Leg						
Approach	596	8	5	6	40	636
Departure	568	9	5	7	45	613
Total	1,164	17	10	13	85	1,249
West Leg						
Approach	506	7	5	7	42	548
Departure	489	7	5	6	39	528
Total	995	14	10	13	81	1,076
Total Approaches						
Approach	1,301	19	10	13	89	1,390
Departure	1,301	19	10	13	89	1,390
Total	2,602	38	20	26	178	2,780

Table C-2 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	Saturday Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
16 Arrow Highway/Live Oak Avenue						
NBL	0	0	0	0	0	0
NBT	0	0	0	0	0	0
NBR	0	0	0	0	0	0
SBL	281	4	3	1	15	296
SBT	0	0	0	0	0	0
SBR	64	1	0	0	2	66
EBL	66	1	0	0	2	68
EBT	498	10	5	8	49	547
EBR	0	0	0	0	0	0
WBL	0	0	0	0	0	0
WBT	528	7	6	7	44	572
WBR	367	6	0	3	18	385
North Leg						
Approach	345	5	3	1	17	362
Departure	433	7	0	3	20	453
Total	778	12	3	4	37	815
South Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
East Leg						
Approach	895	13	6	10	62	957
Departure	779	14	8	9	64	843
Total	1,674	27	14	19	126	1,800
West Leg						
Approach	564	11	5	8	51	615
Departure	592	8	6	7	46	638
Total	1,156	19	11	15	97	1,253
Total Approaches						
Approach	1,804	29	14	19	130	1,934
Departure	1,804	29	14	19	130	1,934
Total	3,608	58	28	38	260	3,868

Table C-2 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	Saturday Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
17 Maine Avenue/Arrow Highway						
NBL	184	1	3	4	20	204
NBT	0	0	0	0	0	0
NBR	100	1	1	0	4	104
SBL	0	0	0	0	0	0
SBT	0	0	0	0	0	0
SBR	0	0	0	0	0	0
EBL	0	0	0	0	0	0
EBT	635	11	7	8	55	690
EBR	154	3	1	1	10	164
WBL	93	2	0	0	3	96
WBT	716	12	3	6	42	758
WBR	0	0	0	0	0	0
North Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
South Leg						
Approach	284	2	4	4	24	308
Departure	247	5	1	1	13	260
Total	531	7	5	5	37	568
East Leg						
Approach	809	14	3	6	45	854
Departure	735	12	8	8	59	794
Total	1,544	26	11	14	104	1,648
West Leg						
Approach	789	14	8	9	65	854
Departure	900	13	6	10	62	962
Total	1,689	27	14	19	127	1,816
Total Approaches						
Approach	1,882	30	15	19	134	2,016
Departure	1,882	30	15	19	134	2,016
Total	3,764	60	30	38	268	4,032

Table C-2 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	Saturday Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
18 Avenida Barbosa/Buena Vista Street						
NBL	73	1	0	0	2	75
NBT	78	1	0	1	5	83
NBR	109	2	1	0	5	114
SBL	0	0	0	0	0	0
SBT	58	1	1	0	4	62
SBR	1	0	0	0	0	1
EBL	2	0	0	0	0	2
EBT	12	0	0	0	0	12
EBR	69	2	0	0	3	72
WBL	106	6	0	0	9	115
WBT	24	1	0	0	2	26
WBR	14	0	0	0	0	14
North Leg						
Approach	59	1	1	0	4	63
Departure	94	1	0	1	5	99
Total	153	2	1	1	9	162
South Leg						
Approach	260	4	1	1	12	272
Departure	233	9	1	0	16	249
Total	493	13	2	1	28	521
East Leg						
Approach	144	7	0	0	11	155
Departure	121	2	1	0	5	126
Total	265	9	1	0	16	281
West Leg						
Approach	83	2	0	0	3	86
Departure	98	2	0	0	4	102
Total	181	4	0	0	7	188
Total Approaches						
Approach	546	14	2	1	30	576
Departure	546	14	2	1	30	576
Total	1,092	28	4	2	60	1,152

Table C-2 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	Saturday Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	Trucks 3 Axle	Trucks 4 Axle	Trucks PCE	Total PCE Volume
19 Avenida Barbosa/Arrow Highway						
NBL	0	0	0	0	0	0
NBT	0	0	0	0	0	0
NBR	0	0	0	0	0	0
SBL	111	4	0	1	9	120
SBT	0	0	0	0	0	0
SBR	127	5	0	0	8	135
EBL	133	1	0	3	11	144
EBT	223	5	6	5	35	258
EBR	0	0	0	0	0	0
WBL	1	0	0	0	0	1
WBT	351	8	4	15	65	416
WBR	137	3	1	2	13	150
North Leg						
Approach	238	9	0	1	17	255
Departure	270	4	1	5	24	294
Total	508	13	1	6	41	549
South Leg						
Approach	0	0	0	0	0	0
Departure	1	0	0	0	0	1
Total	1	0	0	0	0	1
East Leg						
Approach	489	11	5	17	78	567
Departure	334	9	6	6	44	378
Total	823	20	11	23	122	945
West Leg						
Approach	356	6	6	8	46	402
Departure	478	13	4	15	73	551
Total	834	19	10	23	119	953
Total Approaches						
Approach	1,083	26	11	26	141	1,224
Departure	1,083	26	11	26	141	1,224
Total	2,166	52	22	52	282	2,448

Table C-2 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	Saturday Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
20 Interstate 605 Southbound Off-Ramp/Arrow Highway						
NBL	0	0	0	0	0	0
NBT	0	0	0	0	0	0
NBR	0	0	0	0	0	0
SBL	201	1	3	3	17	218
SBT	0	0	0	0	0	0
SBR	236	4	5	13	55	291
EBL	0	0	0	0	0	0
EBT	334	10	11	16	85	419
EBR	0	0	0	0	0	0
WBL	0	0	0	0	0	0
WBT	245	8	0	3	21	266
WBR	0	0	0	0	0	0
North Leg						
Approach	437	5	8	16	72	509
Departure	0	0	0	0	0	0
Total	437	5	8	16	72	509
South Leg						
Approach	0	0	0	0	0	0
Departure	0	0	0	0	0	0
Total	0	0	0	0	0	0
East Leg						
Approach	245	8	0	3	21	266
Departure	535	11	14	19	102	637
Total	780	19	14	22	123	903
West Leg						
Approach	334	10	11	16	85	419
Departure	481	12	5	16	76	557
Total	815	22	16	32	161	976
Total Approaches						
Approach	1,016	23	19	35	178	1,194
Departure	1,016	23	19	35	178	1,194
Total	2,032	46	38	70	356	2,388

Table C-2 - Existing Peak Hour Volumes

(Intersections With Classification Counts)

	Saturday Peak Hour					
	Passenger Vehicles	Trucks 2 Axle	3 Axle	4 Axle	PCE	Total PCE Volume
21 Interstate 605 Northbound Ramps/Arrow Highway						
NBL	0	0	0	0	0	0
NBT	0	0	0	0	0	0
NBR	9	2	3	0	9	18
SBL	0	0	0	0	0	0
SBT	0	0	0	0	0	0
SBR	0	0	0	0	0	0
EBL	0	0	0	0	0	0
EBT	387	6	6	8	45	432
EBR	143	1	5	7	33	176
WBL	0	0	0	0	0	0
WBT	242	8	0	2	18	260
WBR	212	1	1	4	16	228
North Leg						
Approach	0	0	0	0	0	0
Departure	212	1	1	4	16	228
Total	212	1	1	4	16	228
South Leg						
Approach	9	2	3	0	9	18
Departure	143	1	5	7	33	176
Total	152	3	8	7	42	194
East Leg						
Approach	454	9	1	6	34	488
Departure	396	8	9	8	54	450
Total	850	17	10	14	88	938
West Leg						
Approach	530	7	11	15	78	608
Departure	242	8	0	2	18	260
Total	772	15	11	17	96	868
Total Approaches						
Approach	993	18	15	21	121	1,114
Departure	993	18	15	21	121	1,114
Total	1,986	36	30	42	242	2,228

Table C-3
Balance of Existing Peak Hour Volumes
To Maintain Consistent Flow of Vehicles

		A.M. Peak Hour Volumes			P.M. Peak Hour Volumes		
		PCE Volume	Adjust.	Balanced Volume	PCE Volume	Adjust.	Balanced Volume
21	**Interstate 605 Northbound Ramps/Arrow Highway**						
NBL		0		0	0		0
NBT		0		0	0		0
NBR		61		61	34		34
SBL		0		0	0		0
SBT		0		0	0		0
SBR		0		0	0		0
EBL		0		0	0		0
EBT		499	68	567	1,105	76	1,181
EBR		275	37	312	88	6	94
WBL		0		0	0		0
WBT		1,468	-27	1,441	400	-52	348
WBR		382		382	232		232
North Leg							
	Approach	0	0	0	0	0	0
	Departure	382	0	382	232	0	232
	Total	382	0	382	232	0	232
South Leg							
	Approach	61	0	61	34	0	34
	Departure	275	37	312	88	6	94
	Total	336	37	373	122	6	128
East Leg							
	Approach	1,850	-27	1,823	632	-52	580
	Departure	560	68	628	1,139	76	1,215
	Total	2,410	41	2,451	1,771	24	1,795
West Leg							
	Approach	774	105	879	1,193	82	1,275
	Departure	1,468	-27	1,441	400	-52	348
	Total	2,242	78	2,320	1,593	30	1,623
Total Approaches							
	Approach	2,685	78	2,763	1,859	30	1,889
	Departure	2,685	78	2,763	1,859	30	1,889
	Total	5,370	156	5,526	3,718	60	3,778

Table C-4 - Existing Peak Hour Volume Summary

		AM Peak Hour				PM Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project	Existing PCE	Total Adjust.	Project Trips	Existing With Project
1	**Peck Road-Myrtle Avenue/Live Oak Avenue**								
NBL		249	0	0	249	220	0	0	220
NBT		934	0	0	934	766	0	0	766
NBR		266	-2	7	271	174	-4	7	177
SBL		38	0	0	38	177	-4	0	173
SBT		496	0	0	496	548	0	0	548
SBR		151	0	0	151	132	0	0	132
EBL		67	0	0	67	182	0	0	182
EBT		534	-4	14	544	1,153	-28	14	1,139
EBR		207	0	0	207	184	0	0	184
WBL		156	0	3	159	60	0	9	69
WBT		1,133	-2	5	1,136	639	-5	18	652
WBR		54	0	0	54	20	0	0	20
North Leg									
	Approach	685	0	0	685	857	-4	0	853
	Departure	1,055	0	0	1,055	968	0	0	968
	Total	1,740	0	0	1,740	1,825	-4	0	1,821
South Leg									
	Approach	1,449	-2	7	1,454	1,160	-4	7	1,163
	Departure	859	0	3	862	792	0	9	801
	Total	2,308	-2	10	2,316	1,952	-4	16	1,964
East Leg									
	Approach	1,343	-2	8	1,349	719	-5	27	741
	Departure	838	-7	21	852	1,504	-36	21	1,489
	Total	2,181	-9	29	2,201	2,223	-41	48	2,230
West Leg									
	Approach	808	-4	14	818	1,519	-28	14	1,505
	Departure	1,533	-2	5	1,536	991	-5	18	1,004
	Total	2,341	-6	19	2,354	2,510	-32	32	2,510
Total Approaches									
	Approach	4,285	-9	29	4,305	4,255	-41	48	4,262
	Departure	4,285	-9	29	4,305	4,255	-41	48	4,262
	Total	8,570	-17	58	8,611	8,510	-81	96	8,525

Table C-4 - Existing Peak Hour Volume Summary

		AM Peak Hour				PM Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project	Existing PCE	Total Adjust.	Project Trips	Existing With Project
2	**Myrtle Avenue/Longden Avenue**								
NBL		163	0	0	163	92	0	0	92
NBT		873	0	0	873	860	0	0	860
NBR		19	0	0	19	12	0	0	12
SBL		161	-2	7	166	348	-12	7	343
SBT		598	0	0	598	773	0	0	773
SBR		48	0	0	48	53	0	0	53
EBL		68	0	0	68	80	0	0	80
EBT		247	-2	7	252	620	-11	7	616
EBR		74	0	0	74	96	0	0	96
WBL		33	0	0	33	26	0	0	26
WBT		567	-1	3	569	379	-2	9	386
WBR		410	0	3	413	265	-2	9	272
North Leg									
	Approach	807	-2	7	812	1,174	-12	7	1,169
	Departure	1,351	0	3	1,354	1,205	-2	9	1,212
	Total	2,158	-2	10	2,166	2,379	-14	16	2,381
South Leg									
	Approach	1,055	0	0	1,055	964	0	0	964
	Departure	705	0	0	705	895	0	0	895
	Total	1,760	0	0	1,760	1,859	0	0	1,859
East Leg									
	Approach	1,010	-1	6	1,015	670	-4	18	684
	Departure	427	-4	14	437	980	-23	14	971
	Total	1,437	-5	20	1,452	1,650	-27	32	1,655
West Leg									
	Approach	389	-2	7	394	796	-11	7	792
	Departure	778	-1	3	780	524	-2	9	531
	Total	1,167	-3	10	1,174	1,320	-14	16	1,322
Total Approaches									
	Approach	3,261	-5	20	3,276	3,604	-27	32	3,609
	Departure	3,261	-5	20	3,276	3,604	-27	32	3,609
	Total	6,522	-10	40	6,552	7,208	-55	64	7,217

Table C-4 - Existing Peak Hour Volume Summary

		AM Peak Hour				PM Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project	Existing PCE	Total Adjust.	Project Trips	Existing With Project
3	**Longden Avenue/Live Oak Avenue**								
NBL		9	0	0	9	0	0	0	0
NBT		9	0	0	9	0	0	0	0
NBR		9	0	0	9	0	0	0	0
SBL		418	-4	14	428	969	-23	14	960
SBT		1	0	0	1	0	0	0	0
SBR		12	0	0	12	9	0	0	9
EBL		36	0	0	36	8	0	0	8
EBT		805	-7	21	819	1,521	-36	20	1,505
EBR		1	0	0	1	1	0	0	1
WBL		9	0	0	9	1	0	0	1
WBT		1,295	-2	8	1,301	684	-5	26	705
WBR		937	-1	5	941	642	-4	18	656
North Leg									
	Approach	431	-4	14	441	978	-23	14	969
	Departure	982	-1	5	986	650	-4	18	664
	Total	1,413	-5	19	1,427	1,628	-27	32	1,633
South Leg									
	Approach	27	0	0	27	0	0	0	0
	Departure	11	0	0	11	2	0	0	2
	Total	38	0	0	38	2	0	0	2
East Leg									
	Approach	2,241	-3	13	2,251	1,327	-9	44	1,362
	Departure	1,232	-10	35	1,257	2,490	-59	34	2,465
	Total	3,473	-14	48	3,507	3,817	-68	78	3,827
West Leg									
	Approach	842	-7	21	856	1,530	-36	20	1,514
	Departure	1,316	-2	8	1,322	693	-5	26	714
	Total	2,158	-9	29	2,178	2,223	-41	46	2,228
Total Approaches									
	Approach	3,541	-14	48	3,575	3,835	-68	78	3,845
	Departure	3,541	-14	48	3,575	3,835	-68	78	3,845
	Total	7,082	-27	96	7,151	7,670	-136	156	7,690

Table C-4 - Existing Peak Hour Volume Summary

		AM Peak Hour				PM Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project	Existing PCE	Total Adjust.	Project Trips	Existing With Project
4	**Arrow Highway/Live Oak Avenue**								
NBL		0	0	0	0	0	0	0	0
NBT		490	0	0	490	709	0	0	709
NBR		732	-10	34	756	1,819	-59	34	1,794
SBL		120	-2	137	255	237	-8	213	442
SBT		1,331	0	0	1,331	516	0	0	516
SBR		0	0	0	0	0	0	0	0
EBL		0	0	0	0	0	0	0	0
EBT		0	0	0	0	0	0	0	0
EBR		0	0	0	0	0	0	0	0
WBL		912	-3	13	922	821	-9	44	856
WBT		0	0	0	0	0	0	0	0
WBR		197	-1	51	247	117	-1	238	354
North Leg									
	Approach	1,451	-2	137	1,586	753	-8	213	958
	Departure	687	-1	51	737	826	-1	238	1,063
	Total	2,138	-2	188	2,324	1,579	-9	451	2,021
South Leg									
	Approach	1,222	-10	34	1,246	2,528	-59	34	2,503
	Departure	2,243	-3	13	2,253	1,337	-9	44	1,372
	Total	3,465	-14	47	3,498	3,865	-68	78	3,875
East Leg									
	Approach	1,109	-4	64	1,169	938	-10	282	1,210
	Departure	852	-12	171	1,011	2,056	-67	247	2,236
	Total	1,961	-16	235	2,180	2,994	-77	529	3,446
West Leg									
	Approach	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0
Total Approaches									
	Approach	3,782	-16	235	4,001	4,219	-77	529	4,671
	Departure	3,782	-16	235	4,001	4,219	-77	529	4,671
	Total	7,564	-32	470	8,002	8,438	-154	1,058	9,342

Table C-4 - Existing Peak Hour Volume Summary

		AM Peak Hour				PM Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project	Existing PCE	Total Adjust.	Project Trips	Existing With Project
5	**Driveway 1/Live Oak Avenue**								
NBL		22	-22	17	17	7	-7	90	90
NBT		0	0	0	0	0	0	0	0
NBR		82	-82	15	15	60	-60	111	111
SBL		0	0	0	0	0	0	0	0
SBT		0	0	0	0	0	0	0	0
SBR		0	0	0	0	0	0	0	0
EBL		0	0	0	0	0	0	0	0
EBT		815	-2	127	940	2,036	-53	145	2,128
EBR		45	-45	44	44	23	-23	102	102
WBL		28	-28	41	41	46	-46	74	74
WBT		1,098	0	47	1,145	928	-10	192	1,110
WBR		0	0	0	0	0	0	0	0
North Leg									
	Approach	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0
South Leg									
	Approach	104	-104	32	32	67	-67	201	201
	Departure	73	-73	85	85	69	-69	176	176
	Total	177	-177	117	117	136	-136	377	377
East Leg									
	Approach	1,126	-28	88	1,186	974	-56	266	1,184
	Departure	897	-84	142	955	2,096	-113	256	2,239
	Total	2,023	-112	230	2,141	3,070	-169	522	3,423
West Leg									
	Approach	860	-47	171	984	2,059	-76	247	2,230
	Departure	1,120	-22	64	1,162	935	-17	282	1,200
	Total	1,980	-69	235	2,146	2,994	-93	529	3,430
Total Approaches									
	Approach	2,090	-179	291	2,202	3,100	-199	714	3,615
	Departure	2,090	-179	291	2,202	3,100	-199	714	3,615
	Total	4,180	-358	582	4,404	6,200	-398	1,428	7,230

Table C-4 - Existing Peak Hour Volume Summary

		AM Peak Hour				PM Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project	Existing PCE	Total Adjust.	Project Trips	Existing With Project
6	**Speedway Drive-Driveway 2/Live Oak Avenue**								
NBL		0	0	32	32	10	-10	199	199
NBT		0	0	0	0	0	0	0	0
NBR		1	-1	32	32	5	-5	246	246
SBL		0	0	0	0	0	0	0	0
SBT		0	0	0	0	0	0	0	0
SBR		0	0	0	0	0	0	0	0
EBL		0	0	0	0	0	0	0	0
EBT		910	0	56	966	2,035	0	34	2,069
EBR		2	-2	86	86	53	-53	222	222
WBL		20	-20	86	86	87	-87	175	175
WBT		1,131	-7	56	1,180	964	-7	67	1,024
WBR		0	0	0	0	0	0	0	0
North Leg									
	Approach	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0
South Leg									
	Approach	1	-1	64	64	15	-15	445	445
	Departure	22	-22	172	172	140	-140	397	397
	Total	23	-23	236	236	155	-155	842	842
East Leg									
	Approach	1,151	-27	142	1,266	1,051	-94	242	1,199
	Departure	911	-1	88	998	2,040	-5	280	2,315
	Total	2,062	-28	230	2,264	3,091	-99	522	3,514
West Leg									
	Approach	912	-2	142	1,052	2,088	-53	256	2,291
	Departure	1,131	-7	88	1,212	974	-17	266	1,223
	Total	2,043	-9	230	2,264	3,062	-70	522	3,514
Total Approaches									
	Approach	2,064	-30	348	2,382	3,154	-162	943	3,935
	Departure	2,064	-30	348	2,382	3,154	-162	943	3,935
	Total	4,128	-60	696	4,764	6,308	-324	1,886	7,870

Table C-4 - Existing Peak Hour Volume Summary

		AM Peak Hour				PM Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project	Existing PCE	Total Adjust.	Project Trips	Existing With Project
7	**Driveway 3/Live Oak Avenue**								
NBL		0	0	15	15	0	0	89	89
NBT		0	0	0	0	0	0	0	0
NBR		0	0	17	17	0	0	116	116
SBL		0	0	0	0	0	0	0	0
SBT		0	0	0	0	0	0	0	0
SBR		0	0	0	0	0	0	0	0
EBL		0	0	0	0	0	0	0	0
EBT		909	-5	47	951	2,039	-23	180	2,196
EBR		0	0	41	41	0	0	100	100
WBL		12	-12	44	44	5	-5	80	80
WBT		1,143	-27	127	1,243	1,039	-94	153	1,098
WBR		0	0	0	0	0	0	0	0
North Leg									
	Approach	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0
South Leg									
	Approach	0	0	32	32	0	0	205	205
	Departure	12	-12	85	85	5	-5	180	180
	Total	12	-12	117	117	5	-5	385	385
East Leg									
	Approach	1,155	-39	171	1,287	1,044	-99	233	1,178
	Departure	909	-5	64	968	2,039	-23	296	2,312
	Total	2,064	-44	235	2,255	3,083	-122	529	3,490
West Leg									
	Approach	909	-5	88	992	2,039	-23	280	2,296
	Departure	1,143	-27	142	1,258	1,039	-94	242	1,187
	Total	2,052	-32	230	2,250	3,078	-117	522	3,483
Total Approaches									
	Approach	2,064	-44	291	2,311	3,083	-122	718	3,679
	Departure	2,064	-44	291	2,311	3,083	-122	718	3,679
	Total	4,128	-88	582	4,622	6,166	-244	1,436	7,358

Table C-4 - Existing Peak Hour Volume Summary

		AM Peak Hour				PM Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project	Existing PCE	Total Adjust.	Project Trips	Existing With Project
8	**Interstate 605 Southbound On-Ramp/Live Oak Avenue**								
NBL		0	0	0	0	0	0	0	0
NBT		0	0	0	0	0	0	0	0
NBR		0	0	0	0	0	0	0	0
SBL		0	0	0	0	0	0	0	0
SBT		0	0	0	0	0	0	0	0
SBR		0	0	0	0	0	0	0	0
EBL		0	0	0	0	0	0	0	0
EBT		398	-2	13	409	1,063	-12	44	1,095
EBR		524	-3	51	572	978	-11	252	1,219
WBL		685	0	0	685	573	0	0	573
WBT		1,149	-39	171	1,281	1,043	-99	233	1,177
WBR		0	0	0	0	0	0	0	0
North Leg									
	Approach	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0
South Leg									
	Approach	0	0	0	0	0	0	0	0
	Departure	1,209	-3	51	1,257	1,551	-11	252	1,792
	Total	1,209	-3	51	1,257	1,551	-11	252	1,792
East Leg									
	Approach	1,834	-39	171	1,966	1,616	-99	233	1,750
	Departure	398	-2	13	409	1,063	-12	44	1,095
	Total	2,232	-41	184	2,375	2,679	-111	277	2,845
West Leg									
	Approach	922	-5	64	981	2,041	-23	296	2,314
	Departure	1,149	-39	171	1,281	1,043	-99	233	1,177
	Total	2,071	-44	235	2,262	3,084	-122	529	3,491
Total Approaches									
	Approach	2,756	-44	235	2,947	3,657	-122	529	4,064
	Departure	2,756	-44	235	2,947	3,657	-122	529	4,064
	Total	5,512	-88	470	5,894	7,314	-244	1,058	8,128

Table C-4 - Existing Peak Hour Volume Summary

		AM Peak Hour				PM Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project	Existing PCE	Total Adjust.	Project Trips	Existing With Project
9	**Interstate 605 Northbound Ramps/Live Oak Avenue**								
NBL		0	0	0	0	0	0	0	0
NBT		0	0	0	0	0	0	0	0
NBR		366	0	0	366	642	0	0	642
SBL		0	0	0	0	0	0	0	0
SBT		0	0	0	0	0	0	0	0
SBR		384	-6	137	515	660	-38	199	821
EBL		0	0	0	0	0	0	0	0
EBT		401	-2	13	412	1,062	-12	44	1,094
EBR		0	0	0	0	0	0	0	0
WBL		0	0	0	0	0	0	0	0
WBT		1,451	-33	34	1,452	969	-61	34	942
WBR		0	0	0	0	0	0	0	0
North Leg									
	Approach	384	-6	137	515	660	-38	199	821
	Departure	0	0	0	0	0	0	0	0
	Total	384	-6	137	515	660	-38	199	821
South Leg									
	Approach	366	0	0	366	642	0	0	642
	Departure	0	0	0	0	0	0	0	0
	Total	366	0	0	366	642	0	0	642
East Leg									
	Approach	1,451	-33	34	1,452	969	-61	34	942
	Departure	767	-2	13	778	1,704	-12	44	1,736
	Total	2,218	-36	47	2,229	2,673	-73	78	2,678
West Leg									
	Approach	401	-2	13	412	1,062	-12	44	1,094
	Departure	1,835	-39	171	1,967	1,629	-99	233	1,763
	Total	2,236	-41	184	2,379	2,691	-111	277	2,857
Total Approaches									
	Approach	2,602	-41	184	2,745	3,333	-111	277	3,499
	Departure	2,602	-41	184	2,745	3,333	-111	277	3,499
	Total	5,204	-82	368	5,490	6,666	-222	554	6,998

Table C-4 - Existing Peak Hour Volume Summary

		AM Peak Hour				PM Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project	Existing PCE	Total Adjust.	Project Trips	Existing With Project
10	**Graham Road/Live Oak Avenue**								
NBL		148	-1	0	147	17	0	0	17
NBT		0	0	0	0	0	0	0	0
NBR		56	0	0	56	21	0	0	21
SBL		0	0	0	0	0	0	0	0
SBT		0	0	0	0	0	0	0	0
SBR		0	0	0	0	0	0	0	0
EBL		2	0	0	2	6	0	0	6
EBT		672	-2	13	683	1,673	-12	44	1,705
EBR		103	0	0	103	44	0	0	44
WBL		46	0	0	46	33	0	0	33
WBT		1,294	-33	34	1,295	959	-61	34	932
WBR		0	0	0	0	0	0	0	0
North Leg									
	Approach	0	0	0	0	0	0	0	0
	Departure	2	0	0	2	6	0	0	6
	Total	2	0	0	2	6	0	0	6
South Leg									
	Approach	204	-1	0	203	38	0	0	38
	Departure	149	0	0	149	77	0	0	77
	Total	353	-1	0	352	115	0	0	115
East Leg									
	Approach	1,340	-33	34	1,341	992	-61	34	965
	Departure	728	-2	13	739	1,694	-12	44	1,726
	Total	2,068	-35	47	2,080	2,686	-73	78	2,691
West Leg									
	Approach	777	-2	13	788	1,723	-12	44	1,755
	Departure	1,442	-33	34	1,443	976	-61	34	949
	Total	2,219	-36	47	2,230	2,699	-73	78	2,704
Total Approaches									
	Approach	2,321	-36	47	2,332	2,753	-73	78	2,758
	Departure	2,321	-36	47	2,332	2,753	-73	78	2,758
	Total	4,642	-71	94	4,665	5,506	-146	156	5,516

Table C-4 - Existing Peak Hour Volume Summary

		AM Peak Hour				PM Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project	Existing PCE	Total Adjust.	Project Trips	Existing With Project
11	**Live Oak Lane/Live Oak Avenue**								
NBL		0	0	0	0	0	0	0	0
NBT		0	0	0	0	0	0	0	0
NBR		0	0	0	0	0	0	0	0
SBL		13	0	0	13	11	0	0	11
SBT		0	0	0	0	0	0	0	0
SBR		128	0	0	128	69	0	0	69
EBL		83	0	0	83	45	0	0	45
EBT		649	-2	13	660	1,630	-12	44	1,662
EBR		0	0	0	0	0	0	0	0
WBL		0	0	0	0	0	0	0	0
WBT		1,230	-32	34	1,232	912	-61	34	885
WBR		53	0	0	53	6	0	0	6
North Leg									
	Approach	141	0	0	141	80	0	0	80
	Departure	136	0	0	136	51	0	0	51
	Total	277	0	0	277	131	0	0	131
South Leg									
	Approach	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0
East Leg									
	Approach	1,283	-32	34	1,285	918	-61	34	891
	Departure	662	-2	13	673	1,641	-12	44	1,673
	Total	1,945	-34	47	1,958	2,559	-72	78	2,565
West Leg									
	Approach	732	-2	13	743	1,675	-12	44	1,707
	Departure	1,358	-32	34	1,360	981	-60	34	955
	Total	2,090	-34	47	2,103	2,656	-72	78	2,662
Total Approaches									
	Approach	2,156	-34	47	2,169	2,673	-72	78	2,679
	Departure	2,156	-34	47	2,169	2,673	-72	78	2,679
	Total	4,312	-68	94	4,338	5,346	-144	156	5,358

Table C-4 - Existing Peak Hour Volume Summary

		AM Peak Hour				PM Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project	Existing PCE	Total Adjust.	Project Trips	Existing With Project
12	**Rivergrade Road/Live Oak Avenue**								
NBL		40	-1	10	49	97	-6	10	101
NBT		49	0	0	49	64	0	0	64
NBR		104	0	0	104	361	0	0	361
SBL		29	0	0	29	26	0	0	26
SBT		74	0	0	74	20	0	0	20
SBR		70	-2	0	68	57	-4	0	53
EBL		89	0	0	89	77	0	0	77
EBT		481	-2	9	488	1,549	-11	31	1,569
EBR		84	0	4	88	20	0	13	33
WBL		251	0	0	251	81	0	0	81
WBT		1,158	-30	24	1,152	767	-50	24	741
WBR		13	0	0	13	6	0	0	6
North Leg									
	Approach	173	-2	0	171	103	-4	0	99
	Departure	151	0	0	151	147	0	0	147
	Total	324	-2	0	322	250	-4	0	246
South Leg									
	Approach	193	-1	10	202	522	-6	10	526
	Departure	409	0	4	413	121	0	13	134
	Total	602	-1	14	615	643	-6	23	660
East Leg									
	Approach	1,422	-30	24	1,416	854	-50	24	828
	Departure	614	-2	9	621	1,936	-11	31	1,956
	Total	2,036	-31	33	2,038	2,790	-62	55	2,783
West Leg									
	Approach	654	-2	13	665	1,646	-12	44	1,678
	Departure	1,268	-32	34	1,270	921	-61	34	894
	Total	1,922	-34	47	1,935	2,567	-72	78	2,573
Total Approaches									
	Approach	2,442	-34	47	2,455	3,125	-72	78	3,131
	Departure	2,442	-34	47	2,455	3,125	-72	78	3,131
	Total	4,884	-69	94	4,909	6,250	-145	156	6,261

Table C-4 - Existing Peak Hour Volume Summary

		AM Peak Hour				PM Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project	Existing PCE	Total Adjust.	Project Trips	Existing With Project
13	**Commerce Drive/Live Oak Avenue**								
NBL		6	0	0	6	24	0	0	24
NBT		0	0	0	0	0	0	0	0
NBR		18	0	0	18	197	0	0	197
SBL		0	0	0	0	0	0	0	0
SBT		0	0	0	0	0	0	0	0
SBR		0	0	0	0	0	0	0	0
EBL		0	0	0	0	2	0	0	2
EBT		450	-2	9	457	1,928	-11	31	1,948
EBR		45	0	0	45	6	0	0	6
WBL		256	0	0	256	21	0	0	21
WBT		1,529	-30	24	1,523	827	-50	24	801
WBR		0	0	0	0	0	0	0	0
North Leg									
	Approach	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	2	0	0	2
	Total	0	0	0	0	2	0	0	2
South Leg									
	Approach	24	0	0	24	221	0	0	221
	Departure	301	0	0	301	27	0	0	27
	Total	325	0	0	325	248	0	0	248
East Leg									
	Approach	1,785	-30	24	1,779	848	-50	24	822
	Departure	468	-2	9	475	2,125	-11	31	2,145
	Total	2,253	-31	33	2,255	2,973	-62	55	2,966
West Leg									
	Approach	495	-2	9	502	1,936	-11	31	1,956
	Departure	1,535	-30	24	1,529	851	-50	24	825
	Total	2,030	-31	33	2,032	2,787	-62	55	2,780
Total Approaches									
	Approach	2,304	-31	33	2,306	3,005	-62	55	2,998
	Departure	2,304	-31	33	2,306	3,005	-62	55	2,998
	Total	4,608	-63	66	4,611	6,010	-123	110	5,997

Table C-4 - Existing Peak Hour Volume Summary

		AM Peak Hour				PM Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project	Existing PCE	Total Adjust.	Project Trips	Existing With Project
14	**Stewart Avenue/Live Oak Avenue**								
NBL		210	-3	10	217	68	-4	10	74
NBT		118	0	0	118	19	0	0	19
NBR		32	0	0	32	11	0	0	11
SBL		13	0	0	13	23	0	0	23
SBT		26	0	0	26	99	0	0	99
SBR		76	-1	0	75	13	-1	0	12
EBL		19	0	0	19	58	0	0	58
EBT		426	-2	5	429	1,814	-11	18	1,821
EBR		26	0	4	30	264	0	13	277
WBL		17	0	0	17	38	0	0	38
WBT		1,503	-25	14	1,492	751	-46	14	719
WBR		35	0	0	35	1	0	0	1
North Leg									
	Approach	115	-1	0	114	135	-1	0	134
	Departure	172	0	0	172	78	0	0	78
	Total	287	-1	0	286	213	-1	0	212
South Leg									
	Approach	360	-3	10	367	98	-4	10	104
	Departure	69	0	4	73	401	0	13	414
	Total	429	-3	14	440	499	-4	23	518
East Leg									
	Approach	1,555	-25	14	1,544	790	-46	14	758
	Departure	471	-2	5	474	1,848	-11	18	1,855
	Total	2,026	-27	19	2,018	2,638	-56	32	2,614
West Leg									
	Approach	471	-2	9	478	2,136	-11	31	2,156
	Departure	1,789	-30	24	1,783	832	-50	24	806
	Total	2,260	-31	33	2,262	2,968	-62	55	2,961
Total Approaches									
	Approach	2,501	-31	33	2,503	3,159	-62	55	3,152
	Departure	2,501	-31	33	2,503	3,159	-62	55	3,152
	Total	5,002	-63	66	5,005	6,318	-123	110	6,305

Table C-4 - Existing Peak Hour Volume Summary

		AM Peak Hour				PM Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project	Existing PCE	Total Adjust.	Project Trips	Existing With Project
15	**Baldwin Park/Arrow Highway**								
NBL		296	-4	3	295	94	-5	3	92
NBT		0	0	0	0	0	0	0	0
NBR		290	0	0	290	84	0	0	84
SBL		0	0	0	0	0	0	0	0
SBT		0	0	0	0	0	0	0	0
SBR		0	0	0	0	0	0	0	0
EBL		0	0	0	0	0	0	0	0
EBT		432	-2	4	434	1,341	-8	13	1,346
EBR		63	0	1	64	522	-2	4	524
WBL		131	0	0	131	262	0	0	262
WBT		1,295	-20	10	1,285	677	-40	10	647
WBR		0	0	0	0	0	0	0	0
North Leg									
	Approach	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0
South Leg									
	Approach	586	-4	3	585	178	-5	3	176
	Departure	194	0	1	195	784	-2	4	786
	Total	780	-4	4	780	962	-8	7	961
East Leg									
	Approach	1,426	-20	10	1,416	939	-40	10	909
	Departure	722	-2	4	724	1,425	-8	13	1,430
	Total	2,148	-22	14	2,140	2,364	-48	23	2,339
West Leg									
	Approach	495	-2	5	498	1,863	-10	17	1,870
	Departure	1,591	-24	13	1,580	771	-45	13	739
	Total	2,086	-26	18	2,078	2,634	-56	30	2,608
Total Approaches									
	Approach	2,507	-26	18	2,499	2,980	-56	30	2,954
	Departure	2,507	-26	18	2,499	2,980	-56	30	2,954
	Total	5,014	-52	36	4,998	5,960	-111	60	5,909

Table C-4 - Existing Peak Hour Volume Summary

		AM Peak Hour				PM Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project	Existing PCE	Total Adjust.	Project Trips	Existing With Project
16	**Arrow Highway/Live Oak Avenue**								
NBL		0	0	0	0	0	0	0	0
NBT		0	0	0	0	0	0	0	0
NBR		0	0	0	0	0	0	0	0
SBL		269	0	0	269	971	0	0	971
SBT		0	0	0	0	0	0	0	0
SBR		43	0	0	43	110	-4	0	106
EBL		138	0	0	138	37	0	0	37
EBT		585	-2	4	587	1,386	-8	13	1,391
EBR		0	0	0	0	0	0	0	0
WBL		0	0	0	0	0	0	0	0
WBT		1,386	-20	10	1,376	821	-36	10	795
WBR		1,548	0	0	1,548	441	0	0	441
North Leg									
	Approach	312	0	0	312	1,081	-4	0	1,077
	Departure	1,686	0	0	1,686	478	0	0	478
	Total	1,998	0	0	1,998	1,559	-4	0	1,555
South Leg									
	Approach	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0
East Leg									
	Approach	2,934	-20	10	2,924	1,262	-36	10	1,236
	Departure	854	-2	4	856	2,357	-8	13	2,362
	Total	3,788	-21	14	3,781	3,619	-44	23	3,598
West Leg									
	Approach	723	-2	4	725	1,423	-8	13	1,428
	Departure	1,429	-20	10	1,419	931	-40	10	901
	Total	2,152	-22	14	2,144	2,354	-48	23	2,329
Total Approaches									
	Approach	3,969	-22	14	3,961	3,766	-48	23	3,741
	Departure	3,969	-22	14	3,961	3,766	-48	23	3,741
	Total	7,938	-43	28	7,923	7,532	-96	46	7,482

Table C-4 - Existing Peak Hour Volume Summary

		AM Peak Hour				PM Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project	Existing PCE	Total Adjust.	Project Trips	Existing With Project
17	**Maine Avenue/Arrow Highway**								
NBL		612	-4	3	611	249	-7	3	245
NBT		0	0	0	0	0	0	0	0
NBR		104	0	0	104	99	0	0	99
SBL		0	0	0	0	0	0	0	0
SBT		0	0	0	0	0	0	0	0
SBR		0	0	0	0	0	0	0	0
EBL		0	0	0	0	0	0	0	0
EBT		741	-1	3	743	1,859	-7	9	1,861
EBR		97	0	1	98	486	-1	4	489
WBL		34	0	0	34	63	0	0	63
WBT		2,332	-16	7	2,323	1,008	-29	7	986
WBR		0	0	0	0	0	0	0	0
North Leg									
	Approach	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0
South Leg									
	Approach	716	-4	3	715	348	-7	3	344
	Departure	131	0	1	132	549	-1	4	552
	Total	847	-4	4	847	897	-8	7	896
East Leg									
	Approach	2,366	-16	7	2,357	1,071	-29	7	1,049
	Departure	845	-1	3	847	1,958	-7	9	1,960
	Total	3,211	-17	10	3,204	3,029	-35	16	3,010
West Leg									
	Approach	838	-2	4	840	2,345	-8	13	2,350
	Departure	2,944	-20	10	2,934	1,257	-36	10	1,231
	Total	3,782	-21	14	3,775	3,602	-44	23	3,581
Total Approaches									
	Approach	3,920	-21	14	3,913	3,764	-44	23	3,743
	Departure	3,920	-21	14	3,913	3,764	-44	23	3,743
	Total	7,840	-43	28	7,825	7,528	-88	46	7,486

Table C-4 - Existing Peak Hour Volume Summary

		AM Peak Hour				PM Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project	Existing PCE	Total Adjust.	Project Trips	Existing With Project
18	**Avenida Barbosa/Buena Vista Street**								
NBL		50	0	0	50	15	0	0	15
NBT		151	0	0	151	112	0	0	112
NBR		701	0	4	705	295	0	13	308
SBL		8	0	0	8	26	0	0	26
SBT		69	0	0	69	178	0	0	178
SBR		2	0	0	2	6	0	0	6
EBL		1	0	0	1	6	0	0	6
EBT		4	0	0	4	20	0	0	20
EBR		6	0	0	6	82	0	0	82
WBL		146	0	10	156	470	-3	10	477
WBT		14	0	0	14	17	0	0	17
WBR		18	0	0	18	22	0	0	22
North Leg									
	Approach	79	0	0	79	210	0	0	210
	Departure	170	0	0	170	140	0	0	140
	Total	249	0	0	249	350	0	0	350
South Leg									
	Approach	902	0	4	906	422	0	13	435
	Departure	221	0	10	231	730	-3	10	737
	Total	1,123	0	14	1,137	1,152	-3	23	1,172
East Leg									
	Approach	178	0	10	188	509	-3	10	516
	Departure	713	0	4	717	341	0	13	354
	Total	891	0	14	905	850	-3	23	870
West Leg									
	Approach	11	0	0	11	108	0	0	108
	Departure	66	0	0	66	38	0	0	38
	Total	77	0	0	77	146	0	0	146
Total Approaches									
	Approach	1,170	0	14	1,184	1,249	-3	23	1,269
	Departure	1,170	0	14	1,184	1,249	-3	23	1,269
	Total	2,340	0	28	2,368	2,498	-6	46	2,538

Table C-4 - Existing Peak Hour Volume Summary

		AM Peak Hour				PM Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project	Existing PCE	Total Adjust.	Project Trips	Existing With Project
19	**Avenida Barbosa/Arrow Highway**								
NBL		0	0	0	0	0	0	0	0
NBT		0	0	0	0	0	0	0	0
NBR		0	0	0	0	0	0	0	0
SBL		120	0	0	120	361	0	0	361
SBT		0	0	0	0	0	0	0	0
SBR		122	0	10	132	310	-3	10	317
EBL		288	0	4	292	188	0	13	201
EBT		390	-1	47	436	636	-1	225	860
EBR		0	0	0	0	0	0	0	0
WBL		0	0	0	0	0	0	0	0
WBT		1,326	-2	127	1,451	448	-5	203	646
WBR		643	0	0	643	198	0	0	198
North Leg									
	Approach	242	0	10	252	671	-3	10	678
	Departure	931	0	4	935	386	0	13	399
	Total	1,173	0	14	1,187	1,057	-3	23	1,077
South Leg									
	Approach	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0
East Leg									
	Approach	1,969	-2	127	2,094	646	-5	203	844
	Departure	510	-1	47	556	997	-1	225	1,221
	Total	2,479	-2	174	2,651	1,643	-6	428	2,065
West Leg									
	Approach	678	-1	51	728	824	-1	238	1,061
	Departure	1,448	-2	137	1,583	758	-8	213	963
	Total	2,126	-2	188	2,312	1,582	-9	451	2,024
Total Approaches									
	Approach	2,889	-2	188	3,075	2,141	-9	451	2,583
	Departure	2,889	-2	188	3,075	2,141	-9	451	2,583
	Total	5,778	-5	376	6,149	4,282	-18	902	5,166

Table C-4 - Existing Peak Hour Volume Summary

		AM Peak Hour				PM Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project	Existing PCE	Total Adjust.	Project Trips	Existing With Project
20	**Interstate 605 Southbound Off-Ramp/Arrow Highway**								
NBL		0	0	0	0	0	0	0	0
NBT		0	0	0	0	0	0	0	0
NBR		0	0	0	0	0	0	0	0
SBL		381	0	0	381	278	0	0	278
SBT		0	0	0	0	0	0	0	0
SBR		515	0	127	642	306	0	203	509
EBL		0	0	0	0	0	0	0	0
EBT		498	-1	47	544	997	-1	225	1,221
EBR		0	0	0	0	0	0	0	0
WBL		0	0	0	0	0	0	0	0
WBT		1,441	-2	0	1,439	348	-5	0	343
WBR		0	0	0	0	0	0	0	0
North Leg									
	Approach	896	0	127	1,023	584	0	203	787
	Departure	0	0	0	0	0	0	0	0
	Total	896	0	127	1,023	584	0	203	787
South Leg									
	Approach	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0
East Leg									
	Approach	1,441	-2	0	1,439	348	-5	0	343
	Departure	879	-1	47	925	1,275	-1	225	1,499
	Total	2,320	-2	47	2,365	1,623	-6	225	1,842
West Leg									
	Approach	498	-1	47	544	997	-1	225	1,221
	Departure	1,956	-2	127	2,081	654	-5	203	852
	Total	2,454	-2	174	2,626	1,651	-6	428	2,073
Total Approaches									
	Approach	2,835	-2	174	3,007	1,929	-6	428	2,351
	Departure	2,835	-2	174	3,007	1,929	-6	428	2,351
	Total	5,670	-5	348	6,013	3,858	-12	856	4,702

Table C-4 - Existing Peak Hour Volume Summary

		AM Peak Hour				PM Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project	Existing PCE	Total Adjust.	Project Trips	Existing With Project
21	**Interstate 605 Northbound Ramps/Arrow Highway**								
NBL		0	0	0	0	0	0	0	0
NBT		0	0	0	0	0	0	0	0
NBR		61	0	0	61	34	0	0	34
SBL		0	0	0	0	0	0	0	0
SBT		0	0	0	0	0	0	0	0
SBR		0	0	0	0	0	0	0	0
EBL		0	0	0	0	0	0	0	0
EBT		567	-1	0	566	1,181	-1	0	1,180
EBR		312	0	47	359	94	0	225	319
WBL		0	0	0	0	0	0	0	0
WBT		1,441	-2	0	1,439	348	-5	0	343
WBR		382	0	0	382	232	0	0	232
North Leg									
	Approach	0	0	0	0	0	0	0	0
	Departure	382	0	0	382	232	0	0	232
	Total	382	0	0	382	232	0	0	232
South Leg									
	Approach	61	0	0	61	34	0	0	34
	Departure	312	0	47	359	94	0	225	319
	Total	373	0	47	420	128	0	225	353
East Leg									
	Approach	1,823	-2	0	1,821	580	-5	0	575
	Departure	628	-1	0	627	1,215	-1	0	1,214
	Total	2,451	-2	0	2,449	1,795	-6	0	1,789
West Leg									
	Approach	879	-1	47	925	1,275	-1	225	1,499
	Departure	1,441	-2	0	1,439	348	-5	0	343
	Total	2,320	-2	47	2,365	1,623	-6	225	1,842
Total Approaches									
	Approach	2,763	-2	47	2,808	1,889	-6	225	2,108
	Departure	2,763	-2	47	2,808	1,889	-6	225	2,108
	Total	5,526	-5	94	5,615	3,778	-12	450	4,216

Table C-5 - Existing Peak Hour Volume Summary

		Saturday Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project
1	**Peck Road-Myrtle Avenue/Live Oak Avenue**				
NBL		156	0	0	156
NBT		467	0	0	467
NBR		128	-6	13	135
SBL		66	-3	0	63
SBT		418	0	0	418
SBR		138	0	0	138
EBL		133	0	0	133
EBT		401	-20	27	408
EBR		140	0	0	140
WBL		110	0	12	122
WBT		376	-4	24	396
WBR		40	0	0	40
North Leg					
	Approach	622	-3	0	619
	Departure	640	0	0	640
	Total	1,262	-3	0	1,259
South Leg					
	Approach	751	-6	13	758
	Departure	668	0	12	680
	Total	1,419	-6	25	1,438
East Leg					
	Approach	526	-4	36	558
	Departure	595	-30	40	605
	Total	1,121	-34	76	1,163
West Leg					
	Approach	674	-20	27	681
	Departure	670	-4	24	690
	Total	1,344	-25	51	1,370
Total Approaches					
	Approach	2,573	-34	76	2,615
	Departure	2,573	-34	76	2,615
	Total	5,146	-69	152	5,229

Table C-5 - Existing Peak Hour Volume Summary

		Saturday Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project
2	**Myrtle Avenue/Longden Avenue**				
NBL		59	0	0	59
NBT		568	0	0	568
NBR		9	0	0	9
SBL		150	-13	13	150
SBT		563	0	0	563
SBR		96	0	0	96
EBL		98	0	0	98
EBT		185	-6	13	192
EBR		53	0	0	53
WBL		47	0	0	47
WBT		205	-2	12	215
WBR		164	-1	12	175
North Leg					
	Approach	809	-13	13	809
	Departure	830	-1	12	841
	Total	1,639	-14	25	1,650
South Leg					
	Approach	636	0	0	636
	Departure	663	0	0	663
	Total	1,299	0	0	1,299
East Leg					
	Approach	416	-3	24	437
	Departure	344	-19	26	351
	Total	760	-22	50	788
West Leg					
	Approach	336	-6	13	343
	Departure	360	-2	12	370
	Total	696	-8	25	713
Total Approaches					
	Approach	2,197	-22	50	2,225
	Departure	2,197	-22	50	2,225
	Total	4,394	-43	100	4,451

Table C-5 - Existing Peak Hour Volume Summary

		Saturday Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project
3	**Longden Avenue/Live Oak Avenue**				
NBL		7	0	0	7
NBT		7	0	0	7
NBR		8	0	0	8
SBL		349	-19	27	357
SBT		6	0	0	6
SBR		11	0	0	11
EBL		9	0	0	9
EBT		560	-30	40	570
EBR		8	0	0	8
WBL		10	0	0	10
WBT		553	-4	37	586
WBR		378	-3	24	399
North Leg					
	Approach	366	-19	27	374
	Departure	394	-3	24	415
	Total	760	-22	51	789
South Leg					
	Approach	22	0	0	22
	Departure	24	0	0	24
	Total	46	0	0	46
East Leg					
	Approach	941	-7	61	995
	Departure	917	-49	67	935
	Total	1,858	-56	128	1,930
West Leg					
	Approach	577	-30	40	587
	Departure	571	-4	37	604
	Total	1,148	-34	77	1,191
Total Approaches					
	Approach	1,906	-56	128	1,978
	Departure	1,906	-56	128	1,978
	Total	3,812	-112	256	3,956

Table C-5 - Existing Peak Hour Volume Summary

		Saturday Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project
4	**Arrow Highway/Live Oak Avenue**				
NBL		0	0	0	0
NBT		328	0	0	328
NBR		603	-49	66	620
SBL		116	-9	455	562
SBT		439	0	0	439
SBR		0	0	0	0
EBL		0	0	0	0
EBT		0	0	0	0
EBR		0	0	0	0
WBL		510	-7	61	564
WBT		0	0	0	0
WBR		122	-2	399	519
North Leg					
	Approach	555	-9	455	1,001
	Departure	450	-2	399	847
	Total	1,005	-11	854	1,848
South Leg					
	Approach	931	-49	66	948
	Departure	949	-7	61	1,003
	Total	1,880	-56	127	1,951
East Leg					
	Approach	632	-9	460	1,083
	Departure	719	-58	521	1,182
	Total	1,351	-67	981	2,265
West Leg					
	Approach	0	0	0	0
	Departure	0	0	0	0
	Total	0	0	0	0
Total Approaches					
	Approach	2,118	-67	981	3,032
	Departure	2,118	-67	981	3,032
	Total	4,236	-134	1,962	6,064

Table C-5 - Existing Peak Hour Volume Summary

		Saturday Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project
5	**Driveway 1/Live Oak Avenue**				
NBL		9	-9	149	149
NBT		0	0	0	0
NBR		58	-58	149	149
SBL		0	0	0	0
SBT		0	0	0	0
SBR		0	0	0	0
EBL		0	0	0	0
EBT		720	-40	359	1,039
EBR		30	-30	162	162
WBL		21	-21	150	150
WBT		686	-6	312	992
WBR		0	0	0	0
North Leg					
	Approach	0	0	0	0
	Departure	0	0	0	0
	Total	0	0	0	0
South Leg					
	Approach	67	-67	298	298
	Departure	51	-51	312	312
	Total	118	-118	610	610
East Leg					
	Approach	707	-27	462	1,142
	Departure	778	-98	508	1,188
	Total	1,485	-125	970	2,330
West Leg					
	Approach	750	-70	521	1,201
	Departure	695	-15	461	1,141
	Total	1,445	-85	982	2,342
Total Approaches					
	Approach	1,524	-164	1,281	2,641
	Departure	1,524	-164	1,281	2,641
	Total	3,048	-328	2,562	5,282

Table C-5 - Existing Peak Hour Volume Summary

		Saturday Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project
6	**Speedway Drive-Driveway 2/Live Oak Avenue**				
NBL		6	-6	342	342
NBT		0	0	0	0
NBR		3	-3	360	360
SBL		0	0	0	0
SBT		0	0	0	0
SBR		0	0	0	0
EBL		0	0	0	0
EBT		738	0	135	873
EBR		40	-40	374	374
WBL		26	-26	356	356
WBT		700	-5	119	814
WBR		0	0	0	0
North Leg					
	Approach	0	0	0	0
	Departure	0	0	0	0
	Total	0	0	0	0
South Leg					
	Approach	9	-9	702	702
	Departure	66	-66	730	730
	Total	75	-75	1,432	1,432
East Leg					
	Approach	726	-31	475	1,170
	Departure	741	-3	495	1,233
	Total	1,467	-34	970	2,403
West Leg					
	Approach	778	-40	509	1,247
	Departure	706	-11	461	1,156
	Total	1,484	-51	970	2,403
Total Approaches					
	Approach	1,513	-80	1,686	3,119
	Departure	1,513	-80	1,686	3,119
	Total	3,026	-160	3,372	6,238

Table C-5 - Existing Peak Hour Volume Summary

		Saturday Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project
7	**Driveway 3/Live Oak Avenue**				
NBL		0	0	143	143
NBT		0	0	0	0
NBR		0	0	159	159
SBL		0	0	0	0
SBT		0	0	0	0
SBR		0	0	0	0
EBL		0	0	0	0
EBT		742	-11	336	1,067
EBR		0	0	160	160
WBL		5	-5	156	156
WBT		728	-31	331	1,028
WBR		0	0	0	0
North Leg					
	Approach	0	0	0	0
	Departure	0	0	0	0
	Total	0	0	0	0
South Leg					
	Approach	0	0	302	302
	Departure	5	-5	316	316
	Total	5	-5	618	618
East Leg					
	Approach	733	-36	487	1,184
	Departure	742	-11	495	1,226
	Total	1,475	-47	982	2,410
West Leg					
	Approach	742	-11	496	1,227
	Departure	728	-31	474	1,171
	Total	1,470	-42	970	2,398
Total Approaches					
	Approach	1,475	-47	1,285	2,713
	Departure	1,475	-47	1,285	2,713
	Total	2,950	-94	2,570	5,426

Table C-5 - Existing Peak Hour Volume Summary

		Saturday Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project
8	**Interstate 605 Southbound On-Ramp/Live Oak Avenue**				
NBL		0	0	0	0
NBT		0	0	0	0
NBR		0	0	0	0
SBL		0	0	0	0
SBT		0	0	0	0
SBR		0	0	0	0
EBL		0	0	0	0
EBT		175	-3	61	233
EBR		567	-8	434	993
WBL		464	0	0	464
WBT		733	-36	486	1,183
WBR		0	0	0	0
North Leg					
	Approach	0	0	0	0
	Departure	0	0	0	0
	Total	0	0	0	0
South Leg					
	Approach	0	0	0	0
	Departure	1,031	-8	434	1,457
	Total	1,031	-8	434	1,457
East Leg					
	Approach	1,197	-36	486	1,647
	Departure	175	-3	61	233
	Total	1,372	-39	547	1,880
West Leg					
	Approach	742	-11	495	1,226
	Departure	733	-36	486	1,183
	Total	1,475	-47	981	2,409
Total Approaches					
	Approach	1,939	-47	981	2,873
	Departure	1,939	-47	981	2,873
	Total	3,878	-94	1,962	5,746

Table C-5 - Existing Peak Hour Volume Summary

		Saturday Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project
9	**Interstate 605 Northbound Ramps/Live Oak Avenue**				
NBL		0	0	0	0
NBT		0	0	0	0
NBR		332	0	0	332
SBL		0	0	0	0
SBT		0	0	0	0
SBR		454	-13	420	861
EBL		0	0	0	0
EBT		194	-3	61	252
EBR		0	0	0	0
WBL		0	0	0	0
WBT		627	-23	66	670
WBR		0	0	0	0
North Leg					
	Approach	454	-13	420	861
	Departure	0	0	0	0
	Total	454	-13	420	861
South Leg					
	Approach	332	0	0	332
	Departure	0	0	0	0
	Total	332	0	0	332
East Leg					
	Approach	627	-23	66	670
	Departure	526	-3	61	584
	Total	1,153	-26	127	1,254
West Leg					
	Approach	194	-3	61	252
	Departure	1,081	-36	486	1,531
	Total	1,275	-39	547	1,783
Total Approaches					
	Approach	1,607	-39	547	2,115
	Departure	1,607	-39	547	2,115
	Total	3,214	-77	1,094	4,231

Table C-5 - Existing Peak Hour Volume Summary

		Saturday Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project
10	**Graham Road/Live Oak Avenue**				
NBL		36	0	0	36
NBT		0	0	0	0
NBR		4	0	0	4
SBL		0	0	0	0
SBT		0	0	0	0
SBR		0	0	0	0
EBL		2	0	0	2
EBT		495	-3	61	553
EBR		25	0	0	25
WBL		15	0	0	15
WBT		597	-23	66	640
WBR		0	0	0	0
North Leg					
	Approach	0	0	0	0
	Departure	2	0	0	2
	Total	2	0	0	2
South Leg					
	Approach	40	0	0	40
	Departure	40	0	0	40
	Total	80	0	0	80
East Leg					
	Approach	612	-23	66	655
	Departure	499	-3	61	557
	Total	1,111	-25	127	1,213
West Leg					
	Approach	522	-3	61	580
	Departure	633	-23	66	676
	Total	1,155	-26	127	1,256
Total Approaches					
	Approach	1,174	-26	127	1,275
	Departure	1,174	-26	127	1,275
	Total	2,348	-51	254	2,551

Table C-5 - Existing Peak Hour Volume Summary

		Saturday Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project
11	**Live Oak Lane/Live Oak Avenue**				
NBL		0	0	0	0
NBT		0	0	0	0
NBR		0	0	0	0
SBL		2	0	0	2
SBT		0	0	0	0
SBR		61	0	0	61
EBL		35	0	0	35
EBT		466	-2	61	525
EBR		0	0	0	0
WBL		0	0	0	0
WBT		545	-23	66	588
WBR		22	0	0	22
North Leg					
	Approach	63	0	0	63
	Departure	57	0	0	57
	Total	120	0	0	120
South Leg					
	Approach	0	0	0	0
	Departure	0	0	0	0
	Total	0	0	0	0
East Leg					
	Approach	567	-23	66	610
	Departure	468	-2	61	527
	Total	1,035	-25	127	1,137
West Leg					
	Approach	501	-3	61	559
	Departure	606	-22	66	650
	Total	1,107	-25	127	1,209
Total Approaches					
	Approach	1,131	-25	127	1,233
	Departure	1,131	-25	127	1,233
	Total	2,262	-50	254	2,466

Table C-5 - Existing Peak Hour Volume Summary

		Saturday Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project
12	**Rivergrade Road/Live Oak Avenue**				
NBL		19	-1	20	38
NBT		35	0	0	35
NBR		91	0	0	91
SBL		11	0	0	11
SBT		16	0	0	16
SBR		71	-3	0	68
EBL		15	0	0	15
EBT		438	-2	43	479
EBR		12	0	18	30
WBL		47	0	0	47
WBT		473	-19	46	500
WBR		7	0	0	7
North Leg					
	Approach	98	-3	0	95
	Departure	57	0	0	57
	Total	155	-3	0	152
South Leg					
	Approach	145	-1	20	164
	Departure	75	0	18	93
	Total	220	-1	38	257
East Leg					
	Approach	527	-19	46	554
	Departure	540	-2	43	581
	Total	1,067	-21	89	1,135
West Leg					
	Approach	465	-2	61	524
	Departure	563	-23	66	606
	Total	1,028	-25	127	1,130
Total Approaches					
	Approach	1,235	-25	127	1,337
	Departure	1,235	-25	127	1,337
	Total	2,470	-50	254	2,674

Table C-5 - Existing Peak Hour Volume Summary

		Saturday Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project
13	**Commerce Drive/Live Oak Avenue**				
NBL		4	0	0	4
NBT		0	0	0	0
NBR		8	0	0	8
SBL		0	0	0	0
SBT		0	0	0	0
SBR		0	0	0	0
EBL		2	0	0	2
EBT		550	-2	43	591
EBR		6	0	0	6
WBL		13	0	0	13
WBT		497	-19	46	524
WBR		0	0	0	0
North Leg					
	Approach	0	0	0	0
	Departure	2	0	0	2
	Total	2	0	0	2
South Leg					
	Approach	12	0	0	12
	Departure	19	0	0	19
	Total	31	0	0	31
East Leg					
	Approach	510	-19	46	537
	Departure	558	-2	43	599
	Total	1,068	-21	89	1,136
West Leg					
	Approach	558	-2	43	599
	Departure	501	-19	46	528
	Total	1,059	-21	89	1,127
Total Approaches					
	Approach	1,080	-21	89	1,148
	Departure	1,080	-21	89	1,148
	Total	2,160	-43	178	2,295

Table C-5 - Existing Peak Hour Volume Summary

		Saturday Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project
14	**Stewart Avenue/Live Oak Avenue**				
NBL		58	-2	20	76
NBT		23	0	0	23
NBR		27	0	0	27
SBL		2	0	0	2
SBT		44	0	0	44
SBR		3	0	0	3
EBL		6	0	0	6
EBT		521	-2	24	543
EBR		43	0	18	61
WBL		33	0	0	33
WBT		464	-17	27	474
WBR		5	0	0	5
North Leg					
	Approach	49	0	0	49
	Departure	34	0	0	34
	Total	83	0	0	83
South Leg					
	Approach	108	-2	20	126
	Departure	120	0	18	138
	Total	228	-2	38	264
East Leg					
	Approach	502	-17	27	512
	Departure	550	-2	24	572
	Total	1,052	-19	51	1,084
West Leg					
	Approach	570	-2	42	610
	Departure	525	-19	47	553
	Total	1,095	-21	89	1,163
Total Approaches					
	Approach	1,229	-21	89	1,297
	Departure	1,229	-21	89	1,297
	Total	2,458	-43	178	2,593

Table C-5 - Existing Peak Hour Volume Summary

		Saturday Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project
15	**Baldwin Park/Arrow Highway**				
NBL		66	-2	7	71
NBT		0	0	0	0
NBR		140	0	0	140
SBL		0	0	0	0
SBT		0	0	0	0
SBR		0	0	0	0
EBL		0	0	0	0
EBT		473	-2	18	489
EBR		75	0	6	81
WBL		174	0	0	174
WBT		462	-15	20	467
WBR		0	0	0	0
North Leg					
	Approach	0	0	0	0
	Departure	0	0	0	0
	Total	0	0	0	0
South Leg					
	Approach	206	-2	7	211
	Departure	249	0	6	255
	Total	455	-2	13	466
East Leg					
	Approach	636	-15	20	641
	Departure	613	-2	18	629
	Total	1,249	-17	38	1,270
West Leg					
	Approach	548	-2	24	570
	Departure	528	-17	27	538
	Total	1,076	-19	51	1,108
Total Approaches					
	Approach	1,390	-19	51	1,422
	Departure	1,390	-19	51	1,422
	Total	2,780	-38	102	2,844

Table C-5 - Existing Peak Hour Volume Summary

		Saturday Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project
16	**Arrow Highway/Live Oak Avenue**				
NBL		0	0	0	0
NBT		0	0	0	0
NBR		0	0	0	0
SBL		296	0	0	296
SBT		0	0	0	0
SBR		66	-1	0	65
EBL		68	0	0	68
EBT		547	-2	18	563
EBR		0	0	0	0
WBL		0	0	0	0
WBT		572	-14	20	578
WBR		385	0	0	385
North Leg					
	Approach	362	-1	0	361
	Departure	453	0	0	453
	Total	815	-1	0	814
South Leg					
	Approach	0	0	0	0
	Departure	0	0	0	0
	Total	0	0	0	0
East Leg					
	Approach	957	-14	20	963
	Departure	843	-2	18	859
	Total	1,800	-16	38	1,822
West Leg					
	Approach	615	-2	18	631
	Departure	638	-15	20	643
	Total	1,253	-17	38	1,274
Total Approaches					
	Approach	1,934	-17	38	1,955
	Departure	1,934	-17	38	1,955
	Total	3,868	-33	76	3,911

Table C-5 - Existing Peak Hour Volume Summary

		Saturday Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project
17	**Maine Avenue/Arrow Highway**				
NBL		204	-3	7	208
NBT		0	0	0	0
NBR		104	0	0	104
SBL		0	0	0	0
SBT		0	0	0	0
SBR		0	0	0	0
EBL		0	0	0	0
EBT		690	-2	12	700
EBR		164	0	6	170
WBL		96	0	0	96
WBT		758	-11	13	760
WBR		0	0	0	0
North Leg					
	Approach	0	0	0	0
	Departure	0	0	0	0
	Total	0	0	0	0
South Leg					
	Approach	308	-3	7	312
	Departure	260	0	6	266
	Total	568	-3	13	578
East Leg					
	Approach	854	-11	13	856
	Departure	794	-2	12	804
	Total	1,648	-12	25	1,661
West Leg					
	Approach	854	-2	18	870
	Departure	962	-14	20	968
	Total	1,816	-16	38	1,838
Total Approaches					
	Approach	2,016	-16	38	2,038
	Departure	2,016	-16	38	2,038
	Total	4,032	-31	76	4,077

Table C-5 - Existing Peak Hour Volume Summary

		Saturday Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project
18	**Avenida Barbosa/Buena Vista Street**				
NBL		75	0	0	75
NBT		83	0	0	83
NBR		114	0	18	132
SBL		0	0	0	0
SBT		62	0	0	62
SBR		1	0	0	1
EBL		2	0	0	2
EBT		12	0	0	12
EBR		72	0	0	72
WBL		115	-2	20	133
WBT		26	0	0	26
WBR		14	0	0	14
North Leg					
	Approach	63	0	0	63
	Departure	99	0	0	99
	Total	162	0	0	162
South Leg					
	Approach	272	0	18	290
	Departure	249	-2	20	267
	Total	521	-2	38	557
East Leg					
	Approach	155	-2	20	173
	Departure	126	0	18	144
	Total	281	-2	38	317
West Leg					
	Approach	86	0	0	86
	Departure	102	0	0	102
	Total	188	0	0	188
Total Approaches					
	Approach	576	-2	38	612
	Departure	576	-2	38	612
	Total	1,152	-5	76	1,223

Table C-5 - Existing Peak Hour Volume Summary

		Saturday Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project
19	**Avenida Barbosa/Arrow Highway**				
NBL		0	0	0	0
NBT		0	0	0	0
NBR		0	0	0	0
SBL		120	0	0	120
SBT		0	0	0	0
SBR		135	-2	20	153
EBL		144	0	18	162
EBT		258	-2	381	637
EBR		0	0	0	0
WBL		1	0	0	1
WBT		416	-7	435	844
WBR		150	0	0	150
North Leg					
	Approach	255	-2	20	273
	Departure	294	0	18	312
	Total	549	-2	38	585
South Leg					
	Approach	0	0	0	0
	Departure	1	0	0	1
	Total	1	0	0	1
East Leg					
	Approach	567	-7	435	995
	Departure	378	-2	381	757
	Total	945	-9	816	1,752
West Leg					
	Approach	402	-2	399	799
	Departure	551	-9	455	997
	Total	953	-11	854	1,796
Total Approaches					
	Approach	1,224	-11	854	2,067
	Departure	1,224	-11	854	2,067
	Total	2,448	-22	1,708	4,134

Table C-5 - Existing Peak Hour Volume Summary

		Saturday Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project
20	**Interstate 605 Southbound Off-Ramp/Arrow Highway**				
NBL		0	0	0	0
NBT		0	0	0	0
NBR		0	0	0	0
SBL		218	0	0	218
SBT		0	0	0	0
SBR		291	0	435	726
EBL		0	0	0	0
EBT		419	-2	381	798
EBR		0	0	0	0
WBL		0	0	0	0
WBT		266	-7	0	259
WBR		0	0	0	0
North Leg					
	Approach	509	0	435	944
	Departure	0	0	0	0
	Total	509	0	435	944
South Leg					
	Approach	0	0	0	0
	Departure	0	0	0	0
	Total	0	0	0	0
East Leg					
	Approach	266	-7	0	259
	Departure	637	-2	381	1,016
	Total	903	-9	381	1,275
West Leg					
	Approach	419	-2	381	798
	Departure	557	-7	435	985
	Total	976	-9	816	1,783
Total Approaches					
	Approach	1,194	-9	816	2,001
	Departure	1,194	-9	816	2,001
	Total	2,388	-18	1,632	4,002

Table C-5 - Existing Peak Hour Volume Summary

		Saturday Peak Hour			
		Existing PCE	Total Adjust.	Project Trips	Existing With Project
21	**Interstate 605 Northbound Ramps/Arrow Highway**				
NBL		0	0	0	0
NBT		0	0	0	0
NBR		18	0	0	18
SBL		0	0	0	0
SBT		0	0	0	0
SBR		0	0	0	0
EBL		0	0	0	0
EBT		432	-2	0	430
EBR		176	0	381	557
WBL		0	0	0	0
WBT		260	-7	0	253
WBR		228	0	0	228
North Leg					
	Approach	0	0	0	0
	Departure	228	0	0	228
	Total	228	0	0	228
South Leg					
	Approach	18	0	0	18
	Departure	176	0	381	557
	Total	194	0	381	575
East Leg					
	Approach	488	-7	0	481
	Departure	450	-2	0	448
	Total	938	-9	0	929
West Leg					
	Approach	608	-2	381	987
	Departure	260	-7	0	253
	Total	868	-9	381	1,240
Total Approaches					
	Approach	1,114	-9	381	1,486
	Departure	1,114	-9	381	1,486
	Total	2,228	-18	762	2,972

Table C-6 - Future Baseline Peak Hour Volume Summary

	AM Peak Hour								PM Peak Hour							
	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project
1 Peck Road-Myrtle Avenue/Live Oak Avenue																
NBL	249	20	269	0	20	269	0	269	220	18	238	0	18	238	0	238
NBT	934	75	1,009	0	75	1009	0	1,009	766	61	827	0	61	827	0	827
NBR	266	21	287	-2	21	285	7	292	174	14	188	-4	14	183	7	190
SBL	38	3	41	0	3	41	0	41	177	14	191	-4	14	187	0	187
SBT	496	40	536	0	40	536	0	536	548	44	592	0	44	592	0	592
SBR	151	12	163	0	12	163	0	163	132	11	143	0	11	143	0	143
EBL	67	5	72	0	5	72	0	72	182	15	197	0	15	197	0	197
EBT	534	43	577	-4	42	572	14	586	1,153	92	1,245	-28	90	1215	14	1,229
EBR	207	17	224	0	17	224	0	224	184	15	199	0	15	199	0	199
WBL	156	12	168	0	12	168	3	171	60	5	65	0	5	65	9	74
WBT	1,133	91	1,224	-2	90	1222	5	1,227	639	51	690	-5	51	685	18	703
WBR	54	4	58	0	4	58	0	58	20	2	22	0	2	22	0	22
North Leg																
Approach	685	55	740	0	55	739	0	739	857	69	926	-4	68	921	0	921
Departure	1,055	84	1,139	0	84	1,139	0	1,139	968	78	1,046	0	77	1,045	0	1,045
Total	1,740	139	1,879	0	139	1,879	0	1,879	1,825	147	1,972	-4	146	1,966	0	1,966
South Leg																
Approach	1,449	116	1,565	-2	116	1,563	7	1,570	1,160	93	1,253	-4	92	1,248	7	1,255
Departure	859	69	928	0	69	928	3	931	792	64	856	0	63	855	9	864
Total	2,308	185	2,493	-2	184	2,490	10	2,500	1,952	157	2,109	-4	156	2,104	16	2,120
East Leg																
Approach	1,343	107	1,450	-2	107	1,448	8	1,456	719	58	777	-5	57	772	27	799
Departure	838	67	905	-7	66	898	21	919	1,504	120	1,624	-36	117	1,585	21	1,606
Total	2,181	174	2,355	-9	174	2,346	29	2,375	2,223	178	2,401	-41	175	2,357	48	2,405
West Leg																
Approach	808	65	873	-4	64	868	14	882	1,519	122	1,641	-28	119	1,611	14	1,625
Departure	1,533	123	1,656	-2	122	1,654	5	1,659	991	80	1,071	-5	79	1,065	18	1,083
Total	2,341	188	2,529	-6	187	2,522	19	2,541	2,510	202	2,712	-32	198	2,676	32	2,708
Total Approaches																
Approach	4,285	343	4,628	-9	342	4,618	29	4,647	4,255	342	4,597	-41	337	4,551	48	4,599
Departure	4,285	343	4,628	-9	342	4,618	29	4,647	4,255	342	4,597	-41	337	4,551	48	4,599
Total	8,570	686	9,256	-17	684	9,237	58	9,295	8,510	684	9,194	-81	674	9,103	96	9,199

Table C-6 - Future Baseline Peak Hour Volume Summary

	AM Peak Hour								PM Peak Hour							
	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project
2 Myrtle Avenue/Longden Avenue																
NBL	163	13	176	0	13	176	0	176	92	7	99	0	7	99	0	99
NBT	873	70	943	0	70	943	0	943	860	69	929	0	69	929	0	929
NBR	19	2	21	0	2	21	0	21	12	1	13	0	1	13	0	13
SBL	161	13	174	-2	13	172	7	179	348	28	376	-12	27	363	7	370
SBT	598	48	646	0	48	646	0	646	773	62	835	0	62	835	0	835
SBR	48	4	52	0	4	52	0	52	53	4	57	0	4	57	0	57
EBL	68	5	73	0	5	73	0	73	80	6	86	0	6	86	0	86
EBT	247	20	267	-2	20	265	7	272	620	50	670	-11	49	658	7	665
EBR	74	6	80	0	6	80	0	80	96	8	104	0	8	104	0	104
WBL	33	3	36	0	3	36	0	36	26	2	28	0	2	28	0	28
WBT	567	45	612	-1	45	611	3	614	379	30	409	-2	30	407	9	416
WBR	410	33	443	0	33	443	3	446	265	21	286	-2	21	284	9	293
North Leg																
Approach	807	65	872	-2	64	870	7	877	1,174	94	1,268	-12	93	1,255	7	1,262
Departure	1,351	108	1,459	0	108	1,459	3	1,462	1,205	96	1,301	-2	96	1,300	9	1,309
Total	2,158	173	2,331	-2	173	2,329	10	2,339	2,379	190	2,569	-14	189	2,555	16	2,571
South Leg																
Approach	1,055	85	1,140	0	84	1,139	0	1,139	964	77	1,041	0	77	1,041	0	1,041
Departure	705	57	762	0	56	761	0	761	895	72	967	0	72	967	0	967
Total	1,760	142	1,902	0	141	1,901	0	1,901	1,859	149	2,008	0	149	2,008	0	2,008
East Leg																
Approach	1,010	81	1,091	-1	81	1,089	6	1,095	670	53	723	-4	53	719	18	737
Departure	427	35	462	-4	34	457	14	471	980	79	1,059	-23	77	1,033	14	1,047
Total	1,437	116	1,553	-5	115	1,547	20	1,567	1,650	132	1,782	-27	130	1,753	32	1,785
West Leg																
Approach	389	31	420	-2	31	418	7	425	796	64	860	-11	63	848	7	855
Departure	778	62	840	-1	62	839	3	842	524	41	565	-2	42	563	9	572
Total	1,167	93	1,260	-3	93	1,257	10	1,267	1,320	105	1,425	-14	105	1,411	16	1,427
Total Approaches																
Approach	3,261	262	3,523	-5	260	3,517	20	3,537	3,604	288	3,892	-27	286	3,863	32	3,895
Departure	3,261	262	3,523	-5	260	3,517	20	3,537	3,604	288	3,892	-27	286	3,863	32	3,895
Total	6,522	524	7,046	-10	521	7,033	40	7,073	7,208	576	7,784	-55	572	7,726	64	7,790

Table C-6 - Future Baseline Peak Hour Volume Summary

	AM Peak Hour								PM Peak Hour							
	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project
3 Longden Avenue/Live Oak Avenue																
NBL	9	1	10	0	1	10	0	10	0	0	0	0	0	0	0	0
NBT	9	1	10	0	1	10	0	10	0	0	0	0	0	0	0	0
NBR	9	1	10	0	1	10	0	10	0	0	0	0	0	0	0	0
SBL	418	33	451	-4	33	448	14	462	969	78	1,047	-23	76	1022	14	1,036
SBT	1	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0
SBR	12	1	13	0	1	13	0	13	9	1	10	0	1	10	0	10
EBL	36	3	39	0	3	39	0	39	8	1	9	0	1	9	0	9
EBT	805	64	869	-7	64	862	21	883	1,521	122	1,643	-36	119	1604	20	1,624
EBR	1	0	1	0	0	1	0	1	1	0	1	0	0	1	0	1
WBL	9	1	10	0	1	10	0	10	1	0	1	0	0	1	0	1
WBT	1,295	104	1,399	-2	103	1397	8	1,405	684	55	739	-5	54	734	26	760
WBR	937	75	1,012	-1	75	1010	5	1,015	642	51	693	-4	51	689	18	707
North Leg																
Approach	431	34	465	-4	34	462	14	476	978	79	1,057	-23	76	1,031	14	1,045
Departure	982	79	1,061	-1	78	1,059	5	1,064	650	52	702	-4	52	697	18	715
Total	1,413	113	1,526	-5	113	1,521	19	1,540	1,628	131	1,759	-27	128	1,729	32	1,761
South Leg																
Approach	27	3	30	0	2	29	0	29	0	0	0	0	0	0	0	0
Departure	11	1	12	0	1	12	0	12	2	0	2	0	0	2	0	2
Total	38	4	42	0	3	41	0	41	2	0	2	0	0	2	0	2
East Leg																
Approach	2,241	180	2,421	-3	179	2,417	13	2,430	1,327	106	1,433	-9	105	1,424	44	1,468
Departure	1,232	98	1,330	-10	98	1,319	35	1,354	2,490	200	2,690	-59	194	2,625	34	2,659
Total	3,473	278	3,751	-14	277	3,736	48	3,784	3,817	306	4,123	-68	300	4,049	78	4,127
West Leg																
Approach	842	67	909	-7	67	902	21	923	1,530	123	1,653	-36	120	1,613	20	1,633
Departure	1,316	106	1,422	-2	105	1,419	8	1,427	693	56	749	-5	55	744	26	770
Total	2,158	173	2,331	-9	172	2,321	29	2,350	2,223	179	2,402	-41	175	2,357	46	2,403
Total Approaches																
Approach	3,541	284	3,825	-14	282	3,810	48	3,858	3,835	308	4,143	-68	301	4,068	78	4,146
Departure	3,541	284	3,825	-14	282	3,810	48	3,858	3,835	308	4,143	-68	301	4,068	78	4,146
Total	7,082	568	7,650	-27	564	7,619	96	7,715	7,670	616	8,286	-136	603	8,137	156	8,293

Table C-6 - Future Baseline Peak Hour Volume Summary

	AM Peak Hour								PM Peak Hour							
	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project
4 Arrow Highway/Live Oak Avenue																
NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	490	39	529	0	39	529	0	529	709	57	766	0	57	766	0	766
NBR	732	59	791	-10	58	779	34	813	1,819	146	1,965	-59	141	1901	34	1,935
SBL	120	10	130	-2	9	128	137	265	237	19	256	-8	18	248	213	461
SBT	1,331	106	1,437	0	106	1437	0	1,437	516	41	557	0	41	557	0	557
SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBL	912	73	985	-3	73	981	13	994	821	66	887	-9	65	877	44	921
WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBR	197	16	213	-1	16	212	51	263	117	9	126	-1	9	125	238	363
North Leg																
Approach	1,451	116	1,567	-2	116	1,565	137	1,702	753	60	813	-8	60	805	213	1,018
Departure	687	55	742	-1	55	741	51	792	826	66	892	-1	66	891	238	1,129
Total	2,138	171	2,309	-2	171	2,306	188	2,494	1,579	126	1,705	-9	126	1,696	451	2,147
South Leg																
Approach	1,222	98	1,320	-10	97	1,309	34	1,343	2,528	203	2,731	-59	197	2,666	34	2,700
Departure	2,243	179	2,422	-3	179	2,419	13	2,432	1,337	107	1,444	-9	106	1,435	44	1,479
Total	3,465	277	3,742	-14	276	3,728	47	3,775	3,865	310	4,175	-68	304	4,101	78	4,179
East Leg																
Approach	1,109	89	1,198	-4	88	1,193	64	1,257	938	75	1,013	-10	74	1,002	282	1,284
Departure	852	69	921	-12	67	907	171	1,078	2,056	165	2,221	-67	159	2,148	247	2,395
Total	1,961	158	2,119	-16	156	2,101	235	2,336	2,994	240	3,234	-77	233	3,150	529	3,679
West Leg																
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Approaches																
Approach	3,782	303	4,085	-16	301	4,067	235	4,302	4,219	338	4,557	-77	331	4,473	529	5,002
Departure	3,782	303	4,085	-16	301	4,067	235	4,302	4,219	338	4,557	-77	331	4,473	529	5,002
Total	7,564	606	8,170	-32	603	8,135	470	8,605	8,438	676	9,114	-154	663	8,947	1,058	10,005

Table C-6 - Future Baseline Peak Hour Volume Summary

	AM Peak Hour								PM Peak Hour							
	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project
5 Driveway 1/Live Oak Avenue																
NBL	22	2	24	-22	0	0	17	17	7	1	8	-7	0	0	90	90
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	82	7	89	-82	0	0	15	15	60	5	65	-60	0	0	111	111
SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	815	65	880	-2	65	878	127	1,005	2,036	163	2,199	-53	159	2142	145	2,287
EBR	45	4	49	-45	0	0	44	44	23	2	25	-23	0	0	102	102
WBL	28	2	30	-28	0	0	41	41	46	4	50	-46	0	0	74	74
WBT	1,098	88	1,186	0	88	1186	47	1,233	928	74	1,002	-10	73	991	192	1,183
WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg																
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Leg																
Approach	104	9	113	-104	0	0	32	32	67	6	73	-67	0	0	201	201
Departure	73	6	79	-73	0	0	85	85	69	6	75	-69	0	0	176	176
Total	177	15	192	-177	0	0	117	117	136	12	148	-136	0	0	377	377
East Leg																
Approach	1,126	90	1,216	-28	88	1,186	88	1,274	974	78	1,052	-56	73	991	266	1,257
Departure	897	72	969	-84	65	878	142	1,020	2,096	168	2,264	-113	159	2,142	256	2,398
Total	2,023	162	2,185	-112	153	2,064	230	2,294	3,070	246	3,316	-169	232	3,133	522	3,655
West Leg																
Approach	860	69	929	-47	65	878	171	1,049	2,059	165	2,224	-76	159	2,142	247	2,389
Departure	1,120	90	1,210	-22	88	1,186	64	1,250	935	75	1,010	-17	73	991	282	1,273
Total	1,980	159	2,139	-69	153	2,064	235	2,299	2,994	240	3,234	-93	232	3,133	529	3,662
Total Approaches																
Approach	2,090	168	2,258	-179	153	2,064	291	2,355	3,100	249	3,349	-199	232	3,133	714	3,847
Departure	2,090	168	2,258	-179	153	2,064	291	2,355	3,100	249	3,349	-199	232	3,133	714	3,847
Total	4,180	336	4,516	-358	306	4,128	582	4,710	6,200	498	6,698	-398	464	6,266	1,428	7,694

Table C-6 - Future Baseline Peak Hour Volume Summary

	AM Peak Hour								PM Peak Hour							
	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project
6 Speedway Drive-Driveway 2/Live Oak Avenue																
NBL	0	0	0	0	0	0	32	32	10	1	11	-10	0	0	199	199
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	1	0	1	-1	0	0	32	32	5	0	5	-5	0	0	246	246
SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	910	73	983	0	73	983	56	1,039	2,035	163	2,198	0	163	2198	34	2,232
EBR	2	0	2	-2	0	0	86	86	53	4	57	-53	0	0	222	222
WBL	20	2	22	-20	0	0	86	86	87	7	94	-87	0	0	175	175
WBT	1,131	90	1,221	-7	90	1214	56	1,270	964	77	1,041	-7	77	1034	67	1,101
WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg																
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Leg																
Approach	1	0	1	-1	0	0	64	64	15	1	16	-15	0	0	445	445
Departure	22	2	24	-22	0	0	172	172	140	11	151	-140	0	0	397	397
Total	23	2	25	-23	0	0	236	236	155	12	167	-155	0	0	842	842
East Leg																
Approach	1,151	92	1,243	-27	90	1,214	142	1,356	1,051	84	1,135	-94	77	1,034	242	1,276
Departure	911	73	984	-1	73	983	88	1,071	2,040	163	2,203	-5	163	2,198	280	2,478
Total	2,062	165	2,227	-28	163	2,197	230	2,427	3,091	247	3,338	-99	239	3,231	522	3,753
West Leg																
Approach	912	73	985	-2	73	983	142	1,125	2,088	167	2,255	-53	163	2,198	256	2,454
Departure	1,131	90	1,221	-7	90	1,214	88	1,302	974	78	1,052	-17	77	1,034	266	1,300
Total	2,043	163	2,206	-9	163	2,197	230	2,427	3,062	245	3,307	-70	239	3,231	522	3,753
Total Approaches																
Approach	2,064	165	2,229	-30	163	2,197	348	2,545	3,154	252	3,406	-162	239	3,231	943	4,174
Departure	2,064	165	2,229	-30	163	2,197	348	2,545	3,154	252	3,406	-162	239	3,231	943	4,174
Total	4,128	330	4,458	-60	325	4,393	696	5,089	6,308	504	6,812	-324	479	6,463	1,886	8,349

Table C-6 - Future Baseline Peak Hour Volume Summary

	AM Peak Hour								PM Peak Hour							
	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project
7 Driveway 3/Live Oak Avenue																
NBL	0	0	0	0	0	0	15	15	0	0	0	0	0	0	89	89
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	17	17	0	0	0	0	0	0	116	116
SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	909	73	982	-5	72	976	47	1,023	2,039	163	2,202	-23	161	2177	180	2,357
EBR	0	0	0	0	0	0	41	41	0	0	0	0	0	0	100	100
WBL	12	1	13	-12	0	0	44	44	5	0	5	-5	0	0	80	80
WBT	1,143	91	1,234	-27	89	1205	127	1,332	1,039	83	1,122	-94	76	1021	153	1,174
WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg																
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Leg																
Approach	0	0	0	0	0	0	32	32	0	0	0	0	0	0	205	205
Departure	12	1	13	-12	0	0	85	85	5	0	5	-5	0	0	180	180
Total	12	1	13	-12	0	0	117	117	5	0	5	-5	0	0	385	385
East Leg																
Approach	1,155	92	1,247	-39	89	1,205	171	1,376	1,044	83	1,127	-99	76	1,021	233	1,254
Departure	909	73	982	-5	72	976	64	1,040	2,039	163	2,202	-23	161	2,177	296	2,473
Total	2,064	165	2,229	-44	162	2,182	235	2,417	3,083	246	3,329	-122	237	3,198	529	3,727
West Leg																
Approach	909	73	982	-5	72	976	88	1,064	2,039	163	2,202	-23	161	2,177	280	2,457
Departure	1,143	91	1,234	-27	89	1,205	142	1,347	1,039	83	1,122	-94	76	1,021	242	1,263
Total	2,052	164	2,216	-32	162	2,182	230	2,412	3,078	246	3,324	-117	237	3,198	522	3,720
Total Approaches																
Approach	2,064	165	2,229	-44	162	2,182	291	2,473	3,083	246	3,329	-122	237	3,198	718	3,916
Departure	2,064	165	2,229	-44	162	2,182	291	2,473	3,083	246	3,329	-122	237	3,198	718	3,916
Total	4,128	330	4,458	-88	323	4,363	582	4,945	6,166	492	6,658	-244	474	6,396	1,436	7,832

Table C-6 - Future Baseline Peak Hour Volume Summary

	AM Peak Hour								PM Peak Hour							
	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project
8 Interstate 605 Southbound On-Ramp/Live Oak Avenue																
NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	398	32	430	-2	32	428	13	441	1,063	85	1,148	-12	84	1135	44	1,179
EBR	524	42	566	-3	42	563	51	614	978	78	1,056	-11	77	1044	252	1,296
WBL	685	55	740	0	55	740	0	740	573	46	619	0	46	619	0	619
WBT	1,149	92	1,241	-39	89	1199	171	1,370	1,043	83	1,126	-99	76	1020	233	1,253
WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg																
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Leg																
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	1,209	97	1,306	-3	96	1,303	51	1,354	1,551	124	1,675	-11	123	1,663	252	1,915
Total	1,209	97	1,306	-3	96	1,303	51	1,354	1,551	124	1,675	-11	123	1,663	252	1,915
East Leg																
Approach	1,834	147	1,981	-39	144	1,939	171	2,110	1,616	129	1,745	-99	121	1,638	233	1,871
Departure	398	32	430	-2	32	428	13	441	1,063	85	1,148	-12	84	1,135	44	1,179
Total	2,232	179	2,411	-41	175	2,366	184	2,550	2,679	214	2,893	-111	205	2,773	277	3,050
West Leg																
Approach	922	74	996	-5	73	990	64	1,054	2,041	163	2,204	-23	161	2,179	296	2,475
Departure	1,149	92	1,241	-39	89	1,199	171	1,370	1,043	83	1,126	-99	76	1,020	233	1,253
Total	2,071	166	2,237	-44	162	2,189	235	2,424	3,084	246	3,330	-122	237	3,199	529	3,728
Total Approaches																
Approach	2,756	221	2,977	-44	217	2,929	235	3,164	3,657	292	3,949	-122	283	3,818	529	4,347
Departure	2,756	221	2,977	-44	217	2,929	235	3,164	3,657	292	3,949	-122	283	3,818	529	4,347
Total	5,512	442	5,954	-88	434	5,858	470	6,328	7,314	584	7,898	-244	566	7,636	1,058	8,694

Table C-6 - Future Baseline Peak Hour Volume Summary

	AM Peak Hour								PM Peak Hour							
	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project
9 Interstate 605 Northbound Ramps/Live Oak Avenue																
NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	366	29	395	0	29	395	0	395	642	51	693	0	51	693	0	693
SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	384	31	415	-6	30	409	137	546	660	53	713	-38	50	672	199	871
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	401	32	433	-2	32	431	13	444	1,062	85	1,147	-12	84	1134	44	1,178
EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBT	1,451	116	1,567	-33	113	1531	34	1,565	969	78	1,047	-61	73	981	34	1,015
WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg																
Approach	384	31	415	-6	30	409	137	546	660	53	713	-38	50	672	199	871
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	384	31	415	-6	30	409	137	546	660	53	713	-38	50	672	199	871
South Leg																
Approach	366	29	395	0	29	395	0	395	642	51	693	0	51	693	0	693
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	366	29	395	0	29	395	0	395	642	51	693	0	51	693	0	693
East Leg																
Approach	1,451	116	1,567	-33	113	1,531	34	1,565	969	78	1,047	-61	73	981	34	1,015
Departure	767	61	828	-2	61	826	13	839	1,704	136	1,840	-12	135	1,827	44	1,871
Total	2,218	177	2,395	-36	175	2,357	47	2,404	2,673	214	2,887	-73	208	2,808	78	2,886
West Leg																
Approach	401	32	433	-2	32	431	13	444	1,062	85	1,147	-12	84	1,134	44	1,178
Departure	1,835	147	1,982	-39	144	1,940	171	2,111	1,629	131	1,760	-99	122	1,652	233	1,885
Total	2,236	179	2,415	-41	176	2,370	184	2,554	2,691	216	2,907	-111	206	2,786	277	3,063
Total Approaches																
Approach	2,602	208	2,810	-41	205	2,766	184	2,950	3,333	267	3,600	-111	258	3,480	277	3,757
Departure	2,602	208	2,810	-41	205	2,766	184	2,950	3,333	267	3,600	-111	258	3,480	277	3,757
Total	5,204	416	5,620	-82	410	5,531	368	5,899	6,666	534	7,200	-222	516	6,960	554	7,514

Table C-6 - Future Baseline Peak Hour Volume Summary

	AM Peak Hour								PM Peak Hour							
	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project
10 Graham Road/Live Oak Avenue																
NBL	148	12	160	-1	12	159	0	159	17	1	18	0	1	18	0	18
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	56	4	60	0	4	60	0	60	21	2	23	0	2	23	0	23
SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	2	0	2	0	0	2	0	2	6	0	6	0	0	6	0	6
EBT	672	54	726	-2	54	723	13	736	1,673	134	1,807	-12	133	1794	44	1,838
EBR	103	8	111	0	8	111	0	111	44	4	48	0	4	48	0	48
WBL	46	4	50	0	4	50	0	50	33	3	36	0	3	36	0	36
WBT	1,294	104	1,398	-33	101	1362	34	1,396	959	77	1,036	-61	72	970	34	1,004
WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg																
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	2	0	2	0	0	2	0	2	6	0	6	0	0	6	0	6
Total	2	0	2	0	0	2	0	2	6	0	6	0	0	6	0	6
South Leg																
Approach	204	16	220	-1	16	220	0	220	38	3	41	0	3	41	0	41
Departure	149	12	161	0	12	161	0	161	77	7	84	0	6	83	0	83
Total	353	28	381	-1	28	381	0	381	115	10	125	0	9	124	0	124
East Leg																
Approach	1,340	108	1,448	-33	105	1,412	34	1,446	992	80	1,072	-61	74	1,006	34	1,040
Departure	728	58	786	-2	58	784	13	797	1,694	136	1,830	-12	135	1,817	44	1,861
Total	2,068	166	2,234	-35	163	2,196	47	2,243	2,686	216	2,902	-73	209	2,822	78	2,900
West Leg																
Approach	777	62	839	-2	62	837	13	850	1,723	138	1,861	-12	137	1,848	44	1,892
Departure	1,442	116	1,558	-33	113	1,521	34	1,555	976	78	1,054	-61	73	988	34	1,022
Total	2,219	178	2,397	-36	175	2,358	47	2,405	2,699	216	2,915	-73	210	2,836	78	2,914
Total Approaches																
Approach	2,321	186	2,507	-36	183	2,468	47	2,515	2,753	221	2,974	-73	214	2,895	78	2,973
Departure	2,321	186	2,507	-36	183	2,468	47	2,515	2,753	221	2,974	-73	214	2,895	78	2,973
Total	4,642	372	5,014	-71	366	4,937	94	5,031	5,506	442	5,948	-146	429	5,789	156	5,945

Table C-6 - Future Baseline Peak Hour Volume Summary

	AM Peak Hour								PM Peak Hour							
	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project
11 Live Oak Lane/Live Oak Avenue																
NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	13	1	14	0	1	14	0	14	11	1	12	0	1	12	0	12
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	128	10	138	0	10	139	0	139	69	6	75	0	6	75	0	75
EBL	83	7	90	0	7	89	0	89	45	4	49	0	4	48	0	48
EBT	649	52	701	-2	52	699	13	712	1,630	130	1,760	-12	129	1748	44	1,792
EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBT	1,230	98	1,328	-32	96	1294	34	1,328	912	73	985	-61	68	920	34	954
WBR	53	4	57	0	4	57	0	57	6	0	6	0	0	6	0	6
North Leg																
Approach	141	11	152	0	11	153	0	153	80	7	87	0	6	87	0	87
Departure	136	11	147	0	11	147	0	147	51	4	55	0	4	55	0	55
Total	277	22	299	0	22	299	0	299	131	11	142	0	10	142	0	142
South Leg																
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East Leg																
Approach	1,283	102	1,385	-32	100	1,351	34	1,385	918	73	991	-61	69	926	34	960
Departure	662	53	715	-2	53	713	13	726	1,641	131	1,772	-12	130	1,760	44	1,804
Total	1,945	155	2,100	-34	153	2,064	47	2,111	2,559	204	2,763	-72	199	2,686	78	2,764
West Leg																
Approach	732	59	791	-2	58	788	13	801	1,675	134	1,809	-12	133	1,796	44	1,840
Departure	1,358	108	1,466	-32	106	1,432	34	1,466	981	79	1,060	-60	74	994	34	1,028
Total	2,090	167	2,257	-34	164	2,220	47	2,267	2,656	213	2,869	-72	207	2,790	78	2,868
Total Approaches																
Approach	2,156	172	2,328	-34	170	2,292	47	2,339	2,673	214	2,887	-72	208	2,809	78	2,887
Departure	2,156	172	2,328	-34	170	2,292	47	2,339	2,673	214	2,887	-72	208	2,809	78	2,887
Total	4,312	344	4,656	-68	340	4,584	94	4,678	5,346	428	5,774	-144	416	5,618	156	5,774

Table C-6 - Future Baseline Peak Hour Volume Summary

	AM Peak Hour								PM Peak Hour							
	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project
12 Rivergrade Road/Live Oak Avenue																
NBL	40	3	43	-1	3	42	10	52	97	8	105	-6	7	98	10	108
NBT	49	4	53	0	4	53	0	53	64	5	69	0	5	69	0	69
NBR	104	8	112	0	8	112	0	112	361	29	390	0	29	390	0	390
SBL	29	2	31	0	2	31	0	31	26	2	28	0	2	28	0	28
SBT	74	6	80	0	6	80	0	80	20	2	22	0	2	22	0	22
SBR	70	6	76	-2	5	74	0	74	57	5	62	-4	4	58	0	58
EBL	89	7	96	0	7	96	0	96	77	6	83	0	6	83	0	83
EBT	481	38	519	-2	38	518	9	527	1,549	124	1,673	-11	123	1661	31	1,692
EBR	84	7	91	0	7	91	4	95	20	2	22	0	2	22	13	35
WBL	251	20	271	0	20	271	0	271	81	6	87	0	6	87	0	87
WBT	1,158	93	1,251	-30	90	1219	24	1,243	767	61	828	-50	57	774	24	798
WBR	13	1	14	0	1	14	0	14	6	0	6	0	0	6	0	6
North Leg																
Approach	173	14	187	-2	14	185	0	185	103	9	112	-4	8	107	0	107
Departure	151	12	163	0	12	163	0	163	147	11	158	0	12	158	0	158
Total	324	26	350	-2	26	348	0	348	250	20	270	-4	20	265	0	265
South Leg																
Approach	193	15	208	-1	15	207	10	217	522	42	564	-6	41	557	10	567
Departure	409	33	442	0	33	442	4	446	121	10	131	0	10	131	13	144
Total	602	48	650	-1	48	649	14	663	643	52	695	-6	51	688	23	711
East Leg																
Approach	1,422	114	1,536	-30	111	1,504	24	1,528	854	67	921	-50	64	868	24	892
Departure	614	48	662	-2	49	661	9	670	1,936	155	2,091	-11	154	2,079	31	2,110
Total	2,036	162	2,198	-31	160	2,165	33	2,198	2,790	222	3,012	-62	218	2,947	55	3,002
West Leg																
Approach	654	52	706	-2	52	704	13	717	1,646	132	1,778	-12	131	1,765	44	1,809
Departure	1,268	102	1,370	-32	99	1,335	34	1,369	921	74	995	-61	69	929	34	963
Total	1,922	154	2,076	-34	151	2,039	47	2,086	2,567	206	2,773	-72	200	2,694	78	2,772
Total Approaches																
Approach	2,442	195	2,637	-34	193	2,600	47	2,647	3,125	250	3,375	-72	244	3,297	78	3,375
Departure	2,442	195	2,637	-34	193	2,600	47	2,647	3,125	250	3,375	-72	244	3,297	78	3,375
Total	4,884	390	5,274	-69	385	5,201	94	5,295	6,250	500	6,750	-145	488	6,594	156	6,750

Table C-6 - Future Baseline Peak Hour Volume Summary

	AM Peak Hour								PM Peak Hour							
	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project
13 Commerce Drive/Live Oak Avenue																
NBL	6	0	6	0	0	6	0	6	24	2	26	0	2	26	0	26
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	18	1	19	0	1	19	0	19	197	16	213	0	16	213	0	213
SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	2	0	2	0	0	2	0	2
EBT	450	36	486	-2	36	484	9	493	1,928	154	2,082	-11	153	2070	31	2,101
EBR	45	4	49	0	4	49	0	49	6	0	6	0	0	6	0	6
WBL	256	20	276	0	20	276	0	276	21	2	23	0	2	23	0	23
WBT	1,529	122	1,651	-30	120	1619	24	1,643	827	66	893	-50	62	839	24	863
WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg																
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	2	0	2	0	0	2	0	2
Total	0	0	0	0	0	0	0	0	2	0	2	0	0	2	0	2
South Leg																
Approach	24	1	25	0	2	26	0	26	221	18	239	0	18	239	0	239
Departure	301	24	325	0	24	325	0	325	27	2	29	0	2	29	0	29
Total	325	25	350	0	26	351	0	351	248	20	268	0	20	268	0	268
East Leg																
Approach	1,785	142	1,927	-30	140	1,896	24	1,920	848	68	916	-50	64	861	24	885
Departure	468	37	505	-2	37	504	9	513	2,125	170	2,295	-11	169	2,283	31	2,314
Total	2,253	179	2,432	-31	178	2,399	33	2,432	2,973	238	3,211	-62	233	3,144	55	3,199
West Leg																
Approach	495	40	535	-2	39	533	9	542	1,936	154	2,090	-11	154	2,079	31	2,110
Departure	1,535	122	1,657	-30	120	1,626	24	1,650	851	68	919	-50	64	865	24	889
Total	2,030	162	2,192	-31	160	2,159	33	2,192	2,787	222	3,009	-62	218	2,943	55	2,998
Total Approaches																
Approach	2,304	183	2,487	-31	182	2,455	33	2,488	3,005	240	3,245	-62	235	3,179	55	3,234
Departure	2,304	183	2,487	-31	182	2,455	33	2,488	3,005	240	3,245	-62	235	3,179	55	3,234
Total	4,608	366	4,974	-63	364	4,909	66	4,975	6,010	480	6,490	-123	471	6,357	110	6,467

Table C-6 - Future Baseline Peak Hour Volume Summary

	AM Peak Hour								PM Peak Hour							
	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project
14 Stewart Avenue/Live Oak Avenue																
NBL	210	17	227	-3	17	223	10	233	68	5	73	-4	5	69	10	79
NBT	118	9	127	0	9	127	0	127	19	2	21	0	2	21	0	21
NBR	32	3	35	0	3	35	0	35	11	1	12	0	1	12	0	12
SBL	13	1	14	0	1	14	0	14	23	2	25	0	2	25	0	25
SBT	26	2	28	0	2	28	0	28	99	8	107	0	8	107	0	107
SBR	76	6	82	-1	6	81	0	81	13	1	14	-1	1	13	0	13
EBL	19	2	21	0	2	21	0	21	58	5	63	0	5	63	0	63
EBT	426	34	460	-2	34	458	5	463	1,814	145	1,959	-11	144	1947	18	1,965
EBR	26	2	28	0	2	28	4	32	264	21	285	0	21	285	13	298
WBL	17	1	18	0	1	18	0	18	38	3	41	0	3	41	0	41
WBT	1,503	120	1,623	-25	118	1596	14	1,610	751	60	811	-46	56	762	14	776
WBR	35	3	38	0	3	38	0	38	1	0	1	0	0	1	0	1
North Leg																
Approach	115	9	124	-1	9	123	0	123	135	11	146	-1	11	145	0	145
Departure	172	14	186	0	14	186	0	186	78	7	85	0	6	84	0	84
Total	287	23	310	-1	23	309	0	309	213	18	231	-1	17	229	0	229
South Leg																
Approach	360	29	389	-3	29	385	10	395	98	8	106	-4	8	101	10	111
Departure	69	5	74	0	6	74	4	78	401	32	433	0	32	433	13	446
Total	429	34	463	-3	34	460	14	474	499	40	539	-4	40	534	23	557
East Leg																
Approach	1,555	124	1,679	-25	122	1,653	14	1,667	790	63	853	-46	60	804	14	818
Departure	471	38	509	-2	38	507	5	512	1,848	148	1,996	-11	147	1,984	18	2,002
Total	2,026	162	2,188	-27	160	2,159	19	2,178	2,638	211	2,849	-56	207	2,788	32	2,820
West Leg																
Approach	471	38	509	-2	38	507	9	516	2,136	171	2,307	-11	170	2,295	31	2,326
Departure	1,789	143	1,932	-30	141	1,900	24	1,924	832	66	898	-50	63	844	24	868
Total	2,260	181	2,441	-31	178	2,407	33	2,440	2,968	237	3,205	-62	233	3,139	55	3,194
Total Approaches																
Approach	2,501	200	2,701	-31	198	2,667	33	2,700	3,159	253	3,412	-62	248	3,345	55	3,400
Departure	2,501	200	2,701	-31	198	2,667	33	2,700	3,159	253	3,412	-62	248	3,345	55	3,400
Total	5,002	400	5,402	-63	395	5,335	66	5,401	6,318	506	6,824	-123	496	6,690	110	6,800

Table C-6 - Future Baseline Peak Hour Volume Summary

	AM Peak Hour								PM Peak Hour							
	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project
15 Baldwin Park/Arrow Highway																
NBL	296	24	320	-4	23	315	3	318	94	8	102	-5	7	96	3	99
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	290	23	313	0	23	313	0	313	84	7	91	0	7	91	0	91
SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	432	35	467	-2	34	465	4	469	1,341	107	1,448	-8	107	1440	13	1,453
EBR	63	5	68	0	5	68	1	69	522	42	564	-2	42	561	4	565
WBL	131	10	141	0	10	141	0	141	262	21	283	0	21	283	0	283
WBT	1,295	104	1,399	-20	102	1377	10	1,387	677	54	731	-40	51	688	10	698
WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg																
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Leg																
Approach	586	47	633	-4	47	629	3	632	178	15	193	-5	14	187	3	190
Departure	194	15	209	0	16	209	1	210	784	63	847	-2	63	844	4	848
Total	780	62	842	-4	62	838	4	842	962	78	1,040	-8	76	1,031	7	1,038
East Leg																
Approach	1,426	114	1,540	-20	112	1,518	10	1,528	939	75	1,014	-40	72	971	10	981
Departure	722	58	780	-2	58	778	4	782	1,425	114	1,539	-8	113	1,530	13	1,543
Total	2,148	172	2,320	-22	170	2,296	14	2,310	2,364	189	2,553	-48	185	2,501	23	2,524
West Leg																
Approach	495	40	535	-2	39	533	5	538	1,863	149	2,012	-10	148	2,001	17	2,018
Departure	1,591	128	1,719	-24	125	1,692	13	1,705	771	62	833	-45	58	784	13	797
Total	2,086	168	2,254	-26	165	2,225	18	2,243	2,634	211	2,845	-56	206	2,785	30	2,815
Total Approaches																
Approach	2,507	201	2,708	-26	198	2,680	18	2,698	2,980	239	3,219	-56	234	3,158	30	3,188
Departure	2,507	201	2,708	-26	198	2,680	18	2,698	2,980	239	3,219	-56	234	3,158	30	3,188
Total	5,014	402	5,416	-52	397	5,359	36	5,395	5,960	478	6,438	-111	468	6,317	60	6,377

Table C-6 - Future Baseline Peak Hour Volume Summary

	AM Peak Hour								PM Peak Hour							
	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project
16 Arrow Highway/Live Oak Avenue																
NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	269	22	291	0	22	291	0	291	971	78	1,049	0	78	1049	0	1,049
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	43	3	46	0	3	46	0	46	110	9	119	-4	8	114	0	114
EBL	138	11	149	0	11	149	0	149	37	3	40	0	3	40	0	40
EBT	585	47	632	-2	47	630	4	634	1,386	111	1,497	-8	110	1488	13	1,501
EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBT	1,386	111	1,497	-20	109	1475	10	1,485	821	66	887	-36	63	848	10	858
WBR	1,548	124	1,672	0	124	1672	0	1,672	441	35	476	0	35	476	0	476
North Leg																
Approach	312	25	337	0	25	337	0	337	1,081	87	1,168	-4	86	1,163	0	1,163
Departure	1,686	135	1,821	0	135	1,821	0	1,821	478	38	516	0	38	516	0	516
Total	1,998	160	2,158	0	160	2,158	0	2,158	1,559	125	1,684	-4	124	1,679	0	1,679
South Leg																
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East Leg																
Approach	2,934	235	3,169	-20	233	3,147	10	3,157	1,262	101	1,363	-36	98	1,324	10	1,334
Departure	854	69	923	-2	68	921	4	925	2,357	189	2,546	-8	188	2,537	13	2,550
Total	3,788	304	4,092	-21	301	4,068	14	4,082	3,619	290	3,909	-44	286	3,861	23	3,884
West Leg																
Approach	723	58	781	-2	58	779	4	783	1,423	114	1,537	-8	113	1,528	13	1,541
Departure	1,429	114	1,543	-20	113	1,522	10	1,532	931	75	1,006	-40	71	962	10	972
Total	2,152	172	2,324	-22	170	2,301	14	2,315	2,354	189	2,543	-48	184	2,491	23	2,514
Total Approaches																
Approach	3,969	318	4,287	-22	316	4,263	14	4,277	3,766	302	4,068	-48	297	4,016	23	4,039
Departure	3,969	318	4,287	-22	316	4,263	14	4,277	3,766	302	4,068	-48	297	4,016	23	4,039
Total	7,938	636	8,574	-43	632	8,526	28	8,554	7,532	604	8,136	-96	595	8,031	46	8,077

Table C-6 - Future Baseline Peak Hour Volume Summary

	AM Peak Hour								PM Peak Hour							
	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project
17 Maine Avenue/Arrow Highway																
NBL	612	49	661	-4	49	656	3	659	249	20	269	-7	19	261	3	264
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	104	8	112	0	8	112	0	112	99	8	107	0	8	107	0	107
SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	741	59	800	-1	59	799	3	802	1,859	149	2,008	-7	148	2001	9	2,010
EBR	97	8	105	0	8	105	1	106	486	39	525	-1	39	523	4	527
WBL	34	3	37	0	3	37	0	37	63	5	68	0	5	68	0	68
WBT	2,332	187	2,519	-16	185	2502	7	2,509	1,008	81	1,089	-29	78	1058	7	1,065
WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg																
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Leg																
Approach	716	57	773	-4	57	769	3	772	348	28	376	-7	27	368	3	371
Departure	131	11	142	0	10	141	1	142	549	44	593	-1	44	592	4	596
Total	847	68	915	-4	67	910	4	914	897	72	969	-8	71	960	7	967
East Leg																
Approach	2,366	190	2,556	-16	188	2,538	7	2,545	1,071	86	1,157	-29	83	1,126	7	1,133
Departure	845	67	912	-1	67	911	3	914	1,958	157	2,115	-7	156	2,108	9	2,117
Total	3,211	257	3,468	-17	256	3,449	10	3,459	3,029	243	3,272	-35	239	3,233	16	3,249
West Leg																
Approach	838	67	905	-2	67	903	4	907	2,345	188	2,533	-8	187	2,524	13	2,537
Departure	2,944	236	3,180	-20	234	3,158	10	3,168	1,257	101	1,358	-36	98	1,319	10	1,329
Total	3,782	303	4,085	-21	301	4,061	14	4,075	3,602	289	3,891	-44	285	3,843	23	3,866
Total Approaches																
Approach	3,920	314	4,234	-21	312	4,210	14	4,224	3,764	302	4,066	-44	298	4,018	23	4,041
Departure	3,920	314	4,234	-21	312	4,210	14	4,224	3,764	302	4,066	-44	298	4,018	23	4,041
Total	7,840	628	8,468	-43	624	8,421	28	8,449	7,528	604	8,132	-88	595	8,036	46	8,082

Table C-6 - Future Baseline Peak Hour Volume Summary

	AM Peak Hour								PM Peak Hour							
	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project
18 Avenida Barbosa/Buena Vista Street																
NBL	50	4	54	0	4	54	0	54	15	1	16	0	1	16	0	16
NBT	151	12	163	0	12	163	0	163	112	9	121	0	9	121	0	121
NBR	701	56	757	0	56	757	4	761	295	24	319	0	24	319	13	332
SBL	8	1	9	0	1	9	0	9	26	2	28	0	2	28	0	28
SBT	69	6	75	0	6	75	0	75	178	14	192	0	14	192	0	192
SBR	2	0	2	0	0	2	0	2	6	0	6	0	0	6	0	6
EBL	1	0	1	0	0	1	0	1	6	0	6	0	0	6	0	6
EBT	4	0	4	0	0	4	0	4	20	2	22	0	2	22	0	22
EBR	6	0	6	0	0	6	0	6	82	7	89	0	7	89	0	89
WBL	146	12	158	0	12	158	10	168	470	38	508	-3	37	504	10	514
WBT	14	1	15	0	1	15	0	15	17	1	18	0	1	18	0	18
WBR	18	1	19	0	1	19	0	19	22	2	24	0	2	24	0	24
North Leg																
Approach	79	7	86	0	6	85	0	85	210	16	226	0	17	227	0	227
Departure	170	13	183	0	14	184	0	184	140	11	151	0	11	151	0	151
Total	249	20	269	0	20	269	0	269	350	27	377	0	28	378	0	378
South Leg																
Approach	902	72	974	0	72	974	4	978	422	34	456	0	34	456	13	469
Departure	221	18	239	0	18	239	10	249	730	59	789	-3	58	785	10	795
Total	1,123	90	1,213	0	90	1,213	14	1,227	1,152	93	1,245	-3	92	1,241	23	1,264
East Leg																
Approach	178	14	192	0	14	192	10	202	509	41	550	-3	40	546	10	556
Departure	713	57	770	0	57	770	4	774	341	28	369	0	27	368	13	381
Total	891	71	962	0	71	962	14	976	850	69	919	-3	68	915	23	938
West Leg																
Approach	11	0	11	0	1	12	0	12	108	9	117	0	9	117	0	117
Departure	66	5	71	0	5	71	0	71	38	2	40	0	3	41	0	41
Total	77	5	82	0	6	83	0	83	146	11	157	0	12	158	0	158
Total Approaches																
Approach	1,170	93	1,263	0	94	1,264	14	1,278	1,249	100	1,349	-3	100	1,346	23	1,369
Departure	1,170	93	1,263	0	94	1,264	14	1,278	1,249	100	1,349	-3	100	1,346	23	1,369
Total	2,340	186	2,526	0	187	2,527	28	2,555	2,498	200	2,698	-6	199	2,691	46	2,737

Table C-6 - Future Baseline Peak Hour Volume Summary

	AM Peak Hour								PM Peak Hour							
	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project
19 Avenida Barbosa/Arrow Highway																
NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	120	10	130	0	10	130	0	130	361	29	390	0	29	390	0	390
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	122	10	132	0	10	132	10	142	310	25	335	-3	25	331	10	341
EBL	288	23	311	0	23	311	4	315	188	15	203	0	15	203	13	216
EBT	390	31	421	-1	31	420	47	467	636	51	687	-1	51	686	225	911
EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBT	1,326	106	1,432	-2	106	1430	127	1,557	448	36	484	-5	35	479	203	682
WBR	643	51	694	0	51	694	0	694	198	16	214	0	16	214	0	214
North Leg																
Approach	242	20	262	0	19	261	10	271	671	54	725	-3	53	721	10	731
Departure	931	74	1,005	0	74	1,005	4	1,009	386	31	417	0	31	417	13	430
Total	1,173	94	1,267	0	94	1,267	14	1,281	1,057	85	1,142	-3	84	1,138	23	1,161
South Leg																
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East Leg																
Approach	1,969	157	2,126	-2	157	2,125	127	2,252	646	52	698	-5	51	693	203	896
Departure	510	41	551	-1	41	550	47	597	997	80	1,077	-1	80	1,075	225	1,300
Total	2,479	198	2,677	-2	198	2,675	174	2,849	1,643	132	1,775	-6	131	1,768	428	2,196
West Leg																
Approach	678	54	732	-1	54	731	51	782	824	66	890	-1	66	889	238	1,127
Departure	1,448	116	1,564	-2	116	1,562	137	1,699	758	61	819	-8	60	810	213	1,023
Total	2,126	170	2,296	-2	170	2,293	188	2,481	1,582	127	1,709	-9	126	1,699	451	2,150
Total Approaches																
Approach	2,889	231	3,120	-2	231	3,118	188	3,306	2,141	172	2,313	-9	171	2,303	451	2,754
Departure	2,889	231	3,120	-2	231	3,118	188	3,306	2,141	172	2,313	-9	171	2,303	451	2,754
Total	5,778	462	6,240	-5	462	6,235	376	6,611	4,282	344	4,626	-18	341	4,605	902	5,507

Table C-6 - Future Baseline Peak Hour Volume Summary

	AM Peak Hour								PM Peak Hour							
	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project
20 Interstate 605 Southbound Off-Ramp/Arrow Highway																
NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	381	30	411	0	30	411	0	411	278	22	300	0	22	300	0	300
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	515	41	556	0	41	556	127	683	306	24	330	0	24	330	203	533
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	498	40	538	-1	40	537	47	584	997	80	1,077	-1	80	1075	225	1,300
EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBT	1,441	115	1,556	-2	115	1555	0	1,555	348	28	376	-5	27	371	0	371
WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg																
Approach	896	71	967	0	72	968	127	1,095	584	46	630	0	47	631	203	834
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	896	71	967	0	72	968	127	1,095	584	46	630	0	47	631	203	834
South Leg																
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East Leg																
Approach	1,441	115	1,556	-2	115	1,555	0	1,555	348	28	376	-5	27	371	0	371
Departure	879	70	949	-1	70	949	47	996	1,275	102	1,377	-1	102	1,376	225	1,601
Total	2,320	185	2,505	-2	185	2,503	47	2,550	1,623	130	1,753	-6	129	1,747	225	1,972
West Leg																
Approach	498	40	538	-1	40	537	47	584	997	80	1,077	-1	80	1,075	225	1,300
Departure	1,956	156	2,112	-2	156	2,111	127	2,238	654	52	706	-5	52	701	203	904
Total	2,454	196	2,650	-2	196	2,648	174	2,822	1,651	132	1,783	-6	132	1,777	428	2,205
Total Approaches																
Approach	2,835	226	3,061	-2	227	3,059	174	3,233	1,929	154	2,083	-6	154	2,077	428	2,505
Departure	2,835	226	3,061	-2	227	3,059	174	3,233	1,929	154	2,083	-6	154	2,077	428	2,505
Total	5,670	452	6,122	-5	453	6,119	348	6,467	3,858	308	4,166	-12	308	4,154	856	5,010

Table C-6 - Future Baseline Peak Hour Volume Summary

	AM Peak Hour								PM Peak Hour							
	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project	Existing PCE	Growth	OY No Project	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	OY With Project
21 Interstate 605 Northbound Ramps/Arrow Highway																
NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	61	5	66	0	5	66	0	66	34	3	37	0	3	37	0	37
SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	567	45	612	-1	45	612	0	612	1,181	94	1,275	-1	94	1274	0	1,274
EBR	312	25	337	0	25	337	47	384	94	8	102	0	8	102	225	327
WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBT	1,441	115	1,556	-2	115	1555	0	1,555	348	28	376	-5	27	371	0	371
WBR	382	31	413	0	31	413	0	413	232	19	251	0	19	251	0	251
North Leg																
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	382	31	413	0	31	413	0	413	232	19	251	0	19	251	0	251
Total	382	31	413	0	31	413	0	413	232	19	251	0	19	251	0	251
South Leg																
Approach	61	5	66	0	5	66	0	66	34	3	37	0	3	37	0	37
Departure	312	25	337	0	25	337	47	384	94	8	102	0	8	102	225	327
Total	373	30	403	0	30	403	47	450	128	11	139	0	10	138	225	363
East Leg																
Approach	1,823	146	1,969	-2	146	1,967	0	1,967	580	47	627	-5	46	621	0	621
Departure	628	50	678	-1	50	677	0	677	1,215	97	1,312	-1	97	1,311	0	1,311
Total	2,451	196	2,647	-2	196	2,645	0	2,645	1,795	144	1,939	-6	143	1,932	0	1,932
West Leg																
Approach	879	70	949	-1	70	949	47	996	1,275	102	1,377	-1	102	1,376	225	1,601
Departure	1,441	115	1,556	-2	115	1,555	0	1,555	348	28	376	-5	27	371	0	371
Total	2,320	185	2,505	-2	185	2,503	47	2,550	1,623	130	1,753	-6	129	1,747	225	1,972
Total Approaches																
Approach	2,763	221	2,984	-2	221	2,982	47	3,029	1,889	152	2,041	-6	151	2,034	225	2,259
Departure	2,763	221	2,984	-2	221	2,982	47	3,029	1,889	152	2,041	-6	151	2,034	225	2,259
Total	5,526	442	5,968	-5	442	5,963	94	6,057	3,778	304	4,082	-12	301	4,068	450	4,518

Table C-7 - Future Baseline Peak Hour Volume Summary

		Saturday Peak Hour											
		Existing PCE	Growth	OY No Project	Adjust. 1	Adjust. 2	Adjust. 3	Adjust. 4	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	Existing With Project
1	**Peck Road-Myrtle Avenue/Live Oak Avenue**												
NBL		156	12	168					0	12	168	0	168
NBT		467	37	504					0	37	504	0	504
NBR		128	10	138	-4	-2			-6	10	131	13	144
SBL		66	5	71	-2	-1			-3	5	68	0	68
SBT		418	33	451					0	33	451	0	451
SBR		138	11	149					0	11	149	0	149
EBL		133	11	144					0	11	144	0	144
EBT		401	32	433	-14	-6			-20	30	411	27	438
EBR		140	11	151					0	11	151	0	151
WBL		110	9	119					0	9	119	12	131
WBT		376	30	406	-3	-1			-4	30	401	24	425
WBR		40	3	43					0	3	43	0	43
North Leg													
	Approach	622	49	671	-2	-1	0	0	-3	49	668	0	668
	Departure	640	51	691	0	0	0	0	0	51	691	0	691
	Total	1,262	100	1,362	-2	-1	0	0	-3	101	1,359	0	1,359
South Leg													
	Approach	751	59	810	-4	-2	0	0	-6	60	804	13	817
	Departure	668	53	721	0	0	0	0	0	53	721	12	733
	Total	1,419	112	1,531	-4	-2	0	0	-6	113	1,526	25	1,551
East Leg													
	Approach	526	42	568	-3	-1	0	0	-4	42	563	36	599
	Departure	595	47	642	-21	-9	0	0	-30	45	610	40	650
	Total	1,121	89	1,210	-24	-11	0	0	-34	87	1,174	76	1,250
West Leg													
	Approach	674	54	728	-14	-6	0	0	-20	52	706	27	733
	Departure	670	53	723	-3	-1	0	0	-4	53	719	24	743
	Total	1,344	107	1,451	-17	-8	0	0	-25	106	1,425	51	1,476
Total Approaches													
	Approach	2,573	204	2,777	-24	-11	0	0	-34	203	2,742	76	2,818
	Departure	2,573	204	2,777	-24	-11	0	0	-34	203	2,742	76	2,818
	Total	5,146	408	5,554	-47	-21	0	0	-69	406	5,484	152	5,636

Table C-7 - Future Baseline Peak Hour Volume Summary

		Saturday Peak Hour											
		Existing PCE	Growth	OY No Project	Adjust. 1	Adjust. 2	Adjust. 3	Adjust. 4	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	Existing With Project
2	**Myrtle Avenue/Longden Avenue**												
NBL		59	5	64					0	5	64	0	64
NBT		568	45	613					0	45	613	0	613
NBR		9	1	10					0	1	10	0	10
SBL		150	12	162	-10	-3			-13	11	148	13	161
SBT		563	45	608					0	45	608	0	608
SBR		96	8	104					0	8	104	0	104
EBL		98	8	106					0	8	106	0	106
EBT		185	15	200	-2	-3			-6	14	194	13	207
EBR		53	4	57					0	4	57	0	57
WBL		47	4	51					0	4	51	0	51
WBT		205	16	221	-1	-1			-2	16	219	12	231
WBR		164	13	177	-1				-1	13	176	12	188
North Leg													
	Approach	809	65	874	-10	-3	0	0	-13	64	860	13	873
	Departure	830	66	896	-1	0	0	0	-1	66	895	12	907
	Total	1,639	131	1,770	-11	-3	0	0	-14	130	1,755	25	1,780
South Leg													
	Approach	636	51	687	0	0	0	0	0	51	687	0	687
	Departure	663	53	716	0	0	0	0	0	53	716	0	716
	Total	1,299	104	1,403	0	0	0	0	0	104	1,403	0	1,403
East Leg													
	Approach	416	33	449	-2	-1	0	0	-3	33	446	24	470
	Departure	344	28	372	-13	-6	0	0	-19	26	351	26	377
	Total	760	61	821	-15	-7	0	0	-22	59	797	50	847
West Leg													
	Approach	336	27	363	-2	-3	0	0	-6	26	357	13	370
	Departure	360	29	389	-1	-1	0	0	-2	29	387	12	399
	Total	696	56	752	-4	-4	0	0	-8	55	743	25	768
Total Approaches													
	Approach	2,197	176	2,373	-15	-7	0	0	-22	174	2,349	50	2,399
	Departure	2,197	176	2,373	-15	-7	0	0	-22	174	2,349	50	2,399
	Total	4,394	352	4,746	-30	-14	0	0	-43	348	4,699	100	4,799

Table C-7 - Future Baseline Peak Hour Volume Summary

	Saturday Peak Hour											
	Existing PCE	Growth	OY No Project	Adjust. 1	Adjust. 2	Adjust. 3	Adjust. 4	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	Existing With Project
3 Longden Avenue/Live Oak Avenue												
NBL	7	1	8					0	1	8	0	8
NBT	7	1	8					0	1	8	0	8
NBR	8	1	9					0	1	9	0	9
SBL	349	28	377	-13	-6			-19	26	357	27	384
SBT	6	0	6					0	0	6	0	6
SBR	11	1	12					0	1	12	0	12
EBL	9	1	10					0	1	10	0	10
EBT	560	45	605	-21	-9			-30	42	572	40	612
EBR	8	1	9					0	1	9	0	9
WBL	10	1	11					0	1	11	0	11
WBT	553	44	597	-3	-1			-4	44	593	37	630
WBR	378	30	408	-2	-1			-3	30	405	24	429
North Leg												
Approach	366	29	395	-13	-6	0	0	-19	28	375	27	402
Departure	394	32	426	-2	-1	0	0	-3	31	422	24	446
Total	760	61	821	-15	-7	0	0	-22	59	797	51	848
South Leg												
Approach	22	3	25	0	0	0	0	0	2	24	0	24
Departure	24	2	26	0	0	0	0	0	2	26	0	26
Total	46	5	51	0	0	0	0	0	4	50	0	50
East Leg												
Approach	941	75	1,016	-5	-2	0	0	-7	75	1,008	61	1,069
Departure	917	74	991	-34	-15	0	0	-49	69	938	67	1,005
Total	1,858	149	2,007	-38	-18	0	0	-56	144	1,946	128	2,074
West Leg												
Approach	577	47	624	-21	-9	0	0	-30	44	591	40	631
Departure	571	46	617	-3	-1	0	0	-4	45	612	37	649
Total	1,148	93	1,241	-24	-11	0	0	-34	89	1,203	77	1,280
Total Approaches												
Approach	1,906	154	2,060	-38	-18	0	0	-56	148	1,998	128	2,126
Departure	1,906	154	2,060	-38	-18	0	0	-56	148	1,998	128	2,126
Total	3,812	308	4,120	-77	-35	0	0	-112	296	3,996	256	4,252

Table C-7 - Future Baseline Peak Hour Volume Summary

		Saturday Peak Hour											
		Existing PCE	Growth	OY No Project	Adjust. 1	Adjust. 2	Adjust. 3	Adjust. 4	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	Existing With Project
4	**Arrow Highway/Live Oak Avenue**												
NBL		0	0	0					0	0	0	0	0
NBT		328	26	354					0	26	354	0	354
NBR		603	48	651	-34	-15			-49	44	599	66	665
SBL		116	9	125	-6	-3			-9	9	115	455	570
SBT		439	35	474					0	35	474	0	474
SBR		0	0	0					0	0	0	0	0
EBL		0	0	0					0	0	0	0	0
EBT		0	0	0					0	0	0	0	0
EBR		0	0	0					0	0	0	0	0
WBL		510	41	551	-5	-2			-7	40	543	61	604
WBT		0	0	0					0	0	0	0	0
WBR		122	10	132	-1	-1			-2	10	130	399	529
North Leg													
	Approach	555	44	599	-6	-3	0	0	-9	44	589	455	1,044
	Departure	450	36	486	-1	-1	0	0	-2	36	484	399	883
	Total	1,005	80	1,085	-8	-3	0	0	-11	80	1,073	854	1,927
South Leg													
	Approach	931	74	1,005	-34	-15	0	0	-49	71	953	66	1,019
	Departure	949	76	1,025	-5	-2	0	0	-7	75	1,017	61	1,078
	Total	1,880	150	2,030	-38	-18	0	0	-56	146	1,970	127	2,097
East Leg													
	Approach	632	51	683	-6	-3	0	0	-9	50	673	460	1,133
	Departure	719	57	776	-40	-18	0	0	-58	53	714	521	1,235
	Total	1,351	108	1,459	-46	-21	0	0	-67	103	1,387	981	2,368
West Leg													
	Approach	0	0	0	0	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0
Total Approaches													
	Approach	2,118	169	2,287	-46	-21	0	0	-67	164	2,215	981	3,196
	Departure	2,118	169	2,287	-46	-21	0	0	-67	164	2,215	981	3,196
	Total	4,236	338	4,574	-92	-42	0	0	-134	328	4,430	1,962	6,392

Table C-7 - Future Baseline Peak Hour Volume Summary

		Saturday Peak Hour											
		Existing PCE	Growth	OY No Project	Adjust. 1	Adjust. 2	Adjust. 3	Adjust. 4	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	Existing With Project
5	**Driveway 1/Live Oak Avenue**												
NBL		9	1	10	-9				-9	0	0	149	149
NBT		0	0	0					0	0	0	0	0
NBR		58	5	63	-58				-58	0	0	149	149
SBL		0	0	0					0	0	0	0	0
SBT		0	0	0					0	0	0	0	0
SBR		0	0	0					0	0	0	0	0
EBL		0	0	0					0	0	0	0	0
EBT		720	58	778	-40				-40	54	734	359	1,093
EBR		30	2	32	-30				-30	0	0	162	162
WBL		21	2	23	-21				-21	0	0	150	150
WBT		686	55	741	-6				-6	54	734	312	1,046
WBR		0	0	0					0	0	0	0	0
North Leg													
	Approach	0	0	0	0	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0
South Leg													
	Approach	67	6	73	-67	0	0	0	-67	0	0	298	298
	Departure	51	4	55	-51	0	0	0	-51	0	0	312	312
	Total	118	10	128	-118	0	0	0	-118	0	0	610	610
East Leg													
	Approach	707	57	764	-27	0	0	0	-27	54	734	462	1,196
	Departure	778	63	841	-98	0	0	0	-98	54	734	508	1,242
	Total	1,485	120	1,605	-125	0	0	0	-125	109	1,469	970	2,439
West Leg													
	Approach	750	60	810	-70	0	0	0	-70	54	734	521	1,255
	Departure	695	56	751	-15	0	0	0	-15	54	734	461	1,195
	Total	1,445	116	1,561	-85	0	0	0	-85	109	1,469	982	2,451
Total Approaches													
	Approach	1,524	123	1,647	-164	0	0	0	-164	109	1,469	1,281	2,750
	Departure	1,524	123	1,647	-164	0	0	0	-164	109	1,469	1,281	2,750
	Total	3,048	246	3,294	-328	0	0	0	-328	218	2,938	2,562	5,500

Table C-7 - Future Baseline Peak Hour Volume Summary

		Saturday Peak Hour											
		Existing PCE	Growth	OY No Project	Adjust. 1	Adjust. 2	Adjust. 3	Adjust. 4	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	Existing With Project
6	**Speedway Drive-Driveway 2/Live Oak Avenue**												
NBL		6	0	6	-6				-6	0	0	342	342
NBT		0	0	0					0	0	0	0	0
NBR		3	0	3	-3				-3	0	0	360	360
SBL		0	0	0					0	0	0	0	0
SBT		0	0	0					0	0	0	0	0
SBR		0	0	0					0	0	0	0	0
EBL		0	0	0					0	0	0	0	0
EBT		738	59	797					0	59	797	135	932
EBR		40	3	43	-40				-40	0	0	374	374
WBL		26	2	28	-26				-26	0	0	356	356
WBT		700	56	756			-5		-5	56	751	119	870
WBR		0	0	0					0	0	0	0	0
North Leg													
	Approach	0	0	0	0	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0
South Leg													
	Approach	9	0	9	-9	0	0	0	-9	0	0	702	702
	Departure	66	5	71	-66	0	0	0	-66	0	0	730	730
	Total	75	5	80	-75	0	0	0	-75	0	0	1,432	1,432
East Leg													
	Approach	726	58	784	-26	0	-5	0	-31	56	751	475	1,226
	Departure	741	59	800	-3	0	0	0	-3	59	797	495	1,292
	Total	1,467	117	1,584	-29	0	-5	0	-34	115	1,548	970	2,518
West Leg													
	Approach	778	62	840	-40	0	0	0	-40	59	797	509	1,306
	Departure	706	56	762	-6	0	-5	0	-11	56	751	461	1,212
	Total	1,484	118	1,602	-46	0	-5	0	-51	115	1,548	970	2,518
Total Approaches													
	Approach	1,513	120	1,633	-75	0	-5	0	-80	115	1,548	1,686	3,234
	Departure	1,513	120	1,633	-75	0	-5	0	-80	115	1,548	1,686	3,234
	Total	3,026	240	3,266	-150	0	-10	0	-160	229	3,095	3,372	6,467

Table C-7 - Future Baseline Peak Hour Volume Summary

		Saturday Peak Hour											
		Existing PCE	Growth	OY No Project	Adjust. 1	Adjust. 2	Adjust. 3	Adjust. 4	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	Existing With Project
7	**Driveway 3/Live Oak Avenue**												
NBL		0	0	0					0	0	0	143	143
NBT		0	0	0					0	0	0	0	0
NBR		0	0	0					0	0	0	159	159
SBL		0	0	0					0	0	0	0	0
SBT		0	0	0					0	0	0	0	0
SBR		0	0	0					0	0	0	0	0
EBL		0	0	0					0	0	0	0	0
EBT		742	59	801	-3		-8		-11	58	789	336	1,125
EBR		0	0	0					0	0	0	160	160
WBL		5	0	5	-5				-5	0	0	156	156
WBT		728	58	786	-26		-5		-31	56	753	331	1,084
WBR		0	0	0					0	0	0	0	0
North Leg													
	Approach	0	0	0	0	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0
South Leg													
	Approach	0	0	0	0	0	0	0	0	0	0	302	302
	Departure	5	0	5	-5	0	0	0	-5	0	0	316	316
	Total	5	0	5	-5	0	0	0	-5	0	0	618	618
East Leg													
	Approach	733	58	791	-31	0	-5	0	-36	56	753	487	1,240
	Departure	742	59	801	-3	0	-8	0	-11	58	789	495	1,284
	Total	1,475	117	1,592	-34	0	-13	0	-47	114	1,542	982	2,524
West Leg													
	Approach	742	59	801	-3	0	-8	0	-11	58	789	496	1,285
	Departure	728	58	786	-26	0	-5	0	-31	56	753	474	1,227
	Total	1,470	117	1,587	-29	0	-13	0	-42	114	1,542	970	2,512
Total Approaches													
	Approach	1,475	117	1,592	-34	0	-13	0	-47	114	1,542	1,285	2,827
	Departure	1,475	117	1,592	-34	0	-13	0	-47	114	1,542	1,285	2,827
	Total	2,950	234	3,184	-68	0	-26	0	-94	228	3,084	2,570	5,654

Table C-7 - Future Baseline Peak Hour Volume Summary

		Saturday Peak Hour											
		Existing PCE	Growth	OY No Project	Adjust. 1	Adjust. 2	Adjust. 3	Adjust. 4	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	Existing With Project
8	**Interstate 605 Southbound On-Ramp/Live Oak Avenue**												
NBL		0	0	0					0	0	0	0	0
NBT		0	0	0					0	0	0	0	0
NBR		0	0	0					0	0	0	0	0
SBL		0	0	0					0	0	0	0	0
SBT		0	0	0					0	0	0	0	0
SBR		0	0	0					0	0	0	0	0
EBL		0	0	0					0	0	0	0	0
EBT		175	14	189	-1		-2		-3	14	186	61	247
EBR		567	45	612	-2		-6		-8	45	603	434	1,037
WBL		464	37	501					0	37	501	0	501
WBT		733	59	792	-26		-5	-5	-36	56	753	486	1,239
WBR		0	0	0					0	0	0	0	0
North Leg													
	Approach	0	0	0	0	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0
South Leg													
	Approach	0	0	0	0	0	0	0	0	0	0	0	0
	Departure	1,031	82	1,113	-2	0	-6	0	-8	82	1,104	434	1,538
	Total	1,031	82	1,113	-2	0	-6	0	-8	82	1,104	434	1,538
East Leg													
	Approach	1,197	96	1,293	-26	0	-5	-5	-36	93	1,254	486	1,740
	Departure	175	14	189	-1	0	-2	0	-3	14	186	61	247
	Total	1,372	110	1,482	-27	0	-7	-5	-39	107	1,440	547	1,987
West Leg													
	Approach	742	59	801	-3	0	-8	0	-11	58	789	495	1,284
	Departure	733	59	792	-26	0	-5	-5	-36	56	753	486	1,239
	Total	1,475	118	1,593	-29	0	-13	-5	-47	114	1,542	981	2,523
Total Approaches													
	Approach	1,939	155	2,094	-29	0	-13	-5	-47	151	2,043	981	3,024
	Departure	1,939	155	2,094	-29	0	-13	-5	-47	151	2,043	981	3,024
	Total	3,878	310	4,188	-58	0	-26	-10	-94	303	4,087	1,962	6,049

Table C-7 - Future Baseline Peak Hour Volume Summary

		Saturday Peak Hour											
		Existing PCE	Growth	OY No Project	Adjust. 1	Adjust. 2	Adjust. 3	Adjust. 4	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	Existing With Project
9	**Interstate 605 Northbound Ramps/Live Oak Avenue**												
NBL		0	0	0					0	0	0	0	0
NBT		0	0	0					0	0	0	0	0
NBR		332	27	359					0	27	359	0	359
SBL		0	0	0					0	0	0	0	0
SBT		0	0	0					0	0	0	0	0
SBR		454	36	490	-11		-2		-13	35	476	420	896
EBL		0	0	0					0	0	0	0	0
EBT		194	16	210	-1		-2		-3	15	207	61	268
EBR		0	0	0					0	0	0	0	0
WBL		0	0	0					0	0	0	0	0
WBT		627	50	677	-15		-3	-5	-23	48	652	66	718
WBR		0	0	0					0	0	0	0	0
North Leg													
	Approach	454	36	490	-11	0	-2	0	-13	35	476	420	896
	Departure	0	0	0	0	0	0	0	0	0	0	0	0
	Total	454	36	490	-11	0	-2	0	-13	35	476	420	896
South Leg													
	Approach	332	27	359	0	0	0	0	0	27	359	0	359
	Departure	0	0	0	0	0	0	0	0	0	0	0	0
	Total	332	27	359	0	0	0	0	0	27	359	0	359
East Leg													
	Approach	627	50	677	-15	0	-3	-5	-23	48	652	66	718
	Departure	526	43	569	-1	0	-2	0	-3	42	565	61	626
	Total	1,153	93	1,246	-16	0	-5	-5	-26	90	1,218	127	1,345
West Leg													
	Approach	194	16	210	-1	0	-2	0	-3	15	207	61	268
	Departure	1,081	86	1,167	-26	0	-5	-5	-36	84	1,129	486	1,615
	Total	1,275	102	1,377	-27	0	-7	-5	-39	99	1,335	547	1,882
Total Approaches													
	Approach	1,607	129	1,736	-27	0	-7	-5	-39	125	1,694	547	2,241
	Departure	1,607	129	1,736	-27	0	-7	-5	-39	125	1,694	547	2,241
	Total	3,214	258	3,472	-53	0	-14	-10	-77	251	3,388	1,094	4,482

Table C-7 - Future Baseline Peak Hour Volume Summary

		Saturday Peak Hour											
		Existing PCE	Growth	OY No Project	Adjust. 1	Adjust. 2	Adjust. 3	Adjust. 4	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	Existing With Project
10	**Graham Road/Live Oak Avenue**												
NBL		36	3	39			0		0	3	39	0	39
NBT		0	0	0					0	0	0	0	0
NBR		4	0	4					0	0	4	0	4
SBL		0	0	0					0	0	0	0	0
SBT		0	0	0					0	0	0	0	0
SBR		0	0	0					0	0	0	0	0
EBL		2	0	2					0	0	2	0	2
EBT		495	40	535	-1		-2		-3	39	532	61	593
EBR		25	2	27					0	2	27	0	27
WBL		15	1	16					0	1	16	0	16
WBT		597	48	645	-15		-3	-5	-23	46	620	66	686
WBR		0	0	0					0	0	0	0	0
North Leg													
	Approach	0	0	0	0	0	0	0	0	0	0	0	0
	Departure	2	0	2	0	0	0	0	0	0	2	0	2
	Total	2	0	2	0	0	0	0	0	0	2	0	2
South Leg													
	Approach	40	3	43	0	0	0	0	0	3	43	0	43
	Departure	40	3	43	0	0	0	0	0	3	43	0	43
	Total	80	6	86	0	0	0	0	0	6	86	0	86
East Leg													
	Approach	612	49	661	-15	0	-3	-5	-23	47	636	66	702
	Departure	499	40	539	-1	0	-2	0	-3	40	536	61	597
	Total	1,111	89	1,200	-16	0	-5	-5	-25	87	1,172	127	1,299
West Leg													
	Approach	522	42	564	-1	0	-2	0	-3	42	561	61	622
	Departure	633	51	684	-15	0	-3	-5	-23	49	659	66	725
	Total	1,155	93	1,248	-16	0	-5	-5	-26	90	1,220	127	1,347
Total Approaches													
	Approach	1,174	94	1,268	-16	0	-5	-5	-26	92	1,240	127	1,367
	Departure	1,174	94	1,268	-16	0	-5	-5	-26	92	1,240	127	1,367
	Total	2,348	188	2,536	-32	0	-10	-10	-51	184	2,481	254	2,735

Table C-7 - Future Baseline Peak Hour Volume Summary

		Saturday Peak Hour											
		Existing PCE	Growth	OY No Project	Adjust. 1	Adjust. 2	Adjust. 3	Adjust. 4	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	Existing With Project
11	**Live Oak Lane/Live Oak Avenue**												
NBL		0	0	0					0	0	0	0	0
NBT		0	0	0					0	0	0	0	0
NBR		0	0	0					0	0	0	0	0
SBL		2	0	2					0	0	2	0	2
SBT		0	0	0					0	0	0	0	0
SBR		61	5	66			0		0	5	66	0	66
EBL		35	3	38			0		0	3	38	0	38
EBT		466	37	503	-1		-2		-2	37	501	61	562
EBR		0	0	0					0	0	0	0	0
WBL		0	0	0					0	0	0	0	0
WBT		545	44	589	-15		-2	-5	-23	42	564	66	630
WBR		22	2	24					0	2	24	0	24
North Leg													
	Approach	63	5	68	0	0	0	0	0	5	68	0	68
	Departure	57	5	62	0	0	0	0	0	5	61	0	61
	Total	120	10	130	0	0	0	0	0	10	130	0	130
South Leg													
	Approach	0	0	0	0	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0
East Leg													
	Approach	567	46	613	-15	0	-2	-5	-23	44	588	66	654
	Departure	468	37	505	-1	0	-2	0	-2	37	503	61	564
	Total	1,035	83	1,118	-16	0	-4	-5	-25	81	1,091	127	1,218
West Leg													
	Approach	501	40	541	-1	0	-2	0	-3	40	538	61	599
	Departure	606	49	655	-15	0	-2	-5	-22	47	630	66	696
	Total	1,107	89	1,196	-16	0	-4	-5	-25	87	1,169	127	1,296
Total Approaches													
	Approach	1,131	91	1,222	-16	0	-4	-5	-25	88	1,195	127	1,322
	Departure	1,131	91	1,222	-16	0	-4	-5	-25	88	1,195	127	1,322
	Total	2,262	182	2,444	-32	0	-8	-10	-50	177	2,389	254	2,643

Table C-7 - Future Baseline Peak Hour Volume Summary

		Saturday Peak Hour											
		Existing PCE	Growth	OY No Project	Adjust. 1	Adjust. 2	Adjust. 3	Adjust. 4	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	Existing With Project
12	**Rivergrade Road/Live Oak Avenue**												
NBL		19	2	21	-1		0	0	-1	1	20	20	40
NBT		35	3	38					0	3	38	0	38
NBR		91	7	98					0	7	98	0	98
SBL		11	1	12					0	1	12	0	12
SBT		16	1	17					0	1	17	0	17
SBR		71	6	77	-2		0	-1	-3	5	74	0	74
EBL		15	1	16			0		0	1	16	0	16
EBT		438	35	473	-1		-2		-2	35	470	43	513
EBR		12	1	13					0	1	13	18	31
WBL		47	4	51					0	4	51	0	51
WBT		473	38	511	-13		-2	-4	-19	36	490	46	536
WBR		7	1	8					0	1	8	0	8
North Leg													
	Approach	98	8	106	-2	0	0	-1	-3	8	103	0	103
	Departure	57	5	62	0	0	0	0	0	5	61	0	61
	Total	155	13	168	-2	0	0	-1	-3	12	164	0	164
South Leg													
	Approach	145	12	157	-1	0	0	0	-1	12	156	20	176
	Departure	75	6	81	0	0	0	0	0	6	81	18	99
	Total	220	18	238	-1	0	0	0	-1	18	237	38	275
East Leg													
	Approach	527	43	570	-13	0	-2	-4	-19	41	549	46	595
	Departure	540	43	583	-1	0	-2	0	-2	43	581	43	624
	Total	1,067	86	1,153	-13	0	-4	-4	-21	84	1,129	89	1,218
West Leg													
	Approach	465	37	502	-1	0	-2	0	-2	37	500	61	561
	Departure	563	46	609	-15	0	-2	-5	-23	43	584	66	650
	Total	1,028	83	1,111	-16	0	-4	-5	-25	80	1,083	127	1,210
Total Approaches													
	Approach	1,235	100	1,335	-16	0	-4	-5	-25	97	1,307	127	1,434
	Departure	1,235	100	1,335	-16	0	-4	-5	-25	97	1,307	127	1,434
	Total	2,470	200	2,670	-32	0	-8	-10	-50	194	2,614	254	2,868

Table C-7 - Future Baseline Peak Hour Volume Summary

		Saturday Peak Hour											
		Existing PCE	Growth	OY No Project	Adjust. 1	Adjust. 2	Adjust. 3	Adjust. 4	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	Existing With Project
13	**Commerce Drive/Live Oak Avenue**												
NBL		4	0	4					0	0	4	0	4
NBT		0	0	0					0	0	0	0	0
NBR		8	1	9					0	1	9	0	9
SBL		0	0	0					0	0	0	0	0
SBT		0	0	0					0	0	0	0	0
SBR		0	0	0					0	0	0	0	0
EBL		2	0	2					0	0	2	0	2
EBT		550	44	594	-1		-2		-2	44	591	43	634
EBR		6	0	6					0	0	6	0	6
WBL		13	1	14					0	1	14	0	14
WBT		497	40	537	-13		-2	-4	-19	38	516	46	562
WBR		0	0	0					0	0	0	0	0
North Leg													
	Approach	0	0	0	0	0	0	0	0	0	0	0	0
	Departure	2	0	2	0	0	0	0	0	0	2	0	2
	Total	2	0	2	0	0	0	0	0	0	2	0	2
South Leg													
	Approach	12	1	13	0	0	0	0	0	1	13	0	13
	Departure	19	1	20	0	0	0	0	0	2	21	0	21
	Total	31	2	33	0	0	0	0	0	2	33	0	33
East Leg													
	Approach	510	41	551	-13	0	-2	-4	-19	39	530	46	576
	Departure	558	45	603	-1	0	-2	0	-2	44	600	43	643
	Total	1,068	86	1,154	-13	0	-4	-4	-21	84	1,130	89	1,219
West Leg													
	Approach	558	44	602	-1	0	-2	0	-2	44	600	43	643
	Departure	501	40	541	-13	0	-2	-4	-19	39	521	46	567
	Total	1,059	84	1,143	-13	0	-4	-4	-21	83	1,121	89	1,210
Total Approaches													
	Approach	1,080	86	1,166	-13	0	-4	-4	-21	85	1,143	89	1,232
	Departure	1,080	86	1,166	-13	0	-4	-4	-21	85	1,143	89	1,232
	Total	2,160	172	2,332	-27	0	-8	-8	-43	169	2,287	178	2,465

Table C-7 - Future Baseline Peak Hour Volume Summary

		Saturday Peak Hour											
		Existing PCE	Growth	OY No Project	Adjust. 1	Adjust. 2	Adjust. 3	Adjust. 4	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	Existing With Project
14	**Stewart Avenue/Live Oak Avenue**												
NBL		58	5	63	-1		0	0	-2	4	60	20	80
NBT		23	2	25					0	2	25	0	25
NBR		27	2	29					0	2	29	0	29
SBL		2	0	2					0	0	2	0	2
SBT		44	4	48					0	4	48	0	48
SBR		3	0	3	0		0	0	0	0	3	0	3
EBL		6	0	6					0	0	6	0	6
EBT		521	42	563	-1		-2		-2	41	560	24	584
EBR		43	3	46	0				0	3	46	18	64
WBL		33	3	36					0	3	36	0	36
WBT		464	37	501	-11		-2	-4	-17	36	483	27	510
WBR		5	0	5					0	0	5	0	5
North Leg													
	Approach	49	4	53	0	0	0	0	0	4	53	0	53
	Departure	34	2	36	0	0	0	0	0	3	37	0	37
	Total	83	6	89	0	0	0	0	0	7	90	0	90
South Leg													
	Approach	108	9	117	-1	0	0	0	-2	8	114	20	134
	Departure	120	10	130	0	0	0	0	0	10	130	18	148
	Total	228	19	247	-1	0	0	0	-2	18	244	38	282
East Leg													
	Approach	502	40	542	-11	0	-2	-4	-17	39	524	27	551
	Departure	550	44	594	-1	0	-2	0	-2	44	591	24	615
	Total	1,052	84	1,136	-12	0	-4	-4	-19	83	1,116	51	1,167
West Leg													
	Approach	570	45	615	-1	0	-2	0	-2	45	613	42	655
	Departure	525	42	567	-13	0	-2	-4	-19	40	547	47	594
	Total	1,095	87	1,182	-13	0	-4	-4	-21	86	1,160	89	1,249
Total Approaches													
	Approach	1,229	98	1,327	-13	0	-4	-4	-21	97	1,304	89	1,393
	Departure	1,229	98	1,327	-13	0	-4	-4	-21	97	1,304	89	1,393
	Total	2,458	196	2,654	-27	0	-8	-8	-43	193	2,609	178	2,787

Table C-7 - Future Baseline Peak Hour Volume Summary

		Saturday Peak Hour											
		Existing PCE	Growth	OY No Project	Adjust. 1	Adjust. 2	Adjust. 3	Adjust. 4	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	Existing With Project
15	**Baldwin Park/Arrow Highway**												
NBL		66	5	71	-1			0	-2	5	69	7	76
NBT		0	0	0					0	0	0	0	0
NBR		140	11	151					0	11	151	0	151
SBL		0	0	0					0	0	0	0	0
SBT		0	0	0					0	0	0	0	0
SBR		0	0	0					0	0	0	0	0
EBL		0	0	0					0	0	0	0	0
EBT		473	38	511	-1		-1		-2	38	509	18	527
EBR		75	6	81			0		0	6	81	6	87
WBL		174	14	188					0	14	188	0	188
WBT		462	37	499	-10		-2	-3	-15	36	483	20	503
WBR		0	0	0					0	0	0	0	0
North Leg													
	Approach	0	0	0	0	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0
South Leg													
	Approach	206	16	222	-1	0	0	0	-2	16	220	7	227
	Departure	249	20	269	0	0	0	0	0	20	269	6	275
	Total	455	36	491	-1	0	0	0	-2	36	489	13	502
East Leg													
	Approach	636	51	687	-10	0	-2	-3	-15	50	671	20	691
	Departure	613	49	662	-1	0	-1	0	-2	49	660	18	678
	Total	1,249	100	1,349	-10	0	-3	-3	-17	99	1,331	38	1,369
West Leg													
	Approach	548	44	592	-1	0	-2	0	-2	44	589	24	613
	Departure	528	42	570	-11	0	-2	-4	-17	41	552	27	579
	Total	1,076	86	1,162	-12	0	-3	-4	-19	85	1,142	51	1,193
Total Approaches													
	Approach	1,390	111	1,501	-12	0	-3	-4	-19	110	1,481	51	1,532
	Departure	1,390	111	1,501	-12	0	-3	-4	-19	110	1,481	51	1,532
	Total	2,780	222	3,002	-24	0	-7	-7	-38	219	2,962	102	3,064

Table C-7 - Future Baseline Peak Hour Volume Summary

		Saturday Peak Hour											
		Existing PCE	Growth	OY No Project	Adjust. 1	Adjust. 2	Adjust. 3	Adjust. 4	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	Existing With Project
16	**Arrow Highway/Live Oak Avenue**												
NBL		0	0	0					0	0	0	0	0
NBT		0	0	0					0	0	0	0	0
NBR		0	0	0					0	0	0	0	0
SBL		296	24	320					0	24	320	0	320
SBT		0	0	0					0	0	0	0	0
SBR		66	5	71	-1				-1	5	70	0	70
EBL		68	5	73					0	5	73	0	73
EBT		547	44	591	-1		-1		-2	44	589	18	607
EBR		0	0	0					0	0	0	0	0
WBL		0	0	0					0	0	0	0	0
WBT		572	46	618	-9		-2	-3	-14	45	603	20	623
WBR		385	31	416					0	31	416	0	416
North Leg													
	Approach	362	29	391	-1	0	0	0	-1	29	390	0	390
	Departure	453	36	489	0	0	0	0	0	36	489	0	489
	Total	815	65	880	-1	0	0	0	-1	65	879	0	879
South Leg													
	Approach	0	0	0	0	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0
East Leg													
	Approach	957	77	1,034	-9	0	-2	-3	-14	75	1,019	20	1,039
	Departure	843	68	911	-1	0	-1	0	-2	67	908	18	926
	Total	1,800	145	1,945	-9	0	-3	-3	-16	143	1,927	38	1,965
West Leg													
	Approach	615	49	664	-1	0	-1	0	-2	49	662	18	680
	Departure	638	51	689	-10	0	-2	-3	-15	50	673	20	693
	Total	1,253	100	1,353	-10	0	-3	-3	-17	99	1,335	38	1,373
Total Approaches													
	Approach	1,934	155	2,089	-10	0	-3	-3	-17	153	2,071	38	2,109
	Departure	1,934	155	2,089	-10	0	-3	-3	-17	153	2,071	38	2,109
	Total	3,868	310	4,178	-21	0	-6	-6	-33	307	4,141	76	4,217

Table C-7 - Future Baseline Peak Hour Volume Summary

		Saturday Peak Hour											
		Existing PCE	Growth	OY No Project	Adjust. 1	Adjust. 2	Adjust. 3	Adjust. 4	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	Existing With Project
17	**Maine Avenue/Arrow Highway**												
NBL		204	16	220	-2		0	-1	-3	16	217	7	224
NBT		0	0	0					0	0	0	0	0
NBR		104	8	112					0	8	112	0	112
SBL		0	0	0					0	0	0	0	0
SBT		0	0	0					0	0	0	0	0
SBR		0	0	0					0	0	0	0	0
EBL		0	0	0					0	0	0	0	0
EBT		690	55	745	-1		-1		-2	55	743	12	755
EBR		164	13	177			0		0	13	177	6	183
WBL		96	8	104					0	8	104	0	104
WBT		758	61	819	-7		-1	-3	-11	60	807	13	820
WBR		0	0	0					0	0	0	0	0
North Leg													
	Approach	0	0	0	0	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0
South Leg													
	Approach	308	24	332	-2	0	0	-1	-3	24	330	7	337
	Departure	260	21	281	0	0	0	0	0	21	280	6	286
	Total	568	45	613	-2	0	-1	-1	-3	45	610	13	623
East Leg													
	Approach	854	69	923	-7	0	-1	-3	-11	67	911	13	924
	Departure	794	63	857	-1	0	-1	0	-2	63	856	12	868
	Total	1,648	132	1,780	-7	0	-2	-3	-12	131	1,766	25	1,791
West Leg													
	Approach	854	68	922	-1	0	-1	0	-2	68	920	18	938
	Departure	962	77	1,039	-9	0	-2	-3	-14	76	1,024	20	1,044
	Total	1,816	145	1,961	-9	0	-3	-3	-16	144	1,944	38	1,982
Total Approaches													
	Approach	2,016	161	2,177	-9	0	-3	-3	-16	160	2,160	38	2,198
	Departure	2,016	161	2,177	-9	0	-3	-3	-16	160	2,160	38	2,198
	Total	4,032	322	4,354	-19	0	-6	-6	-31	320	4,321	76	4,397

Table C-7 - Future Baseline Peak Hour Volume Summary

		Saturday Peak Hour											
		Existing PCE	Growth	OY No Project	Adjust. 1	Adjust. 2	Adjust. 3	Adjust. 4	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	Existing With Project
18	**Avenida Barbosa/Buena Vista Street**												
NBL		75	6	81					0	6	81	0	81
NBT		83	7	90					0	7	90	0	90
NBR		114	9	123					0	9	123	18	141
SBL		0	0	0					0	0	0	0	0
SBT		62	5	67					0	5	67	0	67
SBR		1	0	1					0	0	1	0	1
EBL		2	0	2					0	0	2	0	2
EBT		12	1	13					0	1	13	0	13
EBR		72	6	78					0	6	78	0	78
WBL		115	9	124	-2	-1			-2	9	122	20	142
WBT		26	2	28					0	2	28	0	28
WBR		14	1	15					0	1	15	0	15
North Leg													
	Approach	63	5	68	0	0	0	0	0	5	68	0	68
	Departure	99	8	107	0	0	0	0	0	8	107	0	107
	Total	162	13	175	0	0	0	0	0	13	175	0	175
South Leg													
	Approach	272	22	294	0	0	0	0	0	22	294	18	312
	Departure	249	20	269	-2	-1	0	0	-2	20	266	20	286
	Total	521	42	563	-2	-1	0	0	-2	41	560	38	598
East Leg													
	Approach	155	12	167	-2	-1	0	0	-2	12	165	20	185
	Departure	126	10	136	0	0	0	0	0	10	136	18	154
	Total	281	22	303	-2	-1	0	0	-2	22	301	38	339
West Leg													
	Approach	86	7	93	0	0	0	0	0	7	93	0	93
	Departure	102	8	110	0	0	0	0	0	8	110	0	110
	Total	188	15	203	0	0	0	0	0	15	203	0	203
Total Approaches													
	Approach	576	46	622	-2	-1	0	0	-2	46	620	38	658
	Departure	576	46	622	-2	-1	0	0	-2	46	620	38	658
	Total	1,152	92	1,244	-3	-1	0	0	-5	92	1,239	76	1,315

Table C-7 - Future Baseline Peak Hour Volume Summary

		Saturday Peak Hour											
		Existing PCE	Growth	OY No Project	Adjust. 1	Adjust. 2	Adjust. 3	Adjust. 4	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	Existing With Project
19	**Avenida Barbosa/Arrow Highway**												
NBL		0	0	0					0	0	0	0	0
NBT		0	0	0					0	0	0	0	0
NBR		0	0	0					0	0	0	0	0
SBL		120	10	130					0	10	130	0	130
SBT		0	0	0					0	0	0	0	0
SBR		135	11	146	-2	-1			-2	11	143	20	163
EBL		144	12	156					0	12	156	18	174
EBT		258	21	279	-1	-1			-2	21	277	381	658
EBR		0	0	0					0	0	0	0	0
WBL		1	0	1					0	0	1	0	1
WBT		416	33	449	-5	-2			-7	33	442	435	877
WBR		150	12	162					0	12	162	0	162
North Leg													
	Approach	255	21	276	-2	-1	0	0	-2	20	273	20	293
	Departure	294	24	318	0	0	0	0	0	24	318	18	336
	Total	549	45	594	-2	-1	0	0	-2	44	590	38	628
South Leg													
	Approach	0	0	0	0	0	0	0	0	0	0	0	0
	Departure	1	0	1	0	0	0	0	0	0	1	0	1
	Total	1	0	1	0	0	0	0	0	0	1	0	1
East Leg													
	Approach	567	45	612	-5	-2	0	0	-7	45	605	435	1,040
	Departure	378	31	409	-1	-1	0	0	-2	30	406	381	787
	Total	945	76	1,021	-6	-3	0	0	-9	75	1,011	816	1,827
West Leg													
	Approach	402	33	435	-1	-1	0	0	-2	32	432	399	831
	Departure	551	44	595	-6	-3	0	0	-9	43	585	455	1,040
	Total	953	77	1,030	-8	-3	0	0	-11	75	1,017	854	1,871
Total Approaches													
	Approach	1,224	99	1,323	-8	-3	0	0	-11	97	1,310	854	2,164
	Departure	1,224	99	1,323	-8	-3	0	0	-11	97	1,310	854	2,164
	Total	2,448	198	2,646	-15	-7	0	0	-22	194	2,620	1,708	4,328

Table C-7 - Future Baseline Peak Hour Volume Summary

		Saturday Peak Hour											
		Existing PCE	Growth	OY No Project	Adjust. 1	Adjust. 2	Adjust. 3	Adjust. 4	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	Existing With Project
20	**Interstate 605 Southbound Off-Ramp/Arrow Highway**												
NBL		0	0	0					0	0	0	0	0
NBT		0	0	0					0	0	0	0	0
NBR		0	0	0					0	0	0	0	0
SBL		218	17	235					0	17	235	0	235
SBT		0	0	0					0	0	0	0	0
SBR		291	23	314					0	23	314	435	749
EBL		0	0	0					0	0	0	0	0
EBT		419	34	453	-1	-1			-2	33	451	381	832
EBR		0	0	0					0	0	0	0	0
WBL		0	0	0					0	0	0	0	0
WBT		266	21	287	-5	-2			-7	21	280	0	280
WBR		0	0	0					0	0	0	0	0
North Leg													
	Approach	509	40	549	0	0	0	0	0	41	550	435	985
	Departure	0	0	0	0	0	0	0	0	0	0	0	0
	Total	509	40	549	0	0	0	0	0	41	550	435	985
South Leg													
	Approach	0	0	0	0	0	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0
East Leg													
	Approach	266	21	287	-5	-2	0	0	-7	21	280	0	280
	Departure	637	51	688	-1	-1	0	0	-2	51	686	381	1,067
	Total	903	72	975	-6	-3	0	0	-9	72	966	381	1,347
West Leg													
	Approach	419	34	453	-1	-1	0	0	-2	33	451	381	832
	Departure	557	44	601	-5	-2	0	0	-7	44	594	435	1,029
	Total	976	78	1,054	-6	-3	0	0	-9	77	1,045	816	1,861
Total Approaches													
	Approach	1,194	95	1,289	-6	-3	0	0	-9	95	1,280	816	2,096
	Departure	1,194	95	1,289	-6	-3	0	0	-9	95	1,280	816	2,096
	Total	2,388	190	2,578	-12	-6	0	0	-18	190	2,560	1,632	4,192

Table C-7 - Future Baseline Peak Hour Volume Summary

		Saturday Peak Hour											
		Existing PCE	Growth	OY No Project	Adjust. 1	Adjust. 2	Adjust. 3	Adjust. 4	Total Adjust.	Adj. Growth	OY No Pr. Adj.	Project Trips	Existing With Project
21	**Interstate 605 Northbound Ramps/Arrow Highway**												
NBL		0	0	0					0	0	0	0	0
NBT		0	0	0					0	0	0	0	0
NBR		18	1	19					0	1	19	0	19
SBL		0	0	0					0	0	0	0	0
SBT		0	0	0					0	0	0	0	0
SBR		0	0	0					0	0	0	0	0
EBL		0	0	0					0	0	0	0	0
EBT		432	35	467	-1	-1			-2	34	465	0	465
EBR		176	14	190					0	14	190	381	571
WBL		0	0	0					0	0	0	0	0
WBT		260	21	281	-5	-2			-7	20	273	0	273
WBR		228	18	246					0	18	246	0	246
North Leg													
	Approach	0	0	0	0	0	0	0	0	0	0	0	0
	Departure	228	18	246	0	0	0	0	0	18	246	0	246
	Total	228	18	246	0	0	0	0	0	18	246	0	246
South Leg													
	Approach	18	1	19	0	0	0	0	0	1	19	0	19
	Departure	176	14	190	0	0	0	0	0	14	190	381	571
	Total	194	15	209	0	0	0	0	0	16	210	381	591
East Leg													
	Approach	488	39	527	-5	-2	0	0	-7	38	519	0	519
	Departure	450	36	486	-1	-1	0	0	-2	36	484	0	484
	Total	938	75	1,013	-6	-3	0	0	-9	74	1,004	0	1,004
West Leg													
	Approach	608	49	657	-1	-1	0	0	-2	49	655	381	1,036
	Departure	260	21	281	-5	-2	0	0	-7	20	273	0	273
	Total	868	70	938	-6	-3	0	0	-9	69	928	381	1,309
Total Approaches													
	Approach	1,114	89	1,203	-6	-3	0	0	-9	88	1,194	381	1,575
	Departure	1,114	89	1,203	-6	-3	0	0	-9	88	1,194	381	1,575
	Total	2,228	178	2,406	-12	-6	0	0	-18	177	2,387	762	3,149

Table C-8 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	OY Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project	Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
1 Peck Road-Myrtle Avenue/Live Oak Avenue														
NBL	269	0	269	269	269	0	269	238	0	238	238	238	0	238
NBT	1,009	0	1,009	1,009	1,009	0	1,009	827	0	827	827	827	0	827
NBR	287	1	288	285	286	7	293	188	2	190	183	185	7	192
SBL	41	0	41	41	41	0	41	191	1	192	187	188	0	188
SBT	536	0	536	536	536	0	536	592	0	592	592	592	0	592
SBR	163	0	163	163	163	0	163	143	0	143	143	143	0	143
EBL	72	0	72	72	72	0	72	197	0	197	197	197	0	197
EBT	577	34	611	572	606	14	620	1,245	20	1,265	1,215	1,235	14	1,249
EBR	224	0	224	224	224	0	224	199	0	199	199	199	0	199
WBL	168	4	172	168	172	3	175	65	2	67	65	67	9	76
WBT	1,224	20	1,244	1,222	1,242	5	1,247	690	35	725	685	720	18	738
WBR	58	0	58	58	58	0	58	22	4	26	22	26	0	26
North Leg														
Approach	740	0	740	739	739	0	739	926	1	927	921	922	0	922
Departure	1,139	0	1,139	1,139	1,139	0	1,139	1,046	4	1,050	1,045	1,049	0	1,049
Total	1,879	0	1,879	1,879	1,879	0	1,879	1,972	5	1,977	1,966	1,971	0	1,971
South Leg														
Approach	1,565	1	1,566	1,563	1,564	7	1,571	1,253	2	1,255	1,248	1,250	7	1,257
Departure	928	4	932	928	932	3	935	856	2	858	855	857	9	866
Total	2,493	5	2,498	2,490	2,495	10	2,505	2,109	4	2,113	2,104	2,108	16	2,124
East Leg														
Approach	1,450	24	1,474	1,448	1,472	8	1,480	777	41	818	772	813	27	840
Departure	905	35	940	898	933	21	954	1,624	23	1,647	1,585	1,608	21	1,629
Total	2,355	59	2,414	2,346	2,405	29	2,434	2,401	64	2,465	2,357	2,421	48	2,469
West Leg														
Approach	873	34	907	868	902	14	916	1,641	20	1,661	1,611	1,631	14	1,645
Departure	1,656	20	1,676	1,654	1,674	5	1,679	1,071	35	1,106	1,065	1,100	18	1,118
Total	2,529	54	2,583	2,522	2,576	19	2,595	2,712	55	2,767	2,676	2,731	32	2,763
Total Approaches														
Approach	4,628	59	4,687	4,618	4,677	29	4,706	4,597	64	4,661	4,551	4,615	48	4,663
Departure	4,628	59	4,687	4,618	4,677	29	4,706	4,597	64	4,661	4,551	4,615	48	4,663
Total	9,256	118	9,374	9,237	9,355	58	9,413	9,194	128	9,322	9,103	9,231	96	9,327

Table C-8 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	OY Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project	Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
2 Myrtle Avenue/Longden Avenue														
NBL	176	0	176	176	176	0	176	99	0	99	99	99	0	99
NBT	943	0	943	943	943	0	943	929	0	929	929	929	0	929
NBR	21	0	21	21	21	0	21	13	0	13	13	13	0	13
SBL	174	4	178	172	176	7	183	376	5	381	363	368	7	375
SBT	646	0	646	646	646	0	646	835	0	835	835	835	0	835
SBR	52	0	52	52	52	0	52	57	0	57	57	57	0	57
EBL	73	0	73	73	73	0	73	86	0	86	86	86	0	86
EBT	267	3	270	265	268	7	275	670	3	673	658	661	7	668
EBR	80	0	80	80	80	0	80	104	0	104	104	104	0	104
WBL	36	0	36	36	36	0	36	28	0	28	28	28	0	28
WBT	612	4	616	611	615	3	618	409	8	417	407	415	9	424
WBR	443	4	447	443	447	3	450	286	9	295	284	293	9	302
North Leg														
Approach	872	4	876	870	874	7	881	1,268	5	1,273	1,255	1,260	7	1,267
Departure	1,459	4	1,463	1,459	1,463	3	1,466	1,301	9	1,310	1,300	1,309	9	1,318
Total	2,331	8	2,339	2,329	2,337	10	2,347	2,569	14	2,583	2,555	2,569	16	2,585
South Leg														
Approach	1,140	0	1,140	1,139	1,139	0	1,139	1,041	0	1,041	1,041	1,041	0	1,041
Departure	762	0	762	761	761	0	761	967	0	967	967	967	0	967
Total	1,902	0	1,902	1,901	1,901	0	1,901	2,008	0	2,008	2,008	2,008	0	2,008
East Leg														
Approach	1,091	8	1,099	1,089	1,097	6	1,103	723	17	740	719	736	18	754
Departure	462	7	469	457	464	14	478	1,059	8	1,067	1,033	1,041	14	1,055
Total	1,553	15	1,568	1,547	1,562	20	1,582	1,782	25	1,807	1,753	1,778	32	1,810
West Leg														
Approach	420	3	423	418	421	7	428	860	3	863	848	851	7	858
Departure	840	4	844	839	843	3	846	565	8	573	563	571	9	580
Total	1,260	7	1,267	1,257	1,264	10	1,274	1,425	11	1,436	1,411	1,422	16	1,438
Total Approaches														
Approach	3,523	15	3,538	3,517	3,532	20	3,552	3,892	25	3,917	3,863	3,888	32	3,920
Departure	3,523	15	3,538	3,517	3,532	20	3,552	3,892	25	3,917	3,863	3,888	32	3,920
Total	7,046	30	7,076	7,033	7,063	40	7,103	7,784	50	7,834	7,726	7,776	64	7,840

Table C-8 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	OY Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project	Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
3 Longden Avenue/Live Oak Avenue														
NBL	10	0	10	10	10	0	10	0	0	0	0	0	0	0
NBT	10	0	10	10	10	0	10	0	0	0	0	0	0	0
NBR	10	0	10	10	10	0	10	0	0	0	0	0	0	0
SBL	451	7	458	448	455	14	469	1,047	8	1,055	1,022	1,030	14	1,044
SBT	1	0	1	1	1	0	1	0	0	0	0	0	0	0
SBR	13	0	13	13	13	0	13	10	0	10	10	10	0	10
EBL	39	0	39	39	39	0	39	9	0	9	9	9	0	9
EBT	869	35	904	862	897	21	918	1,643	23	1,666	1,604	1,627	20	1,647
EBR	1	0	1	1	1	0	1	1	0	1	1	1	0	1
WBL	10	0	10	10	10	0	10	1	0	1	1	1	0	1
WBT	1,399	24	1,423	1,397	1,421	8	1,429	739	41	780	734	775	26	801
WBR	1,012	8	1,020	1,010	1,018	5	1,023	693	17	710	689	706	18	724
North Leg														
Approach	465	7	472	462	469	14	483	1,057	8	1,065	1,031	1,039	14	1,053
Departure	1,061	8	1,069	1,059	1,067	5	1,072	702	17	719	697	714	18	732
Total	1,526	15	1,541	1,521	1,536	19	1,555	1,759	25	1,784	1,729	1,754	32	1,786
South Leg														
Approach	30	0	30	29	29	0	29	0	0	0	0	0	0	0
Departure	12	0	12	12	12	0	12	2	0	2	2	2	0	2
Total	42	0	42	41	41	0	41	2	0	2	2	2	0	2
East Leg														
Approach	2,421	32	2,453	2,417	2,449	13	2,462	1,433	58	1,491	1,424	1,482	44	1,526
Departure	1,330	42	1,372	1,319	1,361	35	1,396	2,690	31	2,721	2,625	2,656	34	2,690
Total	3,751	74	3,825	3,736	3,810	48	3,858	4,123	89	4,212	4,049	4,138	78	4,216
West Leg														
Approach	909	35	944	902	937	21	958	1,653	23	1,676	1,613	1,636	20	1,656
Departure	1,422	24	1,446	1,419	1,443	8	1,451	749	41	790	744	785	26	811
Total	2,331	59	2,390	2,321	2,380	29	2,409	2,402	64	2,466	2,357	2,421	46	2,467
Total Approaches														
Approach	3,825	74	3,899	3,810	3,884	48	3,932	4,143	89	4,232	4,068	4,157	78	4,235
Departure	3,825	74	3,899	3,810	3,884	48	3,932	4,143	89	4,232	4,068	4,157	78	4,235
Total	7,650	148	7,798	7,619	7,767	96	7,863	8,286	178	8,464	8,137	8,315	156	8,471

Table C-8 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	OY Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project	Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
4 Arrow Highway/Live Oak Avenue														
NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	529	38	567	529	567	0	567	766	39	805	766	805	0	805
NBR	791	13	804	779	792	34	826	1,965	6	1,971	1,901	1,907	34	1,941
SBL	130	28	158	128	156	137	293	256	45	301	248	293	213	506
SBT	1,437	27	1,464	1,437	1,464	0	1,464	557	41	598	557	598	0	598
SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBL	985	5	990	981	986	13	999	887	19	906	877	896	44	940
WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBR	213	54	267	212	266	51	317	126	42	168	125	167	238	405
North Leg														
Approach	1,567	55	1,622	1,565	1,620	137	1,757	813	86	899	805	891	213	1,104
Departure	742	92	834	741	833	51	884	892	81	973	891	972	238	1,210
Total	2,309	147	2,456	2,306	2,453	188	2,641	1,705	167	1,872	1,696	1,863	451	2,314
South Leg														
Approach	1,320	51	1,371	1,309	1,360	34	1,394	2,731	45	2,776	2,666	2,711	34	2,745
Departure	2,422	32	2,454	2,419	2,451	13	2,464	1,444	60	1,504	1,435	1,495	44	1,539
Total	3,742	83	3,825	3,728	3,811	47	3,858	4,175	105	4,280	4,101	4,206	78	4,284
East Leg														
Approach	1,198	59	1,257	1,193	1,252	64	1,316	1,013	61	1,074	1,002	1,063	282	1,345
Departure	921	41	962	907	948	171	1,119	2,221	51	2,272	2,148	2,199	247	2,446
Total	2,119	100	2,219	2,101	2,201	235	2,436	3,234	112	3,346	3,150	3,262	529	3,791
West Leg														
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Approaches														
Approach	4,085	165	4,250	4,067	4,232	235	4,467	4,557	192	4,749	4,473	4,665	529	5,194
Departure	4,085	165	4,250	4,067	4,232	235	4,467	4,557	192	4,749	4,473	4,665	529	5,194
Total	8,170	330	8,500	8,135	8,465	470	8,935	9,114	384	9,498	8,947	9,331	1,058	10,389

Table C-8 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	OY Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project	Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
5 Driveway 1/Live Oak Avenue														
NBL	24	0	24	0	0	17	17	8	0	8	0	0	90	90
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	89	0	89	0	0	15	15	65	0	65	0	0	111	111
SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	880	46	926	878	924	127	1,051	2,199	54	2,253	2,142	2,196	145	2,341
EBR	49	0	49	0	0	44	44	25	0	25	0	0	102	102
WBL	30	0	30	0	0	41	41	50	0	50	0	0	74	74
WBT	1,186	59	1,245	1,186	1,245	47	1,292	1,002	61	1,063	991	1,052	192	1,244
WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg														
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Leg														
Approach	113	0	113	0	0	32	32	73	0	73	0	0	201	201
Departure	79	0	79	0	0	85	85	75	0	75	0	0	176	176
Total	192	0	192	0	0	117	117	148	0	148	0	0	377	377
East Leg														
Approach	1,216	59	1,275	1,186	1,245	88	1,333	1,052	61	1,113	991	1,052	266	1,318
Departure	969	46	1,015	878	924	142	1,066	2,264	54	2,318	2,142	2,196	256	2,452
Total	2,185	105	2,290	2,064	2,169	230	2,399	3,316	115	3,431	3,133	3,248	522	3,770
West Leg														
Approach	929	46	975	878	924	171	1,095	2,224	54	2,278	2,142	2,196	247	2,443
Departure	1,210	59	1,269	1,186	1,245	64	1,309	1,010	61	1,071	991	1,052	282	1,334
Total	2,139	105	2,244	2,064	2,169	235	2,404	3,234	115	3,349	3,133	3,248	529	3,777
Total Approaches														
Approach	2,258	105	2,363	2,064	2,169	291	2,460	3,349	115	3,464	3,133	3,248	714	3,962
Departure	2,258	105	2,363	2,064	2,169	291	2,460	3,349	115	3,464	3,133	3,248	714	3,962
Total	4,516	210	4,726	4,128	4,338	582	4,920	6,698	230	6,928	6,266	6,496	1,428	7,924

Table C-8 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	OY Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project	Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
6 Speedway Drive-Driveway 2/Live Oak Avenue														
NBL	0	0	0	0	0	32	32	11	0	11	0	0	199	199
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	1	0	1	0	0	32	32	5	0	5	0	0	246	246
SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	983	46	1,029	983	1,029	56	1,085	2,198	54	2,252	2,198	2,252	34	2,286
EBR	2	0	2	0	0	86	86	57	0	57	0	0	222	222
WBL	22	0	22	0	0	86	86	94	0	94	0	0	175	175
WBT	1,221	59	1,280	1,214	1,273	56	1,329	1,041	61	1,102	1,034	1,095	67	1,162
WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg														
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Leg														
Approach	1	0	1	0	0	64	64	16	0	16	0	0	445	445
Departure	24	0	24	0	0	172	172	151	0	151	0	0	397	397
Total	25	0	25	0	0	236	236	167	0	167	0	0	842	842
East Leg														
Approach	1,243	59	1,302	1,214	1,273	142	1,415	1,135	61	1,196	1,034	1,095	242	1,337
Departure	984	46	1,030	983	1,029	88	1,117	2,203	54	2,257	2,198	2,252	280	2,532
Total	2,227	105	2,332	2,197	2,302	230	2,532	3,338	115	3,453	3,231	3,346	522	3,868
West Leg														
Approach	985	46	1,031	983	1,029	142	1,171	2,255	54	2,309	2,198	2,252	256	2,508
Departure	1,221	59	1,280	1,214	1,273	88	1,361	1,052	61	1,113	1,034	1,095	266	1,361
Total	2,206	105	2,311	2,197	2,302	230	2,532	3,307	115	3,422	3,231	3,346	522	3,868
Total Approaches														
Approach	2,229	105	2,334	2,197	2,302	348	2,650	3,406	115	3,521	3,231	3,346	943	4,289
Departure	2,229	105	2,334	2,197	2,302	348	2,650	3,406	115	3,521	3,231	3,346	943	4,289
Total	4,458	210	4,668	4,393	4,603	696	5,299	6,812	230	7,042	6,463	6,693	1,886	8,579

Table C-8 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	OY Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project	Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
7 Driveway 3/Live Oak Avenue														
NBL	0	0	0	0	0	15	15	0	0	0	0	0	89	89
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	17	17	0	0	0	0	0	116	116
SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	982	46	1,028	976	1,022	47	1,069	2,202	54	2,256	2,177	2,231	180	2,411
EBR	0	0	0	0	0	41	41	0	0	0	0	0	100	100
WBL	13	0	13	0	0	44	44	5	0	5	0	0	80	80
WBT	1,234	59	1,293	1,205	1,264	127	1,391	1,122	61	1,183	1,021	1,082	153	1,235
WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg														
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Leg														
Approach	0	0	0	0	0	32	32	0	0	0	0	0	205	205
Departure	13	0	13	0	0	85	85	5	0	5	0	0	180	180
Total	13	0	13	0	0	117	117	5	0	5	0	0	385	385
East Leg														
Approach	1,247	59	1,306	1,205	1,264	171	1,435	1,127	61	1,188	1,021	1,082	233	1,315
Departure	982	46	1,028	976	1,022	64	1,086	2,202	54	2,256	2,177	2,231	296	2,527
Total	2,229	105	2,334	2,182	2,287	235	2,522	3,329	115	3,444	3,198	3,313	529	3,842
West Leg														
Approach	982	46	1,028	976	1,022	88	1,110	2,202	54	2,256	2,177	2,231	280	2,511
Departure	1,234	59	1,293	1,205	1,264	142	1,406	1,122	61	1,183	1,021	1,082	242	1,324
Total	2,216	105	2,321	2,182	2,287	230	2,517	3,324	115	3,439	3,198	3,313	522	3,835
Total Approaches														
Approach	2,229	105	2,334	2,182	2,287	291	2,578	3,329	115	3,444	3,198	3,313	718	4,031
Departure	2,229	105	2,334	2,182	2,287	291	2,578	3,329	115	3,444	3,198	3,313	718	4,031
Total	4,458	210	4,668	4,363	4,573	582	5,155	6,658	230	6,888	6,396	6,626	1,436	8,062

Table C-8 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	OY Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project	Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
8	**Interstate 605 Southbound On-Ramp/Live Oak Avenue**													
NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	430	18	448	428	446	13	459	1,148	9	1,157	1,135	1,144	44	1,188
EBR	566	28	594	563	591	51	642	1,056	45	1,101	1,044	1,089	252	1,341
WBL	740	124	864	740	864	0	864	619	141	760	619	760	0	760
WBT	1,241	59	1,300	1,199	1,258	171	1,429	1,126	61	1,187	1,020	1,081	233	1,314
WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg														
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Leg														
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	1,306	152	1,458	1,303	1,455	51	1,506	1,675	186	1,861	1,663	1,849	252	2,101
Total	1,306	152	1,458	1,303	1,455	51	1,506	1,675	186	1,861	1,663	1,849	252	2,101
East Leg														
Approach	1,981	183	2,164	1,939	2,122	171	2,293	1,745	202	1,947	1,638	1,840	233	2,073
Departure	430	18	448	428	446	13	459	1,148	9	1,157	1,135	1,144	44	1,188
Total	2,411	201	2,612	2,366	2,567	184	2,751	2,893	211	3,104	2,773	2,984	277	3,261
West Leg														
Approach	996	46	1,042	990	1,036	64	1,100	2,204	54	2,258	2,179	2,233	296	2,529
Departure	1,241	59	1,300	1,199	1,258	171	1,429	1,126	61	1,187	1,020	1,081	233	1,314
Total	2,237	105	2,342	2,189	2,294	235	2,529	3,330	115	3,445	3,199	3,314	529	3,843
Total Approaches														
Approach	2,977	229	3,206	2,929	3,158	235	3,393	3,949	256	4,205	3,818	4,074	529	4,603
Departure	2,977	229	3,206	2,929	3,158	235	3,393	3,949	256	4,205	3,818	4,074	529	4,603
Total	5,954	458	6,412	5,858	6,316	470	6,786	7,898	512	8,410	7,636	8,148	1,058	9,206

Table C-8 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	OY Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project	Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
9 Interstate 605 Northbound Ramps/Live Oak Avenue														
NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	395	137	532	395	532	0	532	693	148	841	693	841	0	841
SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	415	50	465	409	459	137	596	713	29	742	672	701	199	900
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	433	18	451	431	449	13	462	1,147	9	1,156	1,134	1,143	44	1,187
EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBT	1,567	133	1,700	1,531	1,664	34	1,698	1,047	173	1,220	981	1,154	34	1,188
WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg														
Approach	415	50	465	409	459	137	596	713	29	742	672	701	199	900
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	415	50	465	409	459	137	596	713	29	742	672	701	199	900
South Leg														
Approach	395	137	532	395	532	0	532	693	148	841	693	841	0	841
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	395	137	532	395	532	0	532	693	148	841	693	841	0	841
East Leg														
Approach	1,567	133	1,700	1,531	1,664	34	1,698	1,047	173	1,220	981	1,154	34	1,188
Departure	828	155	983	826	981	13	994	1,840	157	1,997	1,827	1,984	44	2,028
Total	2,395	288	2,683	2,357	2,645	47	2,692	2,887	330	3,217	2,808	3,138	78	3,216
West Leg														
Approach	433	18	451	431	449	13	462	1,147	9	1,156	1,134	1,143	44	1,187
Departure	1,982	183	2,165	1,940	2,123	171	2,294	1,760	202	1,962	1,652	1,854	233	2,087
Total	2,415	201	2,616	2,370	2,571	184	2,755	2,907	211	3,118	2,786	2,997	277	3,274
Total Approaches														
Approach	2,810	338	3,148	2,766	3,104	184	3,288	3,600	359	3,959	3,480	3,839	277	4,116
Departure	2,810	338	3,148	2,766	3,104	184	3,288	3,600	359	3,959	3,480	3,839	277	4,116
Total	5,620	676	6,296	5,531	6,207	368	6,575	7,200	718	7,918	6,960	7,678	554	8,232

Table C-8 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	OY Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project	Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
10 Graham Road/Live Oak Avenue														
NBL	160	0	160	159	159	0	159	18	0	18	18	18	0	18
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	60	0	60	60	60	0	60	23	0	23	23	23	0	23
SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	2	0	2	2	2	0	2	6	0	6	6	6	0	6
EBT	726	155	881	723	878	13	891	1,807	156	1,963	1,794	1,950	44	1,994
EBR	111	0	111	111	111	0	111	48	0	48	48	48	0	48
WBL	50	0	50	50	50	0	50	36	0	36	36	36	0	36
WBT	1,398	133	1,531	1,362	1,495	34	1,529	1,036	173	1,209	970	1,143	34	1,177
WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg														
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	2	0	2	2	2	0	2	6	0	6	6	6	0	6
Total	2	0	2	2	2	0	2	6	0	6	6	6	0	6
South Leg														
Approach	220	0	220	220	220	0	220	41	0	41	41	41	0	41
Departure	161	0	161	161	161	0	161	84	0	84	83	83	0	83
Total	381	0	381	381	381	0	381	125	0	125	124	124	0	124
East Leg														
Approach	1,448	133	1,581	1,412	1,545	34	1,579	1,072	173	1,245	1,006	1,179	34	1,213
Departure	786	155	941	784	939	13	952	1,830	156	1,986	1,817	1,973	44	2,017
Total	2,234	288	2,522	2,196	2,484	47	2,531	2,902	329	3,231	2,822	3,151	78	3,229
West Leg														
Approach	839	155	994	837	992	13	1,005	1,861	156	2,017	1,848	2,004	44	2,048
Departure	1,558	133	1,691	1,521	1,654	34	1,688	1,054	173	1,227	988	1,161	34	1,195
Total	2,397	288	2,685	2,358	2,646	47	2,693	2,915	329	3,244	2,836	3,165	78	3,243
Total Approaches														
Approach	2,507	288	2,795	2,468	2,756	47	2,803	2,974	329	3,303	2,895	3,224	78	3,302
Departure	2,507	288	2,795	2,468	2,756	47	2,803	2,974	329	3,303	2,895	3,224	78	3,302
Total	5,014	576	5,590	4,937	5,513	94	5,607	5,948	658	6,606	5,789	6,447	156	6,603

Table C-8 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	OY Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project	Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
11 Live Oak Lane/Live Oak Avenue														
NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	14	3	17	14	17	0	17	12	6	18	12	18	0	18
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	138	8	146	139	147	0	147	75	28	103	75	103	0	103
EBL	90	6	96	89	95	0	95	49	12	61	48	60	0	60
EBT	701	149	850	699	848	13	861	1,760	144	1,904	1,748	1,892	44	1,936
EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBT	1,328	125	1,453	1,294	1,419	34	1,453	985	145	1,130	920	1,065	34	1,099
WBR	57	4	61	57	61	0	61	6	9	15	6	15	0	15
North Leg														
Approach	152	11	163	153	164	0	164	87	34	121	87	121	0	121
Departure	147	10	157	147	157	0	157	55	21	76	55	76	0	76
Total	299	21	320	299	320	0	320	142	55	197	142	197	0	197
South Leg														
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East Leg														
Approach	1,385	129	1,514	1,351	1,480	34	1,514	991	154	1,145	926	1,080	34	1,114
Departure	715	152	867	713	865	13	878	1,772	150	1,922	1,760	1,910	44	1,954
Total	2,100	281	2,381	2,064	2,345	47	2,392	2,763	304	3,067	2,686	2,990	78	3,068
West Leg														
Approach	791	155	946	788	943	13	956	1,809	156	1,965	1,796	1,952	44	1,996
Departure	1,466	133	1,599	1,432	1,565	34	1,599	1,060	173	1,233	994	1,167	34	1,201
Total	2,257	288	2,545	2,220	2,508	47	2,555	2,869	329	3,198	2,790	3,119	78	3,197
Total Approaches														
Approach	2,328	295	2,623	2,292	2,587	47	2,634	2,887	344	3,231	2,809	3,153	78	3,231
Departure	2,328	295	2,623	2,292	2,587	47	2,634	2,887	344	3,231	2,809	3,153	78	3,231
Total	4,656	590	5,246	4,584	5,174	94	5,268	5,774	688	6,462	5,618	6,306	156	6,462

Table C-8 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	OY Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project	Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
12 Rivergrade Road/Live Oak Avenue														
NBL	43	2	45	42	44	10	54	105	6	111	98	104	10	114
NBT	53	2	55	53	55	0	55	69	2	71	69	71	0	71
NBR	112	5	117	112	117	0	117	390	8	398	390	398	0	398
SBL	31	0	31	31	31	0	31	28	0	28	28	28	0	28
SBT	80	2	82	80	82	0	82	22	2	24	22	24	0	24
SBR	76	104	180	74	178	0	178	62	100	162	58	158	0	158
EBL	96	93	189	96	189	0	189	83	113	196	83	196	0	196
EBT	519	53	572	518	571	9	580	1,673	35	1,708	1,661	1,696	31	1,727
EBR	91	5	96	91	96	4	100	22	3	25	22	25	13	38
WBL	271	7	278	271	278	0	278	87	3	90	87	90	0	90
WBT	1,251	24	1,275	1,219	1,243	24	1,267	828	49	877	774	823	24	847
WBR	14	0	14	14	14	0	14	6	0	6	6	6	0	6
North Leg														
Approach	187	106	293	185	291	0	291	112	102	214	107	209	0	209
Departure	163	95	258	163	258	0	258	158	115	273	158	273	0	273
Total	350	201	551	348	549	0	549	270	217	487	265	482	0	482
South Leg														
Approach	208	9	217	207	216	10	226	564	16	580	557	573	10	583
Departure	442	14	456	442	456	4	460	131	8	139	131	139	13	152
Total	650	23	673	649	672	14	686	695	24	719	688	712	23	735
East Leg														
Approach	1,536	31	1,567	1,504	1,535	24	1,559	921	52	973	868	920	24	944
Departure	662	58	720	661	719	9	728	2,091	43	2,134	2,079	2,122	31	2,153
Total	2,198	89	2,287	2,165	2,254	33	2,287	3,012	95	3,107	2,947	3,042	55	3,097
West Leg														
Approach	706	151	857	704	855	13	868	1,778	151	1,929	1,765	1,916	44	1,960
Departure	1,370	130	1,500	1,335	1,465	34	1,499	995	155	1,150	929	1,084	34	1,118
Total	2,076	281	2,357	2,039	2,320	47	2,367	2,773	306	3,079	2,694	3,000	78	3,078
Total Approaches														
Approach	2,637	297	2,934	2,600	2,897	47	2,944	3,375	321	3,696	3,297	3,618	78	3,696
Departure	2,637	297	2,934	2,600	2,897	47	2,944	3,375	321	3,696	3,297	3,618	78	3,696
Total	5,274	594	5,868	5,201	5,795	94	5,889	6,750	642	7,392	6,594	7,236	156	7,392

Table C-8 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	OY Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project	Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
13 Commerce Drive/Live Oak Avenue														
NBL	6	0	6	6	6	0	6	26	0	26	26	26	0	26
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	19	0	19	19	19	0	19	213	0	213	213	213	0	213
SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	2	0	2	2	2	0	2
EBT	486	58	544	484	542	9	551	2,082	42	2,124	2,070	2,112	31	2,143
EBR	49	0	49	49	49	0	49	6	0	6	6	6	0	6
WBL	276	0	276	276	276	0	276	23	0	23	23	23	0	23
WBT	1,651	31	1,682	1,619	1,650	24	1,674	893	52	945	839	891	24	915
WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg														
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	2	0	2	2	2	0	2
Total	0	0	0	0	0	0	0	2	0	2	2	2	0	2
South Leg														
Approach	25	0	25	26	26	0	26	239	0	239	239	239	0	239
Departure	325	0	325	325	325	0	325	29	0	29	29	29	0	29
Total	350	0	350	351	351	0	351	268	0	268	268	268	0	268
East Leg														
Approach	1,927	31	1,958	1,896	1,927	24	1,951	916	52	968	861	913	24	937
Departure	505	58	563	504	562	9	571	2,295	42	2,337	2,283	2,325	31	2,356
Total	2,432	89	2,521	2,399	2,488	33	2,521	3,211	94	3,305	3,144	3,238	55	3,293
West Leg														
Approach	535	58	593	533	591	9	600	2,090	42	2,132	2,079	2,121	31	2,152
Departure	1,657	31	1,688	1,626	1,657	24	1,681	919	52	971	865	917	24	941
Total	2,192	89	2,281	2,159	2,248	33	2,281	3,009	94	3,103	2,943	3,037	55	3,092
Total Approaches														
Approach	2,487	89	2,576	2,455	2,544	33	2,577	3,245	94	3,339	3,179	3,273	55	3,328
Departure	2,487	89	2,576	2,455	2,544	33	2,577	3,245	94	3,339	3,179	3,273	55	3,328
Total	4,974	178	5,152	4,909	5,087	66	5,153	6,490	188	6,678	6,357	6,545	110	6,655

Table C-8 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	OY Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project	Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
14 Stewart Avenue/Live Oak Avenue														
NBL	227	0	227	223	223	10	233	73	0	73	69	69	10	79
NBT	127	4	131	127	131	0	131	21	6	27	21	27	0	27
NBR	35	5	40	35	40	0	40	12	3	15	12	15	0	15
SBL	14	0	14	14	14	0	14	25	0	25	25	25	0	25
SBT	28	3	31	28	31	0	31	107	6	113	107	113	0	113
SBR	82	0	82	81	81	0	81	14	0	14	13	13	0	13
EBL	21	0	21	21	21	0	21	63	0	63	63	63	0	63
EBT	460	58	518	458	516	5	521	1,959	42	2,001	1,947	1,989	18	2,007
EBR	28	0	28	28	28	4	32	285	0	285	285	285	13	298
WBL	18	2	20	18	20	0	20	41	3	44	41	44	0	44
WBT	1,623	31	1,654	1,596	1,627	14	1,641	811	52	863	762	814	14	828
WBR	38	3	41	38	41	0	41	1	6	7	1	7	0	7
North Leg														
Approach	124	3	127	123	126	0	126	146	6	152	145	151	0	151
Departure	186	7	193	186	193	0	193	85	12	97	84	96	0	96
Total	310	10	320	309	319	0	319	231	18	249	229	247	0	247
South Leg														
Approach	389	9	398	385	394	10	404	106	9	115	101	110	10	120
Departure	74	5	79	74	79	4	83	433	9	442	433	442	13	455
Total	463	14	477	460	474	14	488	539	18	557	534	552	23	575
East Leg														
Approach	1,679	36	1,715	1,653	1,689	14	1,703	853	61	914	804	865	14	879
Departure	509	63	572	507	570	5	575	1,996	45	2,041	1,984	2,029	18	2,047
Total	2,188	99	2,287	2,159	2,258	19	2,277	2,849	106	2,955	2,788	2,894	32	2,926
West Leg														
Approach	509	58	567	507	565	9	574	2,307	42	2,349	2,295	2,337	31	2,368
Departure	1,932	31	1,963	1,900	1,931	24	1,955	898	52	950	844	896	24	920
Total	2,441	89	2,530	2,407	2,496	33	2,529	3,205	94	3,299	3,139	3,233	55	3,288
Total Approaches														
Approach	2,701	106	2,807	2,667	2,773	33	2,806	3,412	118	3,530	3,345	3,463	55	3,518
Departure	2,701	106	2,807	2,667	2,773	33	2,806	3,412	118	3,530	3,345	3,463	55	3,518
Total	5,402	212	5,614	5,335	5,547	66	5,613	6,824	236	7,060	6,690	6,926	110	7,036

Table C-8 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	OY Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project	Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
15 Baldwin Park/Arrow Highway														
NBL	320	2	322	315	317	3	320	102	3	105	96	99	3	102
NBT	0	10	10	0	10	0	10	0	5	5	0	5	0	5
NBR	313	3	316	313	316	0	316	91	3	94	91	94	0	94
SBL	0	12	12	0	12	0	12	0	23	23	0	23	0	23
SBT	0	4	4	0	4	0	4	0	7	7	0	7	0	7
SBR	0	19	19	0	19	0	19	0	36	36	0	36	0	36
EBL	0	43	43	0	43	0	43	0	23	23	0	23	0	23
EBT	467	19	486	465	484	4	488	1,448	18	1,466	1,440	1,458	13	1,471
EBR	68	1	69	68	69	1	70	564	4	568	561	565	4	569
WBL	141	3	144	141	144	0	144	283	3	286	283	286	0	286
WBT	1,399	16	1,415	1,377	1,393	10	1,403	731	22	753	688	710	10	720
WBR	0	43	43	0	43	0	43	0	23	23	0	23	0	23
North Leg														
Approach	0	35	35	0	35	0	35	0	66	66	0	66	0	66
Departure	0	96	96	0	96	0	96	0	51	51	0	51	0	51
Total	0	131	131	0	131	0	131	0	117	117	0	117	0	117
South Leg														
Approach	633	15	648	629	644	3	647	193	11	204	187	198	3	201
Departure	209	8	217	209	217	1	218	847	14	861	844	858	4	862
Total	842	23	865	838	861	4	865	1,040	25	1,065	1,031	1,056	7	1,063
East Leg														
Approach	1,540	62	1,602	1,518	1,580	10	1,590	1,014	48	1,062	971	1,019	10	1,029
Departure	780	34	814	778	812	4	816	1,539	44	1,583	1,530	1,574	13	1,587
Total	2,320	96	2,416	2,296	2,392	14	2,406	2,553	92	2,645	2,501	2,593	23	2,616
West Leg														
Approach	535	63	598	533	596	5	601	2,012	45	2,057	2,001	2,046	17	2,063
Departure	1,719	37	1,756	1,692	1,729	13	1,742	833	61	894	784	845	13	858
Total	2,254	100	2,354	2,225	2,325	18	2,343	2,845	106	2,951	2,785	2,891	30	2,921
Total Approaches														
Approach	2,708	175	2,883	2,680	2,855	18	2,873	3,219	170	3,389	3,158	3,328	30	3,358
Departure	2,708	175	2,883	2,680	2,855	18	2,873	3,219	170	3,389	3,158	3,328	30	3,358
Total	5,416	350	5,766	5,359	5,709	36	5,745	6,438	340	6,778	6,317	6,657	60	6,717

Table C-8 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	OY Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project	Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
16 Arrow Highway/Live Oak Avenue														
NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	291	120	411	291	411	0	411	1,049	133	1,182	1,049	1,182	0	1,182
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	46	32	78	46	78	0	78	119	19	138	114	133	0	133
EBL	149	10	159	149	159	0	159	40	16	56	40	56	0	56
EBT	632	24	656	630	654	4	658	1,497	28	1,525	1,488	1,516	13	1,529
EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBT	1,497	30	1,527	1,475	1,505	10	1,515	887	30	917	848	878	10	888
WBR	1,672	68	1,740	1,672	1,740	0	1,740	476	61	537	476	537	0	537
North Leg														
Approach	337	152	489	337	489	0	489	1,168	152	1,320	1,163	1,315	0	1,315
Departure	1,821	78	1,899	1,821	1,899	0	1,899	516	77	593	516	593	0	593
Total	2,158	230	2,388	2,158	2,388	0	2,388	1,684	229	1,913	1,679	1,908	0	1,908
South Leg														
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East Leg														
Approach	3,169	98	3,267	3,147	3,245	10	3,255	1,363	91	1,454	1,324	1,415	10	1,425
Departure	923	144	1,067	921	1,065	4	1,069	2,546	161	2,707	2,537	2,698	13	2,711
Total	4,092	242	4,334	4,068	4,310	14	4,324	3,909	252	4,161	3,861	4,113	23	4,136
West Leg														
Approach	781	34	815	779	813	4	817	1,537	44	1,581	1,528	1,572	13	1,585
Departure	1,543	62	1,605	1,522	1,584	10	1,594	1,006	49	1,055	962	1,011	10	1,021
Total	2,324	96	2,420	2,301	2,397	14	2,411	2,543	93	2,636	2,491	2,584	23	2,607
Total Approaches														
Approach	4,287	284	4,571	4,263	4,547	14	4,561	4,068	287	4,355	4,016	4,303	23	4,326
Departure	4,287	284	4,571	4,263	4,547	14	4,561	4,068	287	4,355	4,016	4,303	23	4,326
Total	8,574	568	9,142	8,526	9,094	28	9,122	8,136	574	8,710	8,031	8,605	46	8,651

Table C-8 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	OY Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project	Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
17 Maine Avenue/Arrow Highway														
NBL	661	9	670	656	665	3	668	269	9	278	261	270	3	273
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	112	0	112	112	112	0	112	107	0	107	107	107	0	107
SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	800	138	938	799	937	3	940	2,008	150	2,158	2,001	2,151	9	2,160
EBR	105	5	110	105	110	1	111	525	10	535	523	533	4	537
WBL	37	0	37	37	37	0	37	68	0	68	68	68	0	68
WBT	2,519	160	2,679	2,502	2,662	7	2,669	1,089	135	1,224	1,058	1,193	7	1,200
WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg														
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Leg														
Approach	773	9	782	769	778	3	781	376	9	385	368	377	3	380
Departure	142	5	147	141	146	1	147	593	10	603	592	602	4	606
Total	915	14	929	910	924	4	928	969	19	988	960	979	7	986
East Leg														
Approach	2,556	160	2,716	2,538	2,698	7	2,705	1,157	135	1,292	1,126	1,261	7	1,268
Departure	912	138	1,050	911	1,049	3	1,052	2,115	150	2,265	2,108	2,258	9	2,267
Total	3,468	298	3,766	3,449	3,747	10	3,757	3,272	285	3,557	3,233	3,518	16	3,534
West Leg														
Approach	905	143	1,048	903	1,046	4	1,050	2,533	160	2,693	2,524	2,684	13	2,697
Departure	3,180	169	3,349	3,158	3,327	10	3,337	1,358	144	1,502	1,319	1,463	10	1,473
Total	4,085	312	4,397	4,061	4,373	14	4,387	3,891	304	4,195	3,843	4,147	23	4,170
Total Approaches														
Approach	4,234	312	4,546	4,210	4,522	14	4,536	4,066	304	4,370	4,018	4,322	23	4,345
Departure	4,234	312	4,546	4,210	4,522	14	4,536	4,066	304	4,370	4,018	4,322	23	4,345
Total	8,468	624	9,092	8,421	9,045	28	9,073	8,132	608	8,740	8,036	8,644	46	8,690

Table C-8 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	OY Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project	Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
18 Avenida Barbosa/Buena Vista Street														
NBL	54	0	54	54	54	0	54	16	0	16	16	16	0	16
NBT	163	1	164	163	164	0	164	121	5	126	121	126	0	126
NBR	757	125	882	757	882	4	886	319	73	392	319	392	13	405
SBL	9	0	9	9	9	0	9	28	0	28	28	28	0	28
SBT	75	4	79	75	79	0	79	192	2	194	192	194	0	194
SBR	2	0	2	2	2	0	2	6	0	6	6	6	0	6
EBL	1	0	1	1	1	0	1	6	0	6	6	6	0	6
EBT	4	0	4	4	4	0	4	22	0	22	22	22	0	22
EBR	6	0	6	6	6	0	6	89	0	89	89	89	0	89
WBL	158	69	227	158	227	10	237	508	112	620	504	616	10	626
WBT	15	0	15	15	15	0	15	18	0	18	18	18	0	18
WBR	19	0	19	19	19	0	19	24	0	24	24	24	0	24
North Leg														
Approach	86	4	90	85	89	0	89	226	2	228	227	229	0	229
Departure	183	1	184	184	185	0	185	151	5	156	151	156	0	156
Total	269	5	274	269	274	0	274	377	7	384	378	385	0	385
South Leg														
Approach	974	126	1,100	974	1,100	4	1,104	456	78	534	456	534	13	547
Departure	239	73	312	239	312	10	322	789	114	903	785	899	10	909
Total	1,213	199	1,412	1,213	1,412	14	1,426	1,245	192	1,437	1,241	1,433	23	1,456
East Leg														
Approach	192	69	261	192	261	10	271	550	112	662	546	658	10	668
Departure	770	125	895	770	895	4	899	369	73	442	368	441	13	454
Total	962	194	1,156	962	1,156	14	1,170	919	185	1,104	915	1,100	23	1,123
West Leg														
Approach	11	0	11	12	12	0	12	117	0	117	117	117	0	117
Departure	71	0	71	71	71	0	71	40	0	40	41	41	0	41
Total	82	0	82	83	83	0	83	157	0	157	158	158	0	158
Total Approaches														
Approach	1,263	199	1,462	1,264	1,463	14	1,477	1,349	192	1,541	1,346	1,538	23	1,561
Departure	1,263	199	1,462	1,264	1,463	14	1,477	1,349	192	1,541	1,346	1,538	23	1,561
Total	2,526	398	2,924	2,527	2,925	28	2,953	2,698	384	3,082	2,691	3,075	46	3,121

Table C-8 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	OY Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project	Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
19 Avenida Barbosa/Arrow Highway														
NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	130	93	223	130	223	0	223	390	87	477	390	477	0	477
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	132	41	173	132	173	10	183	335	67	402	331	398	10	408
EBL	311	75	386	311	386	4	390	203	44	247	203	247	13	260
EBT	421	16	437	420	436	47	483	687	36	723	686	722	225	947
EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBT	1,432	70	1,502	1,430	1,500	127	1,627	484	58	542	479	537	203	740
WBR	694	51	745	694	745	0	745	214	34	248	214	248	0	248
North Leg														
Approach	262	134	396	261	395	10	405	725	154	879	721	875	10	885
Departure	1,005	126	1,131	1,005	1,131	4	1,135	417	78	495	417	495	13	508
Total	1,267	260	1,527	1,267	1,527	14	1,541	1,142	232	1,374	1,138	1,370	23	1,393
South Leg														
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East Leg														
Approach	2,126	121	2,247	2,125	2,246	127	2,373	698	92	790	693	785	203	988
Departure	551	109	660	550	659	47	706	1,077	123	1,200	1,075	1,198	225	1,423
Total	2,677	230	2,907	2,675	2,905	174	3,079	1,775	215	1,990	1,768	1,983	428	2,411
West Leg														
Approach	732	91	823	731	822	51	873	890	80	970	889	969	238	1,207
Departure	1,564	111	1,675	1,562	1,673	137	1,810	819	125	944	810	935	213	1,148
Total	2,296	202	2,498	2,293	2,495	188	2,683	1,709	205	1,914	1,699	1,904	451	2,355
Total Approaches														
Approach	3,120	346	3,466	3,118	3,464	188	3,652	2,313	326	2,639	2,303	2,629	451	3,080
Departure	3,120	346	3,466	3,118	3,464	188	3,652	2,313	326	2,639	2,303	2,629	451	3,080
Total	6,240	692	6,932	6,235	6,927	376	7,303	4,626	652	5,278	4,605	5,257	902	6,159

Table C-8 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	OY Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project	Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
20 Interstate 605 Southbound Off-Ramp/Arrow Highway														
NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBL	411	179	590	411	590	0	590	300	179	479	300	479	0	479
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	556	0	556	556	556	127	683	330	0	330	330	330	203	533
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	538	109	647	537	646	47	693	1,077	123	1,200	1,075	1,198	225	1,423
EBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBT	1,556	120	1,676	1,555	1,675	0	1,675	376	92	468	371	463	0	463
WBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Leg														
Approach	967	179	1,146	968	1,147	127	1,274	630	179	809	631	810	203	1,013
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	967	179	1,146	968	1,147	127	1,274	630	179	809	631	810	203	1,013
South Leg														
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
East Leg														
Approach	1,556	120	1,676	1,555	1,675	0	1,675	376	92	468	371	463	0	463
Departure	949	288	1,237	949	1,237	47	1,284	1,377	302	1,679	1,376	1,678	225	1,903
Total	2,505	408	2,913	2,503	2,911	47	2,958	1,753	394	2,147	1,747	2,141	225	2,366
West Leg														
Approach	538	109	647	537	646	47	693	1,077	123	1,200	1,075	1,198	225	1,423
Departure	2,112	120	2,232	2,111	2,231	127	2,358	706	92	798	701	793	203	996
Total	2,650	229	2,879	2,648	2,877	174	3,051	1,783	215	1,998	1,777	1,992	428	2,420
Total Approaches														
Approach	3,061	408	3,469	3,059	3,467	174	3,641	2,083	394	2,477	2,077	2,471	428	2,899
Departure	3,061	408	3,469	3,059	3,467	174	3,641	2,083	394	2,477	2,077	2,471	428	2,899
Total	6,122	816	6,938	6,119	6,935	348	7,283	4,166	788	4,954	4,154	4,942	856	5,798

Table C-8 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

	AM Peak Hour							PM Peak Hour						
	OY Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project	Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
21 Interstate 605 Northbound Ramps/Arrow Highway														
NBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NBR	66	1	67	66	67	0	67	37	4	41	37	41	0	41
SBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	612	278	890	612	890	0	890	1,275	274	1,549	1,274	1,548	0	1,548
EBR	337	11	348	337	348	47	395	102	26	128	102	128	225	353
WBL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBT	1,556	120	1,676	1,555	1,675	0	1,675	376	92	468	371	463	0	463
WBR	413	166	579	413	579	0	579	251	166	417	251	417	0	417
North Leg														
Approach	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Departure	413	166	579	413	579	0	579	251	166	417	251	417	0	417
Total	413	166	579	413	579	0	579	251	166	417	251	417	0	417
South Leg														
Approach	66	1	67	66	67	0	67	37	4	41	37	41	0	41
Departure	337	11	348	337	348	47	395	102	26	128	102	128	225	353
Total	403	12	415	403	415	47	462	139	30	169	138	168	225	393
East Leg														
Approach	1,969	286	2,255	1,967	2,253	0	2,253	627	258	885	621	879	0	879
Departure	678	279	957	677	956	0	956	1,312	278	1,590	1,311	1,589	0	1,589
Total	2,647	565	3,212	2,645	3,210	0	3,210	1,939	536	2,475	1,932	2,468	0	2,468
West Leg														
Approach	949	289	1,238	949	1,238	47	1,285	1,377	300	1,677	1,376	1,676	225	1,901
Departure	1,556	120	1,676	1,555	1,675	0	1,675	376	92	468	371	463	0	463
Total	2,505	409	2,914	2,503	2,912	47	2,959	1,753	392	2,145	1,747	2,139	225	2,364
Total Approaches														
Approach	2,984	576	3,560	2,982	3,558	47	3,605	2,041	562	2,603	2,034	2,596	225	2,821
Departure	2,984	576	3,560	2,982	3,558	47	3,605	2,041	562	2,603	2,034	2,596	225	2,821
Total	5,968	1,152	7,120	5,963	7,115	94	7,209	4,082	1,124	5,206	4,068	5,192	450	5,642

Table C-9 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

		Saturday Peak Hour						
		Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
1	**Peck Road-Myrtle Avenue/Live Oak Avenue**							
NBL		168	0	168	168	168	0	168
NBT		504	0	504	504	504	0	504
NBR		138	3	141	131	134	13	147
SBL		71	2	73	68	70	0	70
SBT		451	0	451	451	451	0	451
SBR		149	0	149	149	149	0	149
EBL		144	0	144	144	144	0	144
EBT		433	25	458	411	436	27	463
EBR		151	0	151	151	151	0	151
WBL		119	3	122	119	122	12	134
WBT		406	21	427	401	422	24	446
WBR		43	2	45	43	45	0	45
North Leg								
	Approach	671	2	673	668	670	0	670
	Departure	691	2	693	691	693	0	693
	Total	1,362	4	1,366	1,359	1,363	0	1,363
South Leg								
	Approach	810	3	813	804	807	13	820
	Departure	721	3	724	721	724	12	736
	Total	1,531	6	1,537	1,526	1,532	25	1,557
East Leg								
	Approach	568	26	594	563	589	36	625
	Departure	642	30	672	610	640	40	680
	Total	1,210	56	1,266	1,174	1,230	76	1,306
West Leg								
	Approach	728	25	753	706	731	27	758
	Departure	723	21	744	719	740	24	764
	Total	1,451	46	1,497	1,425	1,471	51	1,522
Total Approaches								
	Approach	2,777	56	2,833	2,742	2,798	76	2,874
	Departure	2,777	56	2,833	2,742	2,798	76	2,874
	Total	5,554	112	5,666	5,484	5,596	152	5,748

Table C-9 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

		Saturday Peak Hour						
		Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
2	**Myrtle Avenue/Longden Avenue**							
NBL		64	0	64	64	64	0	64
NBT		613	0	613	613	613	0	613
NBR		10	0	10	10	10	0	10
SBL		162	5	167	148	153	13	166
SBT		608	0	608	608	608	0	608
SBR		104	0	104	104	104	0	104
EBL		106	0	106	106	106	0	106
EBT		200	5	205	194	199	13	212
EBR		57	0	57	57	57	0	57
WBL		51	0	51	51	51	0	51
WBT		221	5	226	219	224	12	236
WBR		177	5	182	176	181	12	193
North Leg								
	Approach	874	5	879	860	865	13	878
	Departure	896	5	901	895	900	12	912
	Total	1,770	10	1,780	1,755	1,765	25	1,790
South Leg								
	Approach	687	0	687	687	687	0	687
	Departure	716	0	716	716	716	0	716
	Total	1,403	0	1,403	1,403	1,403	0	1,403
East Leg								
	Approach	449	10	459	446	456	24	480
	Departure	372	10	382	351	361	26	387
	Total	821	20	841	797	817	50	867
West Leg								
	Approach	363	5	368	357	362	13	375
	Departure	389	5	394	387	392	12	404
	Total	752	10	762	743	753	25	778
Total Approaches								
	Approach	2,373	20	2,393	2,349	2,369	50	2,419
	Departure	2,373	20	2,393	2,349	2,369	50	2,419
	Total	4,746	40	4,786	4,699	4,739	100	4,839

Table C-9 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

		Saturday Peak Hour						
		Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
3	**Longden Avenue/Live Oak Avenue**							
NBL		8	0	8	8	8	0	8
NBT		8	0	8	8	8	0	8
NBR		9	0	9	9	9	0	9
SBL		377	8	385	357	365	27	392
SBT		6	0	6	6	6	0	6
SBR		12	0	12	12	12	0	12
EBL		10	0	10	10	10	0	10
EBT		605	29	634	572	601	40	641
EBR		9	0	9	9	9	0	9
WBL		11	0	11	11	11	0	11
WBT		597	26	623	593	619	37	656
WBR		408	9	417	405	414	24	438
North Leg								
	Approach	395	8	403	375	383	27	410
	Departure	426	9	435	422	431	24	455
	Total	821	17	838	797	814	51	865
South Leg								
	Approach	25	0	25	24	24	0	24
	Departure	26	0	26	26	26	0	26
	Total	51	0	51	50	50	0	50
East Leg								
	Approach	1,016	35	1,051	1,008	1,043	61	1,104
	Departure	991	37	1,028	938	975	67	1,042
	Total	2,007	72	2,079	1,946	2,018	128	2,146
West Leg								
	Approach	624	29	653	591	620	40	660
	Departure	617	26	643	612	638	37	675
	Total	1,241	55	1,296	1,203	1,258	77	1,335
Total Approaches								
	Approach	2,060	72	2,132	1,998	2,070	128	2,198
	Departure	2,060	72	2,132	1,998	2,070	128	2,198
	Total	4,120	144	4,264	3,996	4,140	256	4,396

Table C-9 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

		Saturday Peak Hour						
		Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
4	**Arrow Highway/Live Oak Avenue**							
NBL		0	0	0	0	0	0	0
NBT		354	32	386	354	386	0	386
NBR		651	9	660	599	608	66	674
SBL		125	20	145	115	135	455	590
SBT		474	24	498	474	498	0	498
SBR		0	0	0	0	0	0	0
EBL		0	0	0	0	0	0	0
EBT		0	0	0	0	0	0	0
EBR		0	0	0	0	0	0	0
WBL		551	10	561	543	553	61	614
WBT		0	0	0	0	0	0	0
WBR		132	41	173	130	171	399	570
North Leg								
	Approach	599	44	643	589	633	455	1,088
	Departure	486	73	559	484	557	399	956
	Total	1,085	117	1,202	1,073	1,190	854	2,044
South Leg								
	Approach	1,005	41	1,046	953	994	66	1,060
	Departure	1,025	34	1,059	1,017	1,051	61	1,112
	Total	2,030	75	2,105	1,970	2,045	127	2,172
East Leg								
	Approach	683	51	734	673	724	460	1,184
	Departure	776	29	805	714	743	521	1,264
	Total	1,459	80	1,539	1,387	1,467	981	2,448
West Leg								
	Approach	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
Total Approaches								
	Approach	2,287	136	2,423	2,215	2,351	981	3,332
	Departure	2,287	136	2,423	2,215	2,351	981	3,332
	Total	4,574	272	4,846	4,430	4,702	1,962	6,664

Table C-9 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

		Saturday Peak Hour						
		Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
5	**Driveway 1/Live Oak Avenue**							
NBL		10	0	10	0	0	149	149
NBT		0	0	0	0	0	0	0
NBR		63	0	63	0	0	149	149
SBL		0	0	0	0	0	0	0
SBT		0	0	0	0	0	0	0
SBR		0	0	0	0	0	0	0
EBL		0	0	0	0	0	0	0
EBT		778	29	807	734	763	359	1,122
EBR		32	0	32	0	0	162	162
WBL		23	0	23	0	0	150	150
WBT		741	52	793	734	786	312	1,098
WBR		0	0	0	0	0	0	0
North Leg								
	Approach	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
South Leg								
	Approach	73	0	73	0	0	298	298
	Departure	55	0	55	0	0	312	312
	Total	128	0	128	0	0	610	610
East Leg								
	Approach	764	52	816	734	786	462	1,248
	Departure	841	29	870	734	763	508	1,271
	Total	1,605	81	1,686	1,469	1,550	970	2,520
West Leg								
	Approach	810	29	839	734	763	521	1,284
	Departure	751	52	803	734	786	461	1,247
	Total	1,561	81	1,642	1,469	1,550	982	2,532
Total Approaches								
	Approach	1,647	81	1,728	1,469	1,550	1,281	2,831
	Departure	1,647	81	1,728	1,469	1,550	1,281	2,831
	Total	3,294	162	3,456	2,938	3,100	2,562	5,662

Table C-9 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

		Saturday Peak Hour						
		Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
6	**Speedway Drive-Driveway 2/Live Oak Avenue**							
NBL		6	0	6	0	0	342	342
NBT		0	0	0	0	0	0	0
NBR		3	0	3	0	0	360	360
SBL		0	0	0	0	0	0	0
SBT		0	0	0	0	0	0	0
SBR		0	0	0	0	0	0	0
EBL		0	0	0	0	0	0	0
EBT		797	29	826	797	826	135	961
EBR		43	0	43	0	0	374	374
WBL		28	0	28	0	0	356	356
WBT		756	52	808	751	803	119	922
WBR		0	0	0	0	0	0	0
North Leg								
	Approach	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
South Leg								
	Approach	9	0	9	0	0	702	702
	Departure	71	0	71	0	0	730	730
	Total	80	0	80	0	0	1,432	1,432
East Leg								
	Approach	784	52	836	751	803	475	1,278
	Departure	800	29	829	797	826	495	1,321
	Total	1,584	81	1,665	1,548	1,629	970	2,599
West Leg								
	Approach	840	29	869	797	826	509	1,335
	Departure	762	52	814	751	803	461	1,264
	Total	1,602	81	1,683	1,548	1,629	970	2,599
Total Approaches								
	Approach	1,633	81	1,714	1,548	1,629	1,686	3,315
	Departure	1,633	81	1,714	1,548	1,629	1,686	3,315
	Total	3,266	162	3,428	3,095	3,257	3,372	6,629

Table C-9 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

		Saturday Peak Hour						
		Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
7	**Driveway 3/Live Oak Avenue**							
NBL		0	0	0	0	0	143	143
NBT		0	0	0	0	0	0	0
NBR		0	0	0	0	0	159	159
SBL		0	0	0	0	0	0	0
SBT		0	0	0	0	0	0	0
SBR		0	0	0	0	0	0	0
EBL		0	0	0	0	0	0	0
EBT		801	29	830	789	818	336	1,154
EBR		0	0	0	0	0	160	160
WBL		5	0	5	0	0	156	156
WBT		786	52	838	753	805	331	1,136
WBR		0	0	0	0	0	0	0
North Leg								
	Approach	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
South Leg								
	Approach	0	0	0	0	0	302	302
	Departure	5	0	5	0	0	316	316
	Total	5	0	5	0	0	618	618
East Leg								
	Approach	791	52	843	753	805	487	1,292
	Departure	801	29	830	789	818	495	1,313
	Total	1,592	81	1,673	1,542	1,623	982	2,605
West Leg								
	Approach	801	29	830	789	818	496	1,314
	Departure	786	52	838	753	805	474	1,279
	Total	1,587	81	1,668	1,542	1,623	970	2,593
Total Approaches								
	Approach	1,592	81	1,673	1,542	1,623	1,285	2,908
	Departure	1,592	81	1,673	1,542	1,623	1,285	2,908
	Total	3,184	162	3,346	3,084	3,246	2,570	5,816

Table C-9 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

		Saturday Peak Hour						
		Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
8	**Interstate 605 Southbound On-Ramp/Live Oak Avenue**							
NBL		0	0	0	0	0	0	0
NBT		0	0	0	0	0	0	0
NBR		0	0	0	0	0	0	0
SBL		0	0	0	0	0	0	0
SBT		0	0	0	0	0	0	0
SBR		0	0	0	0	0	0	0
EBL		0	0	0	0	0	0	0
EBT		189	2	191	186	188	61	249
EBR		612	20	632	603	623	434	1,057
WBL		501	23	524	501	524	0	524
WBT		792	46	838	753	799	486	1,285
WBR		0	0	0	0	0	0	0
North Leg								
	Approach	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
South Leg								
	Approach	0	0	0	0	0	0	0
	Departure	1,113	43	1,156	1,104	1,147	434	1,581
	Total	1,113	43	1,156	1,104	1,147	434	1,581
East Leg								
	Approach	1,293	69	1,362	1,254	1,323	486	1,809
	Departure	189	2	191	186	188	61	249
	Total	1,482	71	1,553	1,440	1,511	547	2,058
West Leg								
	Approach	801	22	823	789	811	495	1,306
	Departure	792	46	838	753	799	486	1,285
	Total	1,593	68	1,661	1,542	1,610	981	2,591
Total Approaches								
	Approach	2,094	91	2,185	2,043	2,134	981	3,115
	Departure	2,094	91	2,185	2,043	2,134	981	3,115
	Total	4,188	182	4,370	4,087	4,269	1,962	6,231

Table C-9 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

		Saturday Peak Hour						
		Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
9	**Interstate 605 Northbound Ramps/Live Oak Avenue**							
NBL		0	0	0	0	0	0	0
NBT		0	0	0	0	0	0	0
NBR		359	25	384	359	384	0	384
SBL		0	0	0	0	0	0	0
SBT		0	0	0	0	0	0	0
SBR		490	26	516	476	502	420	922
EBL		0	0	0	0	0	0	0
EBT		210	2	212	207	209	61	270
EBR		0	0	0	0	0	0	0
WBL		0	0	0	0	0	0	0
WBT		677	49	726	652	701	66	767
WBR		0	0	0	0	0	0	0
North Leg								
	Approach	490	26	516	476	502	420	922
	Departure	0	0	0	0	0	0	0
	Total	490	26	516	476	502	420	922
South Leg								
	Approach	359	25	384	359	384	0	384
	Departure	0	0	0	0	0	0	0
	Total	359	25	384	359	384	0	384
East Leg								
	Approach	677	49	726	652	701	66	767
	Departure	569	27	596	565	592	61	653
	Total	1,246	76	1,322	1,218	1,294	127	1,421
West Leg								
	Approach	210	2	212	207	209	61	270
	Departure	1,167	75	1,242	1,129	1,204	486	1,690
	Total	1,377	77	1,454	1,335	1,412	547	1,959
Total Approaches								
	Approach	1,736	102	1,838	1,694	1,796	547	2,343
	Departure	1,736	102	1,838	1,694	1,796	547	2,343
	Total	3,472	204	3,676	3,388	3,592	1,094	4,686

Table C-9 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

		Saturday Peak Hour						
		Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
10	**Graham Road/Live Oak Avenue**							
NBL		39	0	39	39	39	0	39
NBT		0	0	0	0	0	0	0
NBR		4	0	4	4	4	0	4
SBL		0	0	0	0	0	0	0
SBT		0	0	0	0	0	0	0
SBR		0	0	0	0	0	0	0
EBL		2	0	2	2	2	0	2
EBT		535	33	568	532	565	61	626
EBR		27	0	27	27	27	0	27
WBL		16	0	16	16	16	0	16
WBT		645	49	694	620	669	66	735
WBR		0	0	0	0	0	0	0
North Leg								
	Approach	0	0	0	0	0	0	0
	Departure	2	0	2	2	2	0	2
	Total	2	0	2	2	2	0	2
South Leg								
	Approach	43	0	43	43	43	0	43
	Departure	43	0	43	43	43	0	43
	Total	86	0	86	86	86	0	86
East Leg								
	Approach	661	49	710	636	685	66	751
	Departure	539	33	572	536	569	61	630
	Total	1,200	82	1,282	1,172	1,254	127	1,381
West Leg								
	Approach	564	33	597	561	594	61	655
	Departure	684	49	733	659	708	66	774
	Total	1,248	82	1,330	1,220	1,302	127	1,429
Total Approaches								
	Approach	1,268	82	1,350	1,240	1,322	127	1,449
	Departure	1,268	82	1,350	1,240	1,322	127	1,449
	Total	2,536	164	2,700	2,481	2,645	254	2,899

Table C-9 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

		Saturday Peak Hour						
		Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
11	**Live Oak Lane/Live Oak Avenue**							
NBL		0	0	0	0	0	0	0
NBT		0	0	0	0	0	0	0
NBR		0	0	0	0	0	0	0
SBL		2	7	9	2	9	0	9
SBT		0	0	0	0	0	0	0
SBR		66	33	99	66	99	0	99
EBL		38	17	55	38	55	0	55
EBT		503	16	519	501	517	61	578
EBR		0	0	0	0	0	0	0
WBL		0	0	0	0	0	0	0
WBT		589	16	605	564	580	66	646
WBR		24	12	36	24	36	0	36
North Leg								
	Approach	68	40	108	68	108	0	108
	Departure	62	29	91	61	90	0	90
	Total	130	69	199	130	199	0	199
South Leg								
	Approach	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
East Leg								
	Approach	613	28	641	588	616	66	682
	Departure	505	23	528	503	526	61	587
	Total	1,118	51	1,169	1,091	1,142	127	1,269
West Leg								
	Approach	541	33	574	538	571	61	632
	Departure	655	49	704	630	679	66	745
	Total	1,196	82	1,278	1,169	1,251	127	1,378
Total Approaches								
	Approach	1,222	101	1,323	1,195	1,296	127	1,423
	Departure	1,222	101	1,323	1,195	1,296	127	1,423
	Total	2,444	202	2,646	2,389	2,591	254	2,845

Table C-9 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

		Saturday Peak Hour						
		Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
12	**Rivergrade Road/Live Oak Avenue**							
NBL		21	2	23	20	22	20	42
NBT		38	3	41	38	41	0	41
NBR		98	0	98	98	98	0	98
SBL		12	0	12	12	12	0	12
SBT		17	3	20	17	20	0	20
SBR		77	6	83	74	80	0	80
EBL		16	5	21	16	21	0	21
EBT		473	15	488	470	485	43	528
EBR		13	2	15	13	15	18	33
WBL		51	0	51	51	51	0	51
WBT		511	20	531	490	510	46	556
WBR		8	0	8	8	8	0	8
North Leg								
	Approach	106	9	115	103	112	0	112
	Departure	62	8	70	61	69	0	69
	Total	168	17	185	164	181	0	181
South Leg								
	Approach	157	5	162	156	161	20	181
	Departure	81	5	86	81	86	18	104
	Total	238	10	248	237	247	38	285
East Leg								
	Approach	570	20	590	549	569	46	615
	Departure	583	15	598	581	596	43	639
	Total	1,153	35	1,188	1,129	1,164	89	1,253
West Leg								
	Approach	502	22	524	500	522	61	583
	Departure	609	28	637	584	612	66	678
	Total	1,111	50	1,161	1,083	1,133	127	1,260
Total Approaches								
	Approach	1,335	56	1,391	1,307	1,363	127	1,490
	Departure	1,335	56	1,391	1,307	1,363	127	1,490
	Total	2,670	112	2,782	2,614	2,726	254	2,980

Table C-9 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

	Saturday Peak Hour						
	Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
13 Commerce Drive/Live Oak Avenue							
NBL	4	0	4	4	4	0	4
NBT	0	0	0	0	0	0	0
NBR	9	0	9	9	9	0	9
SBL	0	0	0	0	0	0	0
SBT	0	0	0	0	0	0	0
SBR	0	0	0	0	0	0	0
EBL	2	0	2	2	2	0	2
EBT	594	15	609	591	606	43	649
EBR	6	0	6	6	6	0	6
WBL	14	0	14	14	14	0	14
WBT	537	20	557	516	536	46	582
WBR	0	0	0	0	0	0	0
North Leg							
Approach	0	0	0	0	0	0	0
Departure	2	0	2	2	2	0	2
Total	2	0	2	2	2	0	2
South Leg							
Approach	13	0	13	13	13	0	13
Departure	20	0	20	21	21	0	21
Total	33	0	33	33	33	0	33
East Leg							
Approach	551	20	571	530	550	46	596
Departure	603	15	618	600	615	43	658
Total	1,154	35	1,189	1,130	1,165	89	1,254
West Leg							
Approach	602	15	617	600	615	43	658
Departure	541	20	561	521	541	46	587
Total	1,143	35	1,178	1,121	1,156	89	1,245
Total Approaches							
Approach	1,166	35	1,201	1,143	1,178	89	1,267
Departure	1,166	35	1,201	1,143	1,178	89	1,267
Total	2,332	70	2,402	2,287	2,357	178	2,535

Table C-9 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

		Saturday Peak Hour						
		Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
14	**Stewart Avenue/Live Oak Avenue**							
NBL		63	0	63	60	60	20	80
NBT		25	11	36	25	36	0	36
NBR		29	0	29	29	29	0	29
SBL		2	0	2	2	2	0	2
SBT		48	12	60	48	60	0	60
SBR		3	0	3	3	3	0	3
EBL		6	0	6	6	6	0	6
EBT		563	15	578	560	575	24	599
EBR		46	0	46	46	46	18	64
WBL		36	0	36	36	36	0	36
WBT		501	20	521	483	503	27	530
WBR		5	0	5	5	5	0	5
North Leg								
	Approach	53	12	65	53	65	0	65
	Departure	36	11	47	37	48	0	48
	Total	89	23	112	90	113	0	113
South Leg								
	Approach	117	11	128	114	125	20	145
	Departure	130	12	142	130	142	18	160
	Total	247	23	270	244	267	38	305
East Leg								
	Approach	542	20	562	524	544	27	571
	Departure	594	15	609	591	606	24	630
	Total	1,136	35	1,171	1,116	1,151	51	1,202
West Leg								
	Approach	615	15	630	613	628	42	670
	Departure	567	20	587	547	567	47	614
	Total	1,182	35	1,217	1,160	1,195	89	1,284
Total Approaches								
	Approach	1,327	58	1,385	1,304	1,362	89	1,451
	Departure	1,327	58	1,385	1,304	1,362	89	1,451
	Total	2,654	116	2,770	2,609	2,725	178	2,903

Table C-9 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

		Saturday Peak Hour						
		Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
15	**Baldwin Park/Arrow Highway**							
NBL		71	5	76	69	74	7	81
NBT		0	0	0	0	0	0	0
NBR		151	6	157	151	157	0	157
SBL		0	0	0	0	0	0	0
SBT		0	6	6	0	6	0	6
SBR		0	0	0	0	0	0	0
EBL		0	0	0	0	0	0	0
EBT		511	11	522	509	520	18	538
EBR		81	4	85	81	85	6	91
WBL		188	0	188	188	188	0	188
WBT		499	15	514	483	498	20	518
WBR		0	0	0	0	0	0	0
North Leg								
	Approach	0	6	6	0	6	0	6
	Departure	0	0	0	0	0	0	0
	Total	0	6	6	0	6	0	6
South Leg								
	Approach	222	11	233	220	231	7	238
	Departure	269	10	279	269	279	6	285
	Total	491	21	512	489	510	13	523
East Leg								
	Approach	687	15	702	671	686	20	706
	Departure	662	17	679	660	677	18	695
	Total	1,349	32	1,381	1,331	1,363	38	1,401
West Leg								
	Approach	592	15	607	589	604	24	628
	Departure	570	20	590	552	572	27	599
	Total	1,162	35	1,197	1,142	1,177	51	1,228
Total Approaches								
	Approach	1,501	47	1,548	1,481	1,528	51	1,579
	Departure	1,501	47	1,548	1,481	1,528	51	1,579
	Total	3,002	94	3,096	2,962	3,056	102	3,158

Table C-9 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

		Saturday Peak Hour						
		Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
16	**Arrow Highway/Live Oak Avenue**							
NBL		0	0	0	0	0	0	0
NBT		0	0	0	0	0	0	0
NBR		0	0	0	0	0	0	0
SBL		320	63	383	320	383	0	383
SBT		0	0	0	0	0	0	0
SBR		71	0	71	70	70	0	70
EBL		73	6	79	73	79	0	79
EBT		591	15	606	589	604	18	622
EBR		0	0	0	0	0	0	0
WBL		0	0	0	0	0	0	0
WBT		618	18	636	603	621	20	641
WBR		416	65	481	416	481	0	481
North Leg								
	Approach	391	63	454	390	453	0	453
	Departure	489	71	560	489	560	0	560
	Total	880	134	1,014	879	1,013	0	1,013
South Leg								
	Approach	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
East Leg								
	Approach	1,034	83	1,117	1,019	1,102	20	1,122
	Departure	911	78	989	908	986	18	1,004
	Total	1,945	161	2,106	1,927	2,088	38	2,126
West Leg								
	Approach	664	21	685	662	683	18	701
	Departure	689	18	707	673	691	20	711
	Total	1,353	39	1,392	1,335	1,374	38	1,412
Total Approaches								
	Approach	2,089	167	2,256	2,071	2,238	38	2,276
	Departure	2,089	167	2,256	2,071	2,238	38	2,276
	Total	4,178	334	4,512	4,141	4,475	76	4,551

Table C-9 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

		Saturday Peak Hour						
		Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
17	**Maine Avenue/Arrow Highway**							
NBL		220	11	231	217	228	7	235
NBT		0	0	0	0	0	0	0
NBR		112	0	112	112	112	0	112
SBL		0	0	0	0	0	0	0
SBT		0	0	0	0	0	0	0
SBR		0	0	0	0	0	0	0
EBL		0	0	0	0	0	0	0
EBT		745	67	812	743	810	12	822
EBR		177	12	189	177	189	6	195
WBL		104	0	104	104	104	0	104
WBT		819	70	889	807	877	13	890
WBR		0	0	0	0	0	0	0
North Leg								
	Approach	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
South Leg								
	Approach	332	11	343	330	341	7	348
	Departure	281	12	293	280	292	6	298
	Total	613	23	636	610	633	13	646
East Leg								
	Approach	923	70	993	911	981	13	994
	Departure	857	67	924	856	923	12	935
	Total	1,780	137	1,917	1,766	1,903	25	1,928
West Leg								
	Approach	922	79	1,001	920	999	18	1,017
	Departure	1,039	81	1,120	1,024	1,105	20	1,125
	Total	1,961	160	2,121	1,944	2,104	38	2,142
Total Approaches								
	Approach	2,177	160	2,337	2,160	2,320	38	2,358
	Departure	2,177	160	2,337	2,160	2,320	38	2,358
	Total	4,354	320	4,674	4,321	4,641	76	4,717

Table C-9 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

		Saturday Peak Hour						
		Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
18	**Avenida Barbosa/Buena Vista Street**							
NBL		81	2	83	81	83	0	83
NBT		90	1	91	90	91	0	91
NBR		123	65	188	123	188	18	206
SBL		0	0	0	0	0	0	0
SBT		67	1	68	67	68	0	68
SBR		1	0	1	1	1	0	1
EBL		2	0	2	2	2	0	2
EBT		13	0	13	13	13	0	13
EBR		78	2	80	78	80	0	80
WBL		124	49	173	122	171	20	191
WBT		28	0	28	28	28	0	28
WBR		15	0	15	15	15	0	15
North Leg								
	Approach	68	1	69	68	69	0	69
	Departure	107	1	108	107	108	0	108
	Total	175	2	177	175	177	0	177
South Leg								
	Approach	294	68	362	294	362	18	380
	Departure	269	52	321	266	318	20	338
	Total	563	120	683	560	680	38	718
East Leg								
	Approach	167	49	216	165	214	20	234
	Departure	136	65	201	136	201	18	219
	Total	303	114	417	301	415	38	453
West Leg								
	Approach	93	2	95	93	95	0	95
	Departure	110	2	112	110	112	0	112
	Total	203	4	207	203	207	0	207
Total Approaches								
	Approach	622	120	742	620	740	38	778
	Departure	622	120	742	620	740	38	778
	Total	1,244	240	1,484	1,239	1,479	76	1,555

Table C-9 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

		Saturday Peak Hour						
		Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
19	**Avenida Barbosa/Arrow Highway**							
NBL		0	0	0	0	0	0	0
NBT		0	0	0	0	0	0	0
NBR		0	0	0	0	0	0	0
SBL		130	23	153	130	153	0	153
SBT		0	0	0	0	0	0	0
SBR		146	29	175	143	172	20	192
EBL		156	39	195	156	195	18	213
EBT		279	31	310	277	308	381	689
EBR		0	0	0	0	0	0	0
WBL		1	0	1	1	1	0	1
WBT		449	14	463	442	456	435	891
WBR		162	29	191	162	191	0	191
North Leg								
	Approach	276	52	328	273	325	20	345
	Departure	318	68	386	318	386	18	404
	Total	594	120	714	590	710	38	748
South Leg								
	Approach	0	0	0	0	0	0	0
	Departure	1	0	1	1	1	0	1
	Total	1	0	1	1	1	0	1
East Leg								
	Approach	612	43	655	605	648	435	1,083
	Departure	409	54	463	406	460	381	841
	Total	1,021	97	1,118	1,011	1,108	816	1,924
West Leg								
	Approach	435	70	505	432	502	399	901
	Departure	595	43	638	585	628	455	1,083
	Total	1,030	113	1,143	1,017	1,130	854	1,984
Total Approaches								
	Approach	1,323	165	1,488	1,310	1,475	854	2,329
	Departure	1,323	165	1,488	1,310	1,475	854	2,329
	Total	2,646	330	2,976	2,620	2,950	1,708	4,658

Table C-9 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

		Saturday Peak Hour						
		Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
20	**Interstate 605 Southbound Off-Ramp/Arrow Highway**							
NBL		0	0	0	0	0	0	0
NBT		0	0	0	0	0	0	0
NBR		0	0	0	0	0	0	0
SBL		235	42	277	235	277	0	277
SBT		0	0	0	0	0	0	0
SBR		314	0	314	314	314	435	749
EBL		0	0	0	0	0	0	0
EBT		453	54	507	451	505	381	886
EBR		0	0	0	0	0	0	0
WBL		0	0	0	0	0	0	0
WBT		287	43	330	280	323	0	323
WBR		0	0	0	0	0	0	0
North Leg								
	Approach	549	42	591	550	592	435	1,027
	Departure	0	0	0	0	0	0	0
	Total	549	42	591	550	592	435	1,027
South Leg								
	Approach	0	0	0	0	0	0	0
	Departure	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
East Leg								
	Approach	287	43	330	280	323	0	323
	Departure	688	96	784	686	782	381	1,163
	Total	975	139	1,114	966	1,105	381	1,486
West Leg								
	Approach	453	54	507	451	505	381	886
	Departure	601	43	644	594	637	435	1,072
	Total	1,054	97	1,151	1,045	1,142	816	1,958
Total Approaches								
	Approach	1,289	139	1,428	1,280	1,419	816	2,235
	Departure	1,289	139	1,428	1,280	1,419	816	2,235
	Total	2,578	278	2,856	2,560	2,838	1,632	4,470

Table C-9 - Future Baseline Plus Cumulative Projects Peak Hour Volume Summary

		Saturday Peak Hour						
		Opening Year Background	Cumulative Trips	Cumulative No Project	OY Background Adj.	Cumulative No Pr. Adj.	Project Trips	Cumulative With Project
21	**Interstate 605 Northbound Ramps/Arrow Highway**							
NBL		0	0	0	0	0	0	0
NBT		0	0	0	0	0	0	0
NBR		19	4	23	19	23	0	23
SBL		0	0	0	0	0	0	0
SBT		0	0	0	0	0	0	0
SBR		0	0	0	0	0	0	0
EBL		0	0	0	0	0	0	0
EBT		467	63	530	465	528	0	528
EBR		190	35	225	190	225	381	606
WBL		0	0	0	0	0	0	0
WBT		281	43	324	273	316	0	316
WBR		246	27	273	246	273	0	273
North Leg								
	Approach	0	0	0	0	0	0	0
	Departure	246	27	273	246	273	0	273
	Total	246	27	273	246	273	0	273
South Leg								
	Approach	19	4	23	19	23	0	23
	Departure	190	35	225	190	225	381	606
	Total	209	39	248	210	249	381	630
East Leg								
	Approach	527	70	597	519	589	0	589
	Departure	486	67	553	484	551	0	551
	Total	1,013	137	1,150	1,004	1,141	0	1,141
West Leg								
	Approach	657	98	755	655	753	381	1,134
	Departure	281	43	324	273	316	0	316
	Total	938	141	1,079	928	1,069	381	1,450
Total Approaches								
	Approach	1,203	172	1,375	1,194	1,366	381	1,747
	Departure	1,203	172	1,375	1,194	1,366	381	1,747
	Total	2,406	344	2,750	2,387	2,731	762	3,493

Table C-10 - Existing Freeway Segment and Ramp Junction Volumes

Northbound								
	AM Peak Hour				PM Peak Hour			
Interstate 605 Northbound	Without Project PCE Volume	Volume Adjustment	Project Trips	WithProject PCE Volume	Without Project PCE Volume	Volume Adjustment	Project Trips	WithProject PCE Volume
North of Arrow Highway	4,902	0	47	4,949	4,298	0	225	4,523
Arrow Highway Slip On-Ramp	382	0	0	382	232	0	0	232
Arrow Highway Loop On-Ramp to Arrow Highway Slip On-Ramp	4,520	0	47	4,567	4,066	0	225	4,291
Arrow Highway Loop On-Ramp	312	0	47	359	94	0	225	319
Live Oak Avenue Off-Ramp to Arrow Highway Loop On-Ramp	4,208	0	0	4,208	3,972	0	0	3,972
Live Oak Avenue Off-Ramp	750	-6	137	881	1,302	-38	199	1,463
South of Live Oak Avenue	4,958	-6	137	5,089	5,274	-38	199	5,435

Southbound								
	AM Peak Hour				PM Peak Hour			
Interstate 605 Southbound	Without Project PCE Volume	Project Trips Adjustment	Project Trips	WithProject PCE Volume	Without Project PCE Volume	Project Trips Adjustment	Project Trips	WithProject PCE Volume
North of Arrow Highway	6,341	0	127	6,468	5,041	0	203	5,244
Arrow Highway Slip Off-Ramp	896	0	127	1,023	584	0	203	787
Arrow Highway Slip Off-Ramp to Live Oak Avenue Slip On-Ramp	5,445	0	0	5,445	4,457	0	0	4,457
Live Oak Canyon On-Ramp	1,209	-3	51	1,257	1,551	-11	252	1,792
South of Arrow Highway	6,654	-3	51	6,702	6,008	-11	252	6,249

Table C-11 - Existing (Saturday) Freeway Segment and Ramp Junction Volumes

Northbound				
	Saturday Peak Hour			
Interstate 605 Northbound	Without Project PCE Volume	Volume Adjustment	Project Trips	WithProject PCE Volume
North of Arrow Highway	4,814	0	381	5,195
Arrow Highway Slip On-Ramp	228	0	0	228
Arrow Highway Loop On-Ramp to Arrow Highway Slip On-Ramp	4,586	0	381	4,967
Arrow Highway Loop On-Ramp	176	0	381	557
Live Oak Avenue Off-Ramp to Arrow Highway Loop On-Ramp	4,410	0	0	4,410
Live Oak Avenue Off-Ramp	786	-13	420	1,193
South of Live Oak Avenue	5,196	-13	420	5,603

Southbound				
	Saturday Peak Hour			
Interstate 605 Southbound	Without Project PCE Volume	Project Trips Adjustment	Project Trips	WithProject PCE Volume
North of Arrow Highway	5,152	0	435	5,587
Arrow Highway Slip Off-Ramp	509	0	435	944
Arrow Highway Slip Off-Ramp to Live Oak Avenue Slip On-Ramp	4,643	0	0	4,643
Live Oak Canyon On-Ramp	1,031	-8	434	1,457
South of Arrow Highway	5,674	-8	434	6,100

Table C-12 - Future Baseline Segment and Ramp Junction Volumes

Northbound								
	AM Peak Hour				PM Peak Hour			
Interstate 605 Northbound	**Without Project PCE Volume**	**Volume Adjustment**	**Project Trips**	**WithProject PCE Volume**	**Without Project PCE Volume**	**Volume Adjustment**	**Project Trips**	**WithProject PCE Volume**
North of Arrow Highway	4,989	0	47	5,036	4,317	0	225	4,542
Arrow Highway Slip On-Ramp	413	0	0	413	251	0	0	251
Arrow Highway Loop On-Ramp to Arrow Highway Slip On-Ramp	4,576	0	47	4,623	4,066	0	225	4,291
Arrow Highway Loop On-Ramp	337	0	47	384	102	0	225	327
Live Oak Avenue Off-Ramp to Arrow Highway Loop On-Ramp	4,239	0	0	4,239	3,964	0	0	3,964
Live Oak Avenue Off-Ramp	810	-6	137	941	1,406	-38	199	1,567
South of Live Oak Avenue	5,049	-6	137	5,180	5,370	-38	199	5,531

Southbound								
	AM Peak Hour				PM Peak Hour			
Interstate 605 Southbound	**Without Project PCE Volume**	**Project Trips Adjustment**	**Project Trips**	**WithProject PCE Volume**	**Without Project PCE Volume**	**Project Trips Adjustment**	**Project Trips**	**WithProject PCE Volume**
North of Arrow Highway	6,436	0	127	6,563	5,072	0	203	5,275
Arrow Highway Slip Off-Ramp	967	0	127	1,094	630	0	203	833
Arrow Highway Slip Off-Ramp to Live Oak Avenue Slip On-Ramp	5,469	0	0	5,469	4,442	0	0	4,442
Live Oak Canyon On-Ramp	1,306	-3	51	1,357	1,675	-11	252	1,927
South of Arrow Highway	6,775	-3	51	6,826	6,117	-11	252	6,369

Table C -13 - Future Baseline (Saturday) Segment and Ramp Junction Volumes

Northbound				
	Saturday Peak Hour			
Interstate 605 Northbound	Without Project PCE Volume	Volume Adjustment	Project Trips	WithProject PCE Volume
North of Arrow Highway	4,879	0	381	5,260
Arrow Highway Slip On-Ramp	246	0	0	246
Arrow Highway Loop On-Ramp to Arrow Highway Slip On-Ramp	4,633	0	381	5,014
Arrow Highway Loop On-Ramp	190	0	381	571
Live Oak Avenue Off-Ramp to Arrow Highway Loop On-Ramp	4,443	0	0	4,443
Live Oak Avenue Off-Ramp	849	-13	420	1,256
South of Live Oak Avenue	5,292	-13	420	5,699

Southbound				
	Saturday Peak Hour			
Interstate 605 Southbound	Without Project PCE Volume	Project Trips Adjustment	Project Trips	WithProject PCE Volume
North of Arrow Highway	5,210	0	435	5,645
Arrow Highway Slip Off-Ramp	549	0	435	984
Arrow Highway Slip Off-Ramp to Live Oak Avenue Slip On-Ramp	4,661	0	0	4,661
Live Oak Canyon On-Ramp	1,113	-8	434	1,539
South of Arrow Highway	5,774	-8	434	6,199

Table C-14 - Future Baseline Plus Cumulative Projects Segment and Ramp Junction Volumes

Northbound								
	AM Peak Hour				PM Peak Hour			
Interstate 605 Northbound	**Without Project PCE Volume**	**Volume Adjustment**	**Project Trips**	**WithProject PCE Volume**	**Without Project PCE Volume**	**Volume Adjustment**	**Project Trips**	**WithProject PCE Volume**
North of Arrow Highway	4979	0	47	5026	4332	0	225	4557
Arrow Highway Slip On-Ramp	579	0	0	579	417	0	0	417
Arrow Highway Loop On-Ramp to Arrow Highway Slip On-Ramp	4400	0	47	4447	3915	0	225	4140
Arrow Highway Loop On-Ramp	348	0	47	395	128	0	225	353
Live Oak Avenue Off-Ramp to Arrow Highway Loop On-Ramp	4052	0	0	4052	3787	0	0	3787
Live Oak Avenue Off-Ramp	997	-6	137	1128	1583	-38	199	1744
South of Live Oak Avenue	5049	-6	137	5180	5370	-38	199	5531

Southbound								
	AM Peak Hour				PM Peak Hour			
Interstate 605 Southbound	**Without Project PCE Volume**	**Project Trips Adjustment**	**Project Trips**	**WithProject PCE Volume**	**Without Project PCE Volume**	**Project Trips Adjustment**	**Project Trips**	**WithProject PCE Volume**
North of Arrow Highway	6463	0	127	6590	5065	0	203	5268
Arrow Highway Slip Off-Ramp	1146	0	127	1273	809	0	203	1012
Arrow Highway Slip Off-Ramp to Live Oak Avenue Slip On-Ramp	5317	0	0	5317	4256	0	0	4256
Live Oak Canyon On-Ramp	1458	-3	51	1506	1861	-11	252	2102
South of Arrow Highway	6775	-3	51	6823	6117	-11	252	6358

Table C-15 - Future Baseline (Saturday) Plus Cumulative Projects Segment and Ramp Junction Volumes

Northbound				
	Saturday Peak Hour			
Interstate 605 Northbound	Without Project PCE Volume	Volume Adjustment	Project Trips	WithProject PCE Volume
North of Arrow Highway	4,156	0	381	4,537
Arrow Highway Slip On-Ramp	273	0	0	273
Arrow Highway Loop On-Ramp to Arrow Highway Slip On-Ramp	3,883	0	381	4,264
Arrow Highway Loop On-Ramp	225	0	381	606
Live Oak Avenue Off-Ramp to Arrow Highway Loop On-Ramp	3,658	0	0	3,658
Live Oak Avenue Off-Ramp	900	-13	420	1,307
South of Live Oak Avenue	4,558	-13	420	4,965

Southbound				
	Saturday Peak Hour			
Interstate 605 Southbound	Without Project PCE Volume	Project Trips Adjustment	Project Trips	WithProject PCE Volume
North of Arrow Highway	4,807	0	435	5,242
Arrow Highway Slip Off-Ramp	591	0	435	1,026
Arrow Highway Slip Off-Ramp to Live Oak Avenue Slip On-Ramp	4,216	0	0	4,216
Live Oak Canyon On-Ramp	1,156	-8	434	1,582
South of Arrow Highway	5,372	-8	434	5,797

APPENDIX D:

LOS CALCULATION WORKSHEETS

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Scenario Report

Scenario:	Exist NP AM
Command:	Default Command
Volume:	Exist NP AM
Geometry:	Exist
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Peck Rd-Myrtle Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.786
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	64	Level Of Service:	C

Street Name:	Peck Rd-Myrtle						Live Oak Ave					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	249	934	266	38	496	151	67	534	207	156	1133	54
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:	249	934	266	38	496	151	67	534	207	156	1133	54
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:	249	934	266	38	496	151	67	534	207	156	1133	54
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:	249	934	266	38	496	151	67	534	207	156	1133	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	249	934	266	38	496	151	67	534	207	156	1133	54
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:	249	934	266	38	496	151	67	534	207	156	1133	54
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.34	0.66	1.00	2.30	0.70	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	3736	1064	1600	3680	1120	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.16	0.25	0.25	0.02	0.13	0.13	0.04	0.17	0.13	0.10	0.35	0.03
Crit Moves:	****				****		****				****	

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Myrtle Ave/Longden Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.815
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	75	Level Of Service:	D

Street Name:	Myrtle Ave						Longden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	1 0	1	0 1	0 1	0
Volume Module:												
Base Vol:	163	873	19	161	598	48	68	247	74	33	567	410
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:	163	873	19	161	598	48	68	247	74	33	567	410
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:	163	873	19	161	598	48	68	247	74	33	567	410
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:	163	873	19	161	598	48	68	247	74	33	567	410
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	163	873	19	161	598	48	68	247	74	33	567	410
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:	163	873	19	161	598	48	68	247	74	33	567	410
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.00	1.00	1.00	2.00	1.00	0.43	1.57	1.00	0.07	1.12	0.81
Final Sat.:	1600	3200	1600	1600	3200	1600	691	2509	1600	105	1796	1299
Capacity Analysis Module:												
Vol/Sat:	0.10	0.27	0.01	0.10	0.19	0.03	0.04	0.10	0.05	0.02	0.32	0.32
Crit Moves:		****		****			****				****	

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Arrow Hwy/Live Oak Ave

Cycle (sec):	110	Critical Vol./Cap.(X):	0.824
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	75	Level Of Service:	D

Street Name:	Arrow Hwy							Live Oak Ave					
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:	Ignore			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	2	0	2	2	0	2	0	0	0	0	0	0	0	2	0	0	0	1
Volume Module:													
Base Vol:	0	490	732	120	1331	0	0	0	0	912	0	197	
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	490	732	120	1331	0	0	0	0	912	0	197	
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	490	732	120	1331	0	0	0	0	912	0	197	
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	490	0	120	1331	0	0	0	0	912	0	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	490	0	120	1331	0	0	0	0	912	0	0	
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	490	0	120	1331	0	0	0	0	912	0	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	
Lanes:	0.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00	
Final Sat.:	0	3200	3200	2880	3200	0	0	0	0	2880	0	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.15	0.00	0.04	0.42	0.00	0.00	0.00	0.00	0.32	0.00	0.00	
Crit Moves:	****				****					****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Longden Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.675
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	47	Level Of Service:	B

Street Name:	Longden Ave							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	1	1	0	0	1	1	0	2	1
Volume Module:													
Base Vol:	9	9	9	418	1	12	36	805	1	9	1295	937	
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:	9	9	9	418	1	12	36	805	1	9	1295	937	
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:	9	9	9	418	1	12	36	805	1	9	1295	937	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	9	9	9	418	1	12	36	805	1	9	1295	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	9	9	9	418	1	12	36	805	1	9	1295	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	9	9	9	418	1	12	36	805	1	9	1295	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.34	0.33	0.33	1.99	0.01	1.00	1.00	2.99	0.01	1.00	2.00	2.00	
Final Sat.:	533	533	533	3192	8	1600	1600	4794	6	1600	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.02	0.02	0.02	0.13	0.13	0.01	0.02	0.17	0.17	0.01	0.40	0.00	
Crit Moves:		****			****		****				****		

Irwindale Regional Shopping Center
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: C[19.5]

Street Name:	Dwy 1						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 2 1 0			1 0 2 0 0		
Volume Module:												
Base Vol:	22	0	82	0	0	0	0	815	45	28	1098	0
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:	22	0	82	0	0	0	0	815	45	28	1098	0
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:	22	0	82	0	0	0	0	815	45	28	1098	0
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:	22	0	82	0	0	0	0	815	45	28	1098	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	22	0	82	0	0	0	0	815	45	28	1098	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1443	1992	294	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	860	xxxx	xxxxx
Potent Cap.:	125	61	708	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	790	xxxx	xxxxx
Move Cap.:	122	59	708	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	790	xxxx	xxxxx
Volume/Cap:	0.18	0.00	0.12	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.04	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	351	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	1.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	19.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	C	*	*	*	*	*	*	*	*	*	*
ApproachDel:	19.5			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	C			*			*			*		

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Speedway Dr-Dwy 2/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.454
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	31	Level Of Service:	A

Street Name:	Speedway Dr-Dwy 2									Live Oak Ave								
Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Y+R:	0.0	0.0	0.0			0.0	0.0	0.0			0.0	0.0	0.0			0.0	0.0	0.0		
Lanes:	2	0	0	0	1	0	0	0	0	0	0	0	2	1	0	1	0	2	0	0
Volume Module:																				
Base Vol:	0	0	1			0	0	0			0	910	2			20	1131	0		
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	1			0	0	0			0	910	2			20	1131	0		
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	1			0	0	0			0	910	2			20	1131	0		
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	1			0	0	0			0	910	2			20	1131	0		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	0	0	1			0	0	0			0	910	2			20	1131	0		
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	1			0	0	0			0	910	2			20	1131	0		
Saturation Flow Module:																				
Sat/Lane:	1600	1600	1600			1600	1600	1600			1600	1600	1600			1600	1600	1600		
Adjustment:	0.90	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Lanes:	2.00	0.00	1.00			0.00	0.00	0.00			0.00	2.99	0.01			1.00	2.00	0.00		
Final Sat.:	2880	0	1600			0	0	0			0	4789	11			1600	3200	0		
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00			0.00	0.00	0.00			0.00	0.19	0.19			0.01	0.35	0.00		
Crit Moves:			****								****						****			

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: A[9.8]

Street Name:	Dwy 3							Live Oak Ave						
Approach:	North Bound				South Bound			East Bound				West Bound		
Movement:	L	- T	- R		L	- T	- R	L	- T	- R		L	- T	- R
Control:	Stop Sign				Stop Sign			Uncontrolled				Uncontrolled		
Rights:	Include				Include			Include				Include		
Lanes:	0 0 0 0 1				0 0 0 0 0			0 0 2 1 0				1 0 2 0 0		
Volume Module:														
Base Vol:	0	0	0	0	0	0	0	909	0	12	1143	0		
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	0	0	0	0	909	0	12	1143	0		
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	0	0	0	0	909	0	12	1143	0		
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	0	0	0	0	909	0	12	1143	0		
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0		
FinalVolume:	0	0	0	0	0	0	0	909	0	12	1143	0		
Critical Gap Module:														
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx		
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx		
Capacity Module:														
Cnflict Vol:	xxxx	xxxx	303	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	909	xxxx	xxxxx		
Potent Cap.:	xxxx	xxxx	699	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	757	xxxx	xxxxx		
Move Cap.:	xxxx	xxxx	699	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	757	xxxx	xxxxx		
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	xxxx		
Level Of Service Module:														
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx		
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.8	xxxx	xxxxx		
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*		
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*		
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx				
ApproachLOS:	*			*			*			*				

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Graham Rd/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.632
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	43	Level Of Service:	B

Street Name:	Graham Rd							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	0	0	0	0	0	0	2	0	1
Volume Module:													
Base Vol:	148	0	56	0	0	0	0	674	103	46	1294	0	
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:	148	0	56	0	0	0	0	674	103	46	1294	0	
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:	148	0	56	0	0	0	0	674	103	46	1294	0	
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:	148	0	56	0	0	0	0	674	103	46	1294	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	148	0	56	0	0	0	0	674	103	46	1294	0	
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:	148	0	56	0	0	0	0	674	103	46	1294	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.73	0.00	0.27	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	1161	0	439	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.13	0.00	0.13	0.00	0.00	0.00	0.00	0.21	0.06	0.03	0.40	0.00	
Crit Moves:	****						****				****		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Live Oak Ln/Live Oak Ave

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: D[28.9]

Street Name:	Live Oak Ln									Live Oak Ave								
Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0		13	0		128			83	649		0		0	1230			53
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		13	0		128			83	649		0		0	1230			53
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		13	0		128			83	649		0		0	1230			53
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		13	0		128			83	649		0		0	1230			53
Reduct Vol:	0	0	0		0	0		0			0	0		0		0	0			0
FinalVolume:	0	0	0		13	0		128			83	649		0		0	1230			53
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx		6.8	6.5		6.9			4.1	xxxx	xxxxx	xxxxx		xxxx	xxxxx			
FollowUpTim:	xxxxx	xxxx	xxxxx		3.5	4.0		3.3			2.2	xxxx	xxxxx	xxxxx		xxxx	xxxxx			
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx		1747	2072		642			1283	xxxx	xxxxx	xxxx		xxxx	xxxxx			
Potent Cap.:	xxxx	xxxx	xxxxx		79	55		422			548	xxxx	xxxxx	xxxx		xxxx	xxxxx			
Move Cap.:	xxxx	xxxx	xxxxx		70	46		422			548	xxxx	xxxxx	xxxx		xxxx	xxxxx			
Volume/Cap:	xxxx	xxxx	xxxx		0.19	0.00		0.30			0.15	xxxx	xxxx	xxxx		xxxx	xxxx			
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx		xxxx	xxxx		xxxxx			0.5	xxxx	xxxxx	xxxx		xxxx	xxxxx			
Control Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx		xxxxx			12.7	xxxx	xxxxx	xxxxx		xxxx	xxxxx			
LOS by Move:	*	*	*		*	*		*			B	*	*	*		*	*			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	288		xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	2.5		xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	28.9		xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*	*	*		*	D		*			*	*	*			*	*	*		
ApproachDel:	xxxxxx					28.9					xxxxxx					xxxxxx				
ApproachLOS:	*					D					*					*				

Note: Queue reported is the number of cars per lane.

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Rivergrade Rd/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.570
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	39	Level Of Service:	A

Street Name:	Rivergrade Rd							Live Oak Ave					
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:	Ovl			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	
Volume Module:													
Base Vol:	40	49	104	29	74	70	89	481	84	251	1158	13	
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:	40	49	104	29	74	70	89	481	84	251	1158	13	
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:	40	49	104	29	74	70	89	481	84	251	1158	13	
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:	40	49	104	29	74	70	89	481	84	251	1158	13	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	40	49	104	29	74	70	89	481	84	251	1158	13	
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:	40	49	104	29	74	70	89	481	84	251	1158	13	
OvlAdjVol:			0										
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	
Final Sat.:	1600	1600	1600	1600	3200	1600	1600	3200	1600	1600	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.03	0.03	0.07	0.02	0.02	0.04	0.06	0.15	0.05	0.16	0.36	0.01	
OvlAdjV/S:			0.00										
Crit Moves:	****					****	****				****		

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #14 Stewart Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.815
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	70	Level Of Service:	D

Street Name:	Stewart Ave						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	1! 0	0	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	210	118	32	13	26	76	19	426	26	17	1503	35
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:	210	118	32	13	26	76	19	426	26	17	1503	35
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:	210	118	32	13	26	76	19	426	26	17	1503	35
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:	210	118	32	13	26	76	19	426	26	17	1503	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	210	118	32	13	26	76	19	426	26	17	1503	35
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:	210	118	32	13	26	76	19	426	26	17	1503	35
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	0.58	0.33	0.09	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	933	524	142	1600	1600	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.13	0.23	0.23	0.01	0.02	0.05	0.01	0.13	0.02	0.01	0.47	0.02
Crit Moves:		****		****			****				****	

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #15 Baldwin Park/Arrow Hwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.686
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	B

Street Name:	Baldwin Park							Arrow Hwy					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	2 0	0	
Volume Module:													
Base Vol:	296	0	290	0	0	0	0	432	63	131	1295	0	
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:	296	0	290	0	0	0	0	432	63	131	1295	0	
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:	296	0	290	0	0	0	0	432	63	131	1295	0	
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:	296	0	290	0	0	0	0	432	63	131	1295	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	296	0	290	0	0	0	0	432	63	131	1295	0	
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:	296	0	290	0	0	0	0	432	63	131	1295	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.10	0.00	0.18	0.00	0.00	0.00	0.00	0.14	0.04	0.08	0.40	0.00	
Crit Moves:			****				****				****		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #16 Arrow Highway/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.713
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	52	Level Of Service:	C

Street Name:	Arrow Highway							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Permitted			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0 0	0	2 0	0 0	1	1 0	2 0	0	0 0	2 0	2	
Volume Module:													
Base Vol:	0	0	0	269	0	43	138	585	0	0	1386	1548	
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	269	0	43	138	585	0	0	1386	1548	
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	269	0	43	138	585	0	0	1386	1548	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	269	0	43	138	585	0	0	1386	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	269	0	43	138	585	0	0	1386	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	269	0	43	138	585	0	0	1386	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	2.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.09	0.00	0.03	0.09	0.18	0.00	0.00	0.43	0.00	
Crit Moves:				****			****				****		

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Maine Ave/Arrow Hwy

Cycle (sec):	110	Critical Vol./Cap.(X):	0.789
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	66	Level Of Service:	C

Street Name:	Maine Ave							Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	3 0	0	
Volume Module:													
Base Vol:	612	0	104	0	0	0	0	741	97	34	2332	0	
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:	612	0	104	0	0	0	0	741	97	34	2332	0	
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:	612	0	104	0	0	0	0	741	97	34	2332	0	
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:	612	0	104	0	0	0	0	741	97	34	2332	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	612	0	104	0	0	0	0	741	97	34	2332	0	
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:	612	0	104	0	0	0	0	741	97	34	2332	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	3.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	4800	0	
Capacity Analysis Module:													
Vol/Sat:	0.21	0.00	0.07	0.00	0.00	0.00	0.00	0.23	0.06	0.02	0.49	0.00	
Crit Moves:	****						****				****		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #18 Avenida Barbosa/Buena Vista St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.370
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Street Name:	Avenida Barbosa						Buena Vista St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 1	0	0 2	0	0	1! 0	0	1	0 2	0 1	2 0	1 0 1
Volume Module:												
Base Vol:	50	151	701	8	69	2	1	4	6	146	14	18
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:	50	151	701	8	69	2	1	4	6	146	14	18
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:	50	151	701	8	69	2	1	4	6	146	14	18
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:	50	151	701	8	69	2	1	4	6	146	14	18
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	151	701	8	69	2	1	4	6	146	14	18
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:	50	151	701	8	69	2	1	4	6	146	14	18
OvlAdjVol:			539									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	0.25	0.75	2.00	0.10	0.87	0.03	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	398	1202	3200	162	1397	41	1600	3200	1600	2880	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.13	0.13	0.22	0.05	0.05	0.05	0.00	0.00	0.00	0.05	0.01	0.01
OvlAdjV/S:			0.17									
Crit Moves:			****		****			****			****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #19 Avenida Barbosa/Arrow Highway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.771
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	61	Level Of Service:	C

Street Name:	Avenida Barbosa						Arrow Highway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	0	0 0	2 0	0	0 1	1 0	2	0 0	0 0	2	0 1
Volume Module:												
Base Vol:	0	0	0	120	0	122	288	390	0	0	1326	643
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	120	0	122	288	390	0	0	1326	643
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	120	0	122	288	390	0	0	1326	643
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	120	0	122	288	390	0	0	1326	643
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	120	0	122	288	390	0	0	1326	643
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	120	0	122	288	390	0	0	1326	643
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.08	0.18	0.12	0.00	0.00	0.41	0.40
Crit Moves:						****	****				****	

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Scenario Report

Scenario:	Exist NP PM
Command:	Default Command
Volume:	Exist NP PM
Geometry:	Exist
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Peck Rd-Myrtle Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.804
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	68	Level Of Service:	D

Street Name:	Peck Rd-Myrtle							Live Oak Ave					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 0	1	1 0	2 0	1	
Volume Module:													
Base Vol:	220	766	174	177	548	132	182	1153	184	60	639	20	
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:	220	766	174	177	548	132	182	1153	184	60	639	20	
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:	220	766	174	177	548	132	182	1153	184	60	639	20	
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:	220	766	174	177	548	132	182	1153	184	60	639	20	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	220	766	174	177	548	132	182	1153	184	60	639	20	
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:	220	766	174	177	548	132	182	1153	184	60	639	20	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	1.00	2.44	0.56	1.00	2.42	0.58	1.00	2.00	1.00	1.00	2.00	1.00	
Final Sat.:	1600	3911	889	1600	3868	932	1600	3200	1600	1600	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.14	0.20	0.20	0.11	0.14	0.14	0.11	0.36	0.12	0.04	0.20	0.01	
Crit Moves:		****		****				****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Myrtle Ave/Longden Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.829
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	79	Level Of Service:	D

Street Name:	Myrtle Ave						Longden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	1 0	1	0 1	0 1	0
Volume Module:												
Base Vol:	92	860	12	348	773	53	80	620	96	26	379	265
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:	92	860	12	348	773	53	80	620	96	26	379	265
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:	92	860	12	348	773	53	80	620	96	26	379	265
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:	92	860	12	348	773	53	80	620	96	26	379	265
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	92	860	12	348	773	53	80	620	96	26	379	265
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:	92	860	12	348	773	53	80	620	96	26	379	265
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.00	1.00	1.00	2.00	1.00	0.23	1.77	1.00	0.08	1.13	0.79
Final Sat.:	1600	3200	1600	1600	3200	1600	366	2834	1600	124	1810	1266
Capacity Analysis Module:												
Vol/Sat:	0.06	0.27	0.01	0.22	0.24	0.03	0.05	0.22	0.06	0.02	0.21	0.21
Crit Moves:		****		****			****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Longden Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.721
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	53	Level Of Service:	C

Street Name:	Longden Ave							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	1	1	0	0	1	1	0	2	1
Volume Module:													
Base Vol:	0	0	0	969	0	9	8	1521	1	1	684	642	
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	969	0	9	8	1521	1	1	684	642	
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	969	0	9	8	1521	1	1	684	642	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	969	0	9	8	1521	1	1	684	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	969	0	9	8	1521	1	1	684	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	969	0	9	8	1521	1	1	684	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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	1.00	0.00	2.00	0.00	1.00	1.00	2.99	0.01	1.00	2.00	2.00	
Final Sat.:	0	1600	0	3200	0	1600	1600	4797	3	1600	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.30	0.00	0.01	0.01	0.32	0.32	0.00	0.21	0.00	
Crit Moves:				****				****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Arrow Hwy/Live Oak Ave

Cycle (sec):	110	Critical Vol./Cap.(X):	0.680
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	49	Level Of Service:	B

Street Name:	Arrow Hwy							Live Oak Ave					
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:	Ignore			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	2	0	2	2	0	2	0	0	0	0	0	0	0	2	0	0	0	1
Volume Module:													
Base Vol:	0	709	1819	237	516	0	0	0	0	821	0	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	709	1819	237	516	0	0	0	0	821	0	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	709	1819	237	516	0	0	0	0	821	0	117	
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	709	0	237	516	0	0	0	0	821	0	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	709	0	237	516	0	0	0	0	821	0	0	
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	709	0	237	516	0	0	0	0	821	0	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	
Lanes:	0.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00	
Final Sat.:	0	3200	3200	2880	3200	0	0	0	0	2880	0	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.22	0.00	0.08	0.16	0.00	0.00	0.00	0.00	0.29	0.00	0.00	
Crit Moves:		****		****						****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Speedway Dr-Dwy 2/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.593
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	39	Level Of Service:	A

Street Name:	Speedway Dr-Dwy 2							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0	
Volume Module:													
Base Vol:	10	0	5	0	0	0	0	2035	53	87	964	0	
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:	10	0	5	0	0	0	0	2035	53	87	964	0	
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:	10	0	5	0	0	0	0	2035	53	87	964	0	
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:	10	0	5	0	0	0	0	2035	53	87	964	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	10	0	5	0	0	0	0	2035	53	87	964	0	
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:	10	0	5	0	0	0	0	2035	53	87	964	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.92	0.08	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	4678	122	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.44	0.05	0.30	0.00	
Crit Moves:	****								****	****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Graham Rd/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.669
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	46	Level Of Service:	B

Street Name:	Graham Rd							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	0	0	0	0	0	0	2	0	1
Volume Module:													
Base Vol:	17	0	21	0	0	0	0	1679	44	33	959	0	
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:	17	0	21	0	0	0	0	1679	44	33	959	0	
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:	17	0	21	0	0	0	0	1679	44	33	959	0	
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:	17	0	21	0	0	0	0	1679	44	33	959	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	17	0	21	0	0	0	0	1679	44	33	959	0	
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:	17	0	21	0	0	0	0	1679	44	33	959	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.45	0.00	0.55	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	716	0	884	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.52	0.03	0.02	0.30	0.00	
Crit Moves:	****							****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Rivergrade Rd/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.809
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	73	Level Of Service:	D

Street Name:	Rivergrade Rd							Live Oak Ave					
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:	Ovl			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	
Volume Module:													
Base Vol:	97	64	361	26	20	57	77	1549	20	81	767	6	
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:	97	64	361	26	20	57	77	1549	20	81	767	6	
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:	97	64	361	26	20	57	77	1549	20	81	767	6	
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:	97	64	361	26	20	57	77	1549	20	81	767	6	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	97	64	361	26	20	57	77	1549	20	81	767	6	
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:	97	64	361	26	20	57	77	1549	20	81	767	6	
OvlAdjVol:			280										
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	
Final Sat.:	1600	1600	1600	1600	3200	1600	1600	3200	1600	1600	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.06	0.04	0.23	0.02	0.01	0.04	0.05	0.48	0.01	0.05	0.24	0.00	
OvlAdjV/S:			0.17										
Crit Moves:			****	****				****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #14 Stewart Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.795
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	66	Level Of Service:	C

Street Name:	Stewart Ave						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	1! 0	0	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	68	19	11	23	99	13	58	1814	264	38	751	1
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:	68	19	11	23	99	13	58	1814	264	38	751	1
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:	68	19	11	23	99	13	58	1814	264	38	751	1
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:	68	19	11	23	99	13	58	1814	264	38	751	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	19	11	23	99	13	58	1814	264	38	751	1
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:	68	19	11	23	99	13	58	1814	264	38	751	1
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	0.70	0.19	0.11	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1110	310	180	1600	1600	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.06	0.06	0.01	0.06	0.01	0.04	0.57	0.17	0.02	0.23	0.00
Crit Moves:	****				****			****		****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #15 Baldwin Park/Arrow Hwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.735
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	55	Level Of Service:	C

Street Name:	Baldwin Park							Arrow Hwy					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	2 0	0	
Volume Module:													
Base Vol:	94	0	84	0	0	0	0	1341	522	262	677	0	
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:	94	0	84	0	0	0	0	1341	522	262	677	0	
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:	94	0	84	0	0	0	0	1341	522	262	677	0	
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:	94	0	84	0	0	0	0	1341	522	262	677	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	94	0	84	0	0	0	0	1341	522	262	677	0	
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:	94	0	84	0	0	0	0	1341	522	262	677	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.03	0.00	0.05	0.00	0.00	0.00	0.00	0.42	0.33	0.16	0.21	0.00	
Crit Moves:			****					****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #16 Arrow Highway/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.870
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	87	Level Of Service:	D

Street Name:	Arrow Highway							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Permitted			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0 0	0	2 0	0 0	1	1 0	2 0	0	0 0	2 0	2	
Volume Module:													
Base Vol:	0	0	0	971	0	110	37	1386	0	0	821	441	
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	971	0	110	37	1386	0	0	821	441	
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	971	0	110	37	1386	0	0	821	441	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	971	0	110	37	1386	0	0	821	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	971	0	110	37	1386	0	0	821	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	971	0	110	37	1386	0	0	821	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	2.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.34	0.00	0.07	0.02	0.43	0.00	0.00	0.26	0.00	
Crit Moves:				****				****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Maine Ave/Arrow Hwy

Cycle (sec):	110	Critical Vol./Cap.(X):	0.798
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	68	Level Of Service:	C

Street Name:	Maine Ave							Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2	0	0	0	1	0	0	0	0	0	0	0	2
Volume Module:													
Base Vol:	249	0	99	0	0	0	0	1859	486	63	1008	0	
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:	249	0	99	0	0	0	0	1859	486	63	1008	0	
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:	249	0	99	0	0	0	0	1859	486	63	1008	0	
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:	249	0	99	0	0	0	0	1859	486	63	1008	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	249	0	99	0	0	0	0	1859	486	63	1008	0	
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:	249	0	99	0	0	0	0	1859	486	63	1008	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	3.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	4800	0	
Capacity Analysis Module:													
Vol/Sat:	0.09	0.00	0.06	0.00	0.00	0.00	0.00	0.58	0.30	0.04	0.21	0.00	
Crit Moves:	****							****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #18 Avenida Barbosa/Buena Vista St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.525
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	A

Street Name:	Avenida Barbosa						Buena Vista St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 1	0	0 2	0	0	1! 0	0	1	0 2	0 1	2	0 1 0 1
Volume Module:												
Base Vol:	15	112	295	26	178	6	6	20	82	470	17	22
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:	15	112	295	26	178	6	6	20	82	470	17	22
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:	15	112	295	26	178	6	6	20	82	470	17	22
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:	15	112	295	26	178	6	6	20	82	470	17	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	15	112	295	26	178	6	6	20	82	470	17	22
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:	15	112	295	26	178	6	6	20	82	470	17	22
OvlAdjVol:			0									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	0.12	0.88	2.00	0.12	0.85	0.03	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	189	1411	3200	198	1356	46	1600	3200	1600	2880	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.08	0.08	0.09	0.13	0.13	0.13	0.00	0.01	0.05	0.16	0.01	0.01
OvlAdjV/S:			0.00									
Crit Moves:		****			****				****	****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #19 Avenida Barbosa/Arrow Highway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.551
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	A

Street Name:	Avenida Barbosa						Arrow Highway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	0	0 0	2 0	0	0 1	1 0	2	0 0	0 0	2	0 1
Volume Module:												
Base Vol:	0	0	0	361	0	310	188	636	0	0	448	198
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	361	0	310	188	636	0	0	448	198
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	361	0	310	188	636	0	0	448	198
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	361	0	310	188	636	0	0	448	198
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	361	0	310	188	636	0	0	448	198
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	361	0	310	188	636	0	0	448	198
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.13	0.00	0.19	0.12	0.20	0.00	0.00	0.14	0.12
Crit Moves:						****	****				****	

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Scenario Report

Scenario:	Exist NP AM
Command:	Default Command
Volume:	Exist NP AM
Geometry:	Exist
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: C[19.5]

Street Name:	Dwy 1						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 2 1 0			1 0 2 0 0		
Volume Module:												
Base Vol:	22	0	82	0	0	0	0	815	45	28	1098	0
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:	22	0	82	0	0	0	0	815	45	28	1098	0
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:	22	0	82	0	0	0	0	815	45	28	1098	0
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:	22	0	82	0	0	0	0	815	45	28	1098	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	22	0	82	0	0	0	0	815	45	28	1098	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1443	1992	294	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	860	xxxx	xxxxx
Potent Cap.:	125	61	708	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	790	xxxx	xxxxx
Move Cap.:	122	59	708	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	790	xxxx	xxxxx
Volume/Cap:	0.18	0.00	0.12	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.04	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	351	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	1.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	19.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	C	*	*	*	*	*	*	*	*	*	*
ApproachDel:	19.5			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	C			*			*			*		

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: A[9.8]

Street Name:	Dwy 3						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	909	0	12	1143	0
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	0	0	0	0	909	0	12	1143	0
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	0	0	0	0	909	0	12	1143	0
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	0	0	0	0	909	0	12	1143	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	909	0	12	1143	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1505	2076	303	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	909	xxxx	xxxxx
Potent Cap.:	114	54	699	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	757	xxxx	xxxxx
Move Cap.:	113	53	699	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	757	xxxx	xxxxx
Volume/Cap:	0.00	0.00	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.8	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Live Oak Ln/Live Oak Ave

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: D[28.9]

Street Name:	Live Oak Ln									Live Oak Ave								
Approach:	North Bound					South Bound				East Bound					West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0		13	0		128			83	649		0		0	1230		53	
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		13	0		128			83	649		0		0	1230		53	
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		13	0		128			83	649		0		0	1230		53	
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		13	0		128			83	649		0		0	1230		53	
Reduct Vol:	0	0	0		0	0		0			0	0		0		0	0		0	
FinalVolume:	0	0	0		13	0		128			83	649		0		0	1230		53	
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx		6.8	6.5		6.9			4.1	xxxx	xxxxx	xxxxx		xxxx	xxxxx			
FollowUpTim:	xxxxx	xxxx	xxxxx		3.5	4.0		3.3			2.2	xxxx	xxxxx	xxxxx		xxxx	xxxxx			
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx		1747	2072		642			1283	xxxx	xxxxx	xxxx		xxxx	xxxxx			
Potent Cap.:	xxxx	xxxx	xxxxx		79	55		422			548	xxxx	xxxxx	xxxx		xxxx	xxxxx			
Move Cap.:	xxxx	xxxx	xxxxx		70	46		422			548	xxxx	xxxxx	xxxx		xxxx	xxxxx			
Volume/Cap:	xxxx	xxxx	xxxx		0.19	0.00		0.30			0.15	xxxx	xxxx	xxxx		xxxx	xxxx			
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx		xxxx	xxxx		xxxxx			0.5	xxxx	xxxxx	xxxx		xxxx	xxxxx			
Control Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx		xxxxx			12.7	xxxx	xxxxx	xxxxx		xxxx	xxxxx			
LOS by Move:	*	*	*		*	*		*			B	*	*	*		*	*			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	288		xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	2.5		xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	28.9		xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*	*	*		*	D		*			*	*	*			*	*	*		
ApproachDel:	xxxxxx					28.9					xxxxxx					xxxxxx				
ApproachLOS:	*					D					*					*				

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 Commerce Dr/Live Oak Ave

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: C[23.7]

Street Name:	Commerce Dr									Live Oak Ave							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0	2	1	0	1	0	2	0	0
Volume Module:																				
Base Vol:	6	0	18			0	0	0			0	450	45			256	1529	0		
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:	6	0	18			0	0	0			0	450	45			256	1529	0		
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:	6	0	18			0	0	0			0	450	45			256	1529	0		
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:	6	0	18			0	0	0			0	450	45			256	1529	0		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
FinalVolume:	6	0	18			0	0	0			0	450	45			256	1529	0		
Critical Gap Module:																				
Critical Gp:	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx							
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx							
Capacity Module:																				
Cnflict Vol:	1749	xxxx	173	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		495	xxxx	xxxxx							
Potent Cap.:	79	xxxx	847	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1079	xxxx	xxxxx							
Move Cap.:	64	xxxx	847	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1079	xxxx	xxxxx							
Volume/Cap:	0.09	xxxx	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx		0.24	xxxx	xxxx							
Level Of Service Module:																				
2Way95thQ:	0.3	xxxx	0.1	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		0.9	xxxx	xxxxx							
Control Del:	66.7	xxxx	9.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		9.4	xxxx	xxxxx							
LOS by Move:	F	*	A	*	*	*	*	*	*		A	*	*							
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx							
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx							
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx							
Shared LOS:	*	*	*	*	*	*	*	*	*		*	*	*							
ApproachDel:	23.7			xxxxxx			xxxxxx				xxxxxx									
ApproachLOS:	C			*			*				*									

Note: Queue reported is the number of cars per lane.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	398	524	685	1149	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	0.95	1.00	1.00	0.95		
Frt	1.00	0.85	1.00	1.00		
Flt Protected	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3610	1615	1805	3610		
Flt Permitted	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3610	1615	1805	3610		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	423	557	729	1222	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	423	557	729	1222	0	0
Turn Type	NA	Free	Prot	NA		
Protected Phases	2		1	6		
Permitted Phases		Free				
Actuated Green, G (s)	24.0	100.0	68.0	100.0		
Effective Green, g (s)	24.0	100.0	68.0	100.0		
Actuated g/C Ratio	0.24	1.00	0.68	1.00		
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	866	1615	1227	3610		
v/s Ratio Prot	c0.12		c0.40	0.34		
v/s Ratio Perm		0.34				
v/c Ratio	0.49	0.34	0.59	0.34		
Uniform Delay, d1	32.7	0.0	8.6	0.0		
Progression Factor	1.00	1.00	0.59	1.00		
Incremental Delay, d2	2.0	0.6	0.7	0.2		
Delay (s)	34.7	0.6	5.7	0.2		
Level of Service	C	A	A	A		
Approach Delay (s)	15.3			2.3	0.0	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	401	0	0	1451	0	0	0	366	0	0	384
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	427	0	0	1544	0	0	0	389	0	0	409
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		425			272							
pX, platoon unblocked	0.77			0.90			0.82	0.82	0.90	0.82	0.82	0.77
vC, conflicting volume	1544			427			1607	1970	213	2146	1970	772
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1110			151			768	1212	0	1427	1212	109
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	60	100	100	43
cM capacity (veh/h)	490			1303			104	150	986	48	150	717

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	213	213	772	772	389	409
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	389	409
cSH	1700	1700	1700	1700	986	717
Volume to Capacity	0.13	0.13	0.45	0.45	0.40	0.57
Queue Length 95th (ft)	0	0	0	0	48	91
Control Delay (s)	0.0	0.0	0.0	0.0	11.0	16.5
Lane LOS					B	C
Approach Delay (s)	0.0		0.0		11.0	16.5
Approach LOS					B	C

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑		↰	↱
Volume (vph)	0	498	1441	0	381	515
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5187	3610		1805	1615
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5187	3610		1805	1615
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	530	1533	0	405	548
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	530	1533	0	405	548
Turn Type		NA	NA		Prot	Free
Protected Phases		2	6		4	
Permitted Phases						Free
Actuated Green, G (s)		58.0	58.0		34.0	100.0
Effective Green, g (s)		58.0	58.0		34.0	100.0
Actuated g/C Ratio		0.58	0.58		0.34	1.00
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		3008	2093		613	1615
v/s Ratio Prot		0.10	c0.42		c0.22	
v/s Ratio Perm						0.34
v/c Ratio		0.18	0.73		0.66	0.34
Uniform Delay, d1		9.8	15.3		28.1	0.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	2.3		5.5	0.6
Delay (s)		10.0	17.6		33.6	0.6
Level of Service		A	B		C	A
Approach Delay (s)		10.0	17.6		14.6	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	567	45	0	1441	382	0	0	61	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	597	47	0	1517	402	0	0	64	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		537										
pX, platoon unblocked				0.99			0.99	0.99	0.99	0.99	0.99	
vC, conflicting volume	1517			644			1355	2114	298	1879	2161	758
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1517			609			1330	2100	258	1863	2148	758
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	91	100	100	100
cM capacity (veh/h)	446			965			113	52	736	41	48	354

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	298	298	47	758	758	402	64
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	47	0	0	402	64
cSH	1700	1700	1700	1700	1700	1700	736
Volume to Capacity	0.18	0.18	0.03	0.45	0.45	0.24	0.09
Queue Length 95th (ft)	0	0	0	0	0	0	7
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.4
Lane LOS							B
Approach Delay (s)	0.0			0.0			10.4
Approach LOS							B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		

Irwindale Regional Shopping Center
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Scenario Report

Scenario:	Exist NP PM
Command:	Default Command
Volume:	Exist NP PM
Geometry:	Exist
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: F[64.0]

Street Name:	Dwy 1						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	7	0	60	0	0	0	0	2036	23	46	928	0
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:	7	0	60	0	0	0	0	2036	23	46	928	0
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:	7	0	60	0	0	0	0	2036	23	46	928	0
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:	7	0	60	0	0	0	0	2036	23	46	928	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	7	0	60	0	0	0	0	2036	23	46	928	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	2604	3068	690	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	2059	xxxx	xxxxx
Potent Cap.:	21	12	392	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	276	xxxx	xxxxx
Move Cap.:	18	10	392	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	276	xxxx	xxxxx
Volume/Cap:	0.39	0.00	0.15	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.17	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.6	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	20.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	C	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	124	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	2.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	64.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	*	*	*	*	*	*	*	*	*
ApproachDel:		64.0		xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:		F			*			*			*	

Note: Queue reported is the number of cars per lane.

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: C[18.1]

Street Name:	Dwy 3									Live Oak Ave							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	1!	0	0	0	0	0	0	0	0	0	2	1	0	1	0	2	0	0
Volume Module:																				
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	2039	0	0	5	1039	0			
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	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	2039	0	0	5	1039	0			
Added Vol:	0	0	0	0	0	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	0	0	0	0	0			
Initial Fut:	0	0	0	0	0	0	0	0	0	0	0	2039	0	0	5	1039	0			
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	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	1.00	1.00	1.00	1.00	1.00			
PHF Volume:	0	0	0	0	0	0	0	0	0	0	0	2039	0	0	5	1039	0			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
FinalVolume:	0	0	0	0	0	0	0	0	0	0	0	2039	0	0	5	1039	0			
Critical Gap Module:																				
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx								
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	2569	3088	680	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	2039	xxxx	xxxxx								
Potent Cap.:	22	12	398	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	281	xxxx	xxxxx								
Move Cap.:	22	12	398	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	281	xxxx	xxxxx								
Volume/Cap:	0.00	0.00	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	18.1	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	*	*	*	*	C	*	*								
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx		0	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx										
ApproachLOS:	*			*			*			*										

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Live Oak Ln/Live Oak Ave

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: C[23.1]

Street Name:	Live Oak Ln									Live Oak Ave								
Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0	11	0	69	45	1630	0	0	912	6								
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	11	0	69	45	1630	0	0	912	6								
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	11	0	69	45	1630	0	0	912	6								
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	11	0	69	45	1630	0	0	912	6								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	0	0	0	11	0	69	45	1630	0	0	912	6								
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	1820	2635	459	918	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	xxxxx	71	24	554	752	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	xxxxx	67	22	554	752	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	xxxx	0.16	0.00	0.12	0.06	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	*	B	*	*	*	*	*								
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	278	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	1.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	23.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	C	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx				23.1		xxxxxx				xxxxxx									
ApproachLOS:	*				C		*				*									

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 Commerce Dr/Live Oak Ave

Average Delay (sec/veh): 4.2 Worst Case Level Of Service: F[55.3]

Street Name:	Commerce Dr									Live Oak Ave							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	0	0	1	0	0	0	0	0	0	1	1	1	0	1	0	2	0	0
Volume Module:																				
Base Vol:	24	0	197			0	0	0			2	1928		6		21	827			
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:	24	0	197			0	0	0			2	1928		6		21	827			
Added Vol:	0	0	0			0	0	0			0	0		0		0	0			
PasserByVol:	0	0	0			0	0	0			0	0		0		0	0			
Initial Fut:	24	0	197			0	0	0			2	1928		6		21	827			
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:	24	0	197			0	0	0			2	1928		6		21	827			
Reduct Vol:	0	0	0			0	0	0			0	0		0		0	0			
FinalVolume:	24	0	197			0	0	0			2	1928		6		21	827			
Critical Gap Module:																				
Critical Gp:	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx					4.1	xxxx	xxxxx			4.1	xxxx	xxxxx		
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx					2.2	xxxx	xxxxx			2.2	xxxx	xxxxx		
Capacity Module:																				
Cnflict Vol:	2391	xxxx	646	xxxx	xxxx	xxxxx					827	xxxx	xxxxx			1934	xxxx	xxxxx		
Potent Cap.:	29	xxxx	419	xxxx	xxxx	xxxxx					813	xxxx	xxxxx			308	xxxx	xxxxx		
Move Cap.:	27	xxxx	419	xxxx	xxxx	xxxxx					813	xxxx	xxxxx			308	xxxx	xxxxx		
Volume/Cap:	0.88	xxxx	0.47	xxxx	xxxx	xxxx					0.00	xxxx	xxxx			0.07	xxxx	xxxx		
Level Of Service Module:																				
2Way95thQ:	2.8	xxxx	2.4	xxxx	xxxx	xxxxx					0.0	xxxx	xxxxx			0.2	xxxx	xxxxx		
Control Del:	337.2	xxxx	21.0	xxxxx	xxxx	xxxxx					9.4	xxxx	xxxxx			17.5	xxxx	xxxxx		
LOS by Move:	F	*	C	*	*	*					A	*	*			C	*	*		
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx					xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx					0.0	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx					9.4	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*	*	*	*	*	*					A	*	*			*	*	*		
ApproachDel:	55.3			xxxxxx							xxxxxx					xxxxxx				
ApproachLOS:	F			*							*					*				

Note: Queue reported is the number of cars per lane.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1063	978	573	1043	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	0.95	1.00	1.00	0.95		
Frt	1.00	0.85	1.00	1.00		
Flt Protected	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3610	1615	1805	3610		
Flt Permitted	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3610	1615	1805	3610		
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1143	1052	616	1122	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1143	1052	616	1122	0	0
Turn Type	NA	Free	Prot	NA		
Protected Phases	2		1	6		
Permitted Phases		Free				
Actuated Green, G (s)	51.4	100.0	40.6	100.0		
Effective Green, g (s)	51.4	100.0	40.6	100.0		
Actuated g/C Ratio	0.51	1.00	0.41	1.00		
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	1855	1615	732	3610		
v/s Ratio Prot	0.32		c0.34	0.31		
v/s Ratio Perm		c0.65				
v/c Ratio	0.62	0.65	0.84	0.31		
Uniform Delay, d1	17.3	0.0	26.8	0.0		
Progression Factor	1.00	1.00	0.98	1.00		
Incremental Delay, d2	1.5	2.1	8.6	0.2		
Delay (s)	18.8	2.1	34.7	0.2		
Level of Service	B	A	C	A		
Approach Delay (s)	10.8			12.5	0.0	
Approach LOS	B			B	A	

Intersection Summary			
HCM 2000 Control Delay	11.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1062	0	0	969	0	0	0	642	0	0	660
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	1095	0	0	999	0	0	0	662	0	0	680
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		425			272							
pX, platoon unblocked	0.90			0.77			0.82	0.82	0.77	0.82	0.82	0.90
vC, conflicting volume	999			1095			2275	2094	547	2208	2094	499
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	783			532			1581	1361	0	1500	1361	229
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	21	100	100	3
cM capacity (veh/h)	762			807			2	123	842	15	123	704

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	547	547	499	499	662	680
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	662	680
cSH	1700	1700	1700	1700	842	704
Volume to Capacity	0.32	0.32	0.29	0.29	0.79	0.97
Queue Length 95th (ft)	0	0	0	0	203	365
Control Delay (s)	0.0	0.0	0.0	0.0	23.0	50.5
Lane LOS					C	F
Approach Delay (s)	0.0		0.0		23.0	50.5
Approach LOS					C	F

Intersection Summary			
Average Delay	14.4		
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	997	348	0	278	306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5187	3610		1805	1615
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5187	3610		1805	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1084	378	0	302	333
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	1084	378	0	302	333
Turn Type		NA	NA		Prot	Free
Protected Phases		2	6		4	
Permitted Phases						Free
Actuated Green, G (s)		47.0	47.0		45.0	100.0
Effective Green, g (s)		47.0	47.0		45.0	100.0
Actuated g/C Ratio		0.47	0.47		0.45	1.00
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		2437	1696		812	1615
v/s Ratio Prot		c0.21	0.10		c0.17	
v/s Ratio Perm						0.21
v/c Ratio		0.44	0.22		0.37	0.21
Uniform Delay, d1		17.8	15.7		18.2	0.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.6	0.3		1.3	0.3
Delay (s)		18.3	16.0		19.5	0.3
Level of Service		B	B		B	A
Approach Delay (s)		18.3	16.0		9.4	
Approach LOS		B	B		A	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1181	30	0	348	232	0	0	34	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	1256	32	0	370	247	0	0	36	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		537										
pX, platoon unblocked				0.84			0.84	0.84	0.84	0.84	0.84	
vC, conflicting volume	370			1288			1441	1627	628	1035	1659	185
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	370			953			1136	1358	164	650	1396	185
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	95	100	100	100
cM capacity (veh/h)	1199			610			133	126	718	285	119	832

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	628	628	32	185	185	247	36
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	32	0	0	247	36
cSH	1700	1700	1700	1700	1700	1700	718
Volume to Capacity	0.37	0.37	0.02	0.11	0.11	0.15	0.05
Queue Length 95th (ft)	0	0	0	0	0	0	4
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.3
Lane LOS							B
Approach Delay (s)	0.0			0.0			10.3
Approach LOS							B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Scenario Report

Scenario:	Exist NP SAT
Command:	Default Command
Volume:	Exist NP SAT
Geometry:	Exist
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Peck Rd-Myrtle Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.514
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	A

Street Name:	Peck Rd-Myrtle						Live Oak Ave					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2	1 0	1 0	2	1 0	1 0	2	0 1	1 0	2	0 1
Volume Module:												
Base Vol:	156	467	128	66	418	138	133	401	140	110	376	40
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:	156	467	128	66	418	138	133	401	140	110	376	40
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:	156	467	128	66	418	138	133	401	140	110	376	40
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:	156	467	128	66	418	138	133	401	140	110	376	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	156	467	128	66	418	138	133	401	140	110	376	40
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:	156	467	128	66	418	138	133	401	140	110	376	40
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.35	0.65	1.00	2.26	0.74	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	3767	1033	1600	3609	1191	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.10	0.12	0.12	0.04	0.12	0.12	0.08	0.13	0.09	0.07	0.12	0.03
Crit Moves:	****				****		****				****	

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Myrtle Ave/Longden Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.546
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	37	Level Of Service:	A

Street Name:	Myrtle Ave						Longden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	1 0	1	0 1	0 1	0
Volume Module:												
Base Vol:	59	568	9	150	563	96	98	185	53	47	205	164
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:	59	568	9	150	563	96	98	185	53	47	205	164
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:	59	568	9	150	563	96	98	185	53	47	205	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:	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:	59	568	9	150	563	96	98	185	53	47	205	164
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	59	568	9	150	563	96	98	185	53	47	205	164
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:	59	568	9	150	563	96	98	185	53	47	205	164
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.00	1.00	1.00	2.00	1.00	0.69	1.31	1.00	0.23	0.98	0.79
Final Sat.:	1600	3200	1600	1600	3200	1600	1108	2092	1600	362	1577	1262
Capacity Analysis Module:												
Vol/Sat:	0.04	0.18	0.01	0.09	0.18	0.06	0.06	0.09	0.03	0.03	0.13	0.13
Crit Moves:		****		****			****				****	

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Longden Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.403
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	29	Level Of Service:	A

Street Name:	Longden Ave							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	1	1	0	0	1	1	0	2	1
Volume Module:													
Base Vol:	7	7	8	349	6	11	9	560	8	10	553	378	
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:	7	7	8	349	6	11	9	560	8	10	553	378	
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:	7	7	8	349	6	11	9	560	8	10	553	378	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	7	7	8	349	6	11	9	560	8	10	553	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	7	7	8	349	6	11	9	560	8	10	553	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	7	7	8	349	6	11	9	560	8	10	553	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.32	0.32	0.36	1.97	0.03	1.00	1.00	2.96	0.04	1.00	2.00	2.00	
Final Sat.:	509	509	582	3146	54	1600	1600	4732	68	1600	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.01	0.01	0.01	0.11	0.11	0.01	0.01	0.12	0.12	0.01	0.17	0.00	
Crit Moves:			****	****			****				****		

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Arrow Hwy/Live Oak Ave

Cycle (sec):	110	Critical Vol./Cap.(X):	0.411
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	29	Level Of Service:	A

Street Name:	Arrow Hwy							Live Oak Ave					
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:	Ignore			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	2	0	2	2	0	2	0	0	0	0	0
Volume Module:													
Base Vol:	0	328	603	116	439	0	0	0	0	510	0	122	
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	328	603	116	439	0	0	0	0	510	0	122	
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	328	603	116	439	0	0	0	0	510	0	122	
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	328	0	116	439	0	0	0	0	510	0	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	328	0	116	439	0	0	0	0	510	0	0	
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	328	0	116	439	0	0	0	0	510	0	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	
Lanes:	0.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00	
Final Sat.:	0	3200	3200	2880	3200	0	0	0	0	2880	0	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.10	0.00	0.04	0.14	0.00	0.00	0.00	0.00	0.18	0.00	0.00	
Crit Moves:		****		****						****			

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Speedway Dr-Dwy 2/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.321
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Street Name:	Speedway Dr-Dwy 2						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	2	0	0	0 1	0	0	0 0 0	0	0	2 1 0	1	0
Volume Module:												
Base Vol:	6	0	3	0	0	0	0	738	40	26	700	0
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:	6	0	3	0	0	0	0	738	40	26	700	0
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:	6	0	3	0	0	0	0	738	40	26	700	0
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:	6	0	3	0	0	0	0	738	40	26	700	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	6	0	3	0	0	0	0	738	40	26	700	0
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:	6	0	3	0	0	0	0	738	40	26	700	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.85	0.15	1.00	2.00	0.00
Final Sat.:	2880	0	1600	0	0	0	0	4553	247	1600	3200	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.16	0.02	0.22	0.00
Crit Moves:	****						****				****	

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Graham Rd/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.312
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	25	Level Of Service:	A

Street Name:	Graham Rd							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	0	0	0	0	0	0	2	0	1
Volume Module:													
Base Vol:	36	0	4	0	0	0	0	497	25	15	597	0	
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:	36	0	4	0	0	0	0	497	25	15	597	0	
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:	36	0	4	0	0	0	0	497	25	15	597	0	
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:	36	0	4	0	0	0	0	497	25	15	597	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	36	0	4	0	0	0	0	497	25	15	597	0	
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:	36	0	4	0	0	0	0	497	25	15	597	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.90	0.00	0.10	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	1440	0	160	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.16	0.02	0.01	0.19	0.00	
Crit Moves:	****						****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Rivergrade Rd/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.306
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Street Name:	Rivergrade Rd						Live Oak Ave					
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:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	19	35	91	11	16	71	15	438	12	47	473	7
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:	19	35	91	11	16	71	15	438	12	47	473	7
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:	19	35	91	11	16	71	15	438	12	47	473	7
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:	19	35	91	11	16	71	15	438	12	47	473	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	35	91	11	16	71	15	438	12	47	473	7
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:	19	35	91	11	16	71	15	438	12	47	473	7
OvlAdjVol:			44									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	1600	1600	1600	3200	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.01	0.02	0.06	0.01	0.01	0.04	0.01	0.14	0.01	0.03	0.15	0.00
OvlAdjV/S:			0.03									
Crit Moves:	****					****		****		****		

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

Intersection #14 Stewart Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.347
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Street Name:	Stewart Ave						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	1! 0	0	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	58	23	27	2	44	3	6	521	43	33	464	5
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:	58	23	27	2	44	3	6	521	43	33	464	5
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:	58	23	27	2	44	3	6	521	43	33	464	5
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:	58	23	27	2	44	3	6	521	43	33	464	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	58	23	27	2	44	3	6	521	43	33	464	5
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:	58	23	27	2	44	3	6	521	43	33	464	5
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	0.54	0.21	0.25	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	859	341	400	1600	1600	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.07	0.07	0.00	0.03	0.00	0.00	0.16	0.03	0.02	0.15	0.00
Crit Moves:	****				****			****		****		

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

Intersection #15 Baldwin Park/Arrow Hwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.444
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	A

Street Name:	Baldwin Park							Arrow Hwy					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	2 0	0	
Volume Module:													
Base Vol:	66	0	140	0	0	0	0	473	75	174	462	0	
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:	66	0	140	0	0	0	0	473	75	174	462	0	
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:	66	0	140	0	0	0	0	473	75	174	462	0	
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:	66	0	140	0	0	0	0	473	75	174	462	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	66	0	140	0	0	0	0	473	75	174	462	0	
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:	66	0	140	0	0	0	0	473	75	174	462	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.02	0.00	0.09	0.00	0.00	0.00	0.00	0.15	0.05	0.11	0.14	0.00	
Crit Moves:			****					****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #16 Arrow Highway/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.424
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	A

Street Name:	Arrow Highway							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Permitted			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0 0	0	2 0	0 0	1	1 0	2 0	0	0 0	2 0	2	
Volume Module:													
Base Vol:	0	0	0	296	0	66	68	547	0	0	572	385	
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	296	0	66	68	547	0	0	572	385	
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	296	0	66	68	547	0	0	572	385	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	296	0	66	68	547	0	0	572	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	296	0	66	68	547	0	0	572	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	296	0	66	68	547	0	0	572	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	2.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.10	0.00	0.04	0.04	0.17	0.00	0.00	0.18	0.00	
Crit Moves:				****			****				****		

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

Intersection #17 Maine Ave/Arrow Hwy

Cycle (sec):	110	Critical Vol./Cap.(X):	0.437
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	31	Level Of Service:	A

Street Name:	Maine Ave							Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	3 0	0	
Volume Module:													
Base Vol:	204	0	104	0	0	0	0	690	164	96	758	0	
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:	204	0	104	0	0	0	0	690	164	96	758	0	
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:	204	0	104	0	0	0	0	690	164	96	758	0	
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:	204	0	104	0	0	0	0	690	164	96	758	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	204	0	104	0	0	0	0	690	164	96	758	0	
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:	204	0	104	0	0	0	0	690	164	96	758	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	3.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	4800	0	
Capacity Analysis Module:													
Vol/Sat:	0.07	0.00	0.07	0.00	0.00	0.00	0.00	0.22	0.10	0.06	0.16	0.00	
Crit Moves:	****							****		****			

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

Intersection #18 Avenida Barbosa/Buena Vista St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.323
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Street Name:	Avenida Barbosa						Buena Vista St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 1	0	0 2	0 0	0 1	0	1 0	2	0 1	2 0	1 0	1
Volume Module:												
Base Vol:	75	83	114	0	62	1	2	12	72	115	26	14
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:	75	83	114	0	62	1	2	12	72	115	26	14
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:	75	83	114	0	62	1	2	12	72	115	26	14
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:	75	83	114	0	62	1	2	12	72	115	26	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	75	83	114	0	62	1	2	12	72	115	26	14
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:	75	83	114	0	62	1	2	12	72	115	26	14
OvlAdjVol:			0									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	0.47	0.53	2.00	0.00	0.98	0.02	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	759	841	3200	0	1575	25	1600	3200	1600	2880	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.04	0.00	0.04	0.04	0.00	0.00	0.05	0.04	0.02	0.01
OvlAdjV/S:			0.00									
Crit Moves:	****				****				****	****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #19 Avenida Barbosa/Arrow Highway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.405
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	29	Level Of Service:	A

Street Name:	Avenida Barbosa							Arrow Highway					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0	0 0	2 0	0	0 1	1 0	2	0 0	0 0	2	0 1	
Volume Module:													
Base Vol:	0	0	0	120	0	135	144	258	0	0	417	150	
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	120	0	135	144	258	0	0	417	150	
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	120	0	135	144	258	0	0	417	150	
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	120	0	135	144	258	0	0	417	150	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	120	0	135	144	258	0	0	417	150	
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	120	0	135	144	258	0	0	417	150	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.08	0.09	0.08	0.00	0.00	0.13	0.09	
Crit Moves:						****	****				****		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Scenario Report

Scenario:	Exist NP SAT
Command:	Default Command
Volume:	Exist NP SAT
Geometry:	Exist
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B[12.5]

Street Name:	Dwy 1						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	9	0	58	0	0	0	0	720	30	21	686	0
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:	9	0	58	0	0	0	0	720	30	21	686	0
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:	9	0	58	0	0	0	0	720	30	21	686	0
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:	9	0	58	0	0	0	0	720	30	21	686	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	9	0	58	0	0	0	0	720	30	21	686	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1120	1463	255	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	750	xxxx	xxxxx
Potent Cap.:	204	130	750	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	868	xxxx	xxxxx
Move Cap.:	200	127	750	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	868	xxxx	xxxxx
Volume/Cap:	0.05	0.00	0.08	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.2	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	548	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	12.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	*	*	*
ApproachDel:	12.5			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the number of cars per lane.

Irwindale Regional Shopping Center
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[9.1]

Street Name:	Dwy 3						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	742	0	5	728	0
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	0	0	0	0	742	0	5	728	0
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	0	0	0	0	742	0	5	728	0
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	0	0	0	0	742	0	5	728	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	742	0	5	728	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1116	1480	247	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	742	xxxx	xxxxx
Potent Cap.:	205	127	759	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	874	xxxx	xxxxx
Move Cap.:	204	126	759	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	874	xxxx	xxxxx
Volume/Cap:	0.00	0.00	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.1	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

Note: Queue reported is the number of cars per lane.

Irwindale Regional Shopping Center
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Live Oak Ln/Live Oak Ave

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B[10.8]

Street Name:	Live Oak Ln									Live Oak Ave								
Approach:	North Bound					South Bound				East Bound					West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0	2	0	61	35	466	0	0	545	22								
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	2	0	61	35	466	0	0	545	22								
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	2	0	61	35	466	0	0	545	22								
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	2	0	61	35	466	0	0	545	22								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	0	0	0	2	0	61	35	466	0	0	545	22								
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	859	1092	284	567	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	xxxxx	299	216	719	1015	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	xxxxx	292	209	719	1015	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	xxxx	0.01	0.00	0.08	0.03	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*								
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	687	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	10.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	B	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx				10.8		xxxxxx				xxxxxx									
ApproachLOS:	*				B		*				*									

Note: Queue reported is the number of cars per lane.

Irwindale Regional Shopping Center
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 Commerce Dr/Live Oak Ave

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[11.9]

Street Name:	Commerce Dr						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0 0 1			0 0 0 0 0			0 1 1 1 0			1 0 2 0 0		
Volume Module:												
Base Vol:	4	0	8	0	0	0	2	550	6	13	497	0
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:	4	0	8	0	0	0	2	550	6	13	497	0
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:	4	0	8	0	0	0	2	550	6	13	497	0
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:	4	0	8	0	0	0	2	550	6	13	497	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	4	0	8	0	0	0	2	550	6	13	497	0
Critical Gap Module:												
Critical Gp:	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	832	xxxx	186	xxxx	xxxx	xxxxx	497	xxxx	xxxxx	556	xxxx	xxxxx
Potent Cap.:	312	xxxx	830	xxxx	xxxx	xxxxx	1077	xxxx	xxxxx	1025	xxxx	xxxxx
Move Cap.:	308	xxxx	830	xxxx	xxxx	xxxxx	1077	xxxx	xxxxx	1025	xxxx	xxxxx
Volume/Cap:	0.01	xxxx	0.01	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	0.0	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	16.8	xxxx	9.4	xxxxx	xxxx	xxxxx	8.3	xxxx	xxxxx	8.6	xxxx	xxxxx
LOS by Move:	C	*	A	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	A	*	*	*	*	*
ApproachDel:	11.9			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the number of cars per lane.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	175	567	464	733	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	0.95	1.00	1.00	0.95		
Frt	1.00	0.85	1.00	1.00		
Flt Protected	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3610	1615	1805	3610		
Flt Permitted	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3610	1615	1805	3610		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	184	597	488	772	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	184	597	488	772	0	0
Turn Type	NA	Free	Prot	NA		
Protected Phases	2		1	6		
Permitted Phases		Free				
Actuated Green, G (s)	24.0	100.0	68.0	100.0		
Effective Green, g (s)	24.0	100.0	68.0	100.0		
Actuated g/C Ratio	0.24	1.00	0.68	1.00		
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	866	1615	1227	3610		
v/s Ratio Prot	0.05		c0.27	0.21		
v/s Ratio Perm		c0.37				
v/c Ratio	0.21	0.37	0.40	0.21		
Uniform Delay, d1	30.4	0.0	7.0	0.0		
Progression Factor	1.00	1.00	0.66	1.00		
Incremental Delay, d2	0.6	0.7	0.2	0.1		
Delay (s)	31.0	0.7	4.8	0.1		
Level of Service	C	A	A	A		
Approach Delay (s)	7.8			2.0	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	4.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	37.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	194	0	0	627	0	0	0	332	0	0	454
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	213	0	0	689	0	0	0	365	0	0	499
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		425			272							
pX, platoon unblocked	0.93			0.97			0.94	0.94	0.97	0.94	0.94	0.93
vC, conflicting volume	689			213			1057	902	107	1160	902	345
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	511			138			810	646	28	921	646	140
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	64	100	100	40
cM capacity (veh/h)	988			1420			102	370	1019	138	370	825

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	107	107	345	345	365	499
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	365	499
cSH	1700	1700	1700	1700	1019	825
Volume to Capacity	0.06	0.06	0.20	0.20	0.36	0.60
Queue Length 95th (ft)	0	0	0	0	41	104
Control Delay (s)	0.0	0.0	0.0	0.0	10.5	15.8
Lane LOS					B	C
Approach Delay (s)	0.0		0.0		10.5	15.8
Approach LOS					B	C

Intersection Summary			
Average Delay	6.6		
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	419	266	0	218	291
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5187	3610		1805	1615
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5187	3610		1805	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	441	280	0	229	306
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	441	280	0	229	306
Turn Type		NA	NA		Prot	Free
Protected Phases		2	6		4	
Permitted Phases						Free
Actuated Green, G (s)		38.0	38.0		54.0	100.0
Effective Green, g (s)		38.0	38.0		54.0	100.0
Actuated g/C Ratio		0.38	0.38		0.54	1.00
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		1971	1371		974	1615
v/s Ratio Prot		c0.09	0.08		c0.13	
v/s Ratio Perm						0.19
v/c Ratio		0.22	0.20		0.24	0.19
Uniform Delay, d1		21.0	20.8		12.1	0.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	0.3		0.6	0.3
Delay (s)		21.3	21.2		12.7	0.3
Level of Service		C	C		B	A
Approach Delay (s)		21.3	21.2		5.6	
Approach LOS		C	C		A	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	26.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	432	19	0	260	228	0	0	18	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	460	20	0	277	243	0	0	19	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		537										
pX, platoon unblocked				0.96			0.96	0.96	0.96	0.96	0.96	
vC, conflicting volume	277			480			598	736	230	526	756	138
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	277			373			496	640	113	421	661	138
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	98	100	100	100
cM capacity (veh/h)	1298			1148			442	380	888	490	369	891

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	230	230	20	138	138	243	19
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	20	0	0	243	19
cSH	1700	1700	1700	1700	1700	1700	888
Volume to Capacity	0.14	0.14	0.01	0.08	0.08	0.14	0.02
Queue Length 95th (ft)	0	0	0	0	0	0	2
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.1
Lane LOS							A
Approach Delay (s)	0.0			0.0			9.1
Approach LOS							A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	21.9%	ICU Level of Service	A
Analysis Period (min)	15		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Scenario Report

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

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Peck Rd-Myrtle Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.787
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	64	Level Of Service:	C

Street Name:	Peck Rd-Myrtle						Live Oak Ave					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	249	934	271	38	496	151	67	544	207	159	1136	54
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:	249	934	271	38	496	151	67	544	207	159	1136	54
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:	249	934	271	38	496	151	67	544	207	159	1136	54
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:	249	934	271	38	496	151	67	544	207	159	1136	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	249	934	271	38	496	151	67	544	207	159	1136	54
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:	249	934	271	38	496	151	67	544	207	159	1136	54
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.33	0.67	1.00	2.30	0.70	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	3720	1080	1600	3680	1120	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.16	0.25	0.25	0.02	0.13	0.13	0.04	0.17	0.13	0.10	0.36	0.03
Crit Moves:	****				****		****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Myrtle Ave/Longden Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.820
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	76	Level Of Service:	D

Street Name:	Myrtle Ave						Longden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	1 0	1	0 1	0 1	0
Volume Module:												
Base Vol:	163	873	19	166	598	48	68	252	74	33	569	413
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:	163	873	19	166	598	48	68	252	74	33	569	413
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:	163	873	19	166	598	48	68	252	74	33	569	413
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:	163	873	19	166	598	48	68	252	74	33	569	413
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	163	873	19	166	598	48	68	252	74	33	569	413
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:	163	873	19	166	598	48	68	252	74	33	569	413
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.00	1.00	1.00	2.00	1.00	0.42	1.58	1.00	0.07	1.12	0.81
Final Sat.:	1600	3200	1600	1600	3200	1600	680	2520	1600	104	1794	1302
Capacity Analysis Module:												
Vol/Sat:	0.10	0.27	0.01	0.10	0.19	0.03	0.04	0.10	0.05	0.02	0.32	0.32
Crit Moves:		****		****			****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Longden Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.680
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	B

Street Name:	Longden Ave							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	1	1	0	0	1	1	0	2	1
Volume Module:													
Base Vol:	9	9	9	428	1	12	36	819	1	9	1301	941	
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:	9	9	9	428	1	12	36	819	1	9	1301	941	
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:	9	9	9	428	1	12	36	819	1	9	1301	941	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	9	9	9	428	1	12	36	819	1	9	1301	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	9	9	9	428	1	12	36	819	1	9	1301	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	9	9	9	428	1	12	36	819	1	9	1301	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.34	0.33	0.33	1.99	0.01	1.00	1.00	2.99	0.01	1.00	2.00	2.00	
Final Sat.:	533	533	533	3193	7	1600	1600	4794	6	1600	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.02	0.02	0.02	0.13	0.13	0.01	0.02	0.17	0.17	0.01	0.41	0.00	
Crit Moves:		****		****			****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Arrow Hwy/Live Oak Ave

Cycle (sec):	110	Critical Vol./Cap.(X):	0.827
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	76	Level Of Service:	D

Street Name:	Arrow Hwy							Live Oak Ave					
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:	Ignore			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	2	0	2	2	0	2	0	0	0	0	0	0	0	2	0	0	0	1
Volume Module:													
Base Vol:	0	490	756	255	1331	0	0	0	0	922	0	247	
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	490	756	255	1331	0	0	0	0	922	0	247	
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	490	756	255	1331	0	0	0	0	922	0	247	
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	490	0	255	1331	0	0	0	0	922	0	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	490	0	255	1331	0	0	0	0	922	0	0	
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	490	0	255	1331	0	0	0	0	922	0	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	
Lanes:	0.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00	
Final Sat.:	0	3200	3200	2880	3200	0	0	0	0	2880	0	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.15	0.00	0.09	0.42	0.00	0.00	0.00	0.00	0.32	0.00	0.00	
Crit Moves:	****				****					****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Speedway Dr-Dwy 2/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.489
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	33	Level Of Service:	A

Street Name:	Speedway Dr-Dwy 2							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0	
Volume Module:													
Base Vol:	32	0	32	0	0	0	0	966	86	86	1180	0	
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:	32	0	32	0	0	0	0	966	86	86	1180	0	
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:	32	0	32	0	0	0	0	966	86	86	1180	0	
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:	32	0	32	0	0	0	0	966	86	86	1180	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	32	0	32	0	0	0	0	966	86	86	1180	0	
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:	32	0	32	0	0	0	0	966	86	86	1180	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.75	0.25	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	4408	392	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.22	0.22	0.05	0.37	0.00	
Crit Moves:			****				****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Graham Rd/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.632
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	43	Level Of Service:	B

Street Name:	Graham Rd							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	0	0	0	0	0	0	0	2	0 1
Volume Module:													
Base Vol:	147	0	56	0	0	0	0	685	103	46	1295	0	
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:	147	0	56	0	0	0	0	685	103	46	1295	0	
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:	147	0	56	0	0	0	0	685	103	46	1295	0	
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:	147	0	56	0	0	0	0	685	103	46	1295	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	147	0	56	0	0	0	0	685	103	46	1295	0	
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:	147	0	56	0	0	0	0	685	103	46	1295	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.72	0.00	0.28	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	1159	0	441	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.13	0.00	0.13	0.00	0.00	0.00	0.00	0.21	0.06	0.03	0.40	0.00	
Crit Moves:			****				****				****		

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Rivergrade Rd/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.572
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	39	Level Of Service:	A

Street Name:	Rivergrade Rd							Live Oak Ave					
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:	Ovl			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	
Volume Module:													
Base Vol:	49	49	104	29	74	68	89	488	88	251	1152	13	
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:	49	49	104	29	74	68	89	488	88	251	1152	13	
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:	49	49	104	29	74	68	89	488	88	251	1152	13	
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:	49	49	104	29	74	68	89	488	88	251	1152	13	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	49	49	104	29	74	68	89	488	88	251	1152	13	
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:	49	49	104	29	74	68	89	488	88	251	1152	13	
OvlAdjVol:			0										
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	
Final Sat.:	1600	1600	1600	1600	3200	1600	1600	3200	1600	1600	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.03	0.03	0.07	0.02	0.02	0.04	0.06	0.15	0.06	0.16	0.36	0.01	
OvlAdjV/S:			0.00										
Crit Moves:	****					****	****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #14 Stewart Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.816
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	70	Level Of Service:	D

Street Name:	Stewart Ave						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	1! 0	0	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	217	118	32	13	26	75	19	429	30	17	1492	35
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:	217	118	32	13	26	75	19	429	30	17	1492	35
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:	217	118	32	13	26	75	19	429	30	17	1492	35
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:	217	118	32	13	26	75	19	429	30	17	1492	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	217	118	32	13	26	75	19	429	30	17	1492	35
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:	217	118	32	13	26	75	19	429	30	17	1492	35
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	0.59	0.32	0.09	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	946	514	140	1600	1600	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.14	0.23	0.23	0.01	0.02	0.05	0.01	0.13	0.02	0.01	0.47	0.02
Crit Moves:		****		****			****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #15 Baldwin Park/Arrow Hwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.683
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	B

Street Name:	Baldwin Park							Arrow Hwy					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	2 0	0	
Volume Module:													
Base Vol:	295	0	290	0	0	0	0	434	64	131	1285	0	
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:	295	0	290	0	0	0	0	434	64	131	1285	0	
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:	295	0	290	0	0	0	0	434	64	131	1285	0	
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:	295	0	290	0	0	0	0	434	64	131	1285	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	295	0	290	0	0	0	0	434	64	131	1285	0	
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:	295	0	290	0	0	0	0	434	64	131	1285	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.10	0.00	0.18	0.00	0.00	0.00	0.00	0.14	0.04	0.08	0.40	0.00	
Crit Moves:			****				****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #16 Arrow Highway/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.710
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	51	Level Of Service:	C

Street Name:	Arrow Highway							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Permitted			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0	0	2 0	0	0 1	1 0	2	0 0	0 0	2	0 2	
Volume Module:													
Base Vol:	0	0	0	269	0	43	138	587	0	0	1376	1548	
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	269	0	43	138	587	0	0	1376	1548	
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	269	0	43	138	587	0	0	1376	1548	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	269	0	43	138	587	0	0	1376	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	269	0	43	138	587	0	0	1376	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	269	0	43	138	587	0	0	1376	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	2.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.09	0.00	0.03	0.09	0.18	0.00	0.00	0.43	0.00	
Crit Moves:				****			****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Maine Ave/Arrow Hwy

Cycle (sec):	110	Critical Vol./Cap.(X):	0.787
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	66	Level Of Service:	C

Street Name:	Maine Ave							Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	3 0	0	
Volume Module:													
Base Vol:	611	0	104	0	0	0	0	743	98	34	2323	0	
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:	611	0	104	0	0	0	0	743	98	34	2323	0	
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:	611	0	104	0	0	0	0	743	98	34	2323	0	
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:	611	0	104	0	0	0	0	743	98	34	2323	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	611	0	104	0	0	0	0	743	98	34	2323	0	
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:	611	0	104	0	0	0	0	743	98	34	2323	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	3.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	4800	0	
Capacity Analysis Module:													
Vol/Sat:	0.21	0.00	0.07	0.00	0.00	0.00	0.00	0.23	0.06	0.02	0.48	0.00	
Crit Moves:	****						****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #18 Avenida Barbosa/Buena Vista St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.371
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Street Name:	Avenida Barbosa						Buena Vista St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 1	0	0 2	0	0	1! 0	0	1	0 2	0 1	2 0	1 0 1
Volume Module:												
Base Vol:	50	151	705	8	69	2	1	4	6	156	14	18
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:	50	151	705	8	69	2	1	4	6	156	14	18
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:	50	151	705	8	69	2	1	4	6	156	14	18
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:	50	151	705	8	69	2	1	4	6	156	14	18
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	151	705	8	69	2	1	4	6	156	14	18
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:	50	151	705	8	69	2	1	4	6	156	14	18
OvlAdjVol:			532									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	0.25	0.75	2.00	0.10	0.87	0.03	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	398	1202	3200	162	1397	41	1600	3200	1600	2880	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.13	0.13	0.22	0.05	0.05	0.05	0.00	0.00	0.00	0.05	0.01	0.01
OvlAdjV/S:			0.17									
Crit Moves:			****		****			****			****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #19 Avenida Barbosa/Arrow Highway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.818
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	71	Level Of Service:	D

Street Name:	Avenida Barbosa							Arrow Highway					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0 0	0	2 0	0 0	1	1 0	2 0	0	0 0	2 0	1	
Volume Module:													
Base Vol:	0	0	0	120	0	132	292	436	0	0	1451	643	
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	120	0	132	292	436	0	0	1451	643	
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	120	0	132	292	436	0	0	1451	643	
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	120	0	132	292	436	0	0	1451	643	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	120	0	132	292	436	0	0	1451	643	
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	120	0	132	292	436	0	0	1451	643	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.08	0.18	0.14	0.00	0.00	0.45	0.40	
Crit Moves:						****	****				****		

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Scenario Report

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

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: D[34.3]

Street Name:	Dwy 1						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 2 1 0			1 0 2 0 0		
Volume Module:												
Base Vol:	17	0	15	0	0	0	0	940	44	41	1145	0
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:	17	0	15	0	0	0	0	940	44	41	1145	0
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:	17	0	15	0	0	0	0	940	44	41	1145	0
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:	17	0	15	0	0	0	0	940	44	41	1145	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	17	0	15	0	0	0	0	940	44	41	1145	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1617	2189	335	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	984	xxxx	xxxxx
Potent Cap.:	96	46	666	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	710	xxxx	xxxxx
Move Cap.:	92	43	666	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	710	xxxx	xxxxx
Volume/Cap:	0.18	0.00	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.06	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.4	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	154	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	34.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	D	*	*	*	*	*	*	*	*	*	*
ApproachDel:	34.3			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	D			*			*			*		

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: D[34.1]

Street Name:	Dwy 3						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 2 1 0			1 0 2 0 0		
Volume Module:												
Base Vol:	15	0	17	0	0	0	0	951	41	44	1243	0
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:	15	0	17	0	0	0	0	951	41	44	1243	0
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:	15	0	17	0	0	0	0	951	41	44	1243	0
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:	15	0	17	0	0	0	0	951	41	44	1243	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	15	0	17	0	0	0	0	951	41	44	1243	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1681	2303	338	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	992	xxxx	xxxxx
Potent Cap.:	87	39	664	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	705	xxxx	xxxxx
Move Cap.:	83	37	664	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	705	xxxx	xxxxx
Volume/Cap:	0.18	0.00	0.03	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.06	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.4	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	155	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	34.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	D	*	*	*	*	*	*	*	*	*	*
ApproachDel:	34.1			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	D			*			*			*		

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Live Oak Ln/Live Oak Ave

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: D[29.2]

Street Name:	Live Oak Ln									Live Oak Ave								
Approach:	North Bound					South Bound				East Bound					West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0	13	0	128	83	660	0	0	1232	53								
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	13	0	128	83	660	0	0	1232	53								
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	13	0	128	83	660	0	0	1232	53								
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	13	0	128	83	660	0	0	1232	53								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	0	0	0	13	0	128	83	660	0	0	1232	53								
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	1755	2085	643	1285	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	xxxxx	78	54	421	547	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	xxxxx	69	46	421	547	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	xxxx	0.19	0.00	0.30	0.15	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.5	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	12.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	*	B	*	*	*	*	*								
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	286	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	2.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	29.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	D	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx				29.2		xxxxxx				xxxxxx									
ApproachLOS:	*				D		*				*									

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 Commerce Dr/Live Oak Ave

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: C[23.8]

Street Name:	Commerce Dr						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0 0 1			0 0 0 0 0			0 0 2 1 0			1 0 2 0 0		
Volume Module:												
Base Vol:	6	0	18	0	0	0	0	457	45	256	1523	0
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:	6	0	18	0	0	0	0	457	45	256	1523	0
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:	6	0	18	0	0	0	0	457	45	256	1523	0
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:	6	0	18	0	0	0	0	457	45	256	1523	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	6	0	18	0	0	0	0	457	45	256	1523	0
Critical Gap Module:												
Critical Gp:	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1753	xxxx	175	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	502	xxxx	xxxxx
Potent Cap.:	78	xxxx	844	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1073	xxxx	xxxxx
Move Cap.:	64	xxxx	844	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1073	xxxx	xxxxx
Volume/Cap:	0.09	xxxx	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.24	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.3	xxxx	0.1	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.9	xxxx	xxxxx
Control Del:	67.2	xxxx	9.4	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.4	xxxx	xxxxx
LOS by Move:	F	*	A	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	23.8			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	C			*			*			*		

Note: Queue reported is the number of cars per lane.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	409	572	685	1281	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	0.95	1.00	1.00	0.95		
Frt	1.00	0.85	1.00	1.00		
Flt Protected	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3610	1615	1805	3610		
Flt Permitted	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3610	1615	1805	3610		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	435	609	729	1363	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	435	609	729	1363	0	0
Turn Type	NA	Free	Prot	NA		
Protected Phases	2		1	6		
Permitted Phases		Free				
Actuated Green, G (s)	24.0	100.0	68.0	100.0		
Effective Green, g (s)	24.0	100.0	68.0	100.0		
Actuated g/C Ratio	0.24	1.00	0.68	1.00		
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	866	1615	1227	3610		
v/s Ratio Prot	c0.12		c0.40	0.38		
v/s Ratio Perm		0.38				
v/c Ratio	0.50	0.38	0.59	0.38		
Uniform Delay, d1	32.8	0.0	8.6	0.0		
Progression Factor	1.00	1.00	0.61	1.00		
Incremental Delay, d2	2.1	0.7	0.7	0.3		
Delay (s)	34.9	0.7	6.0	0.3		
Level of Service	C	A	A	A		
Approach Delay (s)	14.9			2.3	0.0	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	412	0	0	1452	0	0	0	366	0	0	515
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	438	0	0	1545	0	0	0	389	0	0	548
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		425			272							
pX, platoon unblocked	0.77			0.90			0.82	0.82	0.90	0.82	0.82	0.77
vC, conflicting volume	1545			438			1759	1983	219	2153	1983	772
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1111			153			938	1211	0	1419	1211	108
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	60	100	100	24
cM capacity (veh/h)	490			1295			43	151	982	49	151	717

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	219	219	772	772	389	548
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	389	548
cSH	1700	1700	1700	1700	982	717
Volume to Capacity	0.13	0.13	0.45	0.45	0.40	0.76
Queue Length 95th (ft)	0	0	0	0	48	181
Control Delay (s)	0.0	0.0	0.0	0.0	11.1	24.3
Lane LOS					B	C
Approach Delay (s)	0.0		0.0		11.1	24.3
Approach LOS					B	C

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	544	1439	0	381	642
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5187	3610		1805	1615
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5187	3610		1805	1615
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	579	1531	0	405	683
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	579	1531	0	405	683
Turn Type		NA	NA		Prot	Free
Protected Phases		2	6		4	
Permitted Phases						Free
Actuated Green, G (s)		56.0	56.0		36.0	100.0
Effective Green, g (s)		56.0	56.0		36.0	100.0
Actuated g/C Ratio		0.56	0.56		0.36	1.00
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		2904	2021		649	1615
v/s Ratio Prot		0.11	c0.42		c0.22	
v/s Ratio Perm						0.42
v/c Ratio		0.20	0.76		0.62	0.42
Uniform Delay, d1		10.9	16.8		26.4	0.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.2	2.7		4.5	0.8
Delay (s)		11.1	19.5		30.9	0.8
Level of Service		B	B		C	A
Approach Delay (s)		11.1	19.5		12.0	
Approach LOS		B	B		B	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	566	45	0	1439	382	0	0	61	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	596	47	0	1515	402	0	0	64	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		537										
pX, platoon unblocked				0.98			0.98	0.98	0.98	0.98	0.98	
vC, conflicting volume	1515			643			1353	2111	298	1877	2158	757
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1515			596			1321	2093	244	1855	2141	757
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	91	100	100	100
cM capacity (veh/h)	447			971			114	52	747	42	48	354

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	298	298	47	757	757	402	64
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	47	0	0	402	64
cSH	1700	1700	1700	1700	1700	1700	747
Volume to Capacity	0.18	0.18	0.03	0.45	0.45	0.24	0.09
Queue Length 95th (ft)	0	0	0	0	0	0	7
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.3
Lane LOS							B
Approach Delay (s)	0.0			0.0			10.3
Approach LOS							B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Scenario Report

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

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Peck Rd-Myrtle Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.804
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	67	Level Of Service:	D

Street Name:	Peck Rd-Myrtle							Live Oak Ave					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 0	1	1 0	2 0	1	
Volume Module:													
Base Vol:	220	766	177	173	548	132	182	1139	184	69	652	20	
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:	220	766	177	173	548	132	182	1139	184	69	652	20	
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:	220	766	177	173	548	132	182	1139	184	69	652	20	
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:	220	766	177	173	548	132	182	1139	184	69	652	20	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	220	766	177	173	548	132	182	1139	184	69	652	20	
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:	220	766	177	173	548	132	182	1139	184	69	652	20	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	1.00	2.44	0.56	1.00	2.42	0.58	1.00	2.00	1.00	1.00	2.00	1.00	
Final Sat.:	1600	3899	901	1600	3868	932	1600	3200	1600	1600	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.14	0.20	0.20	0.11	0.14	0.14	0.11	0.36	0.12	0.04	0.20	0.01	
Crit Moves:		****		****				****		****			

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Myrtle Ave/Longden Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.830
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	79	Level Of Service:	D

Street Name:	Myrtle Ave						Longden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	1 0	1	0 1	0 1	0
Volume Module:												
Base Vol:	92	860	12	343	773	53	80	616	96	26	386	272
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:	92	860	12	343	773	53	80	616	96	26	386	272
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:	92	860	12	343	773	53	80	616	96	26	386	272
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:	92	860	12	343	773	53	80	616	96	26	386	272
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	92	860	12	343	773	53	80	616	96	26	386	272
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:	92	860	12	343	773	53	80	616	96	26	386	272
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.00	1.00	1.00	2.00	1.00	0.23	1.77	1.00	0.08	1.13	0.79
Final Sat.:	1600	3200	1600	1600	3200	1600	368	2832	1600	122	1806	1273
Capacity Analysis Module:												
Vol/Sat:	0.06	0.27	0.01	0.21	0.24	0.03	0.05	0.22	0.06	0.02	0.21	0.21
Crit Moves:		****		****			****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Longden Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.714
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	52	Level Of Service:	C

Street Name:	Longden Ave							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	1	1	0	0	1	1	0	2	1
Volume Module:													
Base Vol:	0	0	0	960	0	9	8	1505	1	1	705	656	
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	960	0	9	8	1505	1	1	705	656	
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	960	0	9	8	1505	1	1	705	656	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	960	0	9	8	1505	1	1	705	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	960	0	9	8	1505	1	1	705	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	960	0	9	8	1505	1	1	705	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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	1.00	0.00	2.00	0.00	1.00	1.00	2.99	0.01	1.00	2.00	2.00	
Final Sat.:	0	1600	0	3200	0	1600	1600	4797	3	1600	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.30	0.00	0.01	0.01	0.31	0.31	0.00	0.22	0.00	
Crit Moves:				****				****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Arrow Hwy/Live Oak Ave

Cycle (sec):	110	Critical Vol./Cap.(X):	0.763
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	61	Level Of Service:	C

Street Name:	Arrow Hwy							Live Oak Ave					
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:	Ignore			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	2	0	2	2	0	2	0	0	0	0	0	0	0	2	0	0	0	1
Volume Module:													
Base Vol:	0	709	1794	442	516	0	0	0	0	856	0	354	
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	709	1794	442	516	0	0	0	0	856	0	354	
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	709	1794	442	516	0	0	0	0	856	0	354	
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	709	0	442	516	0	0	0	0	856	0	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	709	0	442	516	0	0	0	0	856	0	0	
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	709	0	442	516	0	0	0	0	856	0	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	
Lanes:	0.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00	
Final Sat.:	0	3200	3200	2880	3200	0	0	0	0	2880	0	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.22	0.00	0.15	0.16	0.00	0.00	0.00	0.00	0.30	0.00	0.00	
Crit Moves:		****		****						****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Speedway Dr-Dwy 2/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.840
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	77	Level Of Service:	D

Street Name:	Speedway Dr-Dwy 2							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0	
Volume Module:													
Base Vol:	199	0	246	0	0	0	0	2069	222	175	1024	0	
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:	199	0	246	0	0	0	0	2069	222	175	1024	0	
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:	199	0	246	0	0	0	0	2069	222	175	1024	0	
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:	199	0	246	0	0	0	0	2069	222	175	1024	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	199	0	246	0	0	0	0	2069	222	175	1024	0	
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:	199	0	246	0	0	0	0	2069	222	175	1024	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.71	0.29	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	4335	465	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.07	0.00	0.15	0.00	0.00	0.00	0.00	0.48	0.48	0.11	0.32	0.00	
Crit Moves:			****					****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Graham Rd/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.679
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	B

Street Name:	Graham Rd							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	0	0	0	0	0	0	0	2	0 1
Volume Module:													
Base Vol:	17	0	21	0	0	0	0	1711	44	33	932	0	
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:	17	0	21	0	0	0	0	1711	44	33	932	0	
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:	17	0	21	0	0	0	0	1711	44	33	932	0	
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:	17	0	21	0	0	0	0	1711	44	33	932	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	17	0	21	0	0	0	0	1711	44	33	932	0	
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:	17	0	21	0	0	0	0	1711	44	33	932	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.45	0.00	0.55	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	716	0	884	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.53	0.03	0.02	0.29	0.00	
Crit Moves:	****							****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Rivergrade Rd/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.816
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	75	Level Of Service:	D

Street Name:	Rivergrade Rd							Live Oak Ave					
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:	Ovl			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	
Volume Module:													
Base Vol:	101	64	361	26	20	53	77	1569	33	81	741	6	
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:	101	64	361	26	20	53	77	1569	33	81	741	6	
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:	101	64	361	26	20	53	77	1569	33	81	741	6	
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:	101	64	361	26	20	53	77	1569	33	81	741	6	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	101	64	361	26	20	53	77	1569	33	81	741	6	
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:	101	64	361	26	20	53	77	1569	33	81	741	6	
OvlAdjVol:			280										
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	
Final Sat.:	1600	1600	1600	1600	3200	1600	1600	3200	1600	1600	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.06	0.04	0.23	0.02	0.01	0.03	0.05	0.49	0.02	0.05	0.23	0.00	
OvlAdjV/S:			0.17										
Crit Moves:			****	****				****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #14 Stewart Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.801
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	67	Level Of Service:	D

Street Name:	Stewart Ave						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0	0	1! 0	0	1	0	1 0	1	1	0	2 0	1
Volume Module:												
Base Vol:	74	19	11	23	99	12	58	1821	277	38	719	1
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:	74	19	11	23	99	12	58	1821	277	38	719	1
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:	74	19	11	23	99	12	58	1821	277	38	719	1
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:	74	19	11	23	99	12	58	1821	277	38	719	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	74	19	11	23	99	12	58	1821	277	38	719	1
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:	74	19	11	23	99	12	58	1821	277	38	719	1
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	0.71	0.18	0.11	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1138	292	169	1600	1600	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.05	0.07	0.06	0.01	0.06	0.01	0.04	0.57	0.17	0.02	0.22	0.00
Crit Moves:	****				****			****		****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #15 Baldwin Park/Arrow Hwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.737
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	55	Level Of Service:	C

Street Name:	Baldwin Park							Arrow Hwy					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2	0	0	0	1	0	0	0	0	0	0	0	2
Volume Module:													
Base Vol:	92	0	84	0	0	0	0	1346	524	262	647	0	
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:	92	0	84	0	0	0	0	1346	524	262	647	0	
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:	92	0	84	0	0	0	0	1346	524	262	647	0	
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:	92	0	84	0	0	0	0	1346	524	262	647	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	92	0	84	0	0	0	0	1346	524	262	647	0	
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:	92	0	84	0	0	0	0	1346	524	262	647	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.03	0.00	0.05	0.00	0.00	0.00	0.00	0.42	0.33	0.16	0.20	0.00	
Crit Moves:			****					****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #16 Arrow Highway/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.872
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	88	Level Of Service:	D

Street Name:	Arrow Highway							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Permitted			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0 0	0	2 0	0 0	1	1 0	2 0	0	0 0	2 0	2	
Volume Module:													
Base Vol:	0	0	0	971	0	106	37	1391	0	0	795	441	
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	971	0	106	37	1391	0	0	795	441	
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	971	0	106	37	1391	0	0	795	441	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	971	0	106	37	1391	0	0	795	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	971	0	106	37	1391	0	0	795	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	971	0	106	37	1391	0	0	795	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	2.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.34	0.00	0.07	0.02	0.43	0.00	0.00	0.25	0.00	
Crit Moves:				****				****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Maine Ave/Arrow Hwy

Cycle (sec):	110	Critical Vol./Cap.(X):	0.797
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	68	Level Of Service:	C

Street Name:	Maine Ave							Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2	0	0	0	1	0	0	0	0	0	0	0	2
Volume Module:													
Base Vol:	245	0	99	0	0	0	0	1861	489	63	986	0	
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:	245	0	99	0	0	0	0	1861	489	63	986	0	
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:	245	0	99	0	0	0	0	1861	489	63	986	0	
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:	245	0	99	0	0	0	0	1861	489	63	986	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	245	0	99	0	0	0	0	1861	489	63	986	0	
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:	245	0	99	0	0	0	0	1861	489	63	986	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	3.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	4800	0	
Capacity Analysis Module:													
Vol/Sat:	0.09	0.00	0.06	0.00	0.00	0.00	0.00	0.58	0.31	0.04	0.21	0.00	
Crit Moves:	****							****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #18 Avenida Barbosa/Buena Vista St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.527
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	A

Street Name:	Avenida Barbosa						Buena Vista St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 1	0	0 2	0	0	1! 0	0	1	0 2	0 1	2 0	1 0 1
Volume Module:												
Base Vol:	15	112	308	26	178	6	6	20	82	477	17	22
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:	15	112	308	26	178	6	6	20	82	477	17	22
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:	15	112	308	26	178	6	6	20	82	477	17	22
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:	15	112	308	26	178	6	6	20	82	477	17	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	15	112	308	26	178	6	6	20	82	477	17	22
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:	15	112	308	26	178	6	6	20	82	477	17	22
OvlAdjVol:			0									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	0.12	0.88	2.00	0.12	0.85	0.03	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	189	1411	3200	198	1356	46	1600	3200	1600	2880	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.08	0.08	0.10	0.13	0.13	0.13	0.00	0.01	0.05	0.17	0.01	0.01
OvlAdjV/S:			0.00									
Crit Moves:		****			****				****	****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #19 Avenida Barbosa/Arrow Highway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.626
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	42	Level Of Service:	B

Street Name:	Avenida Barbosa							Arrow Highway					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0 0	0	2 0	0 0	1	1 0	2 0	0	0 0	2 0	1	
Volume Module:													
Base Vol:	0	0	0	361	0	317	201	860	0	0	646	198	
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	361	0	317	201	860	0	0	646	198	
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	361	0	317	201	860	0	0	646	198	
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	361	0	317	201	860	0	0	646	198	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	361	0	317	201	860	0	0	646	198	
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	361	0	317	201	860	0	0	646	198	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.13	0.00	0.20	0.13	0.27	0.00	0.00	0.20	0.12	
Crit Moves:						****	****				****		

Irwindale Regional Shopping Center
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Scenario Report

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

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Average Delay (sec/veh): 226.9 Worst Case Level Of Service: F[4070.8]

Street Name:	Dwy 1						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	90	0	111	0	0	0	0	2128	102	74	1110	0
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:	90	0	111	0	0	0	0	2128	102	74	1110	0
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:	90	0	111	0	0	0	0	2128	102	74	1110	0
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:	90	0	111	0	0	0	0	2128	102	74	1110	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	90	0	111	0	0	0	0	2128	102	74	1110	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	2882	3437	760	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	2230	xxxx	xxxxx
Potent Cap.:	13	7	353	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	236	xxxx	xxxxx
Move Cap.:	10	5	353	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	236	xxxx	xxxxx
Volume/Cap:	8.96	0.00	0.31	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.31	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1.3	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	27.0	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	D	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	22	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	25.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	4071	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	*	*	*	*	*	*	*	*	*
ApproachDel:	4070.8			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	F			*			*			*		

Note: Queue reported is the number of cars per lane.

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Average Delay (sec/veh): 268.5 Worst Case Level Of Service: F[4807.3]

Street Name:	Dwy 3									Live Oak Ave							
Approach:	North Bound			South Bound						East Bound					West Bound		
Movement:	L	- T	- R	L	- T	- R				L	- T	- R			L	- T	- R
Control:	Stop Sign			Stop Sign						Uncontrolled					Uncontrolled		
Rights:	Include			Include						Include					Include		
Lanes:	0 0	1! 0	0	0 0	0	0	0	0	0	0 0	2	1	0	1	0	2	0 0
Volume Module:																	
Base Vol:	89	0	116	0	0	0		0	2196	100		80	1098		0		
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:	89	0	116	0	0	0		0	2196	100		80	1098		0		
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:	89	0	116	0	0	0		0	2196	100		80	1098		0		
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:	89	0	116	0	0	0		0	2196	100		80	1098		0		
Reduct Vol:	0	0	0	0	0	0		0	0	0		0	0		0		
FinalVolume:	89	0	116	0	0	0		0	2196	100		80	1098		0		
Critical Gap Module:																	
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		4.1	xxxx		xxxxx		
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		2.2	xxxx		xxxxx		
Capacity Module:																	
Cnflict Vol:	2955	3504	782	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		2296	xxxx		xxxxx		
Potent Cap.:	12	6	341	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		223	xxxx		xxxxx		
Move Cap.:	9	4	341	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		223	xxxx		xxxxx		
Volume/Cap:	10.47	0.00	0.34	xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		0.36	xxxx		xxxx		
Level Of Service Module:																	
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		1.5	xxxx		xxxxx		
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		29.9	xxxx		xxxxx		
LOS by Move:	*	*	*	*	*	*		*	*	*		D	*		*		
Movement:	LT -	LTR -	RT	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -		RT		
Shared Cap.:	xxxx	19	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx		xxxxx		
SharedQueue:	xxxxx	26.2	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx		xxxxx		
Shrd ConDel:	xxxxx	4807	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx		xxxxx		
Shared LOS:	*	F	*	*	*	*		*	*	*		*	*		*		
ApproachDel:	4807.3			xxxxxx				xxxxxx				xxxxxx					
ApproachLOS:	F			*				*				*					

Note: Queue reported is the number of cars per lane.

Irwindale Regional Shopping Center
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Live Oak Ln/Live Oak Ave

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: C[22.6]

Street Name:	Live Oak Ln						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 0	0	0 0	1! 0	0	1 0	2 0	0	0 0	1 1	0
Volume Module:												
Base Vol:	0	0	0	11	0	69	45	1662	0	0	885	6
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	11	0	69	45	1662	0	0	885	6
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	11	0	69	45	1662	0	0	885	6
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	11	0	69	45	1662	0	0	885	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	11	0	69	45	1662	0	0	885	6
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1809	2640	446	891	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	72	24	566	769	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	69	22	566	769	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.16	0.00	0.12	0.06	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	283	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	1.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	22.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	*	*	*	*	*	*
ApproachDel:	xxxxxx				22.6		xxxxxx			xxxxxx		
ApproachLOS:	*				C		*			*		

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 Commerce Dr/Live Oak Ave

Average Delay (sec/veh): 4.3 Worst Case Level Of Service: F[56.3]

Street Name:	Commerce Dr						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0 0 1			0 0 0 0 0			0 1 1 1 0			1 0 2 0 0		
Volume Module:												
Base Vol:	24	0	197	0	0	0	2	1948	6	21	801	0
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:	24	0	197	0	0	0	2	1948	6	21	801	0
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:	24	0	197	0	0	0	2	1948	6	21	801	0
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:	24	0	197	0	0	0	2	1948	6	21	801	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	24	0	197	0	0	0	2	1948	6	21	801	0
Critical Gap Module:												
Critical Gp:	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	2398	xxxx	652	xxxx	xxxx	xxxxx	801	xxxx	xxxxx	1954	xxxx	xxxxx
Potent Cap.:	29	xxxx	415	xxxx	xxxx	xxxxx	831	xxxx	xxxxx	303	xxxx	xxxxx
Move Cap.:	27	xxxx	415	xxxx	xxxx	xxxxx	831	xxxx	xxxxx	303	xxxx	xxxxx
Volume/Cap:	0.89	xxxx	0.47	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	0.07	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	2.8	xxxx	2.5	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.2	xxxx	xxxxx
Control Del:	343.6	xxxx	21.3	xxxxx	xxxx	xxxxx	9.3	xxxx	xxxxx	17.8	xxxx	xxxxx
LOS by Move:	F	*	C	*	*	*	A	*	*	C	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	A	*	*	*	*	*
ApproachDel:	56.3			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	F			*			*			*		

Note: Queue reported is the number of cars per lane.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1095	1219	573	1177	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	0.95	1.00	1.00	0.95		
Frt	1.00	0.85	1.00	1.00		
Flt Protected	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3610	1615	1805	3610		
Flt Permitted	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3610	1615	1805	3610		
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1177	1311	616	1266	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1177	1311	616	1266	0	0
Turn Type	NA	Free	Prot	NA		
Protected Phases	2		1	6		
Permitted Phases		Free				
Actuated Green, G (s)	51.4	100.0	40.6	100.0		
Effective Green, g (s)	51.4	100.0	40.6	100.0		
Actuated g/C Ratio	0.51	1.00	0.41	1.00		
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	1855	1615	732	3610		
v/s Ratio Prot	0.33		0.34	0.35		
v/s Ratio Perm		c0.81				
v/c Ratio	0.63	0.81	0.84	0.35		
Uniform Delay, d1	17.5	0.0	26.8	0.0		
Progression Factor	1.00	1.00	0.99	1.00		
Incremental Delay, d2	1.7	4.6	8.6	0.3		
Delay (s)	19.2	4.6	35.2	0.3		
Level of Service	B	A	D	A		
Approach Delay (s)	11.5			11.7	0.0	
Approach LOS	B			B	A	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1094	0	0	942	0	0	0	642	0	0	821
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	1128	0	0	971	0	0	0	662	0	0	846
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		425			272							
pX, platoon unblocked	0.91			0.76			0.81	0.81	0.76	0.81	0.81	0.91
vC, conflicting volume	971			1128			2460	2099	564	2197	2099	486
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	762			541			1812	1365	0	1487	1365	227
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			0	100	20	100	100	0
cM capacity (veh/h)	779			790			0	120	831	14	120	709

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	564	564	486	486	662	846
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	662	846
cSH	1700	1700	1700	1700	831	709
Volume to Capacity	0.33	0.33	0.29	0.29	0.80	1.19
Queue Length 95th (ft)	0	0	0	0	210	709
Control Delay (s)	0.0	0.0	0.0	0.0	24.0	121.6
Lane LOS					C	F
Approach Delay (s)	0.0		0.0		24.0	121.6
Approach LOS					C	F

Intersection Summary			
Average Delay	32.9		
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1221	343	0	278	509
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5187	3610		1805	1615
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5187	3610		1805	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1327	373	0	302	553
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	1327	373	0	302	553
Turn Type		NA	NA		Prot	Free
Protected Phases		2	6		4	
Permitted Phases						Free
Actuated Green, G (s)		52.0	52.0		40.0	100.0
Effective Green, g (s)		52.0	52.0		40.0	100.0
Actuated g/C Ratio		0.52	0.52		0.40	1.00
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		2697	1877		722	1615
v/s Ratio Prot		c0.26	0.10		c0.17	
v/s Ratio Perm						0.34
v/c Ratio		0.49	0.20		0.42	0.34
Uniform Delay, d1		15.5	12.8		21.6	0.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.6	0.2		1.8	0.6
Delay (s)		16.1	13.1		23.4	0.6
Level of Service		B	B		C	A
Approach Delay (s)		16.1	13.1		8.6	
Approach LOS		B	B		A	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1180	30	0	343	232	0	0	34	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	1255	32	0	365	247	0	0	36	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		537										
pX, platoon unblocked				0.82			0.82	0.82	0.82	0.82	0.82	
vC, conflicting volume	365			1287			1438	1620	628	1029	1652	182
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	365			918			1101	1322	116	603	1361	182
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	95	100	100	100
cM capacity (veh/h)	1205			618			139	130	758	303	123	835

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	628	628	32	182	182	247	36
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	32	0	0	247	36
cSH	1700	1700	1700	1700	1700	1700	758
Volume to Capacity	0.37	0.37	0.02	0.11	0.11	0.15	0.05
Queue Length 95th (ft)	0	0	0	0	0	0	4
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.0
Lane LOS							A
Approach Delay (s)	0.0			0.0			10.0
Approach LOS							A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

Irwindale Regional Shopping Center
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Scenario Report

Scenario:	Exist WP SAT
Command:	Default Command
Volume:	Exist WP SAT
Geometry:	Exist
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Peck Rd-Myrtle Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.517
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	A

Street Name:	Peck Rd-Myrtle						Live Oak Ave					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	156	467	135	63	418	138	133	408	140	122	396	40
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:	156	467	135	63	418	138	133	408	140	122	396	40
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:	156	467	135	63	418	138	133	408	140	122	396	40
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:	156	467	135	63	418	138	133	408	140	122	396	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	156	467	135	63	418	138	133	408	140	122	396	40
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:	156	467	135	63	418	138	133	408	140	122	396	40
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.33	0.67	1.00	2.26	0.74	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	3724	1076	1600	3609	1191	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.10	0.13	0.13	0.04	0.12	0.12	0.08	0.13	0.09	0.08	0.12	0.03
Crit Moves:	****				****			****		****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Myrtle Ave/Longden Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.552
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	38	Level Of Service:	A

Street Name:	Myrtle Ave						Longden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	1 0	1	0 1	0 1	0
Volume Module:												
Base Vol:	59	568	9	150	563	96	98	192	53	47	215	175
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:	59	568	9	150	563	96	98	192	53	47	215	175
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:	59	568	9	150	563	96	98	192	53	47	215	175
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:	59	568	9	150	563	96	98	192	53	47	215	175
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	59	568	9	150	563	96	98	192	53	47	215	175
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:	59	568	9	150	563	96	98	192	53	47	215	175
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.00	1.00	1.00	2.00	1.00	0.68	1.32	1.00	0.22	0.98	0.80
Final Sat.:	1600	3200	1600	1600	3200	1600	1081	2119	1600	344	1574	1281
Capacity Analysis Module:												
Vol/Sat:	0.04	0.18	0.01	0.09	0.18	0.06	0.06	0.09	0.03	0.03	0.14	0.14
Crit Moves:		****		****			****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Longden Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.416
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	29	Level Of Service:	A

Street Name:	Longden Ave						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	1! 0	0	1 1	0 0	1	1 0	2 1	0	1 0	2 0	2
Volume Module:												
Base Vol:	7	7	8	357	6	11	9	570	8	10	586	399
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:	7	7	8	357	6	11	9	570	8	10	586	399
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:	7	7	8	357	6	11	9	570	8	10	586	399
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	7	7	8	357	6	11	9	570	8	10	586	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	7	8	357	6	11	9	570	8	10	586	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	7	7	8	357	6	11	9	570	8	10	586	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	0.32	0.32	0.36	1.97	0.03	1.00	1.00	2.96	0.04	1.00	2.00	2.00
Final Sat.:	509	509	582	3147	53	1600	1600	4734	66	1600	3200	3200
Capacity Analysis Module:												
Vol/Sat:	0.01	0.01	0.01	0.11	0.11	0.01	0.01	0.12	0.12	0.01	0.18	0.00
Crit Moves:			****		****		****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Arrow Hwy/Live Oak Ave

Cycle (sec):	110	Critical Vol./Cap.(X):	0.584
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	39	Level Of Service:	A

Street Name:	Arrow Hwy							Live Oak Ave					
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:	Ignore			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	2	0	2	2	0	2	0	0	0	0	0
Volume Module:													
Base Vol:	0	328	620	562	439	0	0	0	0	564	0	519	
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	328	620	562	439	0	0	0	0	564	0	519	
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	328	620	562	439	0	0	0	0	564	0	519	
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	328	0	562	439	0	0	0	0	564	0	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	328	0	562	439	0	0	0	0	564	0	0	
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	328	0	562	439	0	0	0	0	564	0	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	
Lanes:	0.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00	
Final Sat.:	0	3200	3200	2880	3200	0	0	0	0	2880	0	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.10	0.00	0.20	0.14	0.00	0.00	0.00	0.00	0.20	0.00	0.00	
Crit Moves:		****		****						****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Speedway Dr-Dwy 2/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.807
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	68	Level Of Service:	D

Street Name:	Speedway Dr-Dwy 2							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0	
Volume Module:													
Base Vol:	342	0	360	0	0	0	0	873	374	356	814	0	
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:	342	0	360	0	0	0	0	873	374	356	814	0	
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:	342	0	360	0	0	0	0	873	374	356	814	0	
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:	342	0	360	0	0	0	0	873	374	356	814	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	342	0	360	0	0	0	0	873	374	356	814	0	
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:	342	0	360	0	0	0	0	873	374	356	814	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.10	0.90	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3360	1440	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.12	0.00	0.23	0.00	0.00	0.00	0.00	0.26	0.26	0.22	0.25	0.00	
Crit Moves:			****					****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Graham Rd/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.325
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Street Name:	Graham Rd							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	0	0	0	0	0	0	2	0	1
Volume Module:													
Base Vol:	36	0	4	0	0	0	0	555	25	15	640	0	
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:	36	0	4	0	0	0	0	555	25	15	640	0	
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:	36	0	4	0	0	0	0	555	25	15	640	0	
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:	36	0	4	0	0	0	0	555	25	15	640	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	36	0	4	0	0	0	0	555	25	15	640	0	
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:	36	0	4	0	0	0	0	555	25	15	640	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.90	0.00	0.10	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	1440	0	160	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.17	0.02	0.01	0.20	0.00	
Crit Moves:	****						****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Rivergrade Rd/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.329
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Street Name:	Rivergrade Rd						Live Oak Ave					
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:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	38	35	91	11	16	68	15	479	30	47	500	7
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:	38	35	91	11	16	68	15	479	30	47	500	7
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:	38	35	91	11	16	68	15	479	30	47	500	7
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:	38	35	91	11	16	68	15	479	30	47	500	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	38	35	91	11	16	68	15	479	30	47	500	7
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:	38	35	91	11	16	68	15	479	30	47	500	7
OvlAdjVol:			44									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	1600	1600	1600	3200	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.06	0.01	0.01	0.04	0.01	0.15	0.02	0.03	0.16	0.00
OvlAdjV/S:			0.03									
Crit Moves:	****					****		****		****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #14 Stewart Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.365
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Street Name:	Stewart Ave						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	1! 0	0	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	76	23	27	2	44	3	6	543	61	33	474	5
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:	76	23	27	2	44	3	6	543	61	33	474	5
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:	76	23	27	2	44	3	6	543	61	33	474	5
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:	76	23	27	2	44	3	6	543	61	33	474	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	76	23	27	2	44	3	6	543	61	33	474	5
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:	76	23	27	2	44	3	6	543	61	33	474	5
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	0.61	0.18	0.21	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	965	292	343	1600	1600	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.05	0.08	0.08	0.00	0.03	0.00	0.00	0.17	0.04	0.02	0.15	0.00
Crit Moves:	****				****			****		****		

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #15 Baldwin Park/Arrow Hwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.449
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	31	Level Of Service:	A

Street Name:	Baldwin Park							Arrow Hwy					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2	0	0	0	1	0	0	0	0	0	0	0	2
Volume Module:													
Base Vol:	71	0	140	0	0	0	0	489	81	174	467	0	
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:	71	0	140	0	0	0	0	489	81	174	467	0	
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:	71	0	140	0	0	0	0	489	81	174	467	0	
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:	71	0	140	0	0	0	0	489	81	174	467	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	71	0	140	0	0	0	0	489	81	174	467	0	
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:	71	0	140	0	0	0	0	489	81	174	467	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.02	0.00	0.09	0.00	0.00	0.00	0.00	0.15	0.05	0.11	0.15	0.00	
Crit Moves:			****					****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #16 Arrow Highway/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.426
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	A

Street Name:	Arrow Highway							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Permitted			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0 0	0	2 0	0 0	1	1 0	2 0	0	0 0	2 0	2	
Volume Module:													
Base Vol:	0	0	0	296	0	65	68	563	0	0	578	385	
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	296	0	65	68	563	0	0	578	385	
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	296	0	65	68	563	0	0	578	385	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	296	0	65	68	563	0	0	578	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	296	0	65	68	563	0	0	578	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	296	0	65	68	563	0	0	578	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	2.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.10	0.00	0.04	0.04	0.18	0.00	0.00	0.18	0.00	
Crit Moves:				****			****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Maine Ave/Arrow Hwy

Cycle (sec):	110	Critical Vol./Cap.(X):	0.442
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	31	Level Of Service:	A

Street Name:	Maine Ave							Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	3 0	0	
Volume Module:													
Base Vol:	208	0	104	0	0	0	0	700	170	96	760	0	
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:	208	0	104	0	0	0	0	700	170	96	760	0	
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:	208	0	104	0	0	0	0	700	170	96	760	0	
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:	208	0	104	0	0	0	0	700	170	96	760	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	208	0	104	0	0	0	0	700	170	96	760	0	
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:	208	0	104	0	0	0	0	700	170	96	760	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	3.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	4800	0	
Capacity Analysis Module:													
Vol/Sat:	0.07	0.00	0.07	0.00	0.00	0.00	0.00	0.22	0.11	0.06	0.16	0.00	
Crit Moves:	****							****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #18 Avenida Barbosa/Buena Vista St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.329
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Street Name:	Avenida Barbosa							Buena Vista St					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:		Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 1	0 0	2	0 0	0 1	0	1 0	2 0	1	2 0	1 0	1	
Volume Module:													
Base Vol:	75	83	132	0	62	1	2	12	72	133	26	14	
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:	75	83	132	0	62	1	2	12	72	133	26	14	
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:	75	83	132	0	62	1	2	12	72	133	26	14	
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:	75	83	132	0	62	1	2	12	72	133	26	14	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	75	83	132	0	62	1	2	12	72	133	26	14	
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:	75	83	132	0	62	1	2	12	72	133	26	14	
OvlAdjVol:			0										
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	
Lanes:	0.47	0.53	2.00	0.00	0.98	0.02	1.00	2.00	1.00	2.00	1.00	1.00	
Final Sat.:	759	841	3200	0	1575	25	1600	3200	1600	2880	1600	1600	
Capacity Analysis Module:													
Vol/Sat:	0.10	0.10	0.04	0.00	0.04	0.04	0.00	0.00	0.05	0.05	0.02	0.01	
OvlAdjV/S:			0.00										
Crit Moves:	****				****				****	****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #19 Avenida Barbosa/Arrow Highway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.561
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	37	Level Of Service:	A

Street Name:	Avenida Barbosa							Arrow Highway					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0 0	0	2 0	0 0	1	1 0	2 0	0	0 0	2 0	1	
Volume Module:													
Base Vol:	0	0	0	120	0	153	162	637	0	0	845	150	
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	120	0	153	162	637	0	0	845	150	
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	120	0	153	162	637	0	0	845	150	
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	120	0	153	162	637	0	0	845	150	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	120	0	153	162	637	0	0	845	150	
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	120	0	153	162	637	0	0	845	150	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.04	0.00	0.10	0.10	0.20	0.00	0.00	0.26	0.09	
Crit Moves:						****	****				****		

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Scenario Report

Scenario:	Exist WP SAT
Command:	Default Command
Volume:	Exist WP SAT
Geometry:	Exist
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Average Delay (sec/veh): 129.1 Worst Case Level Of Service: F[1137.8]

Street Name:	Dwy 1							Live Oak Ave						
Approach:	North Bound			South Bound				East Bound				West Bound		
Movement:	L	T	R	L	T	R		L	T	R		L	T	R
Control:	Stop Sign			Stop Sign				Uncontrolled				Uncontrolled		
Rights:	Include			Include				Include				Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0				0 0 2 1 0				1 0 2 0 0		
Volume Module:														
Base Vol:	149	0	149	0	0	0	0	1039	162	150	992	0		
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:	149	0	149	0	0	0	0	1039	162	150	992	0		
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:	149	0	149	0	0	0	0	1039	162	150	992	0		
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:	149	0	149	0	0	0	0	1039	162	150	992	0		
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0		
FinalVolume:	149	0	149	0	0	0	0	1039	162	150	992	0		
Critical Gap Module:														
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx		
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx		
Capacity Module:														
Cnflict Vol:	1916	2412	427	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1201	xxxx	xxxxx		
Potent Cap.:	61	33	581	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	588	xxxx	xxxxx		
Move Cap.:	49	25	581	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	588	xxxx	xxxxx		
Volume/Cap:	3.05	0.00	0.26	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.26	xxxx	xxxx		
Level Of Service Module:														
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1.0	xxxx	xxxxx		
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	13.2	xxxx	xxxxx		
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*		
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT		
Shared Cap.:	xxxx	90	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	29.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx	1138	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
Shared LOS:	*	F	*	*	*	*	*	*	*	*	*	*		
ApproachDel:	1137.8			xxxxxx			xxxxxx			xxxxxx				
ApproachLOS:	F			*			*			*				

Note: Queue reported is the number of cars per lane.

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Average Delay (sec/veh): 138.8 Worst Case Level Of Service: F[1240.1]

Street Name:	Dwy 3						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	143	0	159	0	0	0	0	1067	160	156	1028	0
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:	143	0	159	0	0	0	0	1067	160	156	1028	0
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:	143	0	159	0	0	0	0	1067	160	156	1028	0
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:	143	0	159	0	0	0	0	1067	160	156	1028	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	143	0	159	0	0	0	0	1067	160	156	1028	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1973	2487	436	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1227	xxxx	xxxxx
Potent Cap.:	56	30	574	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	575	xxxx	xxxxx
Move Cap.:	44	22	574	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	575	xxxx	xxxxx
Volume/Cap:	3.25	0.00	0.28	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.27	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	13.6	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	86	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	30.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	1240	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	*	*	*	*	*	*	*	*	*
ApproachDel:	1240.1			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	F			*			*			*		

Note: Queue reported is the number of cars per lane.

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Live Oak Ln/Live Oak Ave

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: B[11.0]

Street Name:	Live Oak Ln									Live Oak Ave								
Approach:	North Bound					South Bound				East Bound					West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0			2	0			61	35	525			0	0	588			22
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			2	0			61	35	525			0	0	588			22
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			2	0			61	35	525			0	0	588			22
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			2	0			61	35	525			0	0	588			22
Reduct Vol:	0	0	0			0	0			0	0	0			0	0	0			0
FinalVolume:	0	0	0			2	0			61	35	525			0	0	588			22
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx			6.8	6.5			6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	xxxxx			3.5	4.0			3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx			932	1194			305	610	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	xxxxx			269	188			697	979	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	xxxxx			262	181			697	979	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	xxxx			0.01	0.00			0.09	0.04	xxxx	xxxx	xxxx	xxxx	xxxx				
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Control Del:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			8.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	*	*	*			*	*	*			A	*	*	*	*	*				
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	662	xxxxx			xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	0.3	xxxxx			xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	xxxxx	xxxx	xxxxx			xxxxx	11.0	xxxxx			xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*			*	B	*			*	*	*	*	*	*				
ApproachDel:	xxxxxx					11.0					xxxxxx					xxxxxx				
ApproachLOS:	*					B					*					*				

Note: Queue reported is the number of cars per lane.

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 Commerce Dr/Live Oak Ave

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[12.3]

Street Name:	Commerce Dr						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0 0 1			0 0 0 0 0			0 1 1 1 0			1 0 2 0 0		
Volume Module:												
Base Vol:	4	0	8	0	0	0	2	591	6	13	524	0
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:	4	0	8	0	0	0	2	591	6	13	524	0
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:	4	0	8	0	0	0	2	591	6	13	524	0
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:	4	0	8	0	0	0	2	591	6	13	524	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	4	0	8	0	0	0	2	591	6	13	524	0
Critical Gap Module:												
Critical Gp:	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	886	xxxx	200	xxxx	xxxx	xxxxx	524	xxxx	xxxxx	597	xxxx	xxxxx
Potent Cap.:	288	xxxx	814	xxxx	xxxx	xxxxx	1053	xxxx	xxxxx	989	xxxx	xxxxx
Move Cap.:	285	xxxx	814	xxxx	xxxx	xxxxx	1053	xxxx	xxxxx	989	xxxx	xxxxx
Volume/Cap:	0.01	xxxx	0.01	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	0.0	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	17.8	xxxx	9.5	xxxxx	xxxx	xxxxx	8.4	xxxx	xxxxx	8.7	xxxx	xxxxx
LOS by Move:	C	*	A	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	A	*	*	*	*	*
ApproachDel:	12.3			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the number of cars per lane.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	233	993	464	1183	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	0.95	1.00	1.00	0.95		
Frt	1.00	0.85	1.00	1.00		
Flt Protected	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3610	1615	1805	3610		
Flt Permitted	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3610	1615	1805	3610		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	245	1045	488	1245	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	245	1045	488	1245	0	0
Turn Type	NA	Free	Prot	NA		
Protected Phases	2		1	6		
Permitted Phases		Free				
Actuated Green, G (s)	26.0	100.0	66.0	100.0		
Effective Green, g (s)	26.0	100.0	66.0	100.0		
Actuated g/C Ratio	0.26	1.00	0.66	1.00		
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	938	1615	1191	3610		
v/s Ratio Prot	0.07		0.27	0.34		
v/s Ratio Perm		c0.65				
v/c Ratio	0.26	0.65	0.41	0.34		
Uniform Delay, d1	29.4	0.0	7.9	0.0		
Progression Factor	1.00	1.00	0.77	1.00		
Incremental Delay, d2	0.7	2.0	0.2	0.3		
Delay (s)	30.1	2.0	6.3	0.3		
Level of Service	C	A	A	A		
Approach Delay (s)	7.3			2.0	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	4.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	252	0	0	670	0	0	0	332	0	0	861
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	277	0	0	736	0	0	0	365	0	0	946
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		425			272							
pX, platoon unblocked	0.93			0.96			0.95	0.95	0.96	0.95	0.95	0.93
vC, conflicting volume	736			277			1591	1013	138	1240	1013	368
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	556			153			1308	698	9	937	698	159
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			0	100	65	100	100	0
cM capacity (veh/h)	949			1377			0	348	1030	136	348	801

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	138	138	368	368	365	946
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	365	946
cSH	1700	1700	1700	1700	1030	801
Volume to Capacity	0.08	0.08	0.22	0.22	0.35	1.18
Queue Length 95th (ft)	0	0	0	0	40	749
Control Delay (s)	0.0	0.0	0.0	0.0	10.4	113.9
Lane LOS					B	F
Approach Delay (s)	0.0		0.0		10.4	113.9
Approach LOS					B	F

Intersection Summary			
Average Delay	48.0		
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	798	259	0	218	726
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5187	3610		1805	1615
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5187	3610		1805	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	840	273	0	229	764
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	840	273	0	229	764
Turn Type		NA	NA		Prot	Free
Protected Phases		2	6		4	
Permitted Phases						Free
Actuated Green, G (s)		48.0	48.0		44.0	100.0
Effective Green, g (s)		48.0	48.0		44.0	100.0
Actuated g/C Ratio		0.48	0.48		0.44	1.00
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		2489	1732		794	1615
v/s Ratio Prot		0.16	0.08		0.13	
v/s Ratio Perm						c0.47
v/c Ratio		0.34	0.16		0.29	0.47
Uniform Delay, d1		16.1	14.6		18.0	0.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.4	0.2		0.9	1.0
Delay (s)		16.5	14.8		18.9	1.0
Level of Service		B	B		B	A
Approach Delay (s)		16.5	14.8		5.1	
Approach LOS		B	B		A	

Intersection Summary			
HCM 2000 Control Delay	10.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	430	19	0	253	228	0	0	18	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	457	20	0	269	243	0	0	19	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		537										
pX, platoon unblocked				0.99			0.99	0.99	0.99	0.99	0.99	
vC, conflicting volume	269			478			592	727	229	517	747	135
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	269			457			572	708	206	496	728	135
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	98	100	100	100
cM capacity (veh/h)	1306			1106			404	359	800	446	350	896

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	229	229	20	135	135	243	19
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	20	0	0	243	19
cSH	1700	1700	1700	1700	1700	1700	800
Volume to Capacity	0.13	0.13	0.01	0.08	0.08	0.14	0.02
Queue Length 95th (ft)	0	0	0	0	0	0	2
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.6
Lane LOS							A
Approach Delay (s)	0.0			0.0			9.6
Approach LOS							A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	21.9%	ICU Level of Service	A
Analysis Period (min)	15		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Scenario Report

Scenario:	OY NP AM
Command:	Default Command
Volume:	OY NP AM
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Peck Rd-Myrtle Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.841
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	77	Level Of Service:	D

Street Name:	Peck Rd-Myrtle						Live Oak Ave					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	269	1009	287	41	536	163	72	577	224	168	1224	58
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:	269	1009	287	41	536	163	72	577	224	168	1224	58
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:	269	1009	287	41	536	163	72	577	224	168	1224	58
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:	269	1009	287	41	536	163	72	577	224	168	1224	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	269	1009	287	41	536	163	72	577	224	168	1224	58
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:	269	1009	287	41	536	163	72	577	224	168	1224	58
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.34	0.66	1.00	2.30	0.70	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	3737	1063	1600	3681	1119	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.17	0.27	0.27	0.03	0.15	0.15	0.05	0.18	0.14	0.11	0.38	0.04
Crit Moves:	****				****		****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Myrtle Ave/Longden Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.873
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	95	Level Of Service:	D

Street Name:	Myrtle Ave						Longden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	1 0	1	0 1	0 1	0
Volume Module:												
Base Vol:	176	943	21	174	646	52	73	267	80	36	612	443
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:	176	943	21	174	646	52	73	267	80	36	612	443
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:	176	943	21	174	646	52	73	267	80	36	612	443
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:	176	943	21	174	646	52	73	267	80	36	612	443
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	176	943	21	174	646	52	73	267	80	36	612	443
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:	176	943	21	174	646	52	73	267	80	36	612	443
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.00	1.00	1.00	2.00	1.00	0.43	1.57	1.00	0.07	1.12	0.81
Final Sat.:	1600	3200	1600	1600	3200	1600	687	2513	1600	106	1795	1299
Capacity Analysis Module:												
Vol/Sat:	0.11	0.29	0.01	0.11	0.20	0.03	0.05	0.11	0.05	0.02	0.34	0.34
Crit Moves:		****		****			****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Longden Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.722
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	53	Level Of Service:	C

Street Name:	Longden Ave						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0	0	1! 0	0	1	1	0	0	1	1	0	2
Lanes:	1	0	2	0	2							
Volume Module:												
Base Vol:	10	10	10	451	1	13	39	869	1	10	1399	1012
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:	10	10	10	451	1	13	39	869	1	10	1399	1012
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:	10	10	10	451	1	13	39	869	1	10	1399	1012
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	10	10	10	451	1	13	39	869	1	10	1399	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	10	10	10	451	1	13	39	869	1	10	1399	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	10	10	10	451	1	13	39	869	1	10	1399	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	0.34	0.33	0.33	1.99	0.01	1.00	1.00	2.99	0.01	1.00	2.00	2.00
Final Sat.:	533	533	533	3193	7	1600	1600	4794	6	1600	3200	3200
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.14	0.14	0.01	0.02	0.18	0.18	0.01	0.44	0.00
Crit Moves:		****		****			****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Arrow Hwy/Live Oak Ave

Cycle (sec):	110	Critical Vol./Cap.(X):	0.882
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	96	Level Of Service:	D

Street Name:	Arrow Hwy							Live Oak Ave					
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:	Ignore			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	2	0	2	2	0	2	0	0	0	0	0	0	0	2	0	0	0	1
Volume Module:													
Base Vol:	0	529	791	130	1437	0	0	0	0	985	0	213	
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	529	791	130	1437	0	0	0	0	985	0	213	
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	529	791	130	1437	0	0	0	0	985	0	213	
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	529	0	130	1437	0	0	0	0	985	0	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	529	0	130	1437	0	0	0	0	985	0	0	
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	529	0	130	1437	0	0	0	0	985	0	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	
Lanes:	0.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00	
Final Sat.:	0	3200	3200	2880	3200	0	0	0	0	2880	0	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.17	0.00	0.05	0.45	0.00	0.00	0.00	0.00	0.34	0.00	0.00	
Crit Moves:	****				****					****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Speedway Dr-Dwy 2/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.482
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	32	Level Of Service:	A

Street Name:	Speedway Dr-Dwy 2							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2	0	0	0	1	0	0	0	0	0	0	2	1
Volume Module:													
Base Vol:	0	0	1	0	0	0	0	983	2	22	1221	0	
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	1	0	0	0	0	983	2	22	1221	0	
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	1	0	0	0	0	983	2	22	1221	0	
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	1	0	0	0	0	983	2	22	1221	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	1	0	0	0	0	983	2	22	1221	0	
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	1	0	0	0	0	983	2	22	1221	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.99	0.01	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	4790	10	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.21	0.01	0.38	0.00	
Crit Moves:			****				****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Graham Rd/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.674
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	47	Level Of Service:	B

Street Name:	Graham Rd							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	0	0	0	0	0	0	0	2	0 1
Volume Module:													
Base Vol:	160	0	60	0	0	0	0	728	111	50	1398	0	
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:	160	0	60	0	0	0	0	728	111	50	1398	0	
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:	160	0	60	0	0	0	0	728	111	50	1398	0	
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:	160	0	60	0	0	0	0	728	111	50	1398	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	160	0	60	0	0	0	0	728	111	50	1398	0	
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:	160	0	60	0	0	0	0	728	111	50	1398	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.73	0.00	0.27	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	1164	0	436	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.14	0.00	0.14	0.00	0.00	0.00	0.00	0.23	0.07	0.03	0.44	0.00	
Crit Moves:	****						****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Rivergrade Rd/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.609
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	42	Level Of Service:	B

Street Name:	Rivergrade Rd						Live Oak Ave					
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:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	43	53	112	31	80	76	96	519	91	271	1251	14
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:	43	53	112	31	80	76	96	519	91	271	1251	14
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:	43	53	112	31	80	76	96	519	91	271	1251	14
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:	43	53	112	31	80	76	96	519	91	271	1251	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	53	112	31	80	76	96	519	91	271	1251	14
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:	43	53	112	31	80	76	96	519	91	271	1251	14
OvlAdjVol:			0									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	1600	1600	1600	3200	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.07	0.02	0.03	0.05	0.06	0.16	0.06	0.17	0.39	0.01
OvlAdjV/S:			0.00									
Crit Moves:	****					****	****				****	

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #14 Stewart Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.872
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	88	Level Of Service:	D

Street Name:	Stewart Ave						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	1! 0	0	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	227	127	35	14	28	82	21	460	28	18	1623	38
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:	227	127	35	14	28	82	21	460	28	18	1623	38
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:	227	127	35	14	28	82	21	460	28	18	1623	38
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:	227	127	35	14	28	82	21	460	28	18	1623	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	227	127	35	14	28	82	21	460	28	18	1623	38
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:	227	127	35	14	28	82	21	460	28	18	1623	38
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	0.58	0.33	0.09	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	934	522	144	1600	1600	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.14	0.24	0.24	0.01	0.02	0.05	0.01	0.14	0.02	0.01	0.51	0.02
Crit Moves:		****		****			****				****	

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #15 Baldwin Park/Arrow Hwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.733
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	90	Level Of Service:	C

Street Name:	Baldwin Park							Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	2 0	0	
Volume Module:													
Base Vol:	320	0	313	0	0	0	0	467	68	141	1399	0	
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:	320	0	313	0	0	0	0	467	68	141	1399	0	
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:	320	0	313	0	0	0	0	467	68	141	1399	0	
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:	320	0	313	0	0	0	0	467	68	141	1399	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	320	0	313	0	0	0	0	467	68	141	1399	0	
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:	320	0	313	0	0	0	0	467	68	141	1399	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.11	0.00	0.20	0.00	0.00	0.00	0.00	0.15	0.04	0.09	0.44	0.00	
Crit Moves:			****								****		

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #16 Arrow Highway/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.762
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	59	Level Of Service:	C

Street Name:	Arrow Highway							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Permitted			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0 0	0	2 0	0 0	1	1 0	2 0	0	0 0	2 0	2	
Volume Module:													
Base Vol:	0	0	0	291	0	46	149	632	0	0	1497	1672	
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	291	0	46	149	632	0	0	1497	1672	
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	291	0	46	149	632	0	0	1497	1672	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	291	0	46	149	632	0	0	1497	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	291	0	46	149	632	0	0	1497	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	291	0	46	149	632	0	0	1497	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	2.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.10	0.00	0.03	0.09	0.20	0.00	0.00	0.47	0.00	
Crit Moves:				****			****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Maine Ave/Arrow Hwy

Cycle (sec):	110	Critical Vol./Cap.(X):	0.845
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	81	Level Of Service:	D

Street Name:	Maine Ave						Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	3 0	0
Volume Module:												
Base Vol:	661	0	112	0	0	0	0	800	105	37	2519	0
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:	661	0	112	0	0	0	0	800	105	37	2519	0
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:	661	0	112	0	0	0	0	800	105	37	2519	0
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:	661	0	112	0	0	0	0	800	105	37	2519	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	661	0	112	0	0	0	0	800	105	37	2519	0
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:	661	0	112	0	0	0	0	800	105	37	2519	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	3.00	0.00
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	4800	0
Capacity Analysis Module:												
Vol/Sat:	0.23	0.00	0.07	0.00	0.00	0.00	0.00	0.25	0.07	0.02	0.52	0.00
Crit Moves:	****						****				****	

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #18 Avenida Barbosa/Buena Vista St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.392
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	28	Level Of Service:	A

Street Name:	Avenida Barbosa						Buena Vista St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 1	0	0 2	0	0	1! 0 0	1	0	2 0 1	2	0	1 0 1
Volume Module:												
Base Vol:	54	163	757	9	75	2	1	4	6	158	15	19
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:	54	163	757	9	75	2	1	4	6	158	15	19
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:	54	163	757	9	75	2	1	4	6	158	15	19
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:	54	163	757	9	75	2	1	4	6	158	15	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	54	163	757	9	75	2	1	4	6	158	15	19
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:	54	163	757	9	75	2	1	4	6	158	15	19
OvlAdjVol:			581									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	0.25	0.75	2.00	0.10	0.88	0.02	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	398	1202	3200	167	1395	37	1600	3200	1600	2880	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.24	0.05	0.05	0.05	0.00	0.00	0.00	0.05	0.01	0.01
OvlAdjV/S:			0.18									
Crit Moves:			****			****		****		****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #19 Avenida Barbosa/Arrow Highway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.824
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	73	Level Of Service:	D

Street Name:	Avenida Barbosa							Arrow Highway					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0 0	0	2 0	0 0	1	1 0	2 0	0	0 0	2 0	1	
Volume Module:													
Base Vol:	0	0	0	130	0	132	311	421	0	0	1432	694	
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	130	0	132	311	421	0	0	1432	694	
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	130	0	132	311	421	0	0	1432	694	
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	130	0	132	311	421	0	0	1432	694	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	130	0	132	311	421	0	0	1432	694	
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	130	0	132	311	421	0	0	1432	694	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.05	0.00	0.08	0.19	0.13	0.00	0.00	0.45	0.43	
Crit Moves:						****	****				****		

Irwindale Regional Shopping Center
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Scenario Report

Scenario:	OY NP AM
Command:	Default Command
Volume:	OY NP AM
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: C[23.2]

Street Name:	Dwy 1						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 2 1 0			1 0 2 0 0		
Volume Module:												
Base Vol:	24	0	89	0	0	0	0	880	49	30	1186	0
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:	24	0	89	0	0	0	0	880	49	30	1186	0
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:	24	0	89	0	0	0	0	880	49	30	1186	0
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:	24	0	89	0	0	0	0	880	49	30	1186	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	24	0	89	0	0	0	0	880	49	30	1186	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1558	2151	318	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	929	xxxx	xxxxx
Potent Cap.:	105	49	684	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	744	xxxx	xxxxx
Move Cap.:	102	47	684	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	744	xxxx	xxxxx
Volume/Cap:	0.24	0.00	0.13	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.04	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.0	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	309	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	1.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	23.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	C	*	*	*	*	*	*	*	*	*	*
ApproachDel:	23.2			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	C			*			*			*		

Note: Queue reported is the number of cars per lane.

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[10.2]

Street Name:	Dwy 3						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 2 1 0			1 0 2 0 0		
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	982	0	13	1234	0
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	0	0	0	0	982	0	13	1234	0
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	0	0	0	0	982	0	13	1234	0
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	0	0	0	0	982	0	13	1234	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	982	0	13	1234	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1625	2242	327	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	982	xxxx	xxxxx
Potent Cap.:	95	43	674	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	711	xxxx	xxxxx
Move Cap.:	94	42	674	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	711	xxxx	xxxxx
Volume/Cap:	0.00	0.00	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.2	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

Note: Queue reported is the number of cars per lane.

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Live Oak Ln/Live Oak Ave

Average Delay (sec/veh): 3.1 Worst Case Level Of Service: E[39.5]

Street Name:	Live Oak Ln									Live Oak Ave								
Approach:	North Bound					South Bound				East Bound					West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0	14	0	138	90	701	0	0	1328	57								
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	14	0	138	90	701	0	0	1328	57								
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	14	0	138	90	701	0	0	1328	57								
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	14	0	138	90	701	0	0	1328	57								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	0	0	0	14	0	138	90	701	0	0	1328	57								
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	1887	2238	693	1385	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	xxxxx	64	43	391	501	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	xxxxx	55	35	391	501	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	xxxx	0.26	0.00	0.35	0.18	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.6	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	13.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	*	B	*	*	*	*	*								
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	250	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	3.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	39.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	E	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx				39.5		xxxxxx				xxxxxx									
ApproachLOS:	*				E		*				*									

Note: Queue reported is the number of cars per lane.

Irwindale Regional Shopping Center
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 Commerce Dr/Live Oak Ave

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: D[27.7]

Street Name:	Commerce Dr									Live Oak Ave							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0	2	1	0	1	0	2	0	0
Volume Module:																				
Base Vol:	6		0		19	0		0		0	0		486		49	276		1651		0
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:	6		0		19	0		0		0	0		486		49	276		1651		0
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:	6		0		19	0		0		0	0		486		49	276		1651		0
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:	6		0		19	0		0		0	0		486		49	276		1651		0
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
FinalVolume:	6		0		19	0		0		0	0		486		49	276		1651		0
Critical Gap Module:																				
Critical Gp:	6.8	xxxx			6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				4.1	xxxx		xxxxx		
FollowUpTim:	3.5	xxxx			3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				2.2	xxxx		xxxxx		
Capacity Module:																				
Cnflict Vol:	1888	xxxx			187	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				535	xxxx		xxxxx		
Potent Cap.:	63	xxxx			830	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				1043	xxxx		xxxxx		
Move Cap.:	51	xxxx			830	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				1043	xxxx		xxxxx		
Volume/Cap:	0.12	xxxx			0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx				0.26	xxxx		xxxx		
Level Of Service Module:																				
2Way95thQ:	0.4	xxxx			0.1	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				1.1	xxxx		xxxxx		
Control Del:	85.6	xxxx			9.4	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				9.7	xxxx		xxxxx		
LOS by Move:	F	*			A	*	*	*	*	*	*				A	*		*		
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*	*	*			*	*	*			*	*	*			*	*	*		
ApproachDel:	27.7					xxxxxx					xxxxxx					xxxxxx				
ApproachLOS:	D					*					*					*				

Note: Queue reported is the number of cars per lane.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	430	566	740	1241	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	0.95	1.00	1.00	0.95		
Frt	1.00	0.85	1.00	1.00		
Flt Protected	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3610	1615	1805	3610		
Flt Permitted	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3610	1615	1805	3610		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	457	602	787	1320	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	457	602	787	1320	0	0
Turn Type	NA	Free	Prot	NA		
Protected Phases	2		1	6		
Permitted Phases		Free				
Actuated Green, G (s)	23.0	100.0	69.0	100.0		
Effective Green, g (s)	23.0	100.0	69.0	100.0		
Actuated g/C Ratio	0.23	1.00	0.69	1.00		
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	830	1615	1245	3610		
v/s Ratio Prot	c0.13		c0.44	0.37		
v/s Ratio Perm		0.37				
v/c Ratio	0.55	0.37	0.63	0.37		
Uniform Delay, d1	33.9	0.0	8.5	0.0		
Progression Factor	1.00	1.00	0.56	1.00		
Incremental Delay, d2	2.6	0.7	1.0	0.3		
Delay (s)	36.6	0.7	5.7	0.3		
Level of Service	D	A	A	A		
Approach Delay (s)	16.2			2.3	0.0	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	433	0	0	1567	0	0	0	395	0	0	415
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	461	0	0	1667	0	0	0	420	0	0	441
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		438			227							
pX, platoon unblocked	0.78			0.89			0.83	0.83	0.89	0.83	0.83	0.78
vC, conflicting volume	1667			461			1736	2128	230	2318	2128	834
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1283			154			892	1365	0	1593	1365	209
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	57	100	100	29
cM capacity (veh/h)	425			1284			58	124	973	35	124	623

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	230	230	834	834	420	441
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	420	441
cSH	1700	1700	1700	1700	973	623
Volume to Capacity	0.14	0.14	0.49	0.49	0.43	0.71
Queue Length 95th (ft)	0	0	0	0	55	145
Control Delay (s)	0.0	0.0	0.0	0.0	11.5	23.5
Lane LOS					B	C
Approach Delay (s)	0.0		0.0		11.5	23.5
Approach LOS					B	C

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	538	1556	0	411	556
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5187	3610		1805	1615
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5187	3610		1805	1615
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	572	1655	0	437	591
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	572	1655	0	437	591
Turn Type		NA	NA		Prot	Free
Protected Phases		2	6		4	
Permitted Phases						Free
Actuated Green, G (s)		57.0	57.0		35.0	100.0
Effective Green, g (s)		57.0	57.0		35.0	100.0
Actuated g/C Ratio		0.57	0.57		0.35	1.00
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		2956	2057		631	1615
v/s Ratio Prot		0.11	c0.46		c0.24	
v/s Ratio Perm						0.37
v/c Ratio		0.19	0.80		0.69	0.37
Uniform Delay, d1		10.4	17.1		27.9	0.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.1	3.5		6.2	0.6
Delay (s)		10.5	20.5		34.0	0.6
Level of Service		B	C		C	A
Approach Delay (s)		10.5	20.5		14.8	
Approach LOS		B	C		B	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	612	49	0	1556	413	0	0	66	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	644	52	0	1638	435	0	0	69	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		537										
pX, platoon unblocked				0.98			0.98	0.98	0.98	0.98	0.98	
vC, conflicting volume	1638			696			1463	2282	322	2029	2334	819
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1638			637			1424	2264	254	2005	2317	819
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	91	100	100	100
cM capacity (veh/h)	401			932			95	40	733	32	37	323

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	322	322	52	819	819	435	69
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	52	0	0	435	69
cSH	1700	1700	1700	1700	1700	1700	733
Volume to Capacity	0.19	0.19	0.03	0.48	0.48	0.26	0.09
Queue Length 95th (ft)	0	0	0	0	0	0	8
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.4
Lane LOS							B
Approach Delay (s)	0.0			0.0			10.4
Approach LOS							B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Scenario Report

Scenario:	OY NP PM
Command:	Default Command
Volume:	OY NP PM
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Peck Rd-Myrtle Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.861
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	84	Level Of Service:	D

Street Name:	Peck Rd-Myrtle						Live Oak Ave					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	238	827	188	191	592	143	197	1245	199	65	690	22
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:	238	827	188	191	592	143	197	1245	199	65	690	22
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:	238	827	188	191	592	143	197	1245	199	65	690	22
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:	238	827	188	191	592	143	197	1245	199	65	690	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	238	827	188	191	592	143	197	1245	199	65	690	22
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:	238	827	188	191	592	143	197	1245	199	65	690	22
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.44	0.56	1.00	2.42	0.58	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	3911	889	1600	3866	934	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.15	0.21	0.21	0.12	0.15	0.15	0.12	0.39	0.12	0.04	0.22	0.01
Crit Moves:		****		****				****		****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Myrtle Ave/Longden Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.888
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	103	Level Of Service:	D

Street Name:	Myrtle Ave						Longden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	1 0	1	0 1	0 1	0
Volume Module:												
Base Vol:	99	929	13	376	835	57	86	670	104	28	409	286
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:	99	929	13	376	835	57	86	670	104	28	409	286
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:	99	929	13	376	835	57	86	670	104	28	409	286
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:	99	929	13	376	835	57	86	670	104	28	409	286
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	929	13	376	835	57	86	670	104	28	409	286
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:	99	929	13	376	835	57	86	670	104	28	409	286
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.00	1.00	1.00	2.00	1.00	0.23	1.77	1.00	0.08	1.13	0.79
Final Sat.:	1600	3200	1600	1600	3200	1600	364	2836	1600	124	1810	1266
Capacity Analysis Module:												
Vol/Sat:	0.06	0.29	0.01	0.24	0.26	0.04	0.05	0.24	0.07	0.02	0.23	0.23
Crit Moves:		****		****			****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Longden Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.770
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	61	Level Of Service:	C

Street Name:	Longden Ave							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	1	1	0	0	1	1	0	2	1
Volume Module:													
Base Vol:	0	0	0	1047	0	10	9	1643	1	1	739	693	
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	1047	0	10	9	1643	1	1	739	693	
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	1047	0	10	9	1643	1	1	739	693	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	1047	0	10	9	1643	1	1	739	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	1047	0	10	9	1643	1	1	739	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	1047	0	10	9	1643	1	1	739	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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	1.00	0.00	2.00	0.00	1.00	1.00	2.99	0.01	1.00	2.00	2.00	
Final Sat.:	0	1600	0	3200	0	1600	1600	4797	3	1600	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.33	0.00	0.01	0.01	0.34	0.34	0.00	0.23	0.00	
Crit Moves:				****				****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Arrow Hwy/Live Oak Ave

Cycle (sec):	110	Critical Vol./Cap.(X):	0.727
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	55	Level Of Service:	C

Street Name:	Arrow Hwy							Live Oak Ave					
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:	Ignore			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	2	0	2	2	0	2	0	0	0	0	0	0	0	2	0	0	0	1
Volume Module:													
Base Vol:	0	766	1965	256	557	0	0	0	0	887	0	126	
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	766	1965	256	557	0	0	0	0	887	0	126	
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	766	1965	256	557	0	0	0	0	887	0	126	
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	766	0	256	557	0	0	0	0	887	0	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	766	0	256	557	0	0	0	0	887	0	0	
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	766	0	256	557	0	0	0	0	887	0	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	
Lanes:	0.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00	
Final Sat.:	0	3200	3200	2880	3200	0	0	0	0	2880	0	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.24	0.00	0.09	0.17	0.00	0.00	0.00	0.00	0.31	0.00	0.00	
Crit Moves:		****		****						****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Speedway Dr-Dwy 2/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.632
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	43	Level Of Service:	B

Street Name:	Speedway Dr-Dwy 2							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0	
Volume Module:													
Base Vol:	11	0	5	0	0	0	0	2198	57	94	1041	0	
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:	11	0	5	0	0	0	0	2198	57	94	1041	0	
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:	11	0	5	0	0	0	0	2198	57	94	1041	0	
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:	11	0	5	0	0	0	0	2198	57	94	1041	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	11	0	5	0	0	0	0	2198	57	94	1041	0	
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:	11	0	5	0	0	0	0	2198	57	94	1041	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.92	0.08	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	4679	121	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.47	0.06	0.33	0.00	
Crit Moves:	****							****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Graham Rd/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.715
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	52	Level Of Service:	C

Street Name:	Graham Rd							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	0	0	0	0	0	0	0	2	0 1 1 0 2 0 0
Volume Module:													
Base Vol:	18	0	23	0	0	0	0	1815	48	36	1036	0	
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:	18	0	23	0	0	0	0	1815	48	36	1036	0	
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:	18	0	23	0	0	0	0	1815	48	36	1036	0	
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:	18	0	23	0	0	0	0	1815	48	36	1036	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	18	0	23	0	0	0	0	1815	48	36	1036	0	
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:	18	0	23	0	0	0	0	1815	48	36	1036	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.44	0.00	0.56	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	702	0	898	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.57	0.03	0.02	0.32	0.00	
Crit Moves:	****							****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Rivergrade Rd/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.867
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	93	Level Of Service:	D

Street Name:	Rivergrade Rd						Live Oak Ave					
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:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	105	69	390	28	22	62	83	1673	22	87	828	6
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:	105	69	390	28	22	62	83	1673	22	87	828	6
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:	105	69	390	28	22	62	83	1673	22	87	828	6
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:	105	69	390	28	22	62	83	1673	22	87	828	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	105	69	390	28	22	62	83	1673	22	87	828	6
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:	105	69	390	28	22	62	83	1673	22	87	828	6
OvlAdjVol:			303									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	1600	1600	1600	3200	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.07	0.04	0.24	0.02	0.01	0.04	0.05	0.52	0.01	0.05	0.26	0.00
OvlAdjV/S:			0.19									
Crit Moves:			****	****				****		****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #14 Stewart Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.850
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	80	Level Of Service:	D

Street Name:	Stewart Ave						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	1! 0	0	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	73	21	12	25	107	14	63	1959	285	41	811	1
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:	73	21	12	25	107	14	63	1959	285	41	811	1
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:	73	21	12	25	107	14	63	1959	285	41	811	1
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:	73	21	12	25	107	14	63	1959	285	41	811	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	73	21	12	25	107	14	63	1959	285	41	811	1
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:	73	21	12	25	107	14	63	1959	285	41	811	1
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	0.69	0.20	0.11	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1102	317	181	1600	1600	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.05	0.07	0.07	0.02	0.07	0.01	0.04	0.61	0.18	0.03	0.25	0.00
Crit Moves:	****				****			****		****		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #15 Baldwin Park/Arrow Hwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.786
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	64	Level Of Service:	C

Street Name:	Baldwin Park							Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	2 0	0	
Volume Module:													
Base Vol:	102	0	91	0	0	0	0	1448	564	283	731	0	
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:	102	0	91	0	0	0	0	1448	564	283	731	0	
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:	102	0	91	0	0	0	0	1448	564	283	731	0	
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:	102	0	91	0	0	0	0	1448	564	283	731	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	102	0	91	0	0	0	0	1448	564	283	731	0	
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:	102	0	91	0	0	0	0	1448	564	283	731	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.04	0.00	0.06	0.00	0.00	0.00	0.00	0.45	0.35	0.18	0.23	0.00	
Crit Moves:			****					****		****			

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #16 Arrow Highway/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.932
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	119	Level Of Service:	E

Street Name:	Arrow Highway							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Permitted			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0	0	2 0	0	0 1	1 0	2	0 0	0 0	2	0 2	
Volume Module:													
Base Vol:	0	0	0	1049	0	119	40	1497	0	0	887	476	
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	1049	0	119	40	1497	0	0	887	476	
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	1049	0	119	40	1497	0	0	887	476	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	1049	0	119	40	1497	0	0	887	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	1049	0	119	40	1497	0	0	887	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	1049	0	119	40	1497	0	0	887	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	2.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.36	0.00	0.07	0.03	0.47	0.00	0.00	0.28	0.00	
Crit Moves:				****				****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Maine Ave/Arrow Hwy

Cycle (sec):	110	Critical Vol./Cap.(X):	0.854
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	85	Level Of Service:	D

Street Name:	Maine Ave							Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	3 0	0	
Volume Module:													
Base Vol:	269	0	107	0	0	0	0	2008	525	68	1089	0	
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:	269	0	107	0	0	0	0	2008	525	68	1089	0	
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:	269	0	107	0	0	0	0	2008	525	68	1089	0	
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:	269	0	107	0	0	0	0	2008	525	68	1089	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	269	0	107	0	0	0	0	2008	525	68	1089	0	
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:	269	0	107	0	0	0	0	2008	525	68	1089	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	3.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	4800	0	
Capacity Analysis Module:													
Vol/Sat:	0.09	0.00	0.07	0.00	0.00	0.00	0.00	0.63	0.33	0.04	0.23	0.00	
Crit Moves:	****							****		****			

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #18 Avenida Barbosa/Buena Vista St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.559
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	37	Level Of Service:	A

Street Name:	Avenida Barbosa						Buena Vista St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 1	0	0 2	0	0	1! 0	0	1	0 2	0 1	2 0	1 0 1
Volume Module:												
Base Vol:	16	121	319	28	192	6	6	22	89	508	18	24
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:	16	121	319	28	192	6	6	22	89	508	18	24
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:	16	121	319	28	192	6	6	22	89	508	18	24
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:	16	121	319	28	192	6	6	22	89	508	18	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	121	319	28	192	6	6	22	89	508	18	24
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:	16	121	319	28	192	6	6	22	89	508	18	24
OvlAdjVol:			0									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	0.12	0.88	2.00	0.12	0.85	0.03	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	187	1413	3200	198	1359	42	1600	3200	1600	2880	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.10	0.14	0.14	0.14	0.00	0.01	0.06	0.18	0.01	0.02
OvlAdjV/S:			0.00									
Crit Moves:	****				****				****	****		

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #19 Avenida Barbosa/Arrow Highway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.588
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	39	Level Of Service:	A

Street Name:	Avenida Barbosa							Arrow Highway					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0 0	0	2 0	0 0	1	1 0	2 0	0	0 0	2 0	1	
Volume Module:													
Base Vol:	0	0	0	390	0	335	203	687	0	0	484	214	
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	390	0	335	203	687	0	0	484	214	
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	390	0	335	203	687	0	0	484	214	
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	390	0	335	203	687	0	0	484	214	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	390	0	335	203	687	0	0	484	214	
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	390	0	335	203	687	0	0	484	214	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.14	0.00	0.21	0.13	0.21	0.00	0.00	0.15	0.13	
Crit Moves:						****	****				****		

Irwindale Regional Shopping Center
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Scenario Report

Scenario:	OY NP PM
Command:	Default Command
Volume:	OY NP PM
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Average Delay (sec/veh): 3.3 Worst Case Level Of Service: F[135.0]

Street Name:	Dwy 1						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	8	0	65	0	0	0	0	2199	25	50	1002	0
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:	8	0	65	0	0	0	0	2199	25	50	1002	0
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:	8	0	65	0	0	0	0	2199	25	50	1002	0
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:	8	0	65	0	0	0	0	2199	25	50	1002	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	8	0	65	0	0	0	0	2199	25	50	1002	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	2813	3314	746	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	2224	xxxx	xxxxx
Potent Cap.:	15	9	361	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	238	xxxx	xxxxx
Move Cap.:	12	7	361	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	238	xxxx	xxxxx
Volume/Cap:	0.64	0.00	0.18	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.21	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.8	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	24.1	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	C	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	89	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	4.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	135	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	*	*	*	*	*	*	*	*	*
ApproachDel:	135.0			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	F			*			*			*		

Note: Queue reported is the number of cars per lane.

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: C[20.2]

Street Name:	Dwy 3									Live Oak Ave							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	1!	0	0	0	0	0	0	0	0	0	2	1	0	1	0	2	0	0
Volume Module:																				
Base Vol:	0	0	0	0	0	0	0	0	0	0	0	2202	0	5	1122	0				
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	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	0	0	0	0	0	0	0	0	0	2202	0	5	1122	0				
Added Vol:	0	0	0	0	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	0	0	0	0				
Initial Fut:	0	0	0	0	0	0	0	0	0	0	0	2202	0	5	1122	0				
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	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	1.00	1.00	1.00	1.00				
PHF Volume:	0	0	0	0	0	0	0	0	0	0	0	2202	0	5	1122	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	0	0	0	0	0	0	0	0	0	0	0	2202	0	5	1122	0				
Critical Gap Module:																				
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx								
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	2773	3334	734	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	2202	xxxx	xxxxx								
Potent Cap.:	16	8	367	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	242	xxxx	xxxxx								
Move Cap.:	16	8	367	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	242	xxxx	xxxxx								
Volume/Cap:	0.00	0.00	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	20.2	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	*	*	*	*	C	*	*								
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx		0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx							
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx										
ApproachLOS:	*			*			*			*										

Note: Queue reported is the number of cars per lane.

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Live Oak Ln/Live Oak Ave

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: D[28.8]

Street Name:	Live Oak Ln									Live Oak Ave								
Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0	12	0	75	49	1760	0	0	985	6								
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	12	0	75	49	1760	0	0	985	6								
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	12	0	75	49	1760	0	0	985	6								
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	12	0	75	49	1760	0	0	985	6								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	0	0	0	12	0	75	49	1760	0	0	985	6								
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	1966	2846	496	991	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	xxxxx	56	17	525	706	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	xxxxx	53	16	525	706	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	xxxx	0.23	0.00	0.14	0.07	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	*	B	*	*	*	*	*								
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	236	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	1.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	28.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	D	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx				28.8		xxxxxx				xxxxxx									
ApproachLOS:	*				D		*				*									

Note: Queue reported is the number of cars per lane.

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 Commerce Dr/Live Oak Ave

Average Delay (sec/veh): 6.5 Worst Case Level Of Service: F[85.9]

Street Name:	Commerce Dr						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0 0 1			0 0 0 0 0			0 1 1 1 0			1 0 2 0 0		
Volume Module:												
Base Vol:	26	0	213	0	0	0	2	2082	6	23	893	0
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:	26	0	213	0	0	0	2	2082	6	23	893	0
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:	26	0	213	0	0	0	2	2082	6	23	893	0
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:	26	0	213	0	0	0	2	2082	6	23	893	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	26	0	213	0	0	0	2	2082	6	23	893	0
Critical Gap Module:												
Critical Gp:	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	2582	xxxx	697	xxxx	xxxx	xxxxx	893	xxxx	xxxxx	2088	xxxx	xxxxx
Potent Cap.:	21	xxxx	388	xxxx	xxxx	xxxxx	768	xxxx	xxxxx	269	xxxx	xxxxx
Move Cap.:	20	xxxx	388	xxxx	xxxx	xxxxx	768	xxxx	xxxxx	269	xxxx	xxxxx
Volume/Cap:	1.30	xxxx	0.55	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	0.09	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	3.5	xxxx	3.2	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.3	xxxx	xxxxx
Control Del:	584.6	xxxx	25.0	xxxxx	xxxx	xxxxx	9.7	xxxx	xxxxx	19.7	xxxx	xxxxx
LOS by Move:	F	*	C	*	*	*	A	*	*	C	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	A	*	*	*	*	*
ApproachDel:	85.9			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	F			*			*			*		

Note: Queue reported is the number of cars per lane.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1148	1056	619	1126	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	0.95	1.00	1.00	0.95		
Frt	1.00	0.85	1.00	1.00		
Flt Protected	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3610	1615	1805	3610		
Flt Permitted	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3610	1615	1805	3610		
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1234	1135	666	1211	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1234	1135	666	1211	0	0
Turn Type	NA	Free	Prot	NA		
Protected Phases	2		1	6		
Permitted Phases		Free				
Actuated Green, G (s)	49.4	100.0	42.6	100.0		
Effective Green, g (s)	49.4	100.0	42.6	100.0		
Actuated g/C Ratio	0.49	1.00	0.43	1.00		
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	1783	1615	768	3610		
v/s Ratio Prot	0.34		c0.37	0.34		
v/s Ratio Perm		c0.70				
v/c Ratio	0.69	0.70	0.87	0.34		
Uniform Delay, d1	19.5	0.0	26.1	0.0		
Progression Factor	1.00	1.00	0.95	1.00		
Incremental Delay, d2	2.2	2.6	10.0	0.2		
Delay (s)	21.7	2.6	35.0	0.2		
Level of Service	C	A	C	A		
Approach Delay (s)	12.5			12.6	0.0	
Approach LOS	B			B	A	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1147	0	0	1047	0	0	0	693	0	0	713
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	1182	0	0	1079	0	0	0	714	0	0	735
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		438			227							
pX, platoon unblocked	0.90			0.73			0.78	0.78	0.73	0.78	0.78	0.90
vC, conflicting volume	1079			1182			2457	2262	591	2385	2262	540
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	867			518			1733	1483	0	1641	1483	267
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			0	100	11	100	100	0
cM capacity (veh/h)	707			775			0	99	799	6	99	663

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	591	591	540	540	714	735
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	714	735
cSH	1700	1700	1700	1700	799	663
Volume to Capacity	0.35	0.35	0.32	0.32	0.89	1.11
Queue Length 95th (ft)	0	0	0	0	298	542
Control Delay (s)	0.0	0.0	0.0	0.0	34.5	92.2
Lane LOS					D	F
Approach Delay (s)	0.0		0.0		34.5	92.2
Approach LOS					D	F

Intersection Summary			
Average Delay	24.9		
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1077	376	0	300	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5187	3610		1805	1615
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5187	3610		1805	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1171	409	0	326	359
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	1171	409	0	326	359
Turn Type		NA	NA		Prot	Free
Protected Phases		2	6		4	
Permitted Phases						Free
Actuated Green, G (s)		48.0	48.0		44.0	100.0
Effective Green, g (s)		48.0	48.0		44.0	100.0
Actuated g/C Ratio		0.48	0.48		0.44	1.00
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		2489	1732		794	1615
v/s Ratio Prot		c0.23	0.11		c0.18	
v/s Ratio Perm						0.22
v/c Ratio		0.47	0.24		0.41	0.22
Uniform Delay, d1		17.5	15.2		19.1	0.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.6	0.3		1.6	0.3
Delay (s)		18.1	15.6		20.7	0.3
Level of Service		B	B		C	A
Approach Delay (s)		18.1	15.6		10.0	
Approach LOS		B	B		B	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1275	32	0	376	251	0	0	37	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	1356	34	0	400	267	0	0	39	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		537										
pX, platoon unblocked				0.83			0.83	0.83	0.83	0.83	0.83	
vC, conflicting volume	400			1390			1556	1756	678	1118	1790	200
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	400			1052			1253	1495	190	722	1536	200
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	94	100	100	100
cM capacity (veh/h)	1170			553			108	103	682	248	97	814

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	678	678	34	200	200	267	39
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	34	0	0	267	39
cSH	1700	1700	1700	1700	1700	1700	682
Volume to Capacity	0.40	0.40	0.02	0.12	0.12	0.16	0.06
Queue Length 95th (ft)	0	0	0	0	0	0	5
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.6
Lane LOS							B
Approach Delay (s)	0.0			0.0			10.6
Approach LOS							B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Scenario Report

Scenario:	OY NP SAT
Command:	Default Command
Volume:	OY NP SAT
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Peck Rd-Myrtle Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.547
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	A

Street Name:	Peck Rd-Myrtle						Live Oak Ave					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	168	504	138	71	451	149	144	433	151	119	406	43
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:	168	504	138	71	451	149	144	433	151	119	406	43
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:	168	504	138	71	451	149	144	433	151	119	406	43
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:	168	504	138	71	451	149	144	433	151	119	406	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	504	138	71	451	149	144	433	151	119	406	43
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:	168	504	138	71	451	149	144	433	151	119	406	43
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.36	0.64	1.00	2.26	0.74	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	3768	1032	1600	3608	1192	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.11	0.13	0.13	0.04	0.13	0.13	0.09	0.14	0.09	0.07	0.13	0.03
Crit Moves:	****				****		****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Myrtle Ave/Longden Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.583
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	40	Level Of Service:	A

Street Name:	Myrtle Ave						Longden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	1 0	1	0 1	0 1	0
Volume Module:												
Base Vol:	64	613	10	162	608	104	106	200	57	51	221	177
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:	64	613	10	162	608	104	106	200	57	51	221	177
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:	64	613	10	162	608	104	106	200	57	51	221	177
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:	64	613	10	162	608	104	106	200	57	51	221	177
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	64	613	10	162	608	104	106	200	57	51	221	177
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:	64	613	10	162	608	104	106	200	57	51	221	177
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.00	1.00	1.00	2.00	1.00	0.69	1.31	1.00	0.23	0.98	0.79
Final Sat.:	1600	3200	1600	1600	3200	1600	1108	2092	1600	363	1575	1261
Capacity Analysis Module:												
Vol/Sat:	0.04	0.19	0.01	0.10	0.19	0.07	0.07	0.10	0.04	0.03	0.14	0.14
Crit Moves:		****		****			****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Longden Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.428
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	A

Street Name:	Longden Ave						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	1! 0	0	1 1	0 0	1	1 0	2 1	0	1 0	2 0	2
Volume Module:												
Base Vol:	8	8	9	377	6	12	10	605	9	11	597	408
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:	8	8	9	377	6	12	10	605	9	11	597	408
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:	8	8	9	377	6	12	10	605	9	11	597	408
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	8	8	9	377	6	12	10	605	9	11	597	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	8	8	9	377	6	12	10	605	9	11	597	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	8	8	9	377	6	12	10	605	9	11	597	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	0.32	0.32	0.36	1.97	0.03	1.00	1.00	2.96	0.04	1.00	2.00	2.00
Final Sat.:	512	512	576	3150	50	1600	1600	4730	70	1600	3200	3200
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.12	0.12	0.01	0.01	0.13	0.13	0.01	0.19	0.00
Crit Moves:		****		****			****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Arrow Hwy/Live Oak Ave

Cycle (sec):	110	Critical Vol./Cap.(X):	0.436
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	31	Level Of Service:	A

Street Name:	Arrow Hwy							Live Oak Ave					
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:	Ignore			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	2	0	2	2	0	2	0	0	0	0	0	0	0	2	0	0	0	1
Volume Module:													
Base Vol:	0	354	651	125	474	0	0	0	0	551	0	132	
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	354	651	125	474	0	0	0	0	551	0	132	
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	354	651	125	474	0	0	0	0	551	0	132	
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	354	0	125	474	0	0	0	0	551	0	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	354	0	125	474	0	0	0	0	551	0	0	
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	354	0	125	474	0	0	0	0	551	0	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	
Lanes:	0.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00	
Final Sat.:	0	3200	3200	2880	3200	0	0	0	0	2880	0	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.11	0.00	0.04	0.15	0.00	0.00	0.00	0.00	0.19	0.00	0.00	
Crit Moves:		****		****						****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Speedway Dr-Dwy 2/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.338
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Street Name:	Speedway Dr-Dwy 2						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	6	0	3	0	0	0	0	797	43	28	756	0
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:	6	0	3	0	0	0	0	797	43	28	756	0
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:	6	0	3	0	0	0	0	797	43	28	756	0
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:	6	0	3	0	0	0	0	797	43	28	756	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	6	0	3	0	0	0	0	797	43	28	756	0
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:	6	0	3	0	0	0	0	797	43	28	756	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.85	0.15	1.00	2.00	0.00
Final Sat.:	2880	0	1600	0	0	0	0	4554	246	1600	3200	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.17	0.02	0.24	0.00
Crit Moves:	****						****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Graham Rd/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.328
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Street Name:	Graham Rd							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	0	0	0	0	0	0	2	0	1
Volume Module:													
Base Vol:	39	0	4	0	0	0	0	537	27	16	645	0	
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:	39	0	4	0	0	0	0	537	27	16	645	0	
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:	39	0	4	0	0	0	0	537	27	16	645	0	
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:	39	0	4	0	0	0	0	537	27	16	645	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	39	0	4	0	0	0	0	537	27	16	645	0	
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:	39	0	4	0	0	0	0	537	27	16	645	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.91	0.00	0.09	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	1451	0	149	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.17	0.02	0.01	0.20	0.00	
Crit Moves:	****						****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Rivergrade Rd/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.324
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Street Name:	Rivergrade Rd						Live Oak Ave					
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:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	21	38	98	12	17	77	16	473	13	51	511	8
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:	21	38	98	12	17	77	16	473	13	51	511	8
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:	21	38	98	12	17	77	16	473	13	51	511	8
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:	21	38	98	12	17	77	16	473	13	51	511	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	38	98	12	17	77	16	473	13	51	511	8
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:	21	38	98	12	17	77	16	473	13	51	511	8
OvlAdjVol:			47									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	1600	1600	1600	3200	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.01	0.02	0.06	0.01	0.01	0.05	0.01	0.15	0.01	0.03	0.16	0.01
OvlAdjV/S:			0.03									
Crit Moves:	****					****		****		****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #14 Stewart Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.368
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Street Name:	Stewart Ave						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	1! 0	0	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	63	25	29	2	48	3	6	563	46	36	501	5
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:	63	25	29	2	48	3	6	563	46	36	501	5
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:	63	25	29	2	48	3	6	563	46	36	501	5
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:	63	25	29	2	48	3	6	563	46	36	501	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	63	25	29	2	48	3	6	563	46	36	501	5
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:	63	25	29	2	48	3	6	563	46	36	501	5
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	0.54	0.21	0.25	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	862	342	397	1600	1600	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.07	0.07	0.00	0.03	0.00	0.00	0.18	0.03	0.02	0.16	0.00
Crit Moves:	****				****			****		****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #15 Baldwin Park/Arrow Hwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.472
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	32	Level Of Service:	A

Street Name:	Baldwin Park							Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	2 0	0	
Volume Module:													
Base Vol:	71	0	151	0	0	0	0	511	81	188	499	0	
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:	71	0	151	0	0	0	0	511	81	188	499	0	
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:	71	0	151	0	0	0	0	511	81	188	499	0	
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:	71	0	151	0	0	0	0	511	81	188	499	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	71	0	151	0	0	0	0	511	81	188	499	0	
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:	71	0	151	0	0	0	0	511	81	188	499	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.02	0.00	0.09	0.00	0.00	0.00	0.00	0.16	0.05	0.12	0.16	0.00	
Crit Moves:			****					****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #16 Arrow Highway/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.450
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	31	Level Of Service:	A

Street Name:	Arrow Highway							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Permitted			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0 0	0	2 0	0 0	1	1 0	2 0	0	0 0	2 0	2	
Volume Module:													
Base Vol:	0	0	0	320	0	71	73	591	0	0	618	416	
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	320	0	71	73	591	0	0	618	416	
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	320	0	71	73	591	0	0	618	416	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	320	0	71	73	591	0	0	618	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	320	0	71	73	591	0	0	618	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	320	0	71	73	591	0	0	618	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	2.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.11	0.00	0.04	0.05	0.18	0.00	0.00	0.19	0.00	
Crit Moves:				****			****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Maine Ave/Arrow Hwy

Cycle (sec):	110	Critical Vol./Cap.(X):	0.465
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	32	Level Of Service:	A

Street Name:	Maine Ave							Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	3 0	0	
Volume Module:													
Base Vol:	220	0	112	0	0	0	0	745	177	104	819	0	
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:	220	0	112	0	0	0	0	745	177	104	819	0	
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:	220	0	112	0	0	0	0	745	177	104	819	0	
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:	220	0	112	0	0	0	0	745	177	104	819	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	220	0	112	0	0	0	0	745	177	104	819	0	
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:	220	0	112	0	0	0	0	745	177	104	819	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	3.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	4800	0	
Capacity Analysis Module:													
Vol/Sat:	0.08	0.00	0.07	0.00	0.00	0.00	0.00	0.23	0.11	0.07	0.17	0.00	
Crit Moves:	****							****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #18 Avenida Barbosa/Buena Vista St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.341
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Street Name:	Avenida Barbosa						Buena Vista St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 1	0 0	2	0 0	0 1	0	1 0	2 0	1	2 0	1 0	1
Volume Module:												
Base Vol:	81	90	123	0	67	1	2	13	78	124	28	15
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:	81	90	123	0	67	1	2	13	78	124	28	15
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:	81	90	123	0	67	1	2	13	78	124	28	15
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:	81	90	123	0	67	1	2	13	78	124	28	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	81	90	123	0	67	1	2	13	78	124	28	15
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:	81	90	123	0	67	1	2	13	78	124	28	15
OvlAdjVol:			0									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	0.47	0.53	2.00	0.00	0.99	0.01	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	758	842	3200	0	1576	24	1600	3200	1600	2880	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.11	0.11	0.04	0.00	0.04	0.04	0.00	0.00	0.05	0.04	0.02	0.01
OvlAdjV/S:			0.00									
Crit Moves:		****				****			****	****		

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Scenario Report

Scenario:	OY NP SAT
Command:	Default Command
Volume:	OY NP SAT
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B[13.3]

Street Name:	Dwy 1						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	10	0	63	0	0	0	0	778	32	23	741	0
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:	10	0	63	0	0	0	0	778	32	23	741	0
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:	10	0	63	0	0	0	0	778	32	23	741	0
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:	10	0	63	0	0	0	0	778	32	23	741	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	10	0	63	0	0	0	0	778	32	23	741	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1211	1581	275	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	810	xxxx	xxxxx
Potent Cap.:	178	110	728	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	825	xxxx	xxxxx
Move Cap.:	174	107	728	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	825	xxxx	xxxxx
Volume/Cap:	0.06	0.00	0.09	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.03	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.5	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	507	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	13.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	*	*	*
ApproachDel:	13.3			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[9.4]

Street Name:	Dwy 3						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	801	0	5	786	0
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	0	0	0	0	801	0	5	786	0
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	0	0	0	0	801	0	5	786	0
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	0	0	0	0	801	0	5	786	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	801	0	5	786	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1204	1597	267	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	801	xxxx	xxxxx
Potent Cap.:	180	108	737	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	831	xxxx	xxxxx
Move Cap.:	179	107	737	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	831	xxxx	xxxxx
Volume/Cap:	0.00	0.00	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.4	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Live Oak Ln/Live Oak Ave

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B[11.0]

Street Name:	Live Oak Ln									Live Oak Ave								
Approach:	North Bound					South Bound				East Bound					West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0		2	0		66			38	503		0		0	589		24	
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		2	0		66			38	503		0		0	589		24	
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		2	0		66			38	503		0		0	589		24	
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		2	0		66			38	503		0		0	589		24	
Reduct Vol:	0	0	0		0	0		0			0	0		0		0	0		0	
FinalVolume:	0	0	0		2	0		66			38	503		0		0	589		24	
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx		6.8	6.5		6.9			4.1	xxxx	xxxxx	xxxxx		xxxx	xxxxx			
FollowUpTim:	xxxxx	xxxx	xxxxx		3.5	4.0		3.3			2.2	xxxx	xxxxx	xxxxx		xxxx	xxxxx			
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx		929	1180		307			613	xxxx	xxxxx	xxxx		xxxx	xxxxx			
Potent Cap.:	xxxx	xxxx	xxxxx		270	192		695			976	xxxx	xxxxx	xxxx		xxxx	xxxxx			
Move Cap.:	xxxx	xxxx	xxxxx		262	184		695			976	xxxx	xxxxx	xxxx		xxxx	xxxxx			
Volume/Cap:	xxxx	xxxx	xxxx		0.01	0.00		0.09			0.04	xxxx	xxxx	xxxx		xxxx	xxxx			
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx		xxxx	xxxx		xxxxx			0.1	xxxx	xxxxx	xxxx		xxxx	xxxxx			
Control Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx		xxxxx			8.8	xxxx	xxxxx	xxxxx		xxxx	xxxxx			
LOS by Move:	*	*	*		*	*		*			A	*	*	*		*	*			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	663		xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	0.3		xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	11.0		xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*	*	*		*	B		*			*	*	*			*	*	*		
ApproachDel:	xxxxxx					11.0					xxxxxx					xxxxxx				
ApproachLOS:	*					B					*					*				

Note: Queue reported is the number of cars per lane.

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 Commerce Dr/Live Oak Ave

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[12.1]

Street Name:	Commerce Dr						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0 0 1			0 0 0 0 0			0 1 1 1 0			1 0 2 0 0		
Volume Module:												
Base Vol:	4	0	9	0	0	0	2	594	6	14	537	0
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:	4	0	9	0	0	0	2	594	6	14	537	0
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:	4	0	9	0	0	0	2	594	6	14	537	0
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:	4	0	9	0	0	0	2	594	6	14	537	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	4	0	9	0	0	0	2	594	6	14	537	0
Critical Gap Module:												
Critical Gp:	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	898	xxxx	201	xxxx	xxxx	xxxxx	537	xxxx	xxxxx	600	xxxx	xxxxx
Potent Cap.:	283	xxxx	813	xxxx	xxxx	xxxxx	1041	xxxx	xxxxx	987	xxxx	xxxxx
Move Cap.:	280	xxxx	813	xxxx	xxxx	xxxxx	1041	xxxx	xxxxx	987	xxxx	xxxxx
Volume/Cap:	0.01	xxxx	0.01	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	0.0	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	18.1	xxxx	9.5	xxxxx	xxxx	xxxxx	8.5	xxxx	xxxxx	8.7	xxxx	xxxxx
LOS by Move:	C	*	A	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	A	*	*	*	*	*
ApproachDel:	12.1			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the number of cars per lane.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	189	612	501	792	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	*0.95	1.00	1.00	0.95		
Frt	1.00	1.00	1.00	1.00		
Flt Protected	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3610	1900	1805	3610		
Flt Permitted	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3610	1900	1805	3610		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	199	644	527	834	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	199	644	527	834	0	0
Turn Type	NA	Free	Prot	NA		
Protected Phases	2		1	6		
Permitted Phases		Free				
Actuated Green, G (s)	24.0	100.0	68.0	100.0		
Effective Green, g (s)	24.0	100.0	68.0	100.0		
Actuated g/C Ratio	0.24	1.00	0.68	1.00		
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	866	1900	1227	3610		
v/s Ratio Prot	0.06		c0.29	0.23		
v/s Ratio Perm		c0.34				
v/c Ratio	0.23	0.34	0.43	0.23		
Uniform Delay, d1	30.6	0.0	7.2	0.0		
Progression Factor	1.00	1.00	0.72	1.00		
Incremental Delay, d2	0.6	0.5	0.2	0.1		
Delay (s)	31.2	0.5	5.5	0.1		
Level of Service	C	A	A	A		
Approach Delay (s)	7.7			2.2	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	4.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	210	0	0	677	0	0	0	359	0	0	490
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	231	0	0	744	0	0	0	395	0	0	538
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		438			227							
pX, platoon unblocked	0.93			0.97			0.94	0.94	0.97	0.94	0.94	0.93
vC, conflicting volume	744			231			1141	975	115	1254	975	372
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	572			144			887	710	25	1006	710	171
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	61	100	100	32
cM capacity (veh/h)	939			1407			72	341	1020	115	341	789

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	115	115	372	372	395	538
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	395	538
cSH	1700	1700	1700	1700	1020	789
Volume to Capacity	0.07	0.07	0.22	0.22	0.39	0.68
Queue Length 95th (ft)	0	0	0	0	46	137
Control Delay (s)	0.0	0.0	0.0	0.0	10.7	18.8
Lane LOS					B	C
Approach Delay (s)	0.0		0.0		10.7	18.8
Approach LOS					B	C

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	453	287	0	235	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5187	3610		1805	1615
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5187	3610		1805	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	477	302	0	247	331
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	477	302	0	247	331
Turn Type		NA	NA		Prot	Free
Protected Phases		2	6		4	
Permitted Phases						Free
Actuated Green, G (s)		37.0	37.0		55.0	100.0
Effective Green, g (s)		37.0	37.0		55.0	100.0
Actuated g/C Ratio		0.37	0.37		0.55	1.00
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		1919	1335		992	1615
v/s Ratio Prot		c0.09	0.08		c0.14	
v/s Ratio Perm						0.20
v/c Ratio		0.25	0.23		0.25	0.20
Uniform Delay, d1		21.9	21.7		11.7	0.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	0.4		0.6	0.3
Delay (s)		22.2	22.1		12.3	0.3
Level of Service		C	C		B	A
Approach Delay (s)		22.2	22.1		5.4	
Approach LOS		C	C		A	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	28.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	467	21	0	281	246	0	0	19	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	497	22	0	299	262	0	0	20	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		537										
pX, platoon unblocked				0.96			0.96	0.96	0.96	0.96	0.96	
vC, conflicting volume	299			519			646	796	248	568	818	149
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	299			404			537	694	121	455	717	149
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	98	100	100	100
cM capacity (veh/h)	1274			1114			412	353	874	461	342	877

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	248	248	22	149	149	262	20
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	22	0	0	262	20
cSH	1700	1700	1700	1700	1700	1700	874
Volume to Capacity	0.15	0.15	0.01	0.09	0.09	0.15	0.02
Queue Length 95th (ft)	0	0	0	0	0	0	2
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.2
Lane LOS							A
Approach Delay (s)	0.0			0.0			9.2
Approach LOS							A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	22.9%	ICU Level of Service	A
Analysis Period (min)	15		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Scenario Report

Scenario:	OY WP AM
Command:	Default Command
Volume:	OY WP AM
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Project
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Peck Rd-Myrtle Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.842
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	78	Level Of Service:	D

Street Name:	Peck Rd-Myrtle						Live Oak Ave					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	269	1009	292	41	536	163	72	586	224	171	1227	58
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:	269	1009	292	41	536	163	72	586	224	171	1227	58
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:	269	1009	292	41	536	163	72	586	224	171	1227	58
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:	269	1009	292	41	536	163	72	586	224	171	1227	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	269	1009	292	41	536	163	72	586	224	171	1227	58
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:	269	1009	292	41	536	163	72	586	224	171	1227	58
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.33	0.67	1.00	2.30	0.70	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	3723	1077	1600	3681	1119	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.17	0.27	0.27	0.03	0.15	0.15	0.05	0.18	0.14	0.11	0.38	0.04
Crit Moves:	****				****		****				****	

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Myrtle Ave/Longden Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.878
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	97	Level Of Service:	D

Street Name:	Myrtle Ave						Longden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	1 0	1	0 1	0 1	0
Volume Module:												
Base Vol:	176	943	21	179	646	52	73	272	80	36	614	446
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:	176	943	21	179	646	52	73	272	80	36	614	446
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:	176	943	21	179	646	52	73	272	80	36	614	446
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:	176	943	21	179	646	52	73	272	80	36	614	446
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	176	943	21	179	646	52	73	272	80	36	614	446
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:	176	943	21	179	646	52	73	272	80	36	614	446
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.00	1.00	1.00	2.00	1.00	0.42	1.58	1.00	0.07	1.12	0.81
Final Sat.:	1600	3200	1600	1600	3200	1600	677	2523	1600	105	1793	1302
Capacity Analysis Module:												
Vol/Sat:	0.11	0.29	0.01	0.11	0.20	0.03	0.05	0.11	0.05	0.02	0.34	0.34
Crit Moves:		****		****			****				****	

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Longden Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.727
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	54	Level Of Service:	C

Street Name:	Longden Ave							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	1	1	0	0	1	1	0	2	1
Volume Module:													
Base Vol:	10	10	10	462	1	13	39	883	1	10	1405	1015	
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:	10	10	10	462	1	13	39	883	1	10	1405	1015	
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:	10	10	10	462	1	13	39	883	1	10	1405	1015	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	10	10	10	462	1	13	39	883	1	10	1405	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	10	10	10	462	1	13	39	883	1	10	1405	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	10	10	10	462	1	13	39	883	1	10	1405	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.34	0.33	0.33	1.99	0.01	1.00	1.00	2.99	0.01	1.00	2.00	2.00	
Final Sat.:	533	533	533	3193	7	1600	1600	4795	5	1600	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.02	0.02	0.02	0.14	0.14	0.01	0.02	0.18	0.18	0.01	0.44	0.00	
Crit Moves:		****		****			****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Arrow Hwy/Live Oak Ave

Cycle (sec):	110	Critical Vol./Cap.(X):	0.885
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	97	Level Of Service:	D

Street Name:	Arrow Hwy							Live Oak Ave					
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:	Ignore			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	2	0	2	2	0	2	0	0	0	0	0	0	0	2	0	0	0	1
Volume Module:													
Base Vol:	0	529	813	265	1437	0	0	0	0	994	0	263	
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	529	813	265	1437	0	0	0	0	994	0	263	
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	529	813	265	1437	0	0	0	0	994	0	263	
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	529	0	265	1437	0	0	0	0	994	0	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	529	0	265	1437	0	0	0	0	994	0	0	
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	529	0	265	1437	0	0	0	0	994	0	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	
Lanes:	0.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00	
Final Sat.:	0	3200	3200	2880	3200	0	0	0	0	2880	0	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.17	0.00	0.09	0.45	0.00	0.00	0.00	0.00	0.35	0.00	0.00	
Crit Moves:	****				****					****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Speedway Dr-Dwy 2/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.517
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	A

Street Name:	Speedway Dr-Dwy 2							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0	
Volume Module:													
Base Vol:	32	0	32	0	0	0	0	1039	86	86	1270	0	
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:	32	0	32	0	0	0	0	1039	86	86	1270	0	
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:	32	0	32	0	0	0	0	1039	86	86	1270	0	
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:	32	0	32	0	0	0	0	1039	86	86	1270	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	32	0	32	0	0	0	0	1039	86	86	1270	0	
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:	32	0	32	0	0	0	0	1039	86	86	1270	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.77	0.23	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	4433	367	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.23	0.23	0.05	0.40	0.00	
Crit Moves:			****				****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Graham Rd/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.673
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	47	Level Of Service:	B

Street Name:	Graham Rd							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	0	0	0	0	0	0	0	2	0 1
Volume Module:													
Base Vol:	159	0	60	0	0	0	0	738	111	50	1396	0	
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:	159	0	60	0	0	0	0	738	111	50	1396	0	
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:	159	0	60	0	0	0	0	738	111	50	1396	0	
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:	159	0	60	0	0	0	0	738	111	50	1396	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	159	0	60	0	0	0	0	738	111	50	1396	0	
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:	159	0	60	0	0	0	0	738	111	50	1396	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.73	0.00	0.27	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	1162	0	438	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.14	0.00	0.14	0.00	0.00	0.00	0.00	0.23	0.07	0.03	0.44	0.00	
Crit Moves:			****				****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Rivergrade Rd/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.611
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	42	Level Of Service:	B

Street Name:	Rivergrade Rd						Live Oak Ave					
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:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	52	53	112	31	80	74	96	527	95	271	1243	14
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:	52	53	112	31	80	74	96	527	95	271	1243	14
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:	52	53	112	31	80	74	96	527	95	271	1243	14
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:	52	53	112	31	80	74	96	527	95	271	1243	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	52	53	112	31	80	74	96	527	95	271	1243	14
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:	52	53	112	31	80	74	96	527	95	271	1243	14
OvlAdjVol:			0									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	1600	1600	1600	3200	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.07	0.02	0.03	0.05	0.06	0.16	0.06	0.17	0.39	0.01
OvlAdjV/S:			0.00									
Crit Moves:	****					****	****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #14 Stewart Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.872
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	88	Level Of Service:	D

Street Name:	Stewart Ave						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	1! 0	0	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	233	127	35	14	28	81	21	463	32	18	1610	38
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:	233	127	35	14	28	81	21	463	32	18	1610	38
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:	233	127	35	14	28	81	21	463	32	18	1610	38
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:	233	127	35	14	28	81	21	463	32	18	1610	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	233	127	35	14	28	81	21	463	32	18	1610	38
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:	233	127	35	14	28	81	21	463	32	18	1610	38
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	0.59	0.32	0.09	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	944	514	142	1600	1600	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.15	0.25	0.25	0.01	0.02	0.05	0.01	0.14	0.02	0.01	0.50	0.02
Crit Moves:		****		****			****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #15 Baldwin Park/Arrow Hwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.729
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	89	Level Of Service:	C

Street Name:	Baldwin Park							Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	2 0	0	
Volume Module:													
Base Vol:	318	0	313	0	0	0	0	469	69	141	1387	0	
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:	318	0	313	0	0	0	0	469	69	141	1387	0	
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:	318	0	313	0	0	0	0	469	69	141	1387	0	
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:	318	0	313	0	0	0	0	469	69	141	1387	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	318	0	313	0	0	0	0	469	69	141	1387	0	
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:	318	0	313	0	0	0	0	469	69	141	1387	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.11	0.00	0.20	0.00	0.00	0.00	0.00	0.15	0.04	0.09	0.43	0.00	
Crit Moves:			****								****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #16 Arrow Highway/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.758
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	59	Level Of Service:	C

Street Name:	Arrow Highway						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	0	0 0	2 0	0	0 1	1 0	2	0 0	0 0	2	0 2
Volume Module:												
Base Vol:	0	0	0	291	0	46	149	634	0	0	1485	1672
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	291	0	46	149	634	0	0	1485	1672
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	291	0	46	149	634	0	0	1485	1672
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	0	0	291	0	46	149	634	0	0	1485	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	291	0	46	149	634	0	0	1485	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	0	0	0	291	0	46	149	634	0	0	1485	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	2.00
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	3200
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.10	0.00	0.03	0.09	0.20	0.00	0.00	0.46	0.00
Crit Moves:				****			****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Maine Ave/Arrow Hwy

Cycle (sec):	110	Critical Vol./Cap.(X):	0.842
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	80	Level Of Service:	D

Street Name:	Maine Ave						Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	3 0	0
Volume Module:												
Base Vol:	659	0	112	0	0	0	0	802	106	37	2509	0
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:	659	0	112	0	0	0	0	802	106	37	2509	0
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:	659	0	112	0	0	0	0	802	106	37	2509	0
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:	659	0	112	0	0	0	0	802	106	37	2509	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	659	0	112	0	0	0	0	802	106	37	2509	0
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:	659	0	112	0	0	0	0	802	106	37	2509	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	3.00	0.00
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	4800	0
Capacity Analysis Module:												
Vol/Sat:	0.23	0.00	0.07	0.00	0.00	0.00	0.00	0.25	0.07	0.02	0.52	0.00
Crit Moves:	****						****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #18 Avenida Barbosa/Buena Vista St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.393
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	28	Level Of Service:	A

Street Name:	Avenida Barbosa						Buena Vista St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 1	0	0 2	0 0	1!	0 0	1 0	2	0 1	2 0	1	0 1
Volume Module:												
Base Vol:	54	163	761	9	75	2	1	4	6	168	15	19
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:	54	163	761	9	75	2	1	4	6	168	15	19
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:	54	163	761	9	75	2	1	4	6	168	15	19
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:	54	163	761	9	75	2	1	4	6	168	15	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	54	163	761	9	75	2	1	4	6	168	15	19
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:	54	163	761	9	75	2	1	4	6	168	15	19
OvlAdjVol:			574									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	0.25	0.75	2.00	0.10	0.88	0.02	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	398	1202	3200	167	1395	37	1600	3200	1600	2880	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.24	0.05	0.05	0.05	0.00	0.00	0.00	0.06	0.01	0.01
OvlAdjV/S:			0.18									
Crit Moves:			****			****		****		****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #19 Avenida Barbosa/Arrow Highway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.872
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	88	Level Of Service:	D

Street Name:	Avenida Barbosa						Arrow Highway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	0	0 0	2 0	0	0 1	1 0	2	0 0	0 0	2	0 1
Volume Module:												
Base Vol:	0	0	0	130	0	142	315	467	0	0	1557	694
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	130	0	142	315	467	0	0	1557	694
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	130	0	142	315	467	0	0	1557	694
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	130	0	142	315	467	0	0	1557	694
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	130	0	142	315	467	0	0	1557	694
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	130	0	142	315	467	0	0	1557	694
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.05	0.00	0.09	0.20	0.15	0.00	0.00	0.49	0.43
Crit Moves:						****	****				****	

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Scenario Report

Scenario:	OY WP AM
Command:	Default Command
Volume:	OY WP AM
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Project
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: E[40.7]

Street Name:	Dwy 1						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 2 1 0			1 0 2 0 0		
Volume Module:												
Base Vol:	17	0	15	0	0	0	0	1005	44	41	1233	0
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:	17	0	15	0	0	0	0	1005	44	41	1233	0
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:	17	0	15	0	0	0	0	1005	44	41	1233	0
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:	17	0	15	0	0	0	0	1005	44	41	1233	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	17	0	15	0	0	0	0	1005	44	41	1233	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1726	2342	357	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1049	xxxx	xxxxx
Potent Cap.:	82	37	645	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	671	xxxx	xxxxx
Move Cap.:	78	35	645	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	671	xxxx	xxxxx
Volume/Cap:	0.22	0.00	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.06	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	132	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	40.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	E	*	*	*	*	*	*	*	*	*	*
ApproachDel:		40.7		xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:		E			*			*			*	

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: E[40.9]

Street Name:	Dwy 3									Live Oak Ave							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	1!	0	0	0	0	0	0	0	0	0	2	1	0	1	0	2	0	0
Volume Module:																				
Base Vol:	15	0	17	0	0	0	0	1023	41	44	1332	0								
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:	15	0	17	0	0	0	0	1023	41	44	1332	0								
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:	15	0	17	0	0	0	0	1023	41	44	1332	0								
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:	15	0	17	0	0	0	0	1023	41	44	1332	0								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	15	0	17	0	0	0	0	1023	41	44	1332	0								
Critical Gap Module:																				
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx								
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	1798	2464	362	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1064	xxxx	xxxxx								
Potent Cap.:	73	31	641	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	662	xxxx	xxxxx								
Move Cap.:	69	29	641	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	662	xxxx	xxxxx								
Volume/Cap:	0.22	0.00	0.03	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.07	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.8	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*								
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	132	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	0.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	40.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	E	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	40.9			xxxxxx			xxxxxx			xxxxxx										
ApproachLOS:	E			*			*			*										

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Live Oak Ln/Live Oak Ave

Average Delay (sec/veh): 3.1 Worst Case Level Of Service: E[39.8]

Street Name:	Live Oak Ln									Live Oak Ave								
Approach:	North Bound					South Bound				East Bound					West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0	14	0	139	89	712	0	0	1328	57								
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	14	0	139	89	712	0	0	1328	57								
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	14	0	139	89	712	0	0	1328	57								
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	14	0	139	89	712	0	0	1328	57								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	0	0	0	14	0	139	89	712	0	0	1328	57								
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	1891	2247	693	1385	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	xxxxx	63	42	391	501	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	xxxxx	55	35	391	501	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	xxxx	0.26	0.00	0.36	0.18	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.6	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	13.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	*	B	*	*	*	*	*								
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	250	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	3.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	39.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	E	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx				39.8		xxxxxx				xxxxxx									
ApproachLOS:	*				E		*				*									

Note: Queue reported is the number of cars per lane.

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 Commerce Dr/Live Oak Ave

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: D[27.9]

Street Name:	Commerce Dr									Live Oak Ave						
Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0	2	1	0	1	0	2	0	0
Volume Module:																				
Base Vol:	6	0	19			0	0	0			0	493	49			276	1643	0		
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:	6	0	19			0	0	0			0	493	49			276	1643	0		
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:	6	0	19			0	0	0			0	493	49			276	1643	0		
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:	6	0	19			0	0	0			0	493	49			276	1643	0		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
FinalVolume:	6	0	19			0	0	0			0	493	49			276	1643	0		
Critical Gap Module:																				
Critical Gp:	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx							
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx							
Capacity Module:																				
Cnflict Vol:	1891	xxxx	189	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		542	xxxx	xxxxx							
Potent Cap.:	63	xxxx	827	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1037	xxxx	xxxxx							
Move Cap.:	50	xxxx	827	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1037	xxxx	xxxxx							
Volume/Cap:	0.12	xxxx	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx		0.27	xxxx	xxxx							
Level Of Service Module:																				
2Way95thQ:	0.4	xxxx	0.1	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1.1	xxxx	xxxxx							
Control Del:	86.2	xxxx	9.5	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		9.7	xxxx	xxxxx							
LOS by Move:	F	*	A	*	*	*	*	*	*		A	*	*							
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx							
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx							
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx							
Shared LOS:	*	*	*	*	*	*	*	*	*		*	*	*							
ApproachDel:	27.9			xxxxxx			xxxxxx				xxxxxx									
ApproachLOS:	D			*			*				*									

Note: Queue reported is the number of cars per lane.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	441	614	740	1370	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	0.95	1.00	1.00	0.95		
Frt	1.00	0.85	1.00	1.00		
Flt Protected	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3610	1615	1805	3610		
Flt Permitted	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3610	1615	1805	3610		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	469	653	787	1457	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	469	653	787	1457	0	0
Turn Type	NA	Free	Prot	NA		
Protected Phases	2		1	6		
Permitted Phases		Free				
Actuated Green, G (s)	23.0	100.0	69.0	100.0		
Effective Green, g (s)	23.0	100.0	69.0	100.0		
Actuated g/C Ratio	0.23	1.00	0.69	1.00		
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	830	1615	1245	3610		
v/s Ratio Prot	c0.13		c0.44	0.40		
v/s Ratio Perm		0.40				
v/c Ratio	0.57	0.40	0.63	0.40		
Uniform Delay, d1	34.1	0.0	8.5	0.0		
Progression Factor	1.00	1.00	0.68	1.00		
Incremental Delay, d2	2.8	0.8	1.0	0.3		
Delay (s)	36.9	0.8	6.8	0.3		
Level of Service	D	A	A	A		
Approach Delay (s)	15.8			2.6	0.0	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay	7.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	444	0	0	1565	0	0	0	395	0	0	546
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	472	0	0	1665	0	0	0	420	0	0	581
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		438			227							
pX, platoon unblocked	0.78			0.89			0.84	0.84	0.89	0.84	0.84	0.78
vC, conflicting volume	1665			472			1886	2137	236	2321	2137	832
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1295			155			1074	1374	0	1593	1374	232
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	57	100	100	4
cM capacity (veh/h)	424			1277			7	123	969	35	123	608

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	236	236	832	832	420	581
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	420	581
cSH	1700	1700	1700	1700	969	608
Volume to Capacity	0.14	0.14	0.49	0.49	0.43	0.96
Queue Length 95th (ft)	0	0	0	0	56	329
Control Delay (s)	0.0	0.0	0.0	0.0	11.5	52.3
Lane LOS					B	F
Approach Delay (s)	0.0		0.0		11.5	52.3
Approach LOS					B	F

Intersection Summary			
Average Delay	11.2		
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	584	1555	0	411	683
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5187	3610		1805	1615
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5187	3610		1805	1615
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	621	1654	0	437	727
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	621	1654	0	437	727
Turn Type		NA	NA		Prot	Free
Protected Phases		2	6		4	
Permitted Phases						Free
Actuated Green, G (s)		57.0	57.0		35.0	100.0
Effective Green, g (s)		57.0	57.0		35.0	100.0
Actuated g/C Ratio		0.57	0.57		0.35	1.00
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		2956	2057		631	1615
v/s Ratio Prot		0.12	c0.46		c0.24	
v/s Ratio Perm						0.45
v/c Ratio		0.21	0.80		0.69	0.45
Uniform Delay, d1		10.5	17.1		27.9	0.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.2	3.5		6.2	0.9
Delay (s)		10.7	20.5		34.0	0.9
Level of Service		B	C		C	A
Approach Delay (s)		10.7	20.5		13.3	
Approach LOS		B	C		B	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	612	49	0	1555	413	0	0	66	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	644	52	0	1637	435	0	0	69	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		537										
pX, platoon unblocked				0.97			0.97	0.97	0.97	0.97	0.97	
vC, conflicting volume	1637			696			1463	2281	322	2028	2333	818
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1637			633			1421	2262	250	2002	2315	818
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	91	100	100	100
cM capacity (veh/h)	401			934			96	40	736	32	37	323

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	322	322	52	818	818	435	69
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	52	0	0	435	69
cSH	1700	1700	1700	1700	1700	1700	736
Volume to Capacity	0.19	0.19	0.03	0.48	0.48	0.26	0.09
Queue Length 95th (ft)	0	0	0	0	0	0	8
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.4
Lane LOS							B
Approach Delay (s)	0.0			0.0			10.4
Approach LOS							B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Scenario Report

Scenario:	OY WP PM
Command:	Default Command
Volume:	OY WP PM
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Project
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Peck Rd-Myrtle Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.859
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	83	Level Of Service:	D

Street Name:	Peck Rd-Myrtle						Live Oak Ave					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	238	827	190	187	592	143	197	1229	199	74	703	22
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:	238	827	190	187	592	143	197	1229	199	74	703	22
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:	238	827	190	187	592	143	197	1229	199	74	703	22
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:	238	827	190	187	592	143	197	1229	199	74	703	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	238	827	190	187	592	143	197	1229	199	74	703	22
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:	238	827	190	187	592	143	197	1229	199	74	703	22
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.44	0.56	1.00	2.42	0.58	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	3903	897	1600	3866	934	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.15	0.21	0.21	0.12	0.15	0.15	0.12	0.38	0.12	0.05	0.22	0.01
Crit Moves:		****		****				****		****		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Myrtle Ave/Longden Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.889
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	103	Level Of Service:	D

Street Name:	Myrtle Ave						Longden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	1 0	1	0 1	0 1	0
Volume Module:												
Base Vol:	99	929	13	370	835	57	86	665	104	28	416	293
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:	99	929	13	370	835	57	86	665	104	28	416	293
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:	99	929	13	370	835	57	86	665	104	28	416	293
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:	99	929	13	370	835	57	86	665	104	28	416	293
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	929	13	370	835	57	86	665	104	28	416	293
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:	99	929	13	370	835	57	86	665	104	28	416	293
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.00	1.00	1.00	2.00	1.00	0.23	1.77	1.00	0.08	1.13	0.79
Final Sat.:	1600	3200	1600	1600	3200	1600	366	2834	1600	122	1806	1272
Capacity Analysis Module:												
Vol/Sat:	0.06	0.29	0.01	0.23	0.26	0.04	0.05	0.23	0.07	0.02	0.23	0.23
Crit Moves:		****		****			****				****	

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Longden Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.763
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	59	Level Of Service:	C

Street Name:	Longden Ave							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	1	1	0	0	1	1	0	2	1
Volume Module:													
Base Vol:	0	0	0	1036	0	10	9	1624	1	1	760	707	
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	1036	0	10	9	1624	1	1	760	707	
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	1036	0	10	9	1624	1	1	760	707	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	1036	0	10	9	1624	1	1	760	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	1036	0	10	9	1624	1	1	760	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	1036	0	10	9	1624	1	1	760	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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	1.00	0.00	2.00	0.00	1.00	1.00	2.99	0.01	1.00	2.00	2.00	
Final Sat.:	0	1600	0	3200	0	1600	1600	4797	3	1600	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.32	0.00	0.01	0.01	0.34	0.34	0.00	0.24	0.00	
Crit Moves:				****				****		****			

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Arrow Hwy/Live Oak Ave

Cycle (sec):	110	Critical Vol./Cap.(X):	0.810
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	71	Level Of Service:	D

Street Name:	Arrow Hwy							Live Oak Ave					
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:	Ignore			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	2	0	2	2	0	2	0	0	0	0	0	0	0	2	0	0	0	1
Volume Module:													
Base Vol:	0	766	1935	461	557	0	0	0	0	921	0	363	
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	766	1935	461	557	0	0	0	0	921	0	363	
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	766	1935	461	557	0	0	0	0	921	0	363	
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	766	0	461	557	0	0	0	0	921	0	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	766	0	461	557	0	0	0	0	921	0	0	
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	766	0	461	557	0	0	0	0	921	0	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	
Lanes:	0.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00	
Final Sat.:	0	3200	3200	2880	3200	0	0	0	0	2880	0	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.24	0.00	0.16	0.17	0.00	0.00	0.00	0.00	0.32	0.00	0.00	
Crit Moves:		****		****						****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Speedway Dr-Dwy 2/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.874
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	89	Level Of Service:	D

Street Name:	Speedway Dr-Dwy 2							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0	
Volume Module:													
Base Vol:	199	0	246	0	0	0	0	2232	222	175	1101	0	
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:	199	0	246	0	0	0	0	2232	222	175	1101	0	
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:	199	0	246	0	0	0	0	2232	222	175	1101	0	
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:	199	0	246	0	0	0	0	2232	222	175	1101	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	199	0	246	0	0	0	0	2232	222	175	1101	0	
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:	199	0	246	0	0	0	0	2232	222	175	1101	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.73	0.27	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	4366	434	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.07	0.00	0.15	0.00	0.00	0.00	0.00	0.51	0.51	0.11	0.34	0.00	
Crit Moves:			****					****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Graham Rd/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.724
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	53	Level Of Service:	C

Street Name:	Graham Rd							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	0	0	0	0	0	0	2	0	1
	1	0	2	0	0								
Volume Module:													
Base Vol:	18	0	23	0	0	0	0	1844	48	36	1004	0	
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:	18	0	23	0	0	0	0	1844	48	36	1004	0	
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:	18	0	23	0	0	0	0	1844	48	36	1004	0	
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:	18	0	23	0	0	0	0	1844	48	36	1004	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	18	0	23	0	0	0	0	1844	48	36	1004	0	
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:	18	0	23	0	0	0	0	1844	48	36	1004	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.44	0.00	0.56	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	702	0	898	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.58	0.03	0.02	0.31	0.00	
Crit Moves:	****							****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Rivergrade Rd/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.873
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	95	Level Of Service:	D

Street Name:	Rivergrade Rd						Live Oak Ave					
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:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	108	69	390	28	22	58	83	1692	35	87	798	6
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:	108	69	390	28	22	58	83	1692	35	87	798	6
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:	108	69	390	28	22	58	83	1692	35	87	798	6
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:	108	69	390	28	22	58	83	1692	35	87	798	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	108	69	390	28	22	58	83	1692	35	87	798	6
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:	108	69	390	28	22	58	83	1692	35	87	798	6
OvlAdjVol:			303									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	1600	1600	1600	3200	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.07	0.04	0.24	0.02	0.01	0.04	0.05	0.53	0.02	0.05	0.25	0.00
OvlAdjV/S:			0.19									
Crit Moves:			****	****				****		****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #14 Stewart Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.856
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	82	Level Of Service:	D

Street Name:	Stewart Ave						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	1! 0	0	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	79	21	12	25	107	13	63	1965	298	41	776	1
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:	79	21	12	25	107	13	63	1965	298	41	776	1
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:	79	21	12	25	107	13	63	1965	298	41	776	1
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:	79	21	12	25	107	13	63	1965	298	41	776	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	79	21	12	25	107	13	63	1965	298	41	776	1
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:	79	21	12	25	107	13	63	1965	298	41	776	1
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	0.70	0.19	0.11	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1129	300	171	1600	1600	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.05	0.07	0.07	0.02	0.07	0.01	0.04	0.61	0.19	0.03	0.24	0.00
Crit Moves:	****				****			****		****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #15 Baldwin Park/Arrow Hwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.788
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	64	Level Of Service:	C

Street Name:	Baldwin Park							Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	2 0	0	
Volume Module:													
Base Vol:	99	0	91	0	0	0	0	1453	565	283	698	0	
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:	99	0	91	0	0	0	0	1453	565	283	698	0	
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:	99	0	91	0	0	0	0	1453	565	283	698	0	
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:	99	0	91	0	0	0	0	1453	565	283	698	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	99	0	91	0	0	0	0	1453	565	283	698	0	
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:	99	0	91	0	0	0	0	1453	565	283	698	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.03	0.00	0.06	0.00	0.00	0.00	0.00	0.45	0.35	0.18	0.22	0.00	
Crit Moves:			****					****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #16 Arrow Highway/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.933
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	120	Level Of Service:	E

Street Name:	Arrow Highway							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Permitted			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0	0	2 0	0	0 1	1 0	2	0 0	0 0	2	0 2	
Volume Module:													
Base Vol:	0	0	0	1049	0	114	40	1501	0	0	858	476	
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	1049	0	114	40	1501	0	0	858	476	
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	1049	0	114	40	1501	0	0	858	476	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	1049	0	114	40	1501	0	0	858	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	1049	0	114	40	1501	0	0	858	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	1049	0	114	40	1501	0	0	858	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	2.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.36	0.00	0.07	0.03	0.47	0.00	0.00	0.27	0.00	
Crit Moves:				****				****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Maine Ave/Arrow Hwy

Cycle (sec):	110	Critical Vol./Cap.(X):	0.853
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	84	Level Of Service:	D

Street Name:	Maine Ave							Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	3 0	0	
Volume Module:													
Base Vol:	264	0	107	0	0	0	0	2010	527	68	1065	0	
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:	264	0	107	0	0	0	0	2010	527	68	1065	0	
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:	264	0	107	0	0	0	0	2010	527	68	1065	0	
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:	264	0	107	0	0	0	0	2010	527	68	1065	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	264	0	107	0	0	0	0	2010	527	68	1065	0	
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:	264	0	107	0	0	0	0	2010	527	68	1065	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	3.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	4800	0	
Capacity Analysis Module:													
Vol/Sat:	0.09	0.00	0.07	0.00	0.00	0.00	0.00	0.63	0.33	0.04	0.22	0.00	
Crit Moves:	****							****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #18 Avenida Barbosa/Buena Vista St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.561
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	37	Level Of Service:	A

Street Name:	Avenida Barbosa						Buena Vista St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 1	0	0 2	0	0	1! 0	0	1	0 2	0 1	2 0	1 0 1
Volume Module:												
Base Vol:	16	121	332	28	192	6	6	22	89	514	18	24
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:	16	121	332	28	192	6	6	22	89	514	18	24
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:	16	121	332	28	192	6	6	22	89	514	18	24
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:	16	121	332	28	192	6	6	22	89	514	18	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	121	332	28	192	6	6	22	89	514	18	24
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:	16	121	332	28	192	6	6	22	89	514	18	24
OvlAdjVol:			0									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	0.12	0.88	2.00	0.12	0.85	0.03	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	187	1413	3200	198	1359	42	1600	3200	1600	2880	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.10	0.14	0.14	0.14	0.00	0.01	0.06	0.18	0.01	0.02
OvlAdjV/S:			0.00									
Crit Moves:	****			****					****	****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #19 Avenida Barbosa/Arrow Highway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.661
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	46	Level Of Service:	B

Street Name:	Avenida Barbosa							Arrow Highway					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0 0	0	2 0	0 0	1	1 0	2 0	0	0 0	2 0	1	
Volume Module:													
Base Vol:	0	0	0	390	0	341	216	911	0	0	682	214	
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	390	0	341	216	911	0	0	682	214	
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	390	0	341	216	911	0	0	682	214	
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	390	0	341	216	911	0	0	682	214	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	390	0	341	216	911	0	0	682	214	
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	390	0	341	216	911	0	0	682	214	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.14	0.00	0.21	0.14	0.28	0.00	0.00	0.21	0.13	
Crit Moves:						****	****				****		

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Scenario Report

Scenario:	OY WP PM
Command:	Default Command
Volume:	OY WP PM
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Project
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Average Delay (sec/veh): 314.6 Worst Case Level Of Service: F[6008.5]

Street Name:	Dwy 1						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	90	0	111	0	0	0	0	2287	102	74	1183	0
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:	90	0	111	0	0	0	0	2287	102	74	1183	0
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:	90	0	111	0	0	0	0	2287	102	74	1183	0
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:	90	0	111	0	0	0	0	2287	102	74	1183	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	90	0	111	0	0	0	0	2287	102	74	1183	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	3078	3669	813	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	2389	xxxx	xxxxx
Potent Cap.:	10	5	326	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	205	xxxx	xxxxx
Move Cap.:	7	3	326	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	205	xxxx	xxxxx
Volume/Cap:	12.93	0.00	0.34	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.36	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1.6	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	32.2	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	D	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	15	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	26.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	6009	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	*	*	*	*	*	*	*	*	*
ApproachDel:	6008.5			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	F			*			*			*		

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Average Delay (sec/veh): 378.2 Worst Case Level Of Service: F[7209.7]

Street Name:	Dwy 3						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	89	0	116	0	0	0	0	2357	100	80	1174	0
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:	89	0	116	0	0	0	0	2357	100	80	1174	0
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:	89	0	116	0	0	0	0	2357	100	80	1174	0
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:	89	0	116	0	0	0	0	2357	100	80	1174	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	89	0	116	0	0	0	0	2357	100	80	1174	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	3154	3741	836	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	2457	xxxx	xxxxx
Potent Cap.:	9	4	315	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	193	xxxx	xxxxx
Move Cap.:	6	3	315	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	193	xxxx	xxxxx
Volume/Cap:	15.40	0.00	0.37	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.42	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1.9	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	36.4	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	E	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	13	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	26.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	7210	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	*	*	*	*	*	*	*	*	*
ApproachDel:	7209.7			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	F			*			*			*		

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Live Oak Ln/Live Oak Ave

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: D[27.9]

Street Name:	Live Oak Ln									Live Oak Ave								
Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0	12	0	75	48	1792	0	0	954	6								
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	12	0	75	48	1792	0	0	954	6								
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	12	0	75	48	1792	0	0	954	6								
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	12	0	75	48	1792	0	0	954	6								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	0	0	0	12	0	75	48	1792	0	0	954	6								
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	1949	2845	480	960	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	xxxxx	58	17	537	725	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	xxxxx	55	16	537	725	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	xxxx	0.22	0.00	0.14	0.07	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	*	B	*	*	*	*	*								
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	243	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	1.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	27.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	D	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx				27.9		xxxxxx				xxxxxx									
ApproachLOS:	*				D		*				*									

Note: Queue reported is the number of cars per lane.

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 Commerce Dr/Live Oak Ave

Average Delay (sec/veh): 6.6 Worst Case Level Of Service: F[86.9]

Street Name:	Commerce Dr						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0 0 1			0 0 0 0 0			0 1 1 1 0			1 0 2 0 0		
Volume Module:												
Base Vol:	26	0	213	0	0	0	2	2101	6	23	863	0
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:	26	0	213	0	0	0	2	2101	6	23	863	0
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:	26	0	213	0	0	0	2	2101	6	23	863	0
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:	26	0	213	0	0	0	2	2101	6	23	863	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	26	0	213	0	0	0	2	2101	6	23	863	0
Critical Gap Module:												
Critical Gp:	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	2586	xxxx	703	xxxx	xxxx	xxxxx	863	xxxx	xxxxx	2107	xxxx	xxxxx
Potent Cap.:	21	xxxx	384	xxxx	xxxx	xxxxx	788	xxxx	xxxxx	264	xxxx	xxxxx
Move Cap.:	20	xxxx	384	xxxx	xxxx	xxxxx	788	xxxx	xxxxx	264	xxxx	xxxxx
Volume/Cap:	1.31	xxxx	0.55	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	0.09	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	3.5	xxxx	3.2	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.3	xxxx	xxxxx
Control Del:	591.0	xxxx	25.4	xxxxx	xxxx	xxxxx	9.6	xxxx	xxxxx	19.9	xxxx	xxxxx
LOS by Move:	F	*	D	*	*	*	A	*	*	C	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	A	*	*	*	*	*
ApproachDel:	86.9			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	F			*			*			*		

Note: Queue reported is the number of cars per lane.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1179	1296	619	1253	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	0.95	1.00	1.00	0.95		
Frt	1.00	1.00	1.00	1.00		
Flt Protected	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3610	1900	1805	3610		
Flt Permitted	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3610	1900	1805	3610		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1254	1379	659	1333	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1254	1379	659	1333	0	0
Turn Type	NA	Free	Prot	NA		
Protected Phases	2		1	6		
Permitted Phases		Free				
Actuated Green, G (s)	50.1	100.0	41.9	100.0		
Effective Green, g (s)	50.1	100.0	41.9	100.0		
Actuated g/C Ratio	0.50	1.00	0.42	1.00		
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	1808	1900	756	3610		
v/s Ratio Prot	0.35		c0.37	0.37		
v/s Ratio Perm		c0.73				
v/c Ratio	0.69	0.73	0.87	0.37		
Uniform Delay, d1	19.1	0.0	26.6	0.0		
Progression Factor	1.00	1.00	0.96	1.00		
Incremental Delay, d2	2.2	2.5	10.7	0.3		
Delay (s)	21.3	2.5	36.3	0.3		
Level of Service	C	A	D	A		
Approach Delay (s)	11.4			12.2	0.0	
Approach LOS	B			B	A	

Intersection Summary			
HCM 2000 Control Delay	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1178	0	0	1015	0	0	0	693	0	0	871
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	1253	0	0	1080	0	0	0	737	0	0	927
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		438			227							
pX, platoon unblocked	0.90			0.72			0.77	0.77	0.72	0.77	0.77	0.90
vC, conflicting volume	1080			1253			2720	2333	627	2444	2333	540
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	878			587			2082	1581	0	1724	1581	281
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			0	100	7	100	100	0
cM capacity (veh/h)	704			722			0	85	790	3	85	653

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	627	627	540	540	737	927
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	737	927
cSH	1700	1700	1700	1700	790	653
Volume to Capacity	0.37	0.37	0.32	0.32	0.93	1.42
Queue Length 95th (ft)	0	0	0	0	342	1060
Control Delay (s)	0.0	0.0	0.0	0.0	40.8	216.1
Lane LOS					E	F
Approach Delay (s)	0.0		0.0		40.8	216.1
Approach LOS					E	F

Intersection Summary			
Average Delay	57.6		
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1300	371	0	300	533
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5187	3610		1805	1615
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5187	3610		1805	1615
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1383	395	0	319	567
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	1383	395	0	319	567
Turn Type		NA	NA		Prot	Free
Protected Phases		2	6		4	
Permitted Phases						Free
Actuated Green, G (s)		51.0	51.0		41.0	100.0
Effective Green, g (s)		51.0	51.0		41.0	100.0
Actuated g/C Ratio		0.51	0.51		0.41	1.00
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		2645	1841		740	1615
v/s Ratio Prot		c0.27	0.11		c0.18	
v/s Ratio Perm						0.35
v/c Ratio		0.52	0.21		0.43	0.35
Uniform Delay, d1		16.4	13.5		21.1	0.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.7	0.3		1.8	0.6
Delay (s)		17.1	13.7		23.0	0.6
Level of Service		B	B		C	A
Approach Delay (s)		17.1	13.7		8.7	
Approach LOS		B	B		A	

Intersection Summary			
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1274	32	0	371	251	0	0	37	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	1341	34	0	391	264	0	0	39	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		537										
pX, platoon unblocked				0.81			0.81	0.81	0.81	0.81	0.81	
vC, conflicting volume	391			1375			1536	1732	671	1100	1765	195
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	391			992			1191	1433	121	652	1474	195
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	95	100	100	100
cM capacity (veh/h)	1179			571			117	110	739	274	103	819

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	671	671	34	195	195	264	39
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	34	0	0	264	39
cSH	1700	1700	1700	1700	1700	1700	739
Volume to Capacity	0.39	0.39	0.02	0.11	0.11	0.16	0.05
Queue Length 95th (ft)	0	0	0	0	0	0	4
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.1
Lane LOS							B
Approach Delay (s)	0.0			0.0			10.1
Approach LOS							B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Scenario Report

Scenario:	OY WP SAT
Command:	Default Command
Volume:	OY WP SAT
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Peck Rd-Myrtle Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.549
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	A

Street Name:	Peck Rd-Myrtle						Live Oak Ave					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	168	504	144	68	451	149	144	438	151	131	425	43
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:	168	504	144	68	451	149	144	438	151	131	425	43
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:	168	504	144	68	451	149	144	438	151	131	425	43
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:	168	504	144	68	451	149	144	438	151	131	425	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	504	144	68	451	149	144	438	151	131	425	43
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:	168	504	144	68	451	149	144	438	151	131	425	43
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.33	0.67	1.00	2.26	0.74	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	3733	1067	1600	3608	1192	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.11	0.14	0.13	0.04	0.13	0.13	0.09	0.14	0.09	0.08	0.13	0.03
Crit Moves:	****				****			****		****		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Myrtle Ave/Longden Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.589
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	40	Level Of Service:	A

Street Name:	Myrtle Ave						Longden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	1 0	1	0 1	0 1	0
Volume Module:												
Base Vol:	64	613	10	161	608	104	106	207	57	51	231	188
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:	64	613	10	161	608	104	106	207	57	51	231	188
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:	64	613	10	161	608	104	106	207	57	51	231	188
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:	64	613	10	161	608	104	106	207	57	51	231	188
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	64	613	10	161	608	104	106	207	57	51	231	188
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:	64	613	10	161	608	104	106	207	57	51	231	188
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.00	1.00	1.00	2.00	1.00	0.68	1.32	1.00	0.22	0.98	0.80
Final Sat.:	1600	3200	1600	1600	3200	1600	1084	2116	1600	347	1573	1280
Capacity Analysis Module:												
Vol/Sat:	0.04	0.19	0.01	0.10	0.19	0.07	0.07	0.10	0.04	0.03	0.15	0.15
Crit Moves:		****		****			****				****	

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Longden Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.441
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	A

Street Name:	Longden Ave						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0	0	1! 0	0	1	1	0	0	1	1	0	2
Volume Module:												
Base Vol:	8	8	9	384	6	12	10	612	9	11	630	429
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:	8	8	9	384	6	12	10	612	9	11	630	429
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:	8	8	9	384	6	12	10	612	9	11	630	429
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	8	8	9	384	6	12	10	612	9	11	630	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	8	8	9	384	6	12	10	612	9	11	630	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	8	8	9	384	6	12	10	612	9	11	630	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	0.32	0.32	0.36	1.97	0.03	1.00	1.00	2.96	0.04	1.00	2.00	2.00
Final Sat.:	512	512	576	3151	49	1600	1600	4730	70	1600	3200	3200
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.12	0.12	0.01	0.01	0.13	0.13	0.01	0.20	0.00
Crit Moves:		****		****			****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Arrow Hwy/Live Oak Ave

Cycle (sec):	110	Critical Vol./Cap.(X):	0.609
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	42	Level Of Service:	B

Street Name:	Arrow Hwy							Live Oak Ave					
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:	Ignore			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	2	0	2	2	0	2	0	0	0	0	0	0	0	2	0	0	0	1
Volume Module:													
Base Vol:	0	354	665	570	474	0	0	0	0	604	0	529	
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	354	665	570	474	0	0	0	0	604	0	529	
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	354	665	570	474	0	0	0	0	604	0	529	
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	354	0	570	474	0	0	0	0	604	0	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	354	0	570	474	0	0	0	0	604	0	0	
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	354	0	570	474	0	0	0	0	604	0	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	
Lanes:	0.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00	
Final Sat.:	0	3200	3200	2880	3200	0	0	0	0	2880	0	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.11	0.00	0.20	0.15	0.00	0.00	0.00	0.00	0.21	0.00	0.00	
Crit Moves:		****		****						****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Speedway Dr-Dwy 2/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.820
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	71	Level Of Service:	D

Street Name:	Speedway Dr-Dwy 2							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0	
Volume Module:													
Base Vol:	342	0	360	0	0	0	0	932	374	356	870	0	
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:	342	0	360	0	0	0	0	932	374	356	870	0	
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:	342	0	360	0	0	0	0	932	374	356	870	0	
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:	342	0	360	0	0	0	0	932	374	356	870	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	342	0	360	0	0	0	0	932	374	356	870	0	
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:	342	0	360	0	0	0	0	932	374	356	870	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.14	0.86	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3425	1375	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.12	0.00	0.23	0.00	0.00	0.00	0.00	0.27	0.27	0.22	0.27	0.00	
Crit Moves:			****					****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Graham Rd/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.341
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Street Name:	Graham Rd							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	0	0	0	0	0	0	2	0	1
Volume Module:													
Base Vol:	39	0	4	0	0	0	0	595	27	16	686	0	
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:	39	0	4	0	0	0	0	595	27	16	686	0	
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:	39	0	4	0	0	0	0	595	27	16	686	0	
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:	39	0	4	0	0	0	0	595	27	16	686	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	39	0	4	0	0	0	0	595	27	16	686	0	
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:	39	0	4	0	0	0	0	595	27	16	686	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.91	0.00	0.09	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	1451	0	149	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.19	0.02	0.01	0.21	0.00	
Crit Moves:	****						****				****		

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

Intersection #12 Rivergrade Rd/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.347
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Street Name:	Rivergrade Rd						Live Oak Ave					
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:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	40	38	98	12	17	74	16	513	31	51	536	8
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:	40	38	98	12	17	74	16	513	31	51	536	8
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:	40	38	98	12	17	74	16	513	31	51	536	8
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:	40	38	98	12	17	74	16	513	31	51	536	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	40	38	98	12	17	74	16	513	31	51	536	8
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:	40	38	98	12	17	74	16	513	31	51	536	8
OvlAdjVol:			47									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	1600	1600	1600	3200	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.03	0.02	0.06	0.01	0.01	0.05	0.01	0.16	0.02	0.03	0.17	0.01
OvlAdjV/S:			0.03									
Crit Moves:	****					****		****		****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #14 Stewart Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.385
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	28	Level Of Service:	A

Street Name:	Stewart Ave						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	1! 0	0	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	80	25	29	2	48	3	6	584	64	36	510	5
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:	80	25	29	2	48	3	6	584	64	36	510	5
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:	80	25	29	2	48	3	6	584	64	36	510	5
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:	80	25	29	2	48	3	6	584	64	36	510	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	80	25	29	2	48	3	6	584	64	36	510	5
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:	80	25	29	2	48	3	6	584	64	36	510	5
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	0.60	0.19	0.21	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	955	299	346	1600	1600	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.05	0.08	0.08	0.00	0.03	0.00	0.00	0.18	0.04	0.02	0.16	0.00
Crit Moves:	****				****			****		****		

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

Intersection #15 Baldwin Park/Arrow Hwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.477
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	32	Level Of Service:	A

Street Name:	Baldwin Park							Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	2 0	0	
Volume Module:													
Base Vol:	76	0	151	0	0	0	0	527	87	188	503	0	
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:	76	0	151	0	0	0	0	527	87	188	503	0	
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:	76	0	151	0	0	0	0	527	87	188	503	0	
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:	76	0	151	0	0	0	0	527	87	188	503	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	76	0	151	0	0	0	0	527	87	188	503	0	
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:	76	0	151	0	0	0	0	527	87	188	503	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.03	0.00	0.09	0.00	0.00	0.00	0.00	0.16	0.05	0.12	0.16	0.00	
Crit Moves:			****					****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #16 Arrow Highway/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.451
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	31	Level Of Service:	A

Street Name:	Arrow Highway							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Permitted			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0 0	0	2 0	0 0	1	1 0	2 0	0	0 0	2 0	2	
Volume Module:													
Base Vol:	0	0	0	320	0	70	73	607	0	0	623	416	
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	320	0	70	73	607	0	0	623	416	
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	320	0	70	73	607	0	0	623	416	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	320	0	70	73	607	0	0	623	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	320	0	70	73	607	0	0	623	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	320	0	70	73	607	0	0	623	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	2.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.11	0.00	0.04	0.05	0.19	0.00	0.00	0.19	0.00	
Crit Moves:				****			****				****		

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #17 Maine Ave/Arrow Hwy

Cycle (sec):	110	Critical Vol./Cap.(X):	0.470
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	32	Level Of Service:	A

Street Name:	Maine Ave							Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	3 0	0	
Volume Module:													
Base Vol:	224	0	112	0	0	0	0	755	183	104	820	0	
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:	224	0	112	0	0	0	0	755	183	104	820	0	
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:	224	0	112	0	0	0	0	755	183	104	820	0	
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:	224	0	112	0	0	0	0	755	183	104	820	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	224	0	112	0	0	0	0	755	183	104	820	0	
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:	224	0	112	0	0	0	0	755	183	104	820	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	3.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	4800	0	
Capacity Analysis Module:													
Vol/Sat:	0.08	0.00	0.07	0.00	0.00	0.00	0.00	0.24	0.11	0.07	0.17	0.00	
Crit Moves:	****							****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #18 Avenida Barbosa/Buena Vista St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.347
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Street Name:	Avenida Barbosa						Buena Vista St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 1	0	0 2	0 0	0 1	0	1 0	2	0 1	2 0	1 0	1
Volume Module:												
Base Vol:	81	90	141	0	67	1	2	13	78	142	28	15
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:	81	90	141	0	67	1	2	13	78	142	28	15
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:	81	90	141	0	67	1	2	13	78	142	28	15
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:	81	90	141	0	67	1	2	13	78	142	28	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	81	90	141	0	67	1	2	13	78	142	28	15
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:	81	90	141	0	67	1	2	13	78	142	28	15
OvlAdjVol:			0									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	0.47	0.53	2.00	0.00	0.99	0.01	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	758	842	3200	0	1576	24	1600	3200	1600	2880	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.11	0.11	0.04	0.00	0.04	0.04	0.00	0.00	0.05	0.05	0.02	0.01
OvlAdjV/S:			0.00									
Crit Moves:		****				****			****	****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #19 Avenida Barbosa/Arrow Highway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.000
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	0	Level Of Service:	

Street Name:	Avenida Barbosa						Arrow Highway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	0	0 0	2 0	0	0 1	1 0	2	0 0	0 1	1	0 1
Volume Module:												
Base Vol:	0	0	0	130	0	163	174	658	0	1	877	162
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	130	0	163	174	658	0	1	877	162
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	130	0	163	174	658	0	1	877	162
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	130	0	163	174	658	0	1	877	162
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	130	0	163	174	658	0	1	877	162
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	130	0	163	174	658	0	1	877	162
OvlAdjVol:				0		0	0	0		0	0	0
Saturation Flow Module:												
Sat/Lane:	0	0	0	0	0	0	0	0	0	0	0	0
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Final Sat.:	0	0	0	0	0	0	0	0	0	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crit Moves:												

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Scenario Report

Scenario:	OY WP SAT
Command:	Default Command
Volume:	OY WP SAT
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Average Delay (sec/veh): 147.5 Worst Case Level Of Service: F[1353.5]

Street Name:	Dwy 1							Live Oak Ave						
Approach:	North Bound			South Bound				East Bound				West Bound		
Movement:	L	T	R	L	T	R		L	T	R		L	T	R
Control:	Stop Sign			Stop Sign				Uncontrolled				Uncontrolled		
Rights:	Include			Include				Include				Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0				0 0 2 1 0				1 0 2 0 0		
Volume Module:														
Base Vol:	149	0	149	0	0	0	0	1093	162	150	1046	0		
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:	149	0	149	0	0	0	0	1093	162	150	1046	0		
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:	149	0	149	0	0	0	0	1093	162	150	1046	0		
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:	149	0	149	0	0	0	0	1093	162	150	1046	0		
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0		
FinalVolume:	149	0	149	0	0	0	0	1093	162	150	1046	0		
Critical Gap Module:														
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx		
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx		
Capacity Module:														
Cnflict Vol:	1997	2520	445	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1255	xxxx	xxxxx		
Potent Cap.:	54	28	566	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	561	xxxx	xxxxx		
Move Cap.:	43	21	566	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	561	xxxx	xxxxx		
Volume/Cap:	3.50	0.00	0.26	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.27	xxxx	xxxx		
Level Of Service Module:														
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1.1	xxxx	xxxxx		
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	13.7	xxxx	xxxxx		
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*		
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT		
Shared Cap.:	xxxx	79	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	31.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx	1353	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
Shared LOS:	*	F	*	*	*	*	*	*	*	*	*	*		
ApproachDel:	1353.5			xxxxxx			xxxxxx			xxxxxx				
ApproachLOS:	F			*			*			*				

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Average Delay (sec/veh): 159.8 Worst Case Level Of Service: F[1488.1]

Street Name:	Dwy 3							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled			
Rights:	Include			Include			Include			Include			
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 2 1 0			1 0 2 0 0			
Volume Module:													
Base Vol:	143	0	159	0	0	0	0	1125	160	156	1084	0	
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:	143	0	159	0	0	0	0	1125	160	156	1084	0	
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:	143	0	159	0	0	0	0	1125	160	156	1084	0	
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:	143	0	159	0	0	0	0	1125	160	156	1084	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
FinalVolume:	143	0	159	0	0	0	0	1125	160	156	1084	0	
Critical Gap Module:													
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	
Capacity Module:													
Cnflict Vol:	2059	2601	455	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1285	xxxx	xxxxx	
Potent Cap.:	49	25	558	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	547	xxxx	xxxxx	
Move Cap.:	38	18	558	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	547	xxxx	xxxxx	
Volume/Cap:	3.77	0.00	0.29	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.29	xxxx	xxxx	
Level Of Service Module:													
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1.2	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	14.2	xxxx	xxxxx	
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*	
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	
Shared Cap.:	xxxx	75	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	32.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	1488	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shared LOS:	*	F	*	*	*	*	*	*	*	*	*	*	
ApproachDel:	1488.1			xxxxxx			xxxxxx			xxxxxx			
ApproachLOS:	F			*			*			*			

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 Live Oak Ln/Live Oak Ave

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: B[11.3]

Street Name:	Live Oak Ln									Live Oak Ave								
Approach:	North Bound					South Bound				East Bound					West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0			2	0			66	38		562		0	0		630		24
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			2	0			66	38		562		0	0		630		24
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			2	0			66	38		562		0	0		630		24
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			2	0			66	38		562		0	0		630		24
Reduct Vol:	0	0	0			0	0			0	0		0		0	0		0		0
FinalVolume:	0	0	0			2	0			66	38		562		0	0		630		24
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx			6.8	6.5			6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	xxxxx			3.5	4.0			3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx			999	1280			327	654	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	xxxxx			244	167			675	943	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	xxxxx			236	161			675	943	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	xxxx			0.01	0.00			0.10	0.04	xxxx	xxxx	xxxx	xxxx	xxxx				
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx				
Control Del:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	*	*	*			*	*	*			A	*	*	*	*	*				
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	640	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	0.4	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx	xxxx	xxxxx			xxxxx	11.3	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*	*	*			*	B	*			*	*	*			*	*	*		
ApproachDel:	xxxxxx					11.3					xxxxxx					xxxxxx				
ApproachLOS:	*					B					*					*				

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 Commerce Dr/Live Oak Ave

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[12.5]

Street Name:	Commerce Dr									Live Oak Ave							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	0	0	1	0	0	0	0	0	0	1	1	1	0	1	0	2	0	0
Volume Module:																				
Base Vol:	4	0	9	0	0	0	2	634	6	14	562	0								
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:	4	0	9	0	0	0	2	634	6	14	562	0								
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:	4	0	9	0	0	0	2	634	6	14	562	0								
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:	4	0	9	0	0	0	2	634	6	14	562	0								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	4	0	9	0	0	0	2	634	6	14	562	0								
Critical Gap Module:																				
Critical Gp:	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx								
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	950	xxxx	214	xxxx	xxxx	xxxxx	562	xxxx	xxxxx	640	xxxx	xxxxx								
Potent Cap.:	262	xxxx	797	xxxx	xxxx	xxxxx	1019	xxxx	xxxxx	954	xxxx	xxxxx								
Move Cap.:	259	xxxx	797	xxxx	xxxx	xxxxx	1019	xxxx	xxxxx	954	xxxx	xxxxx								
Volume/Cap:	0.02	xxxx	0.01	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	0.01	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	0.0	xxxx	0.0	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx								
Control Del:	19.1	xxxx	9.6	xxxxx	xxxx	xxxxx	8.5	xxxx	xxxxx	8.8	xxxx	xxxxx								
LOS by Move:	C	*	A	*	*	*	A	*	*	A	*	*								
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	*	*	A	*	*	*	*	*								
ApproachDel:	12.5			xxxxxx			xxxxxx			xxxxxx										
ApproachLOS:	B			*			*			*										

Note: Queue reported is the number of cars per lane.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	247	1037	501	1239	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	*0.95	1.00	1.00	0.95		
Frt	1.00	1.00	1.00	1.00		
Flt Protected	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3610	1900	1805	3610		
Flt Permitted	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3610	1900	1805	3610		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	260	1092	527	1304	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	260	1092	527	1304	0	0
Turn Type	NA	Free	Prot	NA		
Protected Phases	2		1	6		
Permitted Phases		Free				
Actuated Green, G (s)	25.0	100.0	67.0	100.0		
Effective Green, g (s)	25.0	100.0	67.0	100.0		
Actuated g/C Ratio	0.25	1.00	0.67	1.00		
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	902	1900	1209	3610		
v/s Ratio Prot	0.07		0.29	0.36		
v/s Ratio Perm		c0.57				
v/c Ratio	0.29	0.57	0.44	0.36		
Uniform Delay, d1	30.3	0.0	7.7	0.0		
Progression Factor	1.00	1.00	0.80	1.00		
Incremental Delay, d2	0.8	1.3	0.3	0.3		
Delay (s)	31.1	1.3	6.4	0.3		
Level of Service	C	A	A	A		
Approach Delay (s)	7.0			2.0	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	4.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	268	0	0	718	0	0	0	359	0	0	896
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	295	0	0	789	0	0	0	395	0	0	985
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		438			227							
pX, platoon unblocked	0.93			0.95			0.95	0.95	0.95	0.95	0.95	0.93
vC, conflicting volume	789			295			1674	1084	147	1331	1084	395
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	617			158			1379	759	3	1019	759	192
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			0	100	62	100	100	0
cM capacity (veh/h)	903			1365			0	322	1034	114	322	764

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	147	147	395	395	395	985
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	395	985
cSH	1700	1700	1700	1700	1034	764
Volume to Capacity	0.09	0.09	0.23	0.23	0.38	1.29
Queue Length 95th (ft)	0	0	0	0	45	935
Control Delay (s)	0.0	0.0	0.0	0.0	10.6	157.9
Lane LOS					B	F
Approach Delay (s)	0.0		0.0		10.6	157.9
Approach LOS					B	F

Intersection Summary			
Average Delay	64.8		
Intersection Capacity Utilization	82.0%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	832	280	0	235	749
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5187	3610		1805	1615
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5187	3610		1805	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	876	295	0	247	788
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	876	295	0	247	788
Turn Type		NA	NA		Prot	Free
Protected Phases		2	6		4	
Permitted Phases						Free
Actuated Green, G (s)		47.0	47.0		45.0	100.0
Effective Green, g (s)		47.0	47.0		45.0	100.0
Actuated g/C Ratio		0.47	0.47		0.45	1.00
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		2437	1696		812	1615
v/s Ratio Prot		0.17	0.08		0.14	
v/s Ratio Perm						c0.49
v/c Ratio		0.36	0.17		0.30	0.49
Uniform Delay, d1		16.9	15.3		17.5	0.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.4	0.2		1.0	1.1
Delay (s)		17.3	15.5		18.5	1.1
Level of Service		B	B		B	A
Approach Delay (s)		17.3	15.5		5.2	
Approach LOS		B	B		A	

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	465	21	0	273	246	0	0	19	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	489	22	0	287	259	0	0	20	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		537										
pX, platoon unblocked				0.99			0.99	0.99	0.99	0.99	0.99	
vC, conflicting volume	287			512			633	777	245	552	799	144
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	287			483			606	752	214	524	774	144
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	97	100	100	100
cM capacity (veh/h)	1286			1078			381	338	789	424	328	884

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	245	245	22	144	144	259	20
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	22	0	0	259	20
cSH	1700	1700	1700	1700	1700	1700	789
Volume to Capacity	0.14	0.14	0.01	0.08	0.08	0.15	0.03
Queue Length 95th (ft)	0	0	0	0	0	0	2
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.7
Lane LOS							A
Approach Delay (s)	0.0			0.0			9.7
Approach LOS							A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	22.9%	ICU Level of Service	A
Analysis Period (min)	15		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Scenario Report

Scenario:	Cumul NP AM
Command:	Default Command
Volume:	Cumul NP AM
Geometry:	Cumul
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Peck Rd-Myrtle Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.847
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	79	Level Of Service:	D

Street Name:	Peck Rd-Myrtle						Live Oak Ave					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	269	1009	288	41	536	163	72	611	224	172	1244	58
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:	269	1009	288	41	536	163	72	611	224	172	1244	58
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:	269	1009	288	41	536	163	72	611	224	172	1244	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	269	1009	288	41	536	163	72	611	224	172	1244	58
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:	269	1009	288	41	536	163	72	611	224	172	1244	58
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.33	0.67	1.00	2.30	0.70	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	3734	1066	1600	3681	1119	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.17	0.27	0.27	0.03	0.15	0.15	0.05	0.19	0.14	0.11	0.39	0.04
Crit Moves:	****				****		****				****	

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Myrtle Ave/Longden Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.878
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	98	Level Of Service:	D

Street Name:	Myrtle Ave						Longden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	1 0	1	0 1	0 1	0
Volume Module:												
Base Vol:	176	943	21	178	646	52	73	270	80	36	616	447
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:	176	943	21	178	646	52	73	270	80	36	616	447
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:	176	943	21	178	646	52	73	270	80	36	616	447
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	176	943	21	178	646	52	73	270	80	36	616	447
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:	176	943	21	178	646	52	73	270	80	36	616	447
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.00	1.00	1.00	2.00	1.00	0.43	1.57	1.00	0.07	1.12	0.81
Final Sat.:	1600	3200	1600	1600	3200	1600	681	2519	1600	105	1794	1302
Capacity Analysis Module:												
Vol/Sat:	0.11	0.29	0.01	0.11	0.20	0.03	0.05	0.11	0.05	0.02	0.34	0.34
Crit Moves:		****		****			****				****	

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Longden Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.731
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	54	Level Of Service:	C

Street Name:	Longden Ave							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	1	1	0	0	1	1	0	2	1
Volume Module:													
Base Vol:	10	10	10	458	1	13	39	904	1	10	1423	1020	
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:	10	10	10	458	1	13	39	904	1	10	1423	1020	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	10	10	10	458	1	13	39	904	1	10	1423	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	10	10	10	458	1	13	39	904	1	10	1423	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	10	10	10	458	1	13	39	904	1	10	1423	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.34	0.33	0.33	1.99	0.01	1.00	1.00	2.99	0.01	1.00	2.00	2.00	
Final Sat.:	533	533	533	3193	7	1600	1600	4795	5	1600	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.02	0.02	0.02	0.14	0.14	0.01	0.02	0.19	0.19	0.01	0.44	0.00	
Crit Moves:		****		****			****				****		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Arrow Hwy/Live Oak Ave

Cycle (sec):	110	Critical Vol./Cap.(X):	0.892
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	101	Level Of Service:	D

Street Name:	Arrow Hwy							Live Oak Ave					
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:	Ignore			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	2 0	2	2 0	2 0	0	0 0	0 0	0	2 0	0 0	1	
Volume Module:													
Base Vol:	0	567	804	158	1464	0	0	0	0	990	0	267	
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	567	804	158	1464	0	0	0	0	990	0	267	
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	567	0	158	1464	0	0	0	0	990	0	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	567	0	158	1464	0	0	0	0	990	0	0	
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	567	0	158	1464	0	0	0	0	990	0	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	
Lanes:	0.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00	
Final Sat.:	0	3200	3200	2880	3200	0	0	0	0	2880	0	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.18	0.00	0.05	0.46	0.00	0.00	0.00	0.00	0.34	0.00	0.00	
Crit Moves:	****				****					****			

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #6 Speedway Dr-Dwy 2/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.501
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	33	Level Of Service:	A

Street Name:	Speedway Dr-Dwy 2									Live Oak Ave							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Y+R:	0.0	0.0	0.0			0.0	0.0	0.0			0.0	0.0	0.0			0.0	0.0	0.0		
Lanes:	2	0	0	0	1	0	0	0	0	0	0	0	2	1	0	1	0	2	0	0
Volume Module:																				
Base Vol:	0	0	1			0	0	0			0	1029	2			22	1280	0		
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	1			0	0	0			0	1029	2			22	1280	0		
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	1			0	0	0			0	1029	2			22	1280	0		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	0	0	1			0	0	0			0	1029	2			22	1280	0		
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	1			0	0	0			0	1029	2			22	1280	0		
Saturation Flow Module:																				
Sat/Lane:	1600	1600	1600			1600	1600	1600			1600	1600	1600			1600	1600	1600		
Adjustment:	0.90	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Lanes:	2.00	0.00	1.00			0.00	0.00	0.00			0.00	2.99	0.01			1.00	2.00	0.00		
Final Sat.:	2880	0	1600			0	0	0			0	4791	9			1600	3200	0		
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00			0.00	0.00	0.00			0.00	0.21	0.21			0.01	0.40	0.00		
Crit Moves:			****								****						****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 Graham Rd/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.716
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	52	Level Of Service:	C

Street Name:	Graham Rd							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	0	0	0	0	2	0	1	1	0	2	0	0
Volume Module:													
Base Vol:	160	0	60	0	0	0	0	883	111	50	1531	0	
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:	160	0	60	0	0	0	0	883	111	50	1531	0	
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:	160	0	60	0	0	0	0	883	111	50	1531	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	160	0	60	0	0	0	0	883	111	50	1531	0	
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:	160	0	60	0	0	0	0	883	111	50	1531	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.73	0.00	0.27	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	1164	0	436	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.14	0.00	0.14	0.00	0.00	0.00	0.00	0.28	0.07	0.03	0.48	0.00	
Crit Moves:	****						****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #12 Rivergrade Rd/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.741
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	58	Level Of Service:	C

Street Name:	Rivergrade Rd							Live Oak Ave					
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:	Ovl			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	
Volume Module:													
Base Vol:	45	55	117	31	82	180	189	572	96	278	1275	14	
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:	45	55	117	31	82	180	189	572	96	278	1275	14	
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:	45	55	117	31	82	180	189	572	96	278	1275	14	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	45	55	117	31	82	180	189	572	96	278	1275	14	
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:	45	55	117	31	82	180	189	572	96	278	1275	14	
OvlAdjVol:			0										
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	
Final Sat.:	1600	1600	1600	1600	3200	1600	1600	3200	1600	1600	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.03	0.03	0.07	0.02	0.03	0.11	0.12	0.18	0.06	0.17	0.40	0.01	
OvlAdjV/S:			0.00										
Crit Moves:	****					****	****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #14 Stewart Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.887
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	94	Level Of Service:	D

Street Name:	Stewart Ave						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0	0	1! 0	0	1	0	1	0	1	1	0	2	0	1	1	0	2	0	1
Volume Module:												
Base Vol:	227	131	40	14	31	82	21	518	28	20	1654	41
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:	227	131	40	14	31	82	21	518	28	20	1654	41
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:	227	131	40	14	31	82	21	518	28	20	1654	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	227	131	40	14	31	82	21	518	28	20	1654	41
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:	227	131	40	14	31	82	21	518	28	20	1654	41
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	0.57	0.33	0.10	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	913	527	161	1600	1600	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.14	0.25	0.25	0.01	0.02	0.05	0.01	0.16	0.02	0.01	0.52	0.03
Crit Moves:		****		****			****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #15 Baldwin Park/Arrow Hwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.780
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	63	Level Of Service:	C

Street Name:	Baldwin Park						Arrow Hwy					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	2 0	0 1	0	1 0	0 1	0	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	322	10	316	12	4	19	43	486	69	144	1415	43
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:	322	10	316	12	4	19	43	486	69	144	1415	43
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:	322	10	316	12	4	19	43	486	69	144	1415	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	322	10	316	12	4	19	43	486	69	144	1415	43
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:	322	10	316	12	4	19	43	486	69	144	1415	43
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	0.03	0.97	1.00	0.17	0.83	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	2880	49	1551	1600	278	1322	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.11	0.20	0.20	0.01	0.01	0.01	0.03	0.15	0.04	0.09	0.44	0.03
Crit Moves:		****		****			****				****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #16 Arrow Highway/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.803
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	71	Level Of Service:	D

Street Name:	Arrow Highway							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Permitted			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	0	0	0	2	0	0	0	1	1	0	2
Volume Module:													
Base Vol:	0	0	0	411	0	78	159	656	0	0	1527	1740	
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	411	0	78	159	656	0	0	1527	1740	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	411	0	78	159	656	0	0	1527	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	411	0	78	159	656	0	0	1527	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	411	0	78	159	656	0	0	1527	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	2.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.14	0.00	0.05	0.10	0.21	0.00	0.00	0.48	0.00	
Crit Moves:				****			****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #17 Maine Ave/Arrow Hwy

Cycle (sec):	120	Critical Vol./Cap.(X):	0.874
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	96	Level Of Service:	D

Street Name:	Maine Ave						Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	3 0	0
Volume Module:												
Base Vol:	670	0	112	0	0	0	0	938	110	37	2679	0
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:	670	0	112	0	0	0	0	938	110	37	2679	0
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:	670	0	112	0	0	0	0	938	110	37	2679	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	670	0	112	0	0	0	0	938	110	37	2679	0
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:	670	0	112	0	0	0	0	938	110	37	2679	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	3.00	0.00
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	4800	0
Capacity Analysis Module:												
Vol/Sat:	0.23	0.00	0.07	0.00	0.00	0.00	0.00	0.29	0.07	0.02	0.56	0.00
Crit Moves:	****						****				****	

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #18 Avenida Barbosa/Buena Vista St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.433
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	A

Street Name:	Avenida Barbosa						Buena Vista St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 1	0	0 2	0	0	1! 0	0	1	0 2	0 1	2 0	1 0 1
Volume Module:												
Base Vol:	54	164	882	9	79	2	1	4	6	227	15	19
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:	54	164	882	9	79	2	1	4	6	227	15	19
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:	54	164	882	9	79	2	1	4	6	227	15	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	54	164	882	9	79	2	1	4	6	227	15	19
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:	54	164	882	9	79	2	1	4	6	227	15	19
OvlAdjVol:			630									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	0.25	0.75	2.00	0.10	0.88	0.02	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	396	1204	3200	160	1404	36	1600	3200	1600	2880	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.28	0.06	0.06	0.06	0.00	0.00	0.00	0.08	0.01	0.01
OvlAdjV/S:			0.20									
Crit Moves:			****		****			****			****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #19 Avenida Barbosa/Arrow Highway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.919
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	110	Level Of Service:	E

Street Name:	Avenida Barbosa							Arrow Highway					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Permitted			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	0	0	0	2	0	0	0	1	1	0	2	0	0	0	0	2	0	1
Volume Module:																				
Base Vol:	0	0	0	223	0	173	386	437	0	0	1502	745								
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	223	0	173	386	437	0	0	1502	745								
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	223	0	173	386	437	0	0	1502	745								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	0	0	0	223	0	173	386	437	0	0	1502	745								
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	223	0	173	386	437	0	0	1502	745								
Saturation Flow Module:																				
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600								
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00								
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	1600								
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00	0.08	0.00	0.11	0.24	0.14	0.00	0.00	0.47	0.47								
Crit Moves:						****	****				****									

Irwindale Regional Shopping Center
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Scenario Report

Scenario:	Cumul NP AM
Command:	Default Command
Volume:	Cumul NP AM
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: D[25.7]

Street Name:	Dwy 1						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	24	0	89	0	0	0	0	926	49	30	1245	0
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:	24	0	89	0	0	0	0	926	49	30	1245	0
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:	24	0	89	0	0	0	0	926	49	30	1245	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	24	0	89	0	0	0	0	926	49	30	1245	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1633	2256	333	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	975	xxxx	xxxxx
Potent Cap.:	94	42	668	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	716	xxxx	xxxxx
Move Cap.:	91	40	668	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	716	xxxx	xxxxx
Volume/Cap:	0.26	0.00	0.13	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.04	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	3.3	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.3	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	285	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	1.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	25.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	D	*	*	*	*	*	*	*	*	*	*
ApproachDel:	25.7			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	D			*			*			*		

Note: Queue reported is the distance per lane in feet.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[10.4]

Street Name:	Dwy 3						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	1028	0	13	1293	0
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	0	0	0	0	1028	0	13	1293	0
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	0	0	0	0	1028	0	13	1293	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	1028	0	13	1293	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1701	2347	343	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1028	xxxx	xxxxx
Potent Cap.:	85	37	659	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	683	xxxx	xxxxx
Move Cap.:	83	36	659	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	683	xxxx	xxxxx
Volume/Cap:	0.00	0.00	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1.5	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.4	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

Note: Queue reported is the distance per lane in feet.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #11 Live Oak Ln/Live Oak Ave

Average Delay (sec/veh): 5.7 Worst Case Level Of Service: F[83.3]

Street Name:	Live Oak Ln									Live Oak Ave								
Approach:	North Bound					South Bound				East Bound					West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0	17	0	146	96	850	0	0	1453	61								
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	17	0	146	96	850	0	0	1453	61								
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	17	0	146	96	850	0	0	1453	61								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	0	0	0	17	0	146	96	850	0	0	1453	61								
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	2101	2526	757	1514	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	xxxxx	46	28	355	447	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	xxxxx	38	22	355	447	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	xxxx	0.45	0.00	0.41	0.21	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	20.1	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	15.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	*	C	*	*	*	*	*								
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	190	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	6.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	83.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	F	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx				83.3		xxxxxx				xxxxxx									
ApproachLOS:	*				F		*				*									

Note: Queue reported is the distance per lane in feet.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #13 Commerce Dr/Live Oak Ave

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: D[30.8]

Street Name:	Commerce Dr									Live Oak Ave							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0	2	1	0	1	0	2	0	0
Volume Module:																				
Base Vol:	6		0		19	0		0		0	0		544		49	276		1682		0
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6		0		19	0		0		0	0		544		49	276		1682		0
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	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	6		0		19	0		0		0	0		544		49	276		1682		0
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
FinalVolume:	6		0		19	0		0		0	0		544		49	276		1682		0
Critical Gap Module:																				
Critical Gp:	6.8	xxxx			6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				4.1	xxxx	xxxxx			
FollowUpTim:	3.5	xxxx			3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				2.2	xxxx	xxxxx			
Capacity Module:																				
Cnflict Vol:	1962	xxxx			206	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				593	xxxx	xxxxx			
Potent Cap.:	57	xxxx			807	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				993	xxxx	xxxxx			
Move Cap.:	44	xxxx			807	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				993	xxxx	xxxxx			
Volume/Cap:	0.13	xxxx			0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx				0.28	xxxx	xxxx			
Level Of Service Module:																				
2Way95thQ:	10.7	xxxx			1.8	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				28.5	xxxx	xxxxx			
Control Del:	98.1	xxxx			9.6	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				10.0	xxxx	xxxxx			
LOS by Move:	F	*			A	*	*	*	*	*	*				B	*	*			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*	*	*			*	*	*			*	*	*			*	*	*		
ApproachDel:	30.8					xxxxxx					xxxxxx					xxxxxx				
ApproachLOS:	D					*					*					*				

Note: Queue reported is the distance per lane in feet.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	448	594	864	1300	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	0.95	1.00	1.00	0.95		
Frt	1.00	1.00	1.00	1.00		
Flt Protected	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3610	1900	1805	3610		
Flt Permitted	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3610	1900	1805	3610		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	477	632	919	1383	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	477	632	919	1383	0	0
Turn Type	NA	Free	Prot	NA		
Protected Phases	2		1	6		
Permitted Phases		Free				
Actuated Green, G (s)	21.0	100.0	71.0	100.0		
Effective Green, g (s)	21.0	100.0	71.0	100.0		
Actuated g/C Ratio	0.21	1.00	0.71	1.00		
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	758	1900	1281	3610		
v/s Ratio Prot	c0.13		c0.51	0.38		
v/s Ratio Perm		0.33				
v/c Ratio	0.63	0.33	0.72	0.38		
Uniform Delay, d1	36.0	0.0	8.6	0.0		
Progression Factor	1.00	1.00	0.47	1.00		
Incremental Delay, d2	3.9	0.5	1.7	0.3		
Delay (s)	39.9	0.5	5.7	0.3		
Level of Service	D	A	A	A		
Approach Delay (s)	17.4			2.4	0.0	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	451	0	0	1700	0	0	0	532	0	0	465
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	480	0	0	1809	0	0	0	566	0	0	495
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		438			227							
pX, platoon unblocked	0.71			0.88			0.77	0.77	0.88	0.77	0.77	0.71
vC, conflicting volume	1809			480			1879	2288	240	2614	2288	904
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1320			146			854	1387	0	1812	1387	44
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	41	100	100	32
cM capacity (veh/h)	376			1279			62	111	963	16	111	725

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	240	240	904	904	566	495
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	566	495
cSH	1700	1700	1700	1700	963	725
Volume to Capacity	0.14	0.14	0.53	0.53	0.59	0.68
Queue Length 95th (ft)	0	0	0	0	99	136
Control Delay (s)	0.0	0.0	0.0	0.0	13.9	19.9
Lane LOS					B	C
Approach Delay (s)	0.0		0.0		13.9	19.9
Approach LOS					B	C

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	647	1676	0	590	556
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		1.00	1.00
Frt		1.00	1.00		1.00	0.95
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5187	3610		1805	1805
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5187	3610		1805	1805
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	688	1783	0	628	591
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	688	1783	0	628	591
Turn Type		NA	NA		Prot	Free
Protected Phases		2	6		4	
Permitted Phases						Free
Actuated Green, G (s)		52.0	52.0		40.0	100.0
Effective Green, g (s)		52.0	52.0		40.0	100.0
Actuated g/C Ratio		0.52	0.52		0.40	1.00
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		2697	1877		722	1805
v/s Ratio Prot		0.13	c0.49		c0.35	
v/s Ratio Perm						0.33
v/c Ratio		0.26	0.95		0.87	0.33
Uniform Delay, d1		13.3	22.8		27.6	0.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.2	11.9		13.5	0.5
Delay (s)		13.5	34.7		41.1	0.5
Level of Service		B	C		D	A
Approach Delay (s)		13.5	34.7		21.4	
Approach LOS		B	C		C	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	830	60	0	1676	579	0	0	67	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	874	63	0	1764	609	0	0	71	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		537										
pX, platoon unblocked				0.94			0.94	0.94	0.94	0.94	0.94	
vC, conflicting volume	1764			937			1756	2638	437	2272	2701	882
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1764			811			1680	2616	281	2227	2683	882
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	90	100	100	100
cM capacity (veh/h)	359			777			59	23	681	21	21	293

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	437	437	63	882	882	609	71
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	63	0	0	609	71
cSH	1700	1700	1700	1700	1700	1700	681
Volume to Capacity	0.26	0.26	0.04	0.52	0.52	0.36	0.10
Queue Length 95th (ft)	0	0	0	0	0	0	9
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.9
Lane LOS							B
Approach Delay (s)	0.0			0.0			10.9
Approach LOS							B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Scenario Report

Scenario:	Cumul NP PM
Command:	Default Command
Volume:	Cumul NP PM
Geometry:	Cumul
Impact Fee:	Default Impact Fee
Trip Generation:	Project
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Peck Rd-Myrtle Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.869
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	87	Level Of Service:	D

Street Name:	Peck Rd-Myrtle							Live Oak Ave					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	1	0	2	1	0	1	0	2	1	0	1	0	2	0	1	1	0	2	0	1
Volume Module:													
Base Vol:	238	827	190	192	592	143	197	1265	199	67	725	26	
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:	238	827	190	192	592	143	197	1265	199	67	725	26	
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:	238	827	190	192	592	143	197	1265	199	67	725	26	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	238	827	190	192	592	143	197	1265	199	67	725	26	
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:	238	827	190	192	592	143	197	1265	199	67	725	26	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	1.00	2.44	0.56	1.00	2.42	0.58	1.00	2.00	1.00	1.00	2.00	1.00	
Final Sat.:	1600	3903	897	1600	3866	934	1600	3200	1600	1600	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.15	0.21	0.21	0.12	0.15	0.15	0.12	0.40	0.12	0.04	0.23	0.02	
Crit Moves:		****		****				****		****			

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Myrtle Ave/Longden Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.897
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	107	Level Of Service:	D

Street Name:	Myrtle Ave						Longden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	1 0	1	0 1	0 1	0
Volume Module:												
Base Vol:	99	929	13	381	835	57	86	673	104	28	417	295
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:	99	929	13	381	835	57	86	673	104	28	417	295
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:	99	929	13	381	835	57	86	673	104	28	417	295
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	929	13	381	835	57	86	673	104	28	417	295
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:	99	929	13	381	835	57	86	673	104	28	417	295
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.00	1.00	1.00	2.00	1.00	0.23	1.77	1.00	0.07	1.13	0.80
Final Sat.:	1600	3200	1600	1600	3200	1600	363	2837	1600	121	1803	1276
Capacity Analysis Module:												
Vol/Sat:	0.06	0.29	0.01	0.24	0.26	0.04	0.05	0.24	0.07	0.02	0.23	0.23
Crit Moves:		****		****			****				****	

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Longden Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.778
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	62	Level Of Service:	C

Street Name:	Longden Ave							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	1	1	0	0	1	1	0	2	1
Volume Module:													
Base Vol:	0	0	0	1055	0	10	9	1666	1	1	780	710	
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	1055	0	10	9	1666	1	1	780	710	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	1055	0	10	9	1666	1	1	780	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	1055	0	10	9	1666	1	1	780	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	1055	0	10	9	1666	1	1	780	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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	1.00	0.00	2.00	0.00	1.00	1.00	2.99	0.01	1.00	2.00	2.00	
Final Sat.:	0	1600	0	3200	0	1600	1600	4797	3	1600	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.33	0.00	0.01	0.01	0.35	0.35	0.00	0.24	0.00	
Crit Moves:				****				****		****			

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Arrow Hwy/Live Oak Ave

Cycle (sec):	110	Critical Vol./Cap.(X):	0.762
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	61	Level Of Service:	C

Street Name:	Arrow Hwy							Live Oak Ave					
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:	Ignore			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	2	0	2	2	0	2	0	0	0	0	0	0	0	2	0	0	0	1
Volume Module:													
Base Vol:	0	805	1971	301	598	0	0	0	0	906	0	168	
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	805	1971	301	598	0	0	0	0	906	0	168	
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	805	0	301	598	0	0	0	0	906	0	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	805	0	301	598	0	0	0	0	906	0	0	
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	805	0	301	598	0	0	0	0	906	0	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	
Lanes:	0.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00	
Final Sat.:	0	3200	3200	2880	3200	0	0	0	0	2880	0	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.25	0.00	0.10	0.19	0.00	0.00	0.00	0.00	0.31	0.00	0.00	
Crit Moves:		****		****						****			

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #6 Speedway Dr-Dwy 2/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.644
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	44	Level Of Service:	B

Street Name:	Speedway Dr-Dwy 2							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2	0	0	0	1	0	0	0	0	0	0	2	1
Volume Module:													
Base Vol:	11	0	5	0	0	0	0	2252	57	94	1102	0	
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:	11	0	5	0	0	0	0	2252	57	94	1102	0	
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:	11	0	5	0	0	0	0	2252	57	94	1102	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	11	0	5	0	0	0	0	2252	57	94	1102	0	
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:	11	0	5	0	0	0	0	2252	57	94	1102	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.93	0.07	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	4682	118	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48	0.48	0.06	0.34	0.00	
Crit Moves:	****							****		****			

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 Graham Rd/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.763
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	59	Level Of Service:	C

Street Name:	Graham Rd							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	0	0	0	0	0	0	2	0	1
	1	0	2	0	0								
Volume Module:													
Base Vol:	18	0	23	0	0	0	0	1969	48	36	1209	0	
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:	18	0	23	0	0	0	0	1969	48	36	1209	0	
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:	18	0	23	0	0	0	0	1969	48	36	1209	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	18	0	23	0	0	0	0	1969	48	36	1209	0	
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:	18	0	23	0	0	0	0	1969	48	36	1209	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.44	0.00	0.56	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	702	0	898	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.62	0.03	0.02	0.38	0.00	
Crit Moves:	****							****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #12 Rivergrade Rd/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.883
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	D

Street Name:	Rivergrade Rd						Live Oak Ave					
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:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	111	71	398	28	24	162	196	1708	25	90	877	6
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:	111	71	398	28	24	162	196	1708	25	90	877	6
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:	111	71	398	28	24	162	196	1708	25	90	877	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	111	71	398	28	24	162	196	1708	25	90	877	6
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:	111	71	398	28	24	162	196	1708	25	90	877	6
OvlAdjVol:			308									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	1600	1600	1600	3200	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.07	0.04	0.25	0.02	0.01	0.10	0.12	0.53	0.02	0.06	0.27	0.00
OvlAdjV/S:			0.19									
Crit Moves:			****	****				****		****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #14 Stewart Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.869
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	87	Level Of Service:	D

Street Name:	Stewart Ave							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Permitted			Permitted			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	1	0	1	0	1	1	0	2	0	1	1	0	2	0	1
Volume Module:													
Base Vol:	73	27	15	25	113	14	63	2001	285	44	863	7	
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:	73	27	15	25	113	14	63	2001	285	44	863	7	
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:	73	27	15	25	113	14	63	2001	285	44	863	7	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	73	27	15	25	113	14	63	2001	285	44	863	7	
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:	73	27	15	25	113	14	63	2001	285	44	863	7	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.64	0.23	0.13	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	
Final Sat.:	1016	376	209	1600	1600	1600	1600	3200	1600	1600	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.05	0.07	0.07	0.02	0.07	0.01	0.04	0.63	0.18	0.03	0.27	0.00	
Crit Moves:	****				****			****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #15 Baldwin Park/Arrow Hwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.800
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	67	Level Of Service:	D

Street Name:	Baldwin Park							Arrow Hwy					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 1	0	1 0	0 1	0	1 0	2 0	1	1 0	2 0	1	
Volume Module:													
Base Vol:	105	5	94	23	7	36	23	1466	568	286	753	23	
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:	105	5	94	23	7	36	23	1466	568	286	753	23	
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:	105	5	94	23	7	36	23	1466	568	286	753	23	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	105	5	94	23	7	36	23	1466	568	286	753	23	
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:	105	5	94	23	7	36	23	1466	568	286	753	23	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.05	0.95	1.00	0.16	0.84	1.00	2.00	1.00	1.00	2.00	1.00	
Final Sat.:	2880	81	1519	1600	260	1340	1600	3200	1600	1600	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.04	0.06	0.06	0.01	0.03	0.03	0.01	0.46	0.36	0.18	0.24	0.01	
Crit Moves:	****				****			****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #16 Arrow Highway/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.970
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	177	Level Of Service:	E

Street Name:	Arrow Highway							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Permitted			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0	0 0	2 0	0	0 1	1 0	2	0 0	0 0	2	0 2	
Volume Module:													
Base Vol:	0	0	0	1182	0	138	56	1525	0	0	917	537	
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	1182	0	138	56	1525	0	0	917	537	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	1182	0	138	56	1525	0	0	917	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	1182	0	138	56	1525	0	0	917	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	1182	0	138	56	1525	0	0	917	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	2.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.41	0.00	0.09	0.04	0.48	0.00	0.00	0.29	0.00	
Crit Moves:				****				****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #17 Maine Ave/Arrow Hwy

Cycle (sec):	120	Critical Vol./Cap.(X):	0.897
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	107	Level Of Service:	D

Street Name:	Maine Ave							Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	3 0	0	
Volume Module:													
Base Vol:	278	0	107	0	0	0	0	2158	535	68	1224	0	
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:	278	0	107	0	0	0	0	2158	535	68	1224	0	
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:	278	0	107	0	0	0	0	2158	535	68	1224	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	278	0	107	0	0	0	0	2158	535	68	1224	0	
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:	278	0	107	0	0	0	0	2158	535	68	1224	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	3.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	4800	0	
Capacity Analysis Module:													
Vol/Sat:	0.10	0.00	0.07	0.00	0.00	0.00	0.00	0.67	0.33	0.04	0.26	0.00	
Crit Moves:	****							****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #18 Avenida Barbosa/Buena Vista St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.602
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	40	Level Of Service:	B

Street Name:	Avenida Barbosa						Buena Vista St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 1	0	0 2	0	0	1! 0	0	1	0 2	0 1	2 0	1 0 1
Volume Module:												
Base Vol:	16	126	392	28	194	6	6	22	89	620	18	24
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:	16	126	392	28	194	6	6	22	89	620	18	24
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:	16	126	392	28	194	6	6	22	89	620	18	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	126	392	28	194	6	6	22	89	620	18	24
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:	16	126	392	28	194	6	6	22	89	620	18	24
OvlAdjVol:			0									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	0.11	0.89	2.00	0.12	0.85	0.03	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	180	1420	3200	196	1361	42	1600	3200	1600	2880	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.12	0.14	0.14	0.14	0.00	0.01	0.06	0.22	0.01	0.02
OvlAdjV/S:			0.00									
Crit Moves:	****					****			****	****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #19 Avenida Barbosa/Arrow Highway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.675
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	47	Level Of Service:	B

Street Name:	Avenida Barbosa							Arrow Highway					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Permitted			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	0	0	0	2	0	0	0	1	1	0	2	0	0	0	0	2	0	1
Volume Module:																				
Base Vol:	0	0	0	477	0	402	247	723	0	0	542	248								
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	477	0	402	247	723	0	0	542	248								
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	477	0	402	247	723	0	0	542	248								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	0	0	0	477	0	402	247	723	0	0	542	248								
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	477	0	402	247	723	0	0	542	248								
Saturation Flow Module:																				
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600								
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00								
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	1600								
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00	0.17	0.00	0.25	0.15	0.23	0.00	0.00	0.17	0.16								
Crit Moves:						****	****				****									

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Scenario Report

Scenario:	Cumul NP PM
Command:	Default Command
Volume:	Cumul NP PM
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Project
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Average Delay (sec/veh): 4.0 Worst Case Level Of Service: F[174.4]

Street Name:	Dwy 1							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled			
Rights:	Include			Include			Include			Include			
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 2 1 0			1 0 2 0 0			
Volume Module:													
Base Vol:	8	0	65	0	0	0	0	2253	25	50	1063	0	
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:	8	0	65	0	0	0	0	2253	25	50	1063	0	
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:	8	0	65	0	0	0	0	2253	25	50	1063	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
FinalVolume:	8	0	65	0	0	0	0	2253	25	50	1063	0	
Critical Gap Module:													
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	
Capacity Module:													
Cnflict Vol:	2897	3429	764	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	2278	xxxx	xxxxx	
Potent Cap.:	13	7	351	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	226	xxxx	xxxxx	
Move Cap.:	11	6	351	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	226	xxxx	xxxxx	
Volume/Cap:	0.74	0.00	0.19	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.22	xxxx	xxxx	
Level Of Service Module:													
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	20.5	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	25.3	xxxx	xxxxx	
LOS by Move:	*	*	*	*	*	*	*	*	*	D	*	*	
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	
Shared Cap.:	xxxx	79	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	4.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	174	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shared LOS:	*	F	*	*	*	*	*	*	*	*	*	*	
ApproachDel:	174.4			xxxxxx			xxxxxx			xxxxxx			
ApproachLOS:	F			*			*			*			

Note: Queue reported is the distance per lane in feet.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: C[20.9]

Street Name:	Dwy 3						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 2 1 0			1 0 2 0 0		
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	2256	0	5	1183	0
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	0	0	0	0	2256	0	5	1183	0
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	0	0	0	0	2256	0	5	1183	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	2256	0	5	1183	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	2858	3449	752	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	2256	xxxx	xxxxx
Potent Cap.:	14	7	357	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	231	xxxx	xxxxx
Move Cap.:	14	7	357	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	231	xxxx	xxxxx
Volume/Cap:	0.00	0.00	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1.7	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	20.9	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	C	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

Note: Queue reported is the distance per lane in feet.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #11 Live Oak Ln/Live Oak Ave

Average Delay (sec/veh): 2.8 Worst Case Level Of Service: F[69.4]

Street Name:	Live Oak Ln									Live Oak Ave								
Approach:	North Bound					South Bound				East Bound					West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0	18	0	103	61	1904	0	0	1130	15								
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	18	0	103	61	1904	0	0	1130	15								
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	18	0	103	61	1904	0	0	1130	15								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	0	0	0	18	0	103	61	1904	0	0	1130	15								
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	2212	3164	573	1145	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	xxxxx	38	11	468	618	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	xxxxx	35	10	468	618	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	xxxx	0.51	0.00	0.22	0.10	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	8.2	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	11.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	*	B	*	*	*	*	*								
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	166	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	4.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	69.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	F	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx				69.4		xxxxxx				xxxxxx									
ApproachLOS:	*				F		*				*									

Note: Queue reported is the distance per lane in feet.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #13 Commerce Dr/Live Oak Ave

Average Delay (sec/veh): 7.1 Worst Case Level Of Service: F[97.6]

Street Name:	Commerce Dr									Live Oak Ave							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	0	0	1	0	0	0	0	0	0	1	1	1	0	1	0	2	0	0
Volume Module:																				
Base Vol:	26		0		213	0		0		0	2		2124		6	23		945		0
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:	26		0		213	0		0		0	2		2124		6	23		945		0
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:	26		0		213	0		0		0	2		2124		6	23		945		0
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
FinalVolume:	26		0		213	0		0		0	2		2124		6	23		945		0
Critical Gap Module:																				
Critical Gp:	6.8	xxxx		6.9	xxxxx	xxxx	xxxxx				4.1	xxxx	xxxxx			4.1	xxxx	xxxxx		
FollowUpTim:	3.5	xxxx		3.3	xxxxx	xxxx	xxxxx				2.2	xxxx	xxxxx			2.2	xxxx	xxxxx		
Capacity Module:																				
Cnflict Vol:	2650	xxxx		711	xxxx	xxxx	xxxxx				945	xxxx	xxxxx			2130	xxxx	xxxxx		
Potent Cap.:	19	xxxx		380	xxxx	xxxx	xxxxx				734	xxxx	xxxxx			259	xxxx	xxxxx		
Move Cap.:	18	xxxx		380	xxxx	xxxx	xxxxx				734	xxxx	xxxxx			259	xxxx	xxxxx		
Volume/Cap:	1.45	xxxx		0.56	xxxx	xxxx	xxxx				0.00	xxxx	xxxx			0.09	xxxx	xxxx		
Level Of Service Module:																				
2Way95thQ:	91.8	xxxx		82.6	xxxx	xxxx	xxxxx				0.2	xxxx	xxxxx			7.2	xxxx	xxxxx		
Control Del:	685.2	xxxx		25.9	xxxxx	xxxx	xxxxx				9.9	xxxx	xxxxx			20.3	xxxx	xxxxx		
LOS by Move:	F	*		D	*	*	*				A	*	*			C	*	*		
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx	
SharedQueue:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		0.0	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
Shrd ConDel:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		9.9	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
Shared LOS:	*	*		*		*	*		*		A	*		*		*	*		*	
ApproachDel:		97.6				xxxxxx					xxxxxx					xxxxxx				
ApproachLOS:		F				*					*					*				

Note: Queue reported is the distance per lane in feet.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1157	1101	760	1187	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	0.95	1.00	1.00	0.95		
Frt	1.00	0.85	1.00	1.00		
Flt Protected	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3610	1615	1805	3610		
Flt Permitted	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3610	1615	1805	3610		
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1244	1184	817	1276	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1244	1184	817	1276	0	0
Turn Type	NA	Free	Prot	NA		
Protected Phases	2		1	6		
Permitted Phases		Free				
Actuated Green, G (s)	42.6	100.0	49.4	100.0		
Effective Green, g (s)	42.6	100.0	49.4	100.0		
Actuated g/C Ratio	0.43	1.00	0.49	1.00		
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	1537	1615	891	3610		
v/s Ratio Prot	c0.34		c0.45	0.35		
v/s Ratio Perm		0.73				
v/c Ratio	0.81	0.73	0.92	0.35		
Uniform Delay, d1	25.1	0.0	23.4	0.0		
Progression Factor	1.00	1.00	1.15	1.00		
Incremental Delay, d2	4.7	3.0	13.6	0.3		
Delay (s)	29.9	3.0	40.6	0.3		
Level of Service	C	A	D	A		
Approach Delay (s)	16.8			16.0	0.0	
Approach LOS	B			B	A	

Intersection Summary			
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1156	0	0	1220	0	0	0	841	0	0	742
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	1192	0	0	1258	0	0	0	867	0	0	765
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		438			227							
pX, platoon unblocked	0.85			0.69			0.77	0.77	0.69	0.77	0.77	0.85
vC, conflicting volume	1258			1192			2586	2449	596	2721	2449	629
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	943			391			1566	1390	0	1742	1390	200
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			0	100	0	0	100	0
cM capacity (veh/h)	623			817			0	111	756	0	111	689

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	596	596	629	629	867	765
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	867	765
cSH	1700	1700	1700	1700	756	689
Volume to Capacity	0.35	0.35	0.37	0.37	1.15	1.11
Queue Length 95th (ft)	0	0	0	0	656	559
Control Delay (s)	0.0	0.0	0.0	0.0	102.4	91.9
Lane LOS					F	F
Approach Delay (s)	0.0		0.0		102.4	91.9
Approach LOS					F	F

Intersection Summary			
Average Delay	39.0		
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1200	468	0	479	330
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5187	3610		1805	1615
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5187	3610		1805	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1304	509	0	521	359
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	1304	509	0	521	359
Turn Type		NA	NA		Prot	Free
Protected Phases		2	6		4	
Permitted Phases						Free
Actuated Green, G (s)		41.0	41.0		51.0	100.0
Effective Green, g (s)		41.0	41.0		51.0	100.0
Actuated g/C Ratio		0.41	0.41		0.51	1.00
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		2126	1480		920	1615
v/s Ratio Prot		c0.25	0.14		c0.29	
v/s Ratio Perm						0.22
v/c Ratio		0.61	0.34		0.57	0.22
Uniform Delay, d1		23.3	20.3		16.9	0.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.3	0.6		2.5	0.3
Delay (s)		24.6	20.9		19.4	0.3
Level of Service		C	C		B	A
Approach Delay (s)		24.6	20.9		11.6	
Approach LOS		C	C		B	

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1549	58	0	468	417	0	0	41	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	1648	62	0	498	444	0	0	44	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		537										
pX, platoon unblocked				0.77			0.77	0.77	0.77	0.77	0.77	
vC, conflicting volume	498			1710			1897	2146	824	1365	2207	249
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	498			1323			1567	1890	173	876	1970	249
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	93	100	100	100
cM capacity (veh/h)	1077			407			59	55	652	177	49	757

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	824	824	62	249	249	444	44
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	62	0	0	444	44
cSH	1700	1700	1700	1700	1700	1700	652
Volume to Capacity	0.48	0.48	0.04	0.15	0.15	0.26	0.07
Queue Length 95th (ft)	0	0	0	0	0	0	5
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.9
Lane LOS							B
Approach Delay (s)	0.0			0.0			10.9
Approach LOS							B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

Irwindale Regional Shopping Center
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Scenario Report

Scenario:	Cumul NP SAT
Command:	Default Command
Volume:	Cumul NP SAT
Geometry:	Cumul
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Peck Rd-Myrtle Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.549
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	A

Street Name:	Peck Rd-Myrtle							Live Oak Ave					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 0	1	1 0	2 0	1	
Volume Module:													
Base Vol:	168	504	141	73	451	149	144	458	151	122	427	45	
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:	168	504	141	73	451	149	144	458	151	122	427	45	
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:	168	504	141	73	451	149	144	458	151	122	427	45	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	168	504	141	73	451	149	144	458	151	122	427	45	
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:	168	504	141	73	451	149	144	458	151	122	427	45	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	1.00	2.34	0.66	1.00	2.26	0.74	1.00	2.00	1.00	1.00	2.00	1.00	
Final Sat.:	1600	3751	1049	1600	3608	1192	1600	3200	1600	1600	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.11	0.13	0.13	0.05	0.13	0.13	0.09	0.14	0.09	0.08	0.13	0.03	
Crit Moves:	****				****			****		****			

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Myrtle Ave/Longden Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.589
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	40	Level Of Service:	A

Street Name:	Myrtle Ave						Longden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	1 0	1	0 1	0 1	0
Volume Module:												
Base Vol:	64	613	10	167	608	104	106	205	57	51	226	182
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:	64	613	10	167	608	104	106	205	57	51	226	182
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:	64	613	10	167	608	104	106	205	57	51	226	182
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	64	613	10	167	608	104	106	205	57	51	226	182
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:	64	613	10	167	608	104	106	205	57	51	226	182
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.00	1.00	1.00	2.00	1.00	0.68	1.32	1.00	0.22	0.99	0.79
Final Sat.:	1600	3200	1600	1600	3200	1600	1091	2109	1600	356	1576	1269
Capacity Analysis Module:												
Vol/Sat:	0.04	0.19	0.01	0.10	0.19	0.07	0.07	0.10	0.04	0.03	0.14	0.14
Crit Moves:		****		****			****				****	

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Longden Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.439
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	A

Street Name:	Longden Ave							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	1	1	0	0	1	1	0	2	1
Volume Module:													
Base Vol:	8	8	9	385	6	12	10	634	9	11	623	417	
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:	8	8	9	385	6	12	10	634	9	11	623	417	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	8	8	9	385	6	12	10	634	9	11	623	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	8	8	9	385	6	12	10	634	9	11	623	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	8	8	9	385	6	12	10	634	9	11	623	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.32	0.32	0.36	1.97	0.03	1.00	1.00	2.96	0.04	1.00	2.00	2.00	
Final Sat.:	512	512	576	3151	49	1600	1600	4733	67	1600	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.02	0.02	0.02	0.12	0.12	0.01	0.01	0.13	0.13	0.01	0.19	0.00	
Crit Moves:		****		****			****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Arrow Hwy/Live Oak Ave

Cycle (sec):	110	Critical Vol./Cap.(X):	0.457
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	32	Level Of Service:	A

Street Name:	Arrow Hwy							Live Oak Ave					
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:	Ignore			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	2 0	2	2 0	2 0	0	0 0	0 0	0	2 0	0 0	1	
Volume Module:													
Base Vol:	0	386	660	145	498	0	0	0	0	561	0	173	
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	386	660	145	498	0	0	0	0	561	0	173	
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	386	0	145	498	0	0	0	0	561	0	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	386	0	145	498	0	0	0	0	561	0	0	
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	386	0	145	498	0	0	0	0	561	0	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	
Lanes:	0.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00	
Final Sat.:	0	3200	3200	2880	3200	0	0	0	0	2880	0	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.12	0.00	0.05	0.16	0.00	0.00	0.00	0.00	0.19	0.00	0.00	
Crit Moves:		****		****						****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #6 Speedway Dr-Dwy 2/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.355
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Street Name:	Speedway Dr-Dwy 2									Live Oak Ave								
Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Y+R:	0.0	0.0	0.0			0.0	0.0	0.0			0.0	0.0	0.0			0.0	0.0	0.0		
Lanes:	2	0	0	0	1	0	0	0	0	0	0	0	2	1	0	1	0	2	0	0
Volume Module:																				
Base Vol:	6	0	3			0	0	0			0	826	43			28	808	0		
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:	6	0	3			0	0	0			0	826	43			28	808	0		
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:	6	0	3			0	0	0			0	826	43			28	808	0		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	6	0	3			0	0	0			0	826	43			28	808	0		
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:	6	0	3			0	0	0			0	826	43			28	808	0		
Saturation Flow Module:																				
Sat/Lane:	1600	1600	1600			1600	1600	1600			1600	1600	1600			1600	1600	1600		
Adjustment:	0.90	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Lanes:	2.00	0.00	1.00			0.00	0.00	0.00			0.00	2.85	0.15			1.00	2.00	0.00		
Final Sat.:	2880	0	1600			0	0	0			0	4562	238			1600	3200	0		
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00			0.00	0.00	0.00			0.00	0.18	0.18			0.02	0.25	0.00		
Crit Moves:	****										****						****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 Graham Rd/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.344
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Street Name:	Graham Rd							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	0	0	0	0	2	0	1	1	0	2	0	0
Volume Module:													
Base Vol:	39	0	4	0	0	0	0	570	27	16	694	0	
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:	39	0	4	0	0	0	0	570	27	16	694	0	
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:	39	0	4	0	0	0	0	570	27	16	694	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	39	0	4	0	0	0	0	570	27	16	694	0	
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:	39	0	4	0	0	0	0	570	27	16	694	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.91	0.00	0.09	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	1451	0	149	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.18	0.02	0.01	0.22	0.00	
Crit Moves:	****						****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #12 Rivergrade Rd/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.329
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Street Name:	Rivergrade Rd							Live Oak Ave					
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:	Ovl			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	
Volume Module:													
Base Vol:	23	41	98	12	20	83	21	488	15	51	531	8	
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:	23	41	98	12	20	83	21	488	15	51	531	8	
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:	23	41	98	12	20	83	21	488	15	51	531	8	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	23	41	98	12	20	83	21	488	15	51	531	8	
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:	23	41	98	12	20	83	21	488	15	51	531	8	
OvlAdjVol:			47										
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	
Final Sat.:	1600	1600	1600	1600	3200	1600	1600	3200	1600	1600	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.01	0.03	0.06	0.01	0.01	0.05	0.01	0.15	0.01	0.03	0.17	0.01	
OvlAdjV/S:			0.03										
Crit Moves:	****					****	****				****		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #14 Stewart Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.380
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	28	Level Of Service:	A

Street Name:	Stewart Ave						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	1! 0	0	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	63	36	29	2	60	3	6	578	46	36	521	5
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:	63	36	29	2	60	3	6	578	46	36	521	5
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:	63	36	29	2	60	3	6	578	46	36	521	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	63	36	29	2	60	3	6	578	46	36	521	5
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:	63	36	29	2	60	3	6	578	46	36	521	5
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	0.49	0.28	0.23	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	788	450	363	1600	1600	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.04	0.08	0.08	0.00	0.04	0.00	0.00	0.18	0.03	0.02	0.16	0.00
Crit Moves:	****				****			****		****		

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #15 Baldwin Park/Arrow Hwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.479
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	32	Level Of Service:	A

Street Name:	Baldwin Park							Arrow Hwy					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 1	0	1 0	0 1	0	1 0	2 0	1	1 0	2 0	1	
Volume Module:													
Base Vol:	76	0	157	0	6	0	0	522	85	188	514	0	
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:	76	0	157	0	6	0	0	522	85	188	514	0	
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:	76	0	157	0	6	0	0	522	85	188	514	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	76	0	157	0	6	0	0	522	85	188	514	0	
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:	76	0	157	0	6	0	0	522	85	188	514	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	1.00	1.00	0.00	1.00	2.00	1.00	1.00	2.00	1.00	
Final Sat.:	2880	0	1600	1600	1600	0	1600	3200	1600	1600	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.03	0.00	0.10	0.00	0.00	0.00	0.00	0.16	0.05	0.12	0.16	0.00	
Crit Moves:			****	****				****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #16 Arrow Highway/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.464
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	32	Level Of Service:	A

Street Name:	Arrow Highway							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Permitted			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0 0	0	2 0	0 0	1	1 0	2 0	0	0 0	2 0	2	
Volume Module:													
Base Vol:	0	0	0	383	0	71	79	606	0	0	636	481	
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	383	0	71	79	606	0	0	636	481	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	383	0	71	79	606	0	0	636	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	383	0	71	79	606	0	0	636	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	383	0	71	79	606	0	0	636	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	2.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.13	0.00	0.04	0.05	0.19	0.00	0.00	0.20	0.00	
Crit Moves:				****			****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #17 Maine Ave/Arrow Hwy

Cycle (sec):	120	Critical Vol./Cap.(X):	0.482
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	33	Level Of Service:	A

Street Name:	Maine Ave							Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	3 0	0	
Volume Module:													
Base Vol:	231	0	112	0	0	0	0	812	189	104	889	0	
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:	231	0	112	0	0	0	0	812	189	104	889	0	
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:	231	0	112	0	0	0	0	812	189	104	889	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	231	0	112	0	0	0	0	812	189	104	889	0	
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:	231	0	112	0	0	0	0	812	189	104	889	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	3.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	4800	0	
Capacity Analysis Module:													
Vol/Sat:	0.08	0.00	0.07	0.00	0.00	0.00	0.00	0.25	0.12	0.07	0.19	0.00	
Crit Moves:	****							****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #18 Avenida Barbosa/Buena Vista St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.362
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Street Name:	Avenida Barbosa						Buena Vista St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 1	0	0 2	0 0	0 1	0	1 0	2	0 1	2 0	1 0	1
Volume Module:												
Base Vol:	83	91	188	0	68	1	2	13	80	173	28	15
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:	83	91	188	0	68	1	2	13	80	173	28	15
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:	83	91	188	0	68	1	2	13	80	173	28	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	91	188	0	68	1	2	13	80	173	28	15
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:	83	91	188	0	68	1	2	13	80	173	28	15
OvlAdjVol:			0									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	0.48	0.52	2.00	0.00	0.99	0.01	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	763	837	3200	0	1577	23	1600	3200	1600	2880	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.11	0.11	0.06	0.00	0.04	0.04	0.00	0.00	0.05	0.06	0.02	0.01
OvlAdjV/S:			0.00									
Crit Moves:	****				****				****	****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #19 Avenida Barbosa/Arrow Highway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.476
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	32	Level Of Service:	A

Street Name:	Avenida Barbosa							Arrow Highway					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Permitted			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	0	0	0	2	0	0	0	1	1	0	2
Volume Module:													
Base Vol:	0	0	0	153	0	175	195	310	0	1	463	191	
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	153	0	175	195	310	0	1	463	191	
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	153	0	175	195	310	0	1	463	191	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	153	0	175	195	310	0	1	463	191	
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	153	0	175	195	310	0	1	463	191	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.01	1.99	1.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	7	3193	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.05	0.00	0.11	0.12	0.10	0.00	0.00	0.14	0.12	
Crit Moves:						****	****				****		

Irwindale Regional Shopping Center
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Scenario Report

Scenario:	Cumul NP SAT
Command:	Default Command
Volume:	Cumul NP SAT
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B[13.7]

Street Name:	Dwy 1						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	10	0	63	0	0	0	0	807	32	23	793	0
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:	10	0	63	0	0	0	0	807	32	23	793	0
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:	10	0	63	0	0	0	0	807	32	23	793	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	10	0	63	0	0	0	0	807	32	23	793	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1266	1662	285	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	839	xxxx	xxxxx
Potent Cap.:	164	98	718	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	804	xxxx	xxxxx
Move Cap.:	160	95	718	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	804	xxxx	xxxxx
Volume/Cap:	0.06	0.00	0.09	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.03	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.6	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	486	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	13.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	*	*	*
ApproachDel:	13.7			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	B			*			*			*		

Note: Queue reported is the distance per lane in feet.

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[9.5]

Street Name:	Dwy 3						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	830	0	5	838	0
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	0	0	0	0	830	0	5	838	0
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	0	0	0	0	830	0	5	838	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	830	0	5	838	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1259	1678	277	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	830	xxxx	xxxxx
Potent Cap.:	165	96	727	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	811	xxxx	xxxxx
Move Cap.:	165	95	727	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	811	xxxx	xxxxx
Volume/Cap:	0.00	0.00	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.5	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.5	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

Note: Queue reported is the distance per lane in feet.

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #11 Live Oak Ln/Live Oak Ave

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: B[12.5]

Street Name:	Live Oak Ln									Live Oak Ave								
Approach:	North Bound					South Bound				East Bound					West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0	9	0	99	55	519	0	0	605	36								
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	9	0	99	55	519	0	0	605	36								
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	9	0	99	55	519	0	0	605	36								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	0	0	0	9	0	99	55	519	0	0	605	36								
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	993	1252	321	641	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	xxxxx	246	174	681	953	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	xxxxx	235	164	681	953	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	xxxx	0.04	0.00	0.15	0.06	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	4.6	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*								
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	588	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	12.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	B	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx				12.5		xxxxxx				xxxxxx									
ApproachLOS:	*				B		*				*									

Note: Queue reported is the distance per lane in feet.

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #13 Commerce Dr/Live Oak Ave

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[12.3]

Street Name:	Commerce Dr									Live Oak Ave							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	0	0	1	0	0	0	0	0	0	1	1	1	0	1	0	2	0	0
Volume Module:																				
Base Vol:	4	0		9		0	0		0		2	609		6		14	557		0	
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:	4	0		9		0	0		0		2	609		6		14	557		0	
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:	4	0		9		0	0		0		2	609		6		14	557		0	
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0		0	
FinalVolume:	4	0		9		0	0		0		2	609		6		14	557		0	
Critical Gap Module:																				
Critical Gp:	6.8	xxxx		6.9	xxxxx	xxxx	xxxxx				4.1	xxxx	xxxxx			4.1	xxxx	xxxxx		
FollowUpTim:	3.5	xxxx		3.3	xxxxx	xxxx	xxxxx				2.2	xxxx	xxxxx			2.2	xxxx	xxxxx		
Capacity Module:																				
Cnflict Vol:	923	xxxx		206	xxxx	xxxx	xxxxx				557	xxxx	xxxxx			615	xxxx	xxxxx		
Potent Cap.:	273	xxxx		807	xxxx	xxxx	xxxxx				1024	xxxx	xxxxx			974	xxxx	xxxxx		
Move Cap.:	269	xxxx		807	xxxx	xxxx	xxxxx				1024	xxxx	xxxxx			974	xxxx	xxxxx		
Volume/Cap:	0.01	xxxx		0.01	xxxx	xxxx	xxxx				0.00	xxxx	xxxx			0.01	xxxx	xxxx		
Level Of Service Module:																				
2Way95thQ:	1.1	xxxx		0.8	xxxx	xxxx	xxxxx				0.1	xxxx	xxxxx			1.1	xxxx	xxxxx		
Control Del:	18.6	xxxx		9.5	xxxxx	xxxx	xxxxx				8.5	xxxx	xxxxx			8.7	xxxx	xxxxx		
LOS by Move:	C	*		A	*	*	*				A	*	*			A	*	*		
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx	
SharedQueue:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		0.0	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
Shrd ConDel:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		8.5	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
Shared LOS:	*	*		*		*	*		*		A	*		*		*	*		*	
ApproachDel:		12.3				xxxxxx					xxxxxx					xxxxxx				
ApproachLOS:		B					*					*					*			

Note: Queue reported is the distance per lane in feet.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	191	632	524	838	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	0.95	1.00	1.00	0.95		
Frt	1.00	0.85	1.00	1.00		
Flt Protected	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3610	1615	1805	3610		
Flt Permitted	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3610	1615	1805	3610		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	201	665	552	882	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	201	665	552	882	0	0
Turn Type	NA	Free	Prot	NA		
Protected Phases	2		1	6		
Permitted Phases		Free				
Actuated Green, G (s)	23.0	100.0	69.0	100.0		
Effective Green, g (s)	23.0	100.0	69.0	100.0		
Actuated g/C Ratio	0.23	1.00	0.69	1.00		
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	830	1615	1245	3610		
v/s Ratio Prot	0.06		c0.31	0.24		
v/s Ratio Perm		c0.41				
v/c Ratio	0.24	0.41	0.44	0.24		
Uniform Delay, d1	31.4	0.0	6.9	0.0		
Progression Factor	1.00	1.00	0.70	1.00		
Incremental Delay, d2	0.7	0.8	0.3	0.2		
Delay (s)	32.1	0.8	5.1	0.2		
Level of Service	C	A	A	A		
Approach Delay (s)	8.0			2.1	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	4.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	212	0	0	726	0	0	0	384	0	0	516
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	233	0	0	798	0	0	0	422	0	0	567
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		438			227							
pX, platoon unblocked	0.93			0.97			0.94	0.94	0.97	0.94	0.94	0.93
vC, conflicting volume	798			233			1199	1031	116	1336	1031	399
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	620			142			934	756	22	1080	756	189
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	59	100	100	26
cM capacity (veh/h)	898			1407			55	320	1023	97	320	766

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	116	116	399	399	422	567
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	422	567
cSH	1700	1700	1700	1700	1023	766
Volume to Capacity	0.07	0.07	0.23	0.23	0.41	0.74
Queue Length 95th (ft)	0	0	0	0	51	168
Control Delay (s)	0.0	0.0	0.0	0.0	11.0	21.9
Lane LOS					B	C
Approach Delay (s)	0.0		0.0		11.0	21.9
Approach LOS					B	C

Intersection Summary			
Average Delay	8.4		
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	507	330	0	277	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5187	3610		1805	1615
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5187	3610		1805	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	534	347	0	292	331
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	534	347	0	292	331
Turn Type		NA	NA		Prot	Free
Protected Phases		2	6		4	
Permitted Phases						Free
Actuated Green, G (s)		36.0	36.0		56.0	100.0
Effective Green, g (s)		36.0	36.0		56.0	100.0
Actuated g/C Ratio		0.36	0.36		0.56	1.00
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		1867	1299		1010	1615
v/s Ratio Prot		c0.10	0.10		c0.16	
v/s Ratio Perm						0.20
v/c Ratio		0.29	0.27		0.29	0.20
Uniform Delay, d1		22.8	22.7		11.5	0.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.4	0.5		0.7	0.3
Delay (s)		23.2	23.2		12.3	0.3
Level of Service		C	C		B	A
Approach Delay (s)		23.2	23.2		5.9	
Approach LOS		C	C		A	

Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	31.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	530	56	0	324	273	0	0	23	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	564	60	0	345	290	0	0	24	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		537										
pX, platoon unblocked				0.94			0.94	0.94	0.94	0.94	0.94	
vC, conflicting volume	345			623			736	909	282	651	968	172
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	345			484			603	786	122	513	849	172
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	97	100	100	100
cM capacity (veh/h)	1226			1029			366	309	862	412	284	848

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	282	282	60	172	172	290	24
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	60	0	0	290	24
cSH	1700	1700	1700	1700	1700	1700	862
Volume to Capacity	0.17	0.17	0.04	0.10	0.10	0.17	0.03
Queue Length 95th (ft)	0	0	0	0	0	0	2
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.3
Lane LOS							A
Approach Delay (s)	0.0			0.0			9.3
Approach LOS							A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	24.7%	ICU Level of Service	A
Analysis Period (min)	15		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Scenario Report

Scenario:	Cumul WP AM
Command:	Default Command
Volume:	Cumul WP AM
Geometry:	Cumul
Impact Fee:	Default Impact Fee
Trip Generation:	Project
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Peck Rd-Myrtle Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.848
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	80	Level Of Service:	D

Street Name:	Peck Rd-Myrtle						Live Oak Ave					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	269	1009	293	41	536	163	72	620	224	175	1247	58
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:	269	1009	293	41	536	163	72	620	224	175	1247	58
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:	269	1009	293	41	536	163	72	620	224	175	1247	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	269	1009	293	41	536	163	72	620	224	175	1247	58
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:	269	1009	293	41	536	163	72	620	224	175	1247	58
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.32	0.68	1.00	2.30	0.70	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	3720	1080	1600	3681	1119	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.17	0.27	0.27	0.03	0.15	0.15	0.05	0.19	0.14	0.11	0.39	0.04
Crit Moves:	****				****		****				****	

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Myrtle Ave/Longden Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.883
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	D

Street Name:	Myrtle Ave						Longden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	1 0	1	0 1	0 1	0
Volume Module:												
Base Vol:	176	943	21	183	646	52	73	275	80	36	618	450
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:	176	943	21	183	646	52	73	275	80	36	618	450
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:	176	943	21	183	646	52	73	275	80	36	618	450
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	176	943	21	183	646	52	73	275	80	36	618	450
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:	176	943	21	183	646	52	73	275	80	36	618	450
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.00	1.00	1.00	2.00	1.00	0.42	1.58	1.00	0.07	1.12	0.81
Final Sat.:	1600	3200	1600	1600	3200	1600	671	2529	1600	104	1791	1304
Capacity Analysis Module:												
Vol/Sat:	0.11	0.29	0.01	0.11	0.20	0.03	0.05	0.11	0.05	0.02	0.34	0.34
Crit Moves:		****		****			****				****	

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Longden Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.737
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	55	Level Of Service:	C

Street Name:	Longden Ave							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	1	1	0	0	1	1	0	2	1
Volume Module:													
Base Vol:	10	10	10	469	1	13	39	918	1	10	1429	1023	
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:	10	10	10	469	1	13	39	918	1	10	1429	1023	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	10	10	10	469	1	13	39	918	1	10	1429	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	10	10	10	469	1	13	39	918	1	10	1429	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	10	10	10	469	1	13	39	918	1	10	1429	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.34	0.33	0.33	1.99	0.01	1.00	1.00	2.99	0.01	1.00	2.00	2.00	
Final Sat.:	533	533	533	3193	7	1600	1600	4795	5	1600	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.02	0.02	0.02	0.15	0.15	0.01	0.02	0.19	0.19	0.01	0.45	0.00	
Crit Moves:		****			****		****				****		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Arrow Hwy/Live Oak Ave

Cycle (sec):	110	Critical Vol./Cap.(X):	0.895
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	102	Level Of Service:	D

Street Name:	Arrow Hwy							Live Oak Ave					
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:	Ignore			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	2 0	2	2 0	2 0	0	0 0	0 0	0	2 0	0 0	1	
Volume Module:													
Base Vol:	0	567	826	293	1464	0	0	0	0	999	0	317	
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	567	826	293	1464	0	0	0	0	999	0	317	
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	567	0	293	1464	0	0	0	0	999	0	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	567	0	293	1464	0	0	0	0	999	0	0	
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	567	0	293	1464	0	0	0	0	999	0	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	
Lanes:	0.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00	
Final Sat.:	0	3200	3200	2880	3200	0	0	0	0	2880	0	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.18	0.00	0.10	0.46	0.00	0.00	0.00	0.00	0.35	0.00	0.00	
Crit Moves:	****				****					****			

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #6 Speedway Dr-Dwy 2/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.535
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	35	Level Of Service:	A

Street Name:	Speedway Dr-Dwy 2							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0	
Volume Module:													
Base Vol:	32	0	32	0	0	0	0	1085	86	86	1329	0	
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:	32	0	32	0	0	0	0	1085	86	86	1329	0	
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:	32	0	32	0	0	0	0	1085	86	86	1329	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	32	0	32	0	0	0	0	1085	86	86	1329	0	
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:	32	0	32	0	0	0	0	1085	86	86	1329	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.78	0.22	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	4447	353	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.24	0.24	0.05	0.42	0.00	
Crit Moves:			****				****				****		

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 Graham Rd/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.715
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	52	Level Of Service:	C

Street Name:	Graham Rd							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	0	0	0	0	0	0	0	2	0 1 1 0 2 0 0
Volume Module:													
Base Vol:	159	0	60	0	0	0	0	893	111	50	1529	0	
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:	159	0	60	0	0	0	0	893	111	50	1529	0	
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:	159	0	60	0	0	0	0	893	111	50	1529	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	159	0	60	0	0	0	0	893	111	50	1529	0	
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:	159	0	60	0	0	0	0	893	111	50	1529	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.73	0.00	0.27	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	1162	0	438	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.14	0.00	0.14	0.00	0.00	0.00	0.00	0.28	0.07	0.03	0.48	0.00	
Crit Moves:			****				****				****		

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #12 Rivergrade Rd/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.742
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	59	Level Of Service:	C

Street Name:	Rivergrade Rd							Live Oak Ave					
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:	Ovl			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	
Volume Module:													
Base Vol:	54	55	117	31	82	178	189	580	100	278	1267	14	
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:	54	55	117	31	82	178	189	580	100	278	1267	14	
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:	54	55	117	31	82	178	189	580	100	278	1267	14	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	54	55	117	31	82	178	189	580	100	278	1267	14	
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:	54	55	117	31	82	178	189	580	100	278	1267	14	
OvlAdjVol:			0										
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	
Final Sat.:	1600	1600	1600	1600	3200	1600	1600	3200	1600	1600	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.03	0.03	0.07	0.02	0.03	0.11	0.12	0.18	0.06	0.17	0.40	0.01	
OvlAdjV/S:			0.00										
Crit Moves:	****					****	****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #14 Stewart Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.887
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	94	Level Of Service:	D

Street Name:	Stewart Ave						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	1! 0	0	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	233	131	40	14	31	81	21	521	32	20	1641	41
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:	233	131	40	14	31	81	21	521	32	20	1641	41
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:	233	131	40	14	31	81	21	521	32	20	1641	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	233	131	40	14	31	81	21	521	32	20	1641	41
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:	233	131	40	14	31	81	21	521	32	20	1641	41
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	0.58	0.32	0.10	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	923	519	158	1600	1600	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.15	0.25	0.25	0.01	0.02	0.05	0.01	0.16	0.02	0.01	0.51	0.03
Crit Moves:		****		****			****				****	

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #15 Baldwin Park/Arrow Hwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.777
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	62	Level Of Service:	C

Street Name:	Baldwin Park						Arrow Hwy					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	2 0	0 1	0	1 0	0 1	0	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	320	10	316	12	4	19	43	488	70	144	1403	43
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:	320	10	316	12	4	19	43	488	70	144	1403	43
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:	320	10	316	12	4	19	43	488	70	144	1403	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	320	10	316	12	4	19	43	488	70	144	1403	43
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:	320	10	316	12	4	19	43	488	70	144	1403	43
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	0.03	0.97	1.00	0.17	0.83	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	2880	49	1551	1600	278	1322	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.11	0.20	0.20	0.01	0.01	0.01	0.03	0.15	0.04	0.09	0.44	0.03
Crit Moves:		****		****			****				****	

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #16 Arrow Highway/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.799
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	70	Level Of Service:	C

Street Name:	Arrow Highway							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Permitted			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	0	0	0	2	0	0	0	1	1	0	2
Volume Module:													
Base Vol:	0	0	0	411	0	78	159	658	0	0	1515	1740	
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	411	0	78	159	658	0	0	1515	1740	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	411	0	78	159	658	0	0	1515	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	411	0	78	159	658	0	0	1515	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	411	0	78	159	658	0	0	1515	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	2.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.14	0.00	0.05	0.10	0.21	0.00	0.00	0.47	0.00	
Crit Moves:				****			****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #17 Maine Ave/Arrow Hwy

Cycle (sec):	120	Critical Vol./Cap.(X):	0.871
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	94	Level Of Service:	D

Street Name:	Maine Ave							Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	3 0	0	
Volume Module:													
Base Vol:	668	0	112	0	0	0	0	940	111	37	2669	0	
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:	668	0	112	0	0	0	0	940	111	37	2669	0	
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:	668	0	112	0	0	0	0	940	111	37	2669	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	668	0	112	0	0	0	0	940	111	37	2669	0	
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:	668	0	112	0	0	0	0	940	111	37	2669	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	3.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	4800	0	
Capacity Analysis Module:													
Vol/Sat:	0.23	0.00	0.07	0.00	0.00	0.00	0.00	0.29	0.07	0.02	0.56	0.00	
Crit Moves:	****						****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #18 Avenida Barbosa/Buena Vista St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.434
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	30	Level Of Service:	A

Street Name:	Avenida Barbosa						Buena Vista St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 1	0 0	2	0 0	1! 0	0	1 0	2 0	1	2 0	1 0	1
Volume Module:												
Base Vol:	54	164	886	9	79	2	1	4	6	237	15	19
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:	54	164	886	9	79	2	1	4	6	237	15	19
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:	54	164	886	9	79	2	1	4	6	237	15	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	54	164	886	9	79	2	1	4	6	237	15	19
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:	54	164	886	9	79	2	1	4	6	237	15	19
OvlAdjVol:			623									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	0.25	0.75	2.00	0.10	0.88	0.02	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	396	1204	3200	160	1404	36	1600	3200	1600	2880	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.28	0.06	0.06	0.06	0.00	0.00	0.00	0.08	0.01	0.01
OvlAdjV/S:			0.19									
Crit Moves:			****		****			****			****	

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #19 Avenida Barbosa/Arrow Highway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.967
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	150	Level Of Service:	E

Street Name:	Avenida Barbosa							Arrow Highway					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Permitted			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0 0	0	2 0	0 0	1	1 0	2 0	0	0 0	2 0	1	
Volume Module:													
Base Vol:	0	0	0	223	0	183	390	483	0	0	1627	745	
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	223	0	183	390	483	0	0	1627	745	
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	223	0	183	390	483	0	0	1627	745	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	223	0	183	390	483	0	0	1627	745	
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	223	0	183	390	483	0	0	1627	745	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.08	0.00	0.11	0.24	0.15	0.00	0.00	0.51	0.47	
Crit Moves:						****	****				****		

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Scenario Report

Scenario:	Cumul WP AM
Command:	Default Command
Volume:	Cumul WP AM
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Project
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: E[46.2]

Street Name:	Dwy 1						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	17	0	15	0	0	0	0	1051	44	41	1292	0
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:	17	0	15	0	0	0	0	1051	44	41	1292	0
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:	17	0	15	0	0	0	0	1051	44	41	1292	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	17	0	15	0	0	0	0	1051	44	41	1292	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1801	2447	372	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1095	xxxx	xxxxx
Potent Cap.:	73	32	631	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	645	xxxx	xxxxx
Move Cap.:	69	30	631	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	645	xxxx	xxxxx
Volume/Cap:	0.25	0.00	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.06	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	5.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	11.0	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	119	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	1.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	46.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	E	*	*	*	*	*	*	*	*	*	*
ApproachDel:		46.2		xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:		E			*			*			*	

Note: Queue reported is the distance per lane in feet.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: E[46.4]

Street Name:	Dwy 3									Live Oak Ave							
Approach:	North Bound			South Bound						East Bound					West Bound		
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	1!	0	0	0	0	0	0	0	0	0	2	1	0	1	0	2	0	0
Volume Module:																				
Base Vol:	15		0		17	0		0		0	0		1069		41	44		1391		0
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	15		0		17	0		0		0	0		1069		41	44		1391		0
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	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	15		0		17	0		0		0	0		1069		41	44		1391		0
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
FinalVolume:	15		0		17	0		0		0	0		1069		41	44		1391		0
Critical Gap Module:																				
Critical Gp:	6.8	6.5			6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				4.1	xxxx	xxxxx			
FollowUpTim:	3.5	4.0			3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				2.2	xxxx	xxxxx			
Capacity Module:																				
Cnflict Vol:	1873	2569			377	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				1110	xxxx	xxxxx			
Potent Cap.:	65		26		627	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				637	xxxx	xxxxx			
Move Cap.:	62		25		627	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				637	xxxx	xxxxx			
Volume/Cap:	0.24	0.00			0.03	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx				0.07	xxxx	xxxx			
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				5.6	xxxx	xxxxx			
Control Del:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				11.1	xxxx	xxxxx			
LOS by Move:	*	*	*			*	*	*	*	*	*				B	*	*			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx		118	xxxxx		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx		1.0	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx			
Shrd ConDel:	xxxxx		46.4	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx			
Shared LOS:	*		E	*		*	*	*	*	*	*				*	*	*			
ApproachDel:			46.4			xxxxxx			xxxxxx						xxxxxx					
ApproachLOS:			E					*					*					*		

Note: Queue reported is the distance per lane in feet.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #11 Live Oak Ln/Live Oak Ave

Average Delay (sec/veh): 5.8 Worst Case Level Of Service: F[84.0]

Street Name:	Live Oak Ln									Live Oak Ave								
Approach:	North Bound					South Bound				East Bound					West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0	17	0	147	95	861	0	0	1453	61								
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	17	0	147	95	861	0	0	1453	61								
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	17	0	147	95	861	0	0	1453	61								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	0	0	0	17	0	147	95	861	0	0	1453	61								
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	2104	2535	757	1514	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	xxxxx	45	28	355	447	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	xxxxx	38	22	355	447	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	xxxx	0.45	0.00	0.41	0.21	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	19.9	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	15.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	*	C	*	*	*	*	*								
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	190	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	6.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	84.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	F	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx				84.0		xxxxxx				xxxxxx									
ApproachLOS:	*				F		*				*									

Note: Queue reported is the distance per lane in feet.

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #13 Commerce Dr/Live Oak Ave

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: D[31.0]

Street Name:	Commerce Dr									Live Oak Ave							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0	2	1	0	1	0	2	0	0
Volume Module:																				
Base Vol:	6		0		19	0		0		0	0		551		49	276		1674		0
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:	6		0		19	0		0		0	0		551		49	276		1674		0
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:	6		0		19	0		0		0	0		551		49	276		1674		0
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
FinalVolume:	6		0		19	0		0		0	0		551		49	276		1674		0
Critical Gap Module:																				
Critical Gp:	6.8	xxxx		6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx						
FollowUpTim:	3.5	xxxx		3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx						
Capacity Module:																				
Cnflict Vol:	1965	xxxx		208	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		600	xxxx	xxxxx						
Potent Cap.:	56	xxxx		804	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		987	xxxx	xxxxx						
Move Cap.:	44	xxxx		804	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		987	xxxx	xxxxx						
Volume/Cap:	0.14	xxxx		0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx		0.28	xxxx	xxxx						
Level Of Service Module:																				
2Way95thQ:	10.8	xxxx		1.8	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		28.7	xxxx	xxxxx						
Control Del:	98.8	xxxx		9.6	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		10.1	xxxx	xxxxx						
LOS by Move:	F	*		A	*	*	*	*	*	*		B	*	*						
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx	
SharedQueue:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
Shrd ConDel:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
Shared LOS:	*	*		*		*	*		*		*	*		*		*	*		*	
ApproachDel:		31.0				xxxxxx					xxxxxx					xxxxxx				
ApproachLOS:		D					*					*					*			

Note: Queue reported is the distance per lane in feet.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	459	642	864	1429	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	0.95	1.00	1.00	0.95		
Frt	1.00	0.85	1.00	1.00		
Flt Protected	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3610	1615	1805	3610		
Flt Permitted	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3610	1615	1805	3610		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	488	683	919	1520	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	488	683	919	1520	0	0
Turn Type	NA	Free	Prot	NA		
Protected Phases	2		1	6		
Permitted Phases		Free				
Actuated Green, G (s)	22.0	100.0	70.0	100.0		
Effective Green, g (s)	22.0	100.0	70.0	100.0		
Actuated g/C Ratio	0.22	1.00	0.70	1.00		
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	794	1615	1263	3610		
v/s Ratio Prot	c0.14		c0.51	0.42		
v/s Ratio Perm		0.42				
v/c Ratio	0.61	0.42	0.73	0.42		
Uniform Delay, d1	35.2	0.0	9.2	0.0		
Progression Factor	1.00	1.00	0.65	1.00		
Incremental Delay, d2	3.5	0.8	2.0	0.3		
Delay (s)	38.7	0.8	7.9	0.3		
Level of Service	D	A	A	A		
Approach Delay (s)	16.6			3.2	0.0	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	462	0	0	1698	0	0	0	532	0	0	596
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	491	0	0	1806	0	0	0	566	0	0	634
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		438			227							
pX, platoon unblocked	0.75			0.88			0.81	0.81	0.88	0.81	0.81	0.75
vC, conflicting volume	1806			491			2029	2298	246	2618	2298	903
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1410			154			1141	1473	0	1869	1473	206
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			0	100	41	100	100	0
cM capacity (veh/h)	368			1268			0	104	961	15	104	605

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	246	246	903	903	566	634
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	566	634
cSH	1700	1700	1700	1700	961	605
Volume to Capacity	0.14	0.14	0.53	0.53	0.59	1.05
Queue Length 95th (ft)	0	0	0	0	99	433
Control Delay (s)	0.0	0.0	0.0	0.0	14.0	75.8
Lane LOS					B	F
Approach Delay (s)	0.0		0.0		14.0	75.8
Approach LOS					B	F

Intersection Summary			
Average Delay	16.0		
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	693	1675	0	590	683
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5187	3610		1805	1615
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5187	3610		1805	1615
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	737	1782	0	628	727
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	737	1782	0	628	727
Turn Type		NA	NA		Prot	Free
Protected Phases		2	6		4	
Permitted Phases						Free
Actuated Green, G (s)		52.0	52.0		40.0	100.0
Effective Green, g (s)		52.0	52.0		40.0	100.0
Actuated g/C Ratio		0.52	0.52		0.40	1.00
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		2697	1877		722	1615
v/s Ratio Prot		0.14	c0.49		c0.35	
v/s Ratio Perm						0.45
v/c Ratio		0.27	0.95		0.87	0.45
Uniform Delay, d1		13.4	22.8		27.6	0.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	11.8		13.5	0.9
Delay (s)		13.7	34.6		41.1	0.9
Level of Service		B	C		D	A
Approach Delay (s)		13.7	34.6		19.6	
Approach LOS		B	C		B	

Intersection Summary			
HCM 2000 Control Delay	25.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	890	60	0	1675	579	0	0	67	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	937	63	0	1763	609	0	0	71	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		537										
pX, platoon unblocked				0.93			0.93	0.93	0.93	0.93	0.93	
vC, conflicting volume	1763			1000			1818	2700	468	2302	2763	882
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1763			854			1732	2678	283	2251	2746	882
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	89	100	100	100
cM capacity (veh/h)	359			740			54	21	671	19	19	294

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	468	468	63	882	882	609	71
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	63	0	0	609	71
cSH	1700	1700	1700	1700	1700	1700	671
Volume to Capacity	0.28	0.28	0.04	0.52	0.52	0.36	0.11
Queue Length 95th (ft)	0	0	0	0	0	0	9
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	11.0
Lane LOS							B
Approach Delay (s)	0.0			0.0			11.0
Approach LOS							B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Scenario Report

Scenario:	Cumul WP PM
Command:	Default Command
Volume:	Cumul WP PM
Geometry:	Cumul
Impact Fee:	Default Impact Fee
Trip Generation:	Project
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Peck Rd-Myrtle Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.868
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	86	Level Of Service:	D

Street Name:	Peck Rd-Myrtle							Live Oak Ave					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 0	1	1 0	2 0	1	
Volume Module:													
Base Vol:	238	827	192	188	592	143	197	1249	199	76	738	26	
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:	238	827	192	188	592	143	197	1249	199	76	738	26	
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:	238	827	192	188	592	143	197	1249	199	76	738	26	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	238	827	192	188	592	143	197	1249	199	76	738	26	
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:	238	827	192	188	592	143	197	1249	199	76	738	26	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	1.00	2.43	0.57	1.00	2.42	0.58	1.00	2.00	1.00	1.00	2.00	1.00	
Final Sat.:	1600	3896	904	1600	3866	934	1600	3200	1600	1600	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.15	0.21	0.21	0.12	0.15	0.15	0.12	0.39	0.12	0.05	0.23	0.02	
Crit Moves:		****		****				****		****			

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Myrtle Ave/Longden Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.897
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	108	Level Of Service:	D

Street Name:	Myrtle Ave						Longden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	1 0	1	0 1	0 1	0
Volume Module:												
Base Vol:	99	929	13	375	835	57	86	668	104	28	424	302
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:	99	929	13	375	835	57	86	668	104	28	424	302
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:	99	929	13	375	835	57	86	668	104	28	424	302
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	929	13	375	835	57	86	668	104	28	424	302
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:	99	929	13	375	835	57	86	668	104	28	424	302
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.00	1.00	1.00	2.00	1.00	0.23	1.77	1.00	0.07	1.13	0.80
Final Sat.:	1600	3200	1600	1600	3200	1600	365	2835	1600	119	1799	1282
Capacity Analysis Module:												
Vol/Sat:	0.06	0.29	0.01	0.23	0.26	0.04	0.05	0.24	0.07	0.02	0.24	0.24
Crit Moves:		****		****			****				****	

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Longden Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.770
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	61	Level Of Service:	C

Street Name:	Longden Ave							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	1	1	0	0	1	1	0	2	1
Volume Module:													
Base Vol:	0	0	0	1044	0	10	9	1647	1	1	801	724	
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	1044	0	10	9	1647	1	1	801	724	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	1044	0	10	9	1647	1	1	801	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	1044	0	10	9	1647	1	1	801	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	1044	0	10	9	1647	1	1	801	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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	1.00	0.00	2.00	0.00	1.00	1.00	2.99	0.01	1.00	2.00	2.00	
Final Sat.:	0	1600	0	3200	0	1600	1600	4797	3	1600	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.33	0.00	0.01	0.01	0.34	0.34	0.00	0.25	0.00	
Crit Moves:				****				****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Arrow Hwy/Live Oak Ave

Cycle (sec):	110	Critical Vol./Cap.(X):	0.845
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	81	Level Of Service:	D

Street Name:	Arrow Hwy							Live Oak Ave					
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:	Ignore			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	2 0	2	2 0	2 0	0	0 0	0 0	0	2 0	0 0	1	
Volume Module:													
Base Vol:	0	805	1941	506	598	0	0	0	0	940	0	405	
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	805	1941	506	598	0	0	0	0	940	0	405	
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	805	0	506	598	0	0	0	0	940	0	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	805	0	506	598	0	0	0	0	940	0	0	
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	805	0	506	598	0	0	0	0	940	0	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	
Lanes:	0.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00	
Final Sat.:	0	3200	3200	2880	3200	0	0	0	0	2880	0	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.25	0.00	0.18	0.19	0.00	0.00	0.00	0.00	0.33	0.00	0.00	
Crit Moves:		****		****						****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #6 Speedway Dr-Dwy 2/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.886
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	93	Level Of Service:	D

Street Name:	Speedway Dr-Dwy 2							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0	
Volume Module:													
Base Vol:	199	0	246	0	0	0	0	2286	222	175	1162	0	
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:	199	0	246	0	0	0	0	2286	222	175	1162	0	
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:	199	0	246	0	0	0	0	2286	222	175	1162	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	199	0	246	0	0	0	0	2286	222	175	1162	0	
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:	199	0	246	0	0	0	0	2286	222	175	1162	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.73	0.27	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	4375	425	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.07	0.00	0.15	0.00	0.00	0.00	0.00	0.52	0.52	0.11	0.36	0.00	
Crit Moves:			****					****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 Graham Rd/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.773
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	61	Level Of Service:	C

Street Name:	Graham Rd							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	0	0	0	0	0	0	2	0	1
Volume Module:													
Base Vol:	18	0	23	0	0	0	0	2000	48	36	1177	0	
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:	18	0	23	0	0	0	0	2000	48	36	1177	0	
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:	18	0	23	0	0	0	0	2000	48	36	1177	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	18	0	23	0	0	0	0	2000	48	36	1177	0	
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:	18	0	23	0	0	0	0	2000	48	36	1177	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.44	0.00	0.56	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	702	0	898	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.63	0.03	0.02	0.37	0.00	
Crit Moves:	****							****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #12 Rivergrade Rd/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.889
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	103	Level Of Service:	D

Street Name:	Rivergrade Rd						Live Oak Ave					
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:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1
Volume Module:												
Base Vol:	114	71	398	28	24	158	196	1727	38	90	847	6
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:	114	71	398	28	24	158	196	1727	38	90	847	6
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:	114	71	398	28	24	158	196	1727	38	90	847	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	114	71	398	28	24	158	196	1727	38	90	847	6
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:	114	71	398	28	24	158	196	1727	38	90	847	6
OvlAdjVol:			308									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1600	1600	1600	1600	3200	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.07	0.04	0.25	0.02	0.01	0.10	0.12	0.54	0.02	0.06	0.26	0.00
OvlAdjV/S:			0.19									
Crit Moves:			****	****				****		****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #14 Stewart Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.875
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	89	Level Of Service:	D

Street Name:	Stewart Ave							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Permitted			Permitted			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	1	0	1	0	1	1	0	2	0	1	1	0	2	0	1
Volume Module:													
Base Vol:	79	27	15	25	113	13	63	2007	298	44	828	7	
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:	79	27	15	25	113	13	63	2007	298	44	828	7	
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:	79	27	15	25	113	13	63	2007	298	44	828	7	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	79	27	15	25	113	13	63	2007	298	44	828	7	
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:	79	27	15	25	113	13	63	2007	298	44	828	7	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.66	0.22	0.12	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	
Final Sat.:	1045	357	198	1600	1600	1600	1600	3200	1600	1600	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.05	0.08	0.08	0.02	0.07	0.01	0.04	0.63	0.19	0.03	0.26	0.00	
Crit Moves:	****				****			****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #15 Baldwin Park/Arrow Hwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.801
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	67	Level Of Service:	D

Street Name:	Baldwin Park							Arrow Hwy					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 1	0	1 0	0 1	0	1 0	2 0	1	1 0	2 0	1	
Volume Module:													
Base Vol:	102	5	94	23	7	36	23	1471	569	286	720	23	
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:	102	5	94	23	7	36	23	1471	569	286	720	23	
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:	102	5	94	23	7	36	23	1471	569	286	720	23	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	102	5	94	23	7	36	23	1471	569	286	720	23	
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:	102	5	94	23	7	36	23	1471	569	286	720	23	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.05	0.95	1.00	0.16	0.84	1.00	2.00	1.00	1.00	2.00	1.00	
Final Sat.:	2880	81	1519	1600	260	1340	1600	3200	1600	1600	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.04	0.06	0.06	0.01	0.03	0.03	0.01	0.46	0.36	0.18	0.23	0.01	
Crit Moves:	****				****			****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #16 Arrow Highway/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.972
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	179	Level Of Service:	E

Street Name:	Arrow Highway							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Permitted			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0 0	0	2 0	0 0	1	1 0	2 0	0	0 0	2 0	2	
Volume Module:													
Base Vol:	0	0	0	1182	0	133	56	1529	0	0	888	537	
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	1182	0	133	56	1529	0	0	888	537	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	1182	0	133	56	1529	0	0	888	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	1182	0	133	56	1529	0	0	888	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	1182	0	133	56	1529	0	0	888	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	2.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.41	0.00	0.08	0.04	0.48	0.00	0.00	0.28	0.00	
Crit Moves:				****				****		****			

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #17 Maine Ave/Arrow Hwy

Cycle (sec):	120	Critical Vol./Cap.(X):	0.896
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	107	Level Of Service:	D

Street Name:	Maine Ave							Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2	0	0	0	1	0	0	0	0	0	0	0	
Volume Module:													
Base Vol:	273	0	107	0	0	0	0	2160	537	68	1200	0	
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:	273	0	107	0	0	0	0	2160	537	68	1200	0	
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:	273	0	107	0	0	0	0	2160	537	68	1200	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	273	0	107	0	0	0	0	2160	537	68	1200	0	
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:	273	0	107	0	0	0	0	2160	537	68	1200	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	3.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	4800	0	
Capacity Analysis Module:													
Vol/Sat:	0.09	0.00	0.07	0.00	0.00	0.00	0.00	0.68	0.34	0.04	0.25	0.00	
Crit Moves:	****							****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #18 Avenida Barbosa/Buena Vista St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.604
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	40	Level Of Service:	B

Street Name:	Avenida Barbosa								Buena Vista St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 1	0	0 2	0	0	1! 0	0	1	0 2	0 1	2 0	1 0 1
Volume Module:												
Base Vol:	16	126	405	28	194	6	6	22	89	626	18	24
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:	16	126	405	28	194	6	6	22	89	626	18	24
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:	16	126	405	28	194	6	6	22	89	626	18	24
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	16	126	405	28	194	6	6	22	89	626	18	24
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:	16	126	405	28	194	6	6	22	89	626	18	24
OvlAdjVol:			0									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00
Lanes:	0.11	0.89	2.00	0.12	0.85	0.03	1.00	2.00	1.00	2.00	1.00	1.00
Final Sat.:	180	1420	3200	196	1361	42	1600	3200	1600	2880	1600	1600
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.13	0.14	0.14	0.14	0.00	0.01	0.06	0.22	0.01	0.02
OvlAdjV/S:			0.00									
Crit Moves:	****					****			****	****		

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #19 Avenida Barbosa/Arrow Highway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.749
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	57	Level Of Service:	C

Street Name:	Avenida Barbosa							Arrow Highway					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Permitted			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0 0	0	2 0	0 0	1	1 0	2 0	0	0 0	2 0	1	
Volume Module:													
Base Vol:	0	0	0	477	0	408	260	947	0	0	740	248	
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	477	0	408	260	947	0	0	740	248	
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	477	0	408	260	947	0	0	740	248	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	477	0	408	260	947	0	0	740	248	
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	477	0	408	260	947	0	0	740	248	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	1.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.17	0.00	0.26	0.16	0.30	0.00	0.00	0.23	0.16	
Crit Moves:						****	****				****		

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Scenario Report

Scenario:	Cumul WP PM
Command:	Default Command
Volume:	Cumul WP PM
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Project
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Average Delay (sec/veh): 359.8 Worst Case Level Of Service: F[7079.3]

Street Name:	Dwy 1						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0
Volume Module:												
Base Vol:	90	0	111	0	0	0	0	2341	102	74	1244	0
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:	90	0	111	0	0	0	0	2341	102	74	1244	0
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:	90	0	111	0	0	0	0	2341	102	74	1244	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	90	0	111	0	0	0	0	2341	102	74	1244	0
Critical Gap Module:												
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	3162	3784	831	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	2443	xxxx	xxxxx
Potent Cap.:	8	4	317	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	195	xxxx	xxxxx
Move Cap.:	6	3	317	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	195	xxxx	xxxxx
Volume/Cap:	15.12	0.00	0.35	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.38	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	41.3	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	34.3	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	D	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	13	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	26.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	7079	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	*	*	*	*	*	*	*	*	*
ApproachDel:	7079.3			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	F			*			*			*		

Note: Queue reported is the distance per lane in feet.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Average Delay (sec/veh): 434.6 Worst Case Level Of Service: F[8529.7]

Street Name:	Dwy 3									Live Oak Ave							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	1!	0	0	0	0	0	0	0	0	0	2	1	0	1	0	2	0	0
Volume Module:																				
Base Vol:	89	0	116		0	0		0		0	0	2411		100		80	1235		0	
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		1.00	
Initial Bse:	89	0	116		0	0		0		0	0	2411		100		80	1235		0	
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		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		1.00	
PHF Volume:	89	0	116		0	0		0		0	0	2411		100		80	1235		0	
Reduct Vol:	0	0	0		0	0		0		0	0	0		0		0	0		0	
FinalVolume:	89	0	116		0	0		0		0	0	2411		100		80	1235		0	
Critical Gap Module:																				
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx							
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx							
Capacity Module:																				
Cnflict Vol:	3239	3856	854	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		2511	xxxx	xxxxx							
Potent Cap.:	7	4	306	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		183	xxxx	xxxxx							
Move Cap.:	5	2	306	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		183	xxxx	xxxxx							
Volume/Cap:	18.11	0.00	0.38	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx		0.44	xxxx	xxxx							
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		50.2	xxxx	xxxxx							
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		39.0	xxxx	xxxxx							
LOS by Move:	*	*	*	*	*	*	*	*	*		E	*	*							
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx		11	xxxxx		xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx		27.1	xxxxx		xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx		8530	xxxxx		xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*		F	*		*	*	*			*	*	*			*	*	*		
ApproachDel:	8529.7					xxxxxx					xxxxxx					xxxxxx				
ApproachLOS:	F					*					*					*				

Note: Queue reported is the distance per lane in feet.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #11 Live Oak Ln/Live Oak Ave

Average Delay (sec/veh): 2.7 Worst Case Level Of Service: F[65.2]

Street Name:	Live Oak Ln									Live Oak Ave								
Approach:	North Bound					South Bound				East Bound					West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0	18	0	103	60	1936	0	0	1099	15								
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	18	0	103	60	1936	0	0	1099	15								
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	18	0	103	60	1936	0	0	1099	15								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	0	0	0	18	0	103	60	1936	0	0	1099	15								
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	2195	3163	557	1114	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	xxxxx	39	11	479	634	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	xxxxx	37	10	479	634	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	xxxx	0.49	0.00	0.22	0.09	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	7.8	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	11.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	*	B	*	*	*	*	*								
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	171	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	4.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	65.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	F	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx				65.2		xxxxxx				xxxxxx									
ApproachLOS:	*				F		*				*									

Note: Queue reported is the distance per lane in feet.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #13 Commerce Dr/Live Oak Ave

Average Delay (sec/veh): 7.2 Worst Case Level Of Service: F[98.8]

Street Name:	Commerce Dr									Live Oak Ave							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	0	0	1	0	0	0	0	0	0	1	1	1	0	1	0	2	0	0
Volume Module:																				
Base Vol:	26		0		213	0		0		0	2		2143		6	23		915		0
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	26		0		213	0		0		0	2		2143		6	23		915		0
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	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	26		0		213	0		0		0	2		2143		6	23		915		0
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
FinalVolume:	26		0		213	0		0		0	2		2143		6	23		915		0
Critical Gap Module:																				
Critical Gp:	6.8	xxxx			6.9	xxxxx	xxxx	xxxxx			4.1	xxxx	xxxxx			4.1	xxxx	xxxxx		
FollowUpTim:	3.5	xxxx			3.3	xxxxx	xxxx	xxxxx			2.2	xxxx	xxxxx			2.2	xxxx	xxxxx		
Capacity Module:																				
Cnflict Vol:	2654	xxxx			717	xxxx	xxxx	xxxxx			915	xxxx	xxxxx			2149	xxxx	xxxxx		
Potent Cap.:	19	xxxx			376	xxxx	xxxx	xxxxx			754	xxxx	xxxxx			254	xxxx	xxxxx		
Move Cap.:	18	xxxx			376	xxxx	xxxx	xxxxx			754	xxxx	xxxxx			254	xxxx	xxxxx		
Volume/Cap:	1.46	xxxx			0.57	xxxx	xxxx	xxxx			0.00	xxxx	xxxx			0.09	xxxx	xxxx		
Level Of Service Module:																				
2Way95thQ:	92.0	xxxx			84.0	xxxx	xxxx	xxxxx			0.2	xxxx	xxxxx			7.4	xxxx	xxxxx		
Control Del:	692.5	xxxx			26.3	xxxxx	xxxx	xxxxx			9.8	xxxx	xxxxx			20.6	xxxx	xxxxx		
LOS by Move:	F		*		D	*	*	*			A	*	*			C	*	*		
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			0.0	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			9.8	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*		*		*	*	*	*			A	*	*			*	*	*		
ApproachDel:			98.8					xxxxxx					xxxxxx					xxxxxx		
ApproachLOS:			F					*					*					*		

Note: Queue reported is the distance per lane in feet.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1188	1341	760	1314	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	0.95	1.00	1.00	0.95		
Frt	1.00	1.00	1.00	1.00		
Flt Protected	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3610	1900	1805	3610		
Flt Permitted	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3610	1900	1805	3610		
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1277	1442	817	1413	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1277	1442	817	1413	0	0
Turn Type	NA	Free	Prot	NA		
Protected Phases	2		1	6		
Permitted Phases		Free				
Actuated Green, G (s)	42.6	100.0	49.4	100.0		
Effective Green, g (s)	42.6	100.0	49.4	100.0		
Actuated g/C Ratio	0.43	1.00	0.49	1.00		
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	1537	1900	891	3610		
v/s Ratio Prot	c0.35		c0.45	0.39		
v/s Ratio Perm		0.76				
v/c Ratio	0.83	0.76	0.92	0.39		
Uniform Delay, d1	25.5	0.0	23.4	0.0		
Progression Factor	1.00	1.00	1.20	1.00		
Incremental Delay, d2	5.4	2.9	13.7	0.3		
Delay (s)	30.9	2.9	41.8	0.3		
Level of Service	C	A	D	A		
Approach Delay (s)	16.0			15.5	0.0	
Approach LOS	B			B	A	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1187	0	0	1188	0	0	0	841	0	0	900
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	0	1224	0	0	1225	0	0	0	867	0	0	928
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		438			227							
pX, platoon unblocked	0.85			0.68			0.76	0.76	0.68	0.76	0.76	0.85
vC, conflicting volume	1225			1224			2764	2448	612	2704	2448	612
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	907			387			1783	1366	0	1703	1366	185
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			0	100	0	0	100	0
cM capacity (veh/h)	644			804			0	112	742	0	112	706

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	612	612	612	612	867	928
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	867	928
cSH	1700	1700	1700	1700	742	706
Volume to Capacity	0.36	0.36	0.36	0.36	1.17	1.31
Queue Length 95th (ft)	0	0	0	0	687	928
Control Delay (s)	0.0	0.0	0.0	0.0	111.1	170.4
Lane LOS					F	F
Approach Delay (s)	0.0		0.0		111.1	170.4
Approach LOS					F	F

Intersection Summary			
Average Delay	60.0		
Intersection Capacity Utilization	95.2%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1423	463	0	479	533
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5187	3610		1805	1615
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5187	3610		1805	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1547	503	0	521	579
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	1547	503	0	521	579
Turn Type		NA	NA		Prot	Free
Protected Phases		2	6		4	
Permitted Phases						Free
Actuated Green, G (s)		44.0	44.0		48.0	100.0
Effective Green, g (s)		44.0	44.0		48.0	100.0
Actuated g/C Ratio		0.44	0.44		0.48	1.00
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		2282	1588		866	1615
v/s Ratio Prot		c0.30	0.14		c0.29	
v/s Ratio Perm						0.36
v/c Ratio		0.68	0.32		0.60	0.36
Uniform Delay, d1		22.3	18.2		19.0	0.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.6	0.5		3.1	0.6
Delay (s)		24.0	18.7		22.1	0.6
Level of Service		C	B		C	A
Approach Delay (s)		24.0	18.7		10.8	
Approach LOS		C	B		B	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1548	58	0	463	417	0	0	41	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	1647	62	0	493	444	0	0	44	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		537										
pX, platoon unblocked				0.74			0.74	0.74	0.74	0.74	0.74	
vC, conflicting volume	493			1709			1893	2139	823	1360	2201	246
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	493			1250			1500	1834	50	777	1917	246
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	94	100	100	100
cM capacity (veh/h)	1081			416			63	57	748	202	50	760

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	823	823	62	246	246	444	44
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	62	0	0	444	44
cSH	1700	1700	1700	1700	1700	1700	748
Volume to Capacity	0.48	0.48	0.04	0.14	0.14	0.26	0.06
Queue Length 95th (ft)	0	0	0	0	0	0	5
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.1
Lane LOS							B
Approach Delay (s)	0.0			0.0			10.1
Approach LOS							B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Scenario Report

Scenario:	Cumul WP SAT
Command:	Default Command
Volume:	Cumul WP SAT
Geometry:	Cumul
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Peck Rd-Myrtle Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.559
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	37	Level Of Service:	A

Street Name:	Peck Rd-Myrtle							Live Oak Ave					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	1 0	2 1	0	1 0	2 1	0	1 0	2 0	1	1 0	2 0	1	
Volume Module:													
Base Vol:	168	504	147	70	451	149	144	463	151	134	446	45	
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:	168	504	147	70	451	149	144	463	151	134	446	45	
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:	168	504	147	70	451	149	144	463	151	134	446	45	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	168	504	147	70	451	149	144	463	151	134	446	45	
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:	168	504	147	70	451	149	144	463	151	134	446	45	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	1.00	2.32	0.68	1.00	2.26	0.74	1.00	2.00	1.00	1.00	2.00	1.00	
Final Sat.:	1600	3716	1084	1600	3608	1192	1600	3200	1600	1600	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.11	0.14	0.14	0.04	0.13	0.13	0.09	0.14	0.09	0.08	0.14	0.03	
Crit Moves:	****				****		****				****		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Myrtle Ave/Longden Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.595
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	41	Level Of Service:	A

Street Name:	Myrtle Ave						Longden Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	1 0	1	0 1	0 1	0
Volume Module:												
Base Vol:	64	613	10	166	608	104	106	212	57	51	236	193
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:	64	613	10	166	608	104	106	212	57	51	236	193
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:	64	613	10	166	608	104	106	212	57	51	236	193
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	64	613	10	166	608	104	106	212	57	51	236	193
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:	64	613	10	166	608	104	106	212	57	51	236	193
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	1.00	2.00	1.00	1.00	2.00	1.00	0.67	1.33	1.00	0.21	0.99	0.80
Final Sat.:	1600	3200	1600	1600	3200	1600	1067	2133	1600	340	1573	1287
Capacity Analysis Module:												
Vol/Sat:	0.04	0.19	0.01	0.10	0.19	0.07	0.07	0.10	0.04	0.03	0.15	0.15
Crit Moves:		****		****			****				****	

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Longden Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.451
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	31	Level Of Service:	A

Street Name:	Longden Ave							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	1	1	0	0	1	1	0	2	1
Volume Module:													
Base Vol:	8	8	9	392	6	12	10	641	9	11	656	438	
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:	8	8	9	392	6	12	10	641	9	11	656	438	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	8	8	9	392	6	12	10	641	9	11	656	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	8	8	9	392	6	12	10	641	9	11	656	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	8	8	9	392	6	12	10	641	9	11	656	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.32	0.32	0.36	1.97	0.03	1.00	1.00	2.96	0.04	1.00	2.00	2.00	
Final Sat.:	512	512	576	3152	48	1600	1600	4734	66	1600	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.02	0.02	0.02	0.12	0.12	0.01	0.01	0.14	0.14	0.01	0.21	0.00	
Crit Moves:		****		****			****				****		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Arrow Hwy/Live Oak Ave

Cycle (sec):	110	Critical Vol./Cap.(X):	0.630
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	43	Level Of Service:	B

Street Name:	Arrow Hwy							Live Oak Ave					
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:	Ignore			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	2 0	2	2 0	2 0	0	0 0	0 0	0	2 0	0 0	1	
Volume Module:													
Base Vol:	0	386	674	590	498	0	0	0	0	614	0	570	
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	386	674	590	498	0	0	0	0	614	0	570	
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	386	0	590	498	0	0	0	0	614	0	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	386	0	590	498	0	0	0	0	614	0	0	
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	386	0	590	498	0	0	0	0	614	0	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	
Lanes:	0.00	2.00	2.00	2.00	2.00	0.00	0.00	0.00	0.00	2.00	0.00	1.00	
Final Sat.:	0	3200	3200	2880	3200	0	0	0	0	2880	0	1600	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.12	0.00	0.20	0.16	0.00	0.00	0.00	0.00	0.21	0.00	0.00	
Crit Moves:		****		****						****			

Irwindale Regional Shopping Center
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #6 Speedway Dr-Dwy 2/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.826
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	73	Level Of Service:	D

Street Name:	Speedway Dr-Dwy 2							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0	
Volume Module:													
Base Vol:	342	0	360	0	0	0	0	961	374	356	922	0	
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:	342	0	360	0	0	0	0	961	374	356	922	0	
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:	342	0	360	0	0	0	0	961	374	356	922	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	342	0	360	0	0	0	0	961	374	356	922	0	
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:	342	0	360	0	0	0	0	961	374	356	922	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.16	0.84	1.00	2.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3455	1345	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.12	0.00	0.23	0.00	0.00	0.00	0.00	0.28	0.28	0.22	0.29	0.00	
Crit Moves:			****					****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 Graham Rd/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.357
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Street Name:	Graham Rd							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	1! 0	0	0	0	0	0	0	0	0	2	0 1
Volume Module:													
Base Vol:	39	0	4	0	0	0	0	628	27	16	735	0	
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:	39	0	4	0	0	0	0	628	27	16	735	0	
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:	39	0	4	0	0	0	0	628	27	16	735	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	39	0	4	0	0	0	0	628	27	16	735	0	
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:	39	0	4	0	0	0	0	628	27	16	735	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	0.91	0.00	0.09	0.00	0.00	0.00	0.00	2.00	1.00	1.00	2.00	0.00	
Final Sat.:	1451	0	149	0	0	0	0	3200	1600	1600	3200	0	
Capacity Analysis Module:													
Vol/Sat:	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.20	0.02	0.01	0.23	0.00	
Crit Moves:	****						****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #12 Rivergrade Rd/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.356
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	28	Level Of Service:	A

Street Name:	Rivergrade Rd							Live Oak Ave					
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:	Ovl			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	1 0	1 0	1	1 0	2 0	1	1 0	2 0	1	1 0	2 0	1	
Volume Module:													
Base Vol:	42	41	98	12	20	80	21	528	33	51	556	8	
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:	42	41	98	12	20	80	21	528	33	51	556	8	
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:	42	41	98	12	20	80	21	528	33	51	556	8	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	42	41	98	12	20	80	21	528	33	51	556	8	
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:	42	41	98	12	20	80	21	528	33	51	556	8	
OvlAdjVol:			47										
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
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:	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	
Final Sat.:	1600	1600	1600	1600	3200	1600	1600	3200	1600	1600	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.03	0.03	0.06	0.01	0.01	0.05	0.01	0.17	0.02	0.03	0.17	0.01	
OvlAdjV/S:			0.03										
Crit Moves:	****					****		****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #14 Stewart Ave/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.397
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	28	Level Of Service:	A

Street Name:	Stewart Ave						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0	0	1! 0	0	1	0	1	0	1	1	0	2
Volume Module:												
Base Vol:	80	36	29	2	60	3	6	599	64	36	530	5
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:	80	36	29	2	60	3	6	599	64	36	530	5
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:	80	36	29	2	60	3	6	599	64	36	530	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	80	36	29	2	60	3	6	599	64	36	530	5
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:	80	36	29	2	60	3	6	599	64	36	530	5
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
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:	0.55	0.25	0.20	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	883	397	320	1600	1600	1600	1600	3200	1600	1600	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.05	0.09	0.09	0.00	0.04	0.00	0.00	0.19	0.04	0.02	0.17	0.00
Crit Moves:	****				****			****		****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #15 Baldwin Park/Arrow Hwy

Cycle (sec):	100	Critical Vol./Cap.(X):	0.484
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	32	Level Of Service:	A

Street Name:	Baldwin Park							Arrow Hwy					
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:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 1	0	1 0	0 1	0	1 0	2 0	1	1 0	2 0	1	
Volume Module:													
Base Vol:	81	0	157	0	6	0	0	538	91	188	518	0	
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:	81	0	157	0	6	0	0	538	91	188	518	0	
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:	81	0	157	0	6	0	0	538	91	188	518	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	81	0	157	0	6	0	0	538	91	188	518	0	
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:	81	0	157	0	6	0	0	538	91	188	518	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	1.00	1.00	0.00	1.00	2.00	1.00	1.00	2.00	1.00	
Final Sat.:	2880	0	1600	1600	1600	0	1600	3200	1600	1600	3200	1600	
Capacity Analysis Module:													
Vol/Sat:	0.03	0.00	0.10	0.00	0.00	0.00	0.00	0.17	0.06	0.12	0.16	0.00	
Crit Moves:			****	****				****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #16 Arrow Highway/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.466
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	32	Level Of Service:	A

Street Name:	Arrow Highway							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R	
Control:	Split Phase			Split Phase			Permitted			Permitted			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0 0	0	2 0	0 0	1	1 0	2 0	0	0 0	2 0	2	
Volume Module:													
Base Vol:	0	0	0	383	0	70	79	622	0	0	641	481	
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	383	0	70	79	622	0	0	641	481	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	383	0	70	79	622	0	0	641	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	383	0	70	79	622	0	0	641	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	383	0	70	79	622	0	0	641	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.00	2.00	2.00	
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	0	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.13	0.00	0.04	0.05	0.19	0.00	0.00	0.20	0.00	
Crit Moves:				****			****				****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #17 Maine Ave/Arrow Hwy

Cycle (sec):	120	Critical Vol./Cap.(X):	0.487
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	A

Street Name:	Maine Ave							Arrow Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	2 0	0 0	1	0 0	0 0	0	0 0	2 0	1	1 0	3 0	0	
Volume Module:													
Base Vol:	235	0	112	0	0	0	0	822	195	104	890	0	
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:	235	0	112	0	0	0	0	822	195	104	890	0	
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:	235	0	112	0	0	0	0	822	195	104	890	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	235	0	112	0	0	0	0	822	195	104	890	0	
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:	235	0	112	0	0	0	0	822	195	104	890	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	1.00	1.00	3.00	0.00	
Final Sat.:	2880	0	1600	0	0	0	0	3200	1600	1600	4800	0	
Capacity Analysis Module:													
Vol/Sat:	0.08	0.00	0.07	0.00	0.00	0.00	0.00	0.26	0.12	0.07	0.19	0.00	
Crit Moves:	****							****		****			

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #18 Avenida Barbosa/Buena Vista St

Cycle (sec):	100	Critical Vol./Cap.(X):	0.368
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	27	Level Of Service:	A

Street Name:	Avenida Barbosa							Buena Vista St					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R	
Control:	Split Phase			Split Phase			Protected			Protected			
Rights:	Ovl			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 1	0 0	2	0 0	0 1	0	1 0	2 0	1	2 0	1 0	1	
Volume Module:													
Base Vol:	83	91	206	0	68	1	2	13	80	191	28	15	
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:	83	91	206	0	68	1	2	13	80	191	28	15	
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:	83	91	206	0	68	1	2	13	80	191	28	15	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	83	91	206	0	68	1	2	13	80	191	28	15	
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:	83	91	206	0	68	1	2	13	80	191	28	15	
OvlAdjVol:			0										
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	
Lanes:	0.48	0.52	2.00	0.00	0.99	0.01	1.00	2.00	1.00	2.00	1.00	1.00	
Final Sat.:	763	837	3200	0	1577	23	1600	3200	1600	2880	1600	1600	
Capacity Analysis Module:													
Vol/Sat:	0.11	0.11	0.06	0.00	0.04	0.04	0.00	0.00	0.05	0.07	0.02	0.01	
OvlAdjV/S:			0.00										
Crit Moves:	****				****				****	****			

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #19 Avenida Barbosa/Arrow Highway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.632
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	43	Level Of Service:	B

Street Name:	Avenida Barbosa							Arrow Highway					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Protected			Permitted			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0	0	0	0	0	2	0	0	0	1	1	0	2	0	0	0	1	1	0	1
Volume Module:																				
Base Vol:	0	0	0	153	0	192	213	689	0	1	891	191								
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	153	0	192	213	689	0	1	891	191								
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	153	0	192	213	689	0	1	891	191								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	0	0	0	153	0	192	213	689	0	1	891	191								
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	153	0	192	213	689	0	1	891	191								
Saturation Flow Module:																				
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600								
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	2.00	0.00	0.01	1.99	1.00								
Final Sat.:	0	0	0	2880	0	1600	1600	3200	0	4	3196	1600								
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00	0.05	0.00	0.12	0.13	0.22	0.00	0.00	0.28	0.12								
Crit Moves:						****	****				****									

Irwindale Regional Shopping Center
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Scenario Report

Scenario:	Cumul WP SAT
Command:	Default Command
Volume:	Cumul WP SAT
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Average Delay (sec/veh): 160.3 Worst Case Level Of Service: F[1515.1]

Street Name:	Dwy 1									Live Oak Ave						
Approach:	North Bound			South Bound			East Bound			West Bound						
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R				
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled						
Rights:	Include			Include			Include			Include						
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	2 1	0	1 0	2 0	0				
Volume Module:																
Base Vol:	149	0	149	0	0	0	0	1122	162	150	1098	0				
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:	149	0	149	0	0	0	0	1122	162	150	1098	0				
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:	149	0	149	0	0	0	0	1122	162	150	1098	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
FinalVolume:	149	0	149	0	0	0	0	1122	162	150	1098	0				
Critical Gap Module:																
Critical Gp:	6.8	6.5	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx				
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	2052	2601	455	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1284	xxxx	xxxxx				
Potent Cap.:	49	25	558	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	547	xxxx	xxxxx				
Move Cap.:	39	18	558	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	547	xxxx	xxxxx				
Volume/Cap:	3.84	0.00	0.27	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.27	xxxx	xxxx				
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	27.7	xxxx	xxxxx				
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	14.0	xxxx	xxxxx				
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*				
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT				
Shared Cap.:	xxxx	73	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	31.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd ConDel:	xxxxx	1515	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	F	*	*	*	*	*	*	*	*	*	*				
ApproachDel:	1515.1			xxxxxx			xxxxxx			xxxxxx						
ApproachLOS:	F			*			*			*						

Note: Queue reported is the distance per lane in feet.

Irwindale Regional Shopping Center
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Average Delay (sec/veh): 173.6 Worst Case Level Of Service: F[1663.7]

Street Name:	Dwy 3									Live Oak Ave							
Approach:	North Bound			South Bound						East Bound					West Bound		
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	1!	0	0	0	0	0	0	0	0	0	2	1	0	1	0	2	0	0
Volume Module:																				
Base Vol:	143		0	159		0		0		0	0	1154		160		156	1136		0	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	143		0	159		0		0		0	0	1154		160		156	1136		0	
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	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	143		0	159		0		0		0	0	1154		160		156	1136		0	
Reduct Vol:	0		0	0		0		0		0	0	0		0		0	0		0	
FinalVolume:	143		0	159		0		0		0	0	1154		160		156	1136		0	
Critical Gap Module:																				
Critical Gp:	6.8	6.5		6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx						
FollowUpTim:	3.5	4.0		3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx						
Capacity Module:																				
Cnflict Vol:	2114	2682		465	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1314	xxxx	xxxxx						
Potent Cap.:	45	22		550	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		533	xxxx	xxxxx						
Move Cap.:	35	16		550	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		533	xxxx	xxxxx						
Volume/Cap:	4.13	0.00		0.29	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx		0.29	xxxx	xxxx						
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx		xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		30.3	xxxx	xxxxx						
Control Del:	xxxxx	xxxx		xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		14.5	xxxx	xxxxx						
LOS by Move:	*	*		*	*	*	*	*	*	*		B	*	*						
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx		68	xxxxx		xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx		32.7	xxxxx		xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx		1664	xxxxx		xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*		F	*		*	*	*			*	*	*			*	*	*		
ApproachDel:	1663.7					xxxxxx					xxxxxx					xxxxxx				
ApproachLOS:	F					*					*					*				

Note: Queue reported is the distance per lane in feet.

Irwindale Regional Shopping Center
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #11 Live Oak Ln/Live Oak Ave

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: B[12.9]

Street Name:	Live Oak Ln									Live Oak Ave								
Approach:	North Bound					South Bound				East Bound					West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	0	0	0	1!	0	0	1	0	2	0	0	0	0	1	1	0
Volume Module:																				
Base Vol:	0	0	0	9	0	99	55	578	0	0	646	36								
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	9	0	99	55	578	0	0	646	36								
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	9	0	99	55	578	0	0	646	36								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	0	0	0	9	0	99	55	578	0	0	646	36								
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	6.5	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	1063	1352	341	682	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	xxxxx	222	151	661	920	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	xxxxx	211	142	661	920	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	xxxx	0.04	0.00	0.15	0.06	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	4.8	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*								
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	561	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	12.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	B	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx				12.9		xxxxxx				xxxxxx									
ApproachLOS:	*				B		*				*									

Note: Queue reported is the distance per lane in feet.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #13 Commerce Dr/Live Oak Ave

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[12.7]

Street Name:	Commerce Dr									Live Oak Ave							
Approach:	North Bound				South Bound				East Bound				West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	0	0	1	0	0	0	0	0	0	1	1	1	0	1	0	2	0	0
Volume Module:																				
Base Vol:	4	0	9			0	0	0			2	649	6			14	582	0		
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:	4	0	9			0	0	0			2	649	6			14	582	0		
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:	4	0	9			0	0	0			2	649	6			14	582	0		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
FinalVolume:	4	0	9			0	0	0			2	649	6			14	582	0		
Critical Gap Module:																				
Critical Gp:	6.8	xxxx	6.9	xxxxx	xxxx	xxxxx					4.1	xxxx	xxxxx			4.1	xxxx	xxxxx		
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx					2.2	xxxx	xxxxx			2.2	xxxx	xxxxx		
Capacity Module:																				
Cnflict Vol:	975	xxxx	219	xxxx	xxxx	xxxxx					582	xxxx	xxxxx			655	xxxx	xxxxx		
Potent Cap.:	252	xxxx	791	xxxx	xxxx	xxxxx					1002	xxxx	xxxxx			942	xxxx	xxxxx		
Move Cap.:	249	xxxx	791	xxxx	xxxx	xxxxx					1002	xxxx	xxxxx			942	xxxx	xxxxx		
Volume/Cap:	0.02	xxxx	0.01	xxxx	xxxx	xxxx					0.00	xxxx	xxxx			0.01	xxxx	xxxx		
Level Of Service Module:																				
2Way95thQ:	1.2	xxxx	0.9	xxxx	xxxx	xxxxx					0.1	xxxx	xxxxx			1.1	xxxx	xxxxx		
Control Del:	19.7	xxxx	9.6	xxxxx	xxxx	xxxxx					8.6	xxxx	xxxxx			8.9	xxxx	xxxxx		
LOS by Move:	C	*	A	*	*	*					A	*	*			A	*	*		
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx					xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx					0.0	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx					8.6	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*	*	*	*	*	*					A	*	*			*	*	*		
ApproachDel:	12.7			xxxxxx							xxxxxx					xxxxxx				
ApproachLOS:	B			*							*					*				

Note: Queue reported is the distance per lane in feet.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	249	1057	524	1285	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0		
Lane Util. Factor	0.95	1.00	1.00	0.95		
Frt	1.00	0.85	1.00	1.00		
Flt Protected	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3610	1615	1805	3610		
Flt Permitted	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3610	1615	1805	3610		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	262	1113	552	1353	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	262	1113	552	1353	0	0
Turn Type	NA	Free	Prot	NA		
Protected Phases	2		1	6		
Permitted Phases		Free				
Actuated Green, G (s)	24.0	100.0	68.0	100.0		
Effective Green, g (s)	24.0	100.0	68.0	100.0		
Actuated g/C Ratio	0.24	1.00	0.68	1.00		
Clearance Time (s)	4.0		4.0	4.0		
Vehicle Extension (s)	3.0		3.0	3.0		
Lane Grp Cap (vph)	866	1615	1227	3610		
v/s Ratio Prot	0.07		0.31	0.37		
v/s Ratio Perm		c0.69				
v/c Ratio	0.30	0.69	0.45	0.37		
Uniform Delay, d1	31.1	0.0	7.4	0.0		
Progression Factor	1.00	1.00	0.77	1.00		
Incremental Delay, d2	0.9	2.4	0.3	0.3		
Delay (s)	32.0	2.4	5.9	0.3		
Level of Service	C	A	A	A		
Approach Delay (s)	8.1			1.9	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM 2000 Control Delay	4.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	270	0	0	767	0	0	0	384	0	0	922
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	0	297	0	0	843	0	0	0	422	0	0	1013
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		438			227							
pX, platoon unblocked	0.92			0.95			0.94	0.94	0.95	0.94	0.94	0.92
vC, conflicting volume	843			297			1731	1140	148	1413	1140	421
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	654			155			1420	793	0	1083	793	195
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			0	100	59	100	100	0
cM capacity (veh/h)	867			1366			0	305	1037	98	305	753

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	148	148	421	421	422	1013
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	422	1013
cSH	1700	1700	1700	1700	1037	753
Volume to Capacity	0.09	0.09	0.25	0.25	0.41	1.34
Queue Length 95th (ft)	0	0	0	0	50	1040
Control Delay (s)	0.0	0.0	0.0	0.0	10.8	181.7
Lane LOS					B	F
Approach Delay (s)	0.0		0.0		10.8	181.7
Approach LOS					B	F

Intersection Summary			
Average Delay	73.3		
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	886	323	0	277	749
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		1.00	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5187	3610		1805	1615
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5187	3610		1805	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	933	340	0	292	788
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	933	340	0	292	788
Turn Type		NA	NA		Prot	Free
Protected Phases		2	6		4	
Permitted Phases						Free
Actuated Green, G (s)		45.0	45.0		47.0	100.0
Effective Green, g (s)		45.0	45.0		47.0	100.0
Actuated g/C Ratio		0.45	0.45		0.47	1.00
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		2334	1624		848	1615
v/s Ratio Prot		0.18	0.09		0.16	
v/s Ratio Perm						c0.49
v/c Ratio		0.40	0.21		0.34	0.49
Uniform Delay, d1		18.4	16.7		16.8	0.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.5	0.3		1.1	1.1
Delay (s)		19.0	17.0		17.9	1.1
Level of Service		B	B		B	A
Approach Delay (s)		19.0	17.0		5.6	
Approach LOS		B	B		A	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	528	56	0	316	273	0	0	23	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	562	60	0	336	290	0	0	24	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		537										
pX, platoon unblocked				0.96			0.96	0.96	0.96	0.96	0.96	
vC, conflicting volume	336			621			730	898	281	641	957	168
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	336			517			631	806	162	538	868	168
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	97	100	100	100
cM capacity (veh/h)	1234			1015			354	305	824	400	280	853

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	281	281	60	168	168	290	24
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	60	0	0	290	24
cSH	1700	1700	1700	1700	1700	1700	824
Volume to Capacity	0.17	0.17	0.04	0.10	0.10	0.17	0.03
Queue Length 95th (ft)	0	0	0	0	0	0	2
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.5
Lane LOS							A
Approach Delay (s)	0.0			0.0			9.5
Approach LOS							A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	24.6%	ICU Level of Service	A
Analysis Period (min)	15		

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Scenario Report

Scenario:	Exist NP AM
Command:	Default Command
Volume:	Exist NP AM
Geometry:	Exist
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.407
Loss Time (sec):	10	Average Delay (sec/veh):	17.2
Optimal Cycle:	43	Level Of Service:	B

Street Name:	Dwy 1							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R	
Control:	Split Phase			Split Phase			Permitted			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! 0	0	0	0	0	0	0	0	0	0	
Volume Module:													
Base Vol:	22	0	82	0	0	0	0	815	45	28	1098	0	
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:	22	0	82	0	0	0	0	815	45	28	1098	0	
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:	22	0	82	0	0	0	0	815	45	28	1098	0	
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:	22	0	82	0	0	0	0	815	45	28	1098	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	22	0	82	0	0	0	0	815	45	28	1098	0	
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:	22	0	82	0	0	0	0	815	45	28	1098	0	
Saturation Flow Module:													
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Adjustment:	0.89	1.00	0.89	1.00	1.00	1.00	1.00	0.90	0.90	0.95	0.95	1.00	
Lanes:	0.21	0.00	0.79	0.00	0.00	0.00	0.00	2.84	0.16	1.00	2.00	0.00	
Final Sat.:	356	0	1326	0	0	0	0	4876	269	1805	3610	0	
Capacity Analysis Module:													
Vol/Sat:	0.06	0.00	0.06	0.00	0.00	0.00	0.00	0.17	0.17	0.02	0.30	0.00	
Crit Moves:			****								****		
Green/Cycle:	0.10	0.00	0.10	0.00	0.00	0.00	0.00	0.28	0.28	0.51	0.80	0.00	
Volume/Cap:	0.59	0.00	0.59	0.00	0.00	0.00	0.00	0.59	0.59	0.03	0.38	0.00	
Delay/Veh:	48.1	0.0	48.1	0.0	0.0	0.0	0.0	31.6	31.6	12.0	3.1	0.0	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AdjDel/Veh:	48.1	0.0	48.1	0.0	0.0	0.0	0.0	31.6	31.6	12.0	3.1	0.0	
LOS by Move:	D	A	D	A	A	A	A	C	C	B	A	A	
HCM2kAvgQ:	4	0	4	0	0	0	0	8	8	0	5	0	

Note: Queue reported is the number of cars per lane.

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Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Scenario Report

Scenario:	Exist NP PM
Command:	Default Command
Volume:	Exist NP PM
Geometry:	Exist
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.515
Loss Time (sec):	10	Average Delay (sec/veh):	5.4
Optimal Cycle:	37	Level Of Service:	A

Street Name:	Dwy 1							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			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! 0	0	0	0	0	0	2	1	0	1	0	2	0	0
Volume Module:													
Base Vol:	7	0	60	0	0	0	0	2036	23	46	928	0	
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:	7	0	60	0	0	0	0	2036	23	46	928	0	
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:	7	0	60	0	0	0	0	2036	23	46	928	0	
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:	7	0	60	0	0	0	0	2036	23	46	928	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	7	0	60	0	0	0	0	2036	23	46	928	0	
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:	7	0	60	0	0	0	0	2036	23	46	928	0	
Saturation Flow Module:													
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Adjustment:	0.87	1.00	0.87	1.00	1.00	1.00	1.00	0.91	0.91	0.95	0.95	1.00	
Lanes:	0.10	0.00	0.90	0.00	0.00	0.00	0.00	2.97	0.03	1.00	2.00	0.00	
Final Sat.:	174	0	1488	0	0	0	0	5119	58	1805	3610	0	
Capacity Analysis Module:													
Vol/Sat:	0.04	0.00	0.04	0.00	0.00	0.00	0.00	0.40	0.40	0.03	0.26	0.00	
Crit Moves:			****					****		****			
Green/Cycle:	0.08	0.00	0.08	0.00	0.00	0.00	0.00	0.77	0.77	0.05	0.82	0.00	
Volume/Cap:	0.51	0.00	0.51	0.00	0.00	0.00	0.00	0.52	0.52	0.51	0.31	0.00	
Delay/Veh:	47.8	0.0	47.8	0.0	0.0	0.0	0.0	4.4	4.4	51.4	2.2	0.0	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AdjDel/Veh:	47.8	0.0	47.8	0.0	0.0	0.0	0.0	4.4	4.4	51.4	2.2	0.0	
LOS by Move:	D	A	D	A	A	A	A	A	A	D	A	A	
HCM2kAvgQ:	3	0	3	0	0	0	0	9	9	1	4	0	

Note: Queue reported is the number of cars per lane.

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	401	0	0	1451	0	0	0	366	0	0	384
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0				4.0			4.0
Lane Util. Factor		0.95			0.95				0.88			1.00
Frt		1.00			1.00				0.85			0.86
Flt Protected		1.00			1.00				1.00			1.00
Satd. Flow (prot)		3610			3610				2842			1644
Flt Permitted		1.00			1.00				1.00			1.00
Satd. Flow (perm)		3610			3610				2842			1644
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	427	0	0	1544	0	0	0	389	0	0	409
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	236	0	0	15
Lane Group Flow (vph)	0	427	0	0	1544	0	0	0	153	0	0	394
Turn Type		NA			NA				Perm			Perm
Protected Phases		4			8							
Permitted Phases									2			6
Actuated Green, G (s)		52.7			52.7				39.3			39.3
Effective Green, g (s)		52.7			52.7				39.3			39.3
Actuated g/C Ratio		0.53			0.53				0.39			0.39
Clearance Time (s)		4.0			4.0				4.0			4.0
Vehicle Extension (s)		3.0			3.0				3.0			3.0
Lane Grp Cap (vph)		1902			1902				1116			646
v/s Ratio Prot		0.12			c0.43							
v/s Ratio Perm									0.05			c0.24
v/c Ratio		0.22			0.81				0.14			0.61
Uniform Delay, d1		12.7			19.6				19.5			24.2
Progression Factor		0.18			0.63				1.00			1.00
Incremental Delay, d2		0.1			2.3				0.3			4.3
Delay (s)		2.3			14.6				19.7			28.5
Level of Service		A			B				B			C
Approach Delay (s)		2.3			14.6			19.7			28.5	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1062	0	0	969	0	0	0	642	0	0	660
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0				4.0			4.0
Lane Util. Factor		0.95			0.95				0.88			1.00
Frt		1.00			1.00				0.85			0.86
Flt Protected		1.00			1.00				1.00			1.00
Satd. Flow (prot)		3610			3610				2842			1644
Flt Permitted		1.00			1.00				1.00			1.00
Satd. Flow (perm)		3610			3610				2842			1644
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1095	0	0	999	0	0	0	662	0	0	680
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	17	0	0	14
Lane Group Flow (vph)	0	1095	0	0	999	0	0	0	645	0	0	666
Turn Type		NA			NA				Perm			Perm
Protected Phases		4			8							
Permitted Phases									2			6
Actuated Green, G (s)		36.1			36.1				55.9			55.9
Effective Green, g (s)		36.1			36.1				55.9			55.9
Actuated g/C Ratio		0.36			0.36				0.56			0.56
Clearance Time (s)		4.0			4.0				4.0			4.0
Vehicle Extension (s)		3.0			3.0				3.0			3.0
Lane Grp Cap (vph)		1303			1303				1588			918
v/s Ratio Prot		c0.30			0.28							
v/s Ratio Perm									0.23			c0.41
v/c Ratio		0.84			0.77				0.41			0.73
Uniform Delay, d1		29.3			28.2				12.6			16.4
Progression Factor		0.36			0.86				1.00			1.00
Incremental Delay, d2		4.0			2.6				0.8			5.0
Delay (s)		14.5			26.9				13.4			21.4
Level of Service		B			C				B			C
Approach Delay (s)		14.5			26.9			13.4			21.4	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Existing With Project With Improvements

Scenario Report

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

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Existing With Project With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.373
Loss Time (sec):	10	Average Delay (sec/veh):	4.0
Optimal Cycle:	30	Level Of Service:	A

Street Name:	Dwy 1						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			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! 0	0	0	0	0	0	2	1	0	1
Volume Module:												
Base Vol:	17	0	15	0	0	0	0	940	44	41	1145	0
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:	17	0	15	0	0	0	0	940	44	41	1145	0
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:	17	0	15	0	0	0	0	940	44	41	1145	0
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:	17	0	15	0	0	0	0	940	44	41	1145	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	0	15	0	0	0	0	940	44	41	1145	0
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:	17	0	15	0	0	0	0	940	44	41	1145	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	0.90	0.90	0.95	0.95	1.00
Lanes:	0.53	0.00	0.47	0.00	0.00	0.00	0.00	2.87	0.13	1.00	2.00	0.00
Final Sat.:	921	0	813	0	0	0	0	4920	230	1805	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.19	0.19	0.02	0.32	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.05	0.00	0.05	0.00	0.00	0.00	0.00	0.76	0.76	0.09	0.85	0.00
Volume/Cap:	0.37	0.00	0.37	0.00	0.00	0.00	0.00	0.25	0.25	0.25	0.37	0.00
Delay/Veh:	48.7	0.0	48.7	0.0	0.0	0.0	0.0	3.6	3.6	43.1	1.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.7	0.0	48.7	0.0	0.0	0.0	0.0	3.6	3.6	43.1	1.7	0.0
LOS by Move:	D	A	D	A	A	A	A	A	A	D	A	A
HCM2kAvgQ:	1	0	1	0	0	0	0	3	3	1	4	0

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Existing With Project With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.403
Loss Time (sec):	10	Average Delay (sec/veh):	14.8
Optimal Cycle:	45	Level Of Service:	B

Street Name:	Dwy 3						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Permitted			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! 0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	15	0	17	0	0	0	0	951	41	44	1243	0
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:	15	0	17	0	0	0	0	951	41	44	1243	0
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:	15	0	17	0	0	0	0	951	41	44	1243	0
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:	15	0	17	0	0	0	0	951	41	44	1243	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	15	0	17	0	0	0	0	951	41	44	1243	0
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:	15	0	17	0	0	0	0	951	41	44	1243	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	0.90	0.90	0.95	0.95	1.00
Lanes:	0.47	0.00	0.53	0.00	0.00	0.00	0.00	2.88	0.12	1.00	2.00	0.00
Final Sat.:	807	0	915	0	0	0	0	4943	213	1805	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.19	0.19	0.02	0.34	0.00
Crit Moves:			****								****	
Green/Cycle:	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.31	0.31	0.56	0.87	0.00
Volume/Cap:	0.62	0.00	0.62	0.00	0.00	0.00	0.00	0.62	0.62	0.04	0.40	0.00
Delay/Veh:	68.3	0.0	68.3	0.0	0.0	0.0	0.0	30.1	30.1	10.0	1.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.3	0.0	68.3	0.0	0.0	0.0	0.0	30.1	30.1	10.0	1.4	0.0
LOS by Move:	E	A	E	A	A	A	A	C	C	B	A	A
HCM2kAvgQ:	2	0	2	0	0	0	0	9	9	1	4	0

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Existing With Project With Improvements

Scenario Report

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

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Existing With Project With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.657
Loss Time (sec):	10	Average Delay (sec/veh):	12.0
Optimal Cycle:	49	Level Of Service:	B

Street Name:	Dwy 1						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			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! 0	0	0	0	0	0	2	1	0	1
Volume Module:												
Base Vol:	90	0	111	0	0	0	0	2128	102	74	1110	0
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:	90	0	111	0	0	0	0	2128	102	74	1110	0
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:	90	0	111	0	0	0	0	2128	102	74	1110	0
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:	90	0	111	0	0	0	0	2128	102	74	1110	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	0	111	0	0	0	0	2128	102	74	1110	0
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:	90	0	111	0	0	0	0	2128	102	74	1110	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	1.00	0.90	1.00	1.00	1.00	1.00	0.90	0.90	0.95	0.95	1.00
Lanes:	0.45	0.00	0.55	0.00	0.00	0.00	0.00	2.86	0.14	1.00	2.00	0.00
Final Sat.:	770	0	949	0	0	0	0	4915	236	1805	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.12	0.00	0.12	0.00	0.00	0.00	0.00	0.43	0.43	0.04	0.31	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.18	0.00	0.18	0.00	0.00	0.00	0.00	0.66	0.66	0.06	0.72	0.00
Volume/Cap:	0.66	0.00	0.66	0.00	0.00	0.00	0.00	0.66	0.66	0.66	0.43	0.00
Delay/Veh:	43.4	0.0	43.4	0.0	0.0	0.0	0.0	10.7	10.7	59.1	5.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.4	0.0	43.4	0.0	0.0	0.0	0.0	10.7	10.7	59.1	5.7	0.0
LOS by Move:	D	A	D	A	A	A	A	B	B	E	A	A
HCM2kAvgQ:	7	0	7	0	0	0	0	15	15	2	7	0

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Existing With Project With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.677
Loss Time (sec):	10	Average Delay (sec/veh):	12.4
Optimal Cycle:	51	Level Of Service:	B

Street Name:	Dwy 3							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			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! 0	0	0	0	0	0	0	0	0	2	1 0
	1	0	2 0	0									
Volume Module:													
Base Vol:	89	0	116	0	0	0	0	2196	100	80	1098	0	
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:	89	0	116	0	0	0	0	2196	100	80	1098	0	
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:	89	0	116	0	0	0	0	2196	100	80	1098	0	
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:	89	0	116	0	0	0	0	2196	100	80	1098	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	89	0	116	0	0	0	0	2196	100	80	1098	0	
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:	89	0	116	0	0	0	0	2196	100	80	1098	0	
Saturation Flow Module:													
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Adjustment:	0.90	1.00	0.90	1.00	1.00	1.00	1.00	0.90	0.90	0.95	0.95	1.00	
Lanes:	0.43	0.00	0.57	0.00	0.00	0.00	0.00	2.87	0.13	1.00	2.00	0.00	
Final Sat.:	746	0	973	0	0	0	0	4926	224	1805	3610	0	
Capacity Analysis Module:													
Vol/Sat:	0.12	0.00	0.12	0.00	0.00	0.00	0.00	0.45	0.45	0.04	0.30	0.00	
Crit Moves:	****							****		****			
Green/Cycle:	0.18	0.00	0.18	0.00	0.00	0.00	0.00	0.66	0.66	0.07	0.72	0.00	
Volume/Cap:	0.68	0.00	0.68	0.00	0.00	0.00	0.00	0.68	0.68	0.68	0.42	0.00	
Delay/Veh:	44.5	0.0	44.5	0.0	0.0	0.0	0.0	11.1	11.1	60.2	5.6	0.0	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AdjDel/Veh:	44.5	0.0	44.5	0.0	0.0	0.0	0.0	11.1	11.1	60.2	5.6	0.0	
LOS by Move:	D	A	D	A	A	A	A	B	B	E	A	A	
HCM2kAvgQ:	7	0	7	0	0	0	0	15	15	3	7	0	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	412	0	0	1452	0	0	0	366	0	0	515
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0				4.0			4.0
Lane Util. Factor		0.95			0.95				0.88			1.00
Frt		1.00			1.00				0.85			0.86
Flt Protected		1.00			1.00				1.00			1.00
Satd. Flow (prot)		3610			3610				2842			1644
Flt Permitted		1.00			1.00				1.00			1.00
Satd. Flow (perm)		3610			3610				2842			1644
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	438	0	0	1545	0	0	0	389	0	0	548
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	223	0	0	9
Lane Group Flow (vph)	0	438	0	0	1545	0	0	0	166	0	0	539
Turn Type		NA			NA				Perm			Perm
Protected Phases		4			8							
Permitted Phases									2			6
Actuated Green, G (s)		49.2			49.2				42.8			42.8
Effective Green, g (s)		49.2			49.2				42.8			42.8
Actuated g/C Ratio		0.49			0.49				0.43			0.43
Clearance Time (s)		4.0			4.0				4.0			4.0
Vehicle Extension (s)		3.0			3.0				3.0			3.0
Lane Grp Cap (vph)		1776			1776				1216			703
v/s Ratio Prot		0.12			c0.43							
v/s Ratio Perm									0.06			c0.33
v/c Ratio		0.25			0.87				0.14			0.77
Uniform Delay, d1		14.7			22.6				17.4			24.3
Progression Factor		0.33			0.68				1.00			1.00
Incremental Delay, d2		0.1			4.0				0.2			7.8
Delay (s)		5.0			19.4				17.6			32.2
Level of Service		A			B				B			C
Approach Delay (s)		5.0			19.4			17.6			32.2	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1094	0	0	942	0	0	0	642	0	0	821
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0				4.0			4.0
Lane Util. Factor		0.95			0.95				0.88			1.00
Frt		1.00			1.00				0.85			0.86
Flt Protected		1.00			1.00				1.00			1.00
Satd. Flow (prot)		3610			3610				2842			1644
Flt Permitted		1.00			1.00				1.00			1.00
Satd. Flow (perm)		3610			3610				2842			1644
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1128	0	0	971	0	0	0	662	0	0	846
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	10	0	0	11
Lane Group Flow (vph)	0	1128	0	0	971	0	0	0	652	0	0	835
Turn Type		NA			NA				Perm			Perm
Protected Phases		4			8							
Permitted Phases									2			6
Actuated Green, G (s)		34.5			34.5				57.5			57.5
Effective Green, g (s)		34.5			34.5				57.5			57.5
Actuated g/C Ratio		0.34			0.34				0.58			0.58
Clearance Time (s)		4.0			4.0				4.0			4.0
Vehicle Extension (s)		3.0			3.0				3.0			3.0
Lane Grp Cap (vph)		1245			1245				1634			945
v/s Ratio Prot		c0.31			0.27							
v/s Ratio Perm									0.23			c0.51
v/c Ratio		0.91			0.78				0.40			0.88
Uniform Delay, d1		31.2			29.3				11.7			18.4
Progression Factor		0.39			0.87				1.00			1.00
Incremental Delay, d2		7.6			3.0				0.7			11.8
Delay (s)		19.8			28.5				12.5			30.2
Level of Service		B			C				B			C
Approach Delay (s)		19.8			28.5			12.5			30.2	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Existing (Saturday) With Project With Improvments

Scenario Report

Scenario:	Default Scenario
Command:	Default Command
Volume:	Cumul WP AM
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Project
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Existing (Saturday) With Project With Improvments

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.546
Loss Time (sec):	10	Average Delay (sec/veh):	19.9
Optimal Cycle:	39	Level Of Service:	B

Street Name:	Dwy 1							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			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! 0	0	0	0	0	0	0	0	0	2	1 0
Volume Module:													
Base Vol:	149	0	149	0	0	0	0	1039	162	150	992	0	
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:	149	0	149	0	0	0	0	1039	162	150	992	0	
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:	149	0	149	0	0	0	0	1039	162	150	992	0	
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:	149	0	149	0	0	0	0	1039	162	150	992	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	149	0	149	0	0	0	0	1039	162	150	992	0	
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:	149	0	149	0	0	0	0	1039	162	150	992	0	
Saturation Flow Module:													
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	0.89	0.89	0.95	0.95	1.00	
Lanes:	0.50	0.00	0.50	0.00	0.00	0.00	0.00	2.60	0.40	1.00	2.00	0.00	
Final Sat.:	865	0	865	0	0	0	0	4398	686	1805	3610	0	
Capacity Analysis Module:													
Vol/Sat:	0.17	0.00	0.17	0.00	0.00	0.00	0.00	0.24	0.24	0.08	0.27	0.00	
Crit Moves:	****							****		****			
Green/Cycle:	0.32	0.00	0.32	0.00	0.00	0.00	0.00	0.43	0.43	0.15	0.58	0.00	
Volume/Cap:	0.55	0.00	0.55	0.00	0.00	0.00	0.00	0.55	0.55	0.55	0.47	0.00	
Delay/Veh:	29.5	0.0	29.5	0.0	0.0	0.0	0.0	21.4	21.4	41.5	12.1	0.0	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AdjDel/Veh:	29.5	0.0	29.5	0.0	0.0	0.0	0.0	21.4	21.4	41.5	12.1	0.0	
LOS by Move:	C	A	C	A	A	A	A	C	C	D	B	A	
HCM2kAvgQ:	8	0	8	0	0	0	0	10	10	4	9	0	

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Existing (Saturday) With Project With Improvments

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.559
Loss Time (sec):	10	Average Delay (sec/veh):	20.1
Optimal Cycle:	40	Level Of Service:	C

Street Name:	Dwy 3							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			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! 0	0	0	0	0	0	0	0	0	2	1 0
	1	0	2 0	0									
Volume Module:													
Base Vol:	143	0	159	0	0	0	0	1067	160	156	1028	0	
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:	143	0	159	0	0	0	0	1067	160	156	1028	0	
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:	143	0	159	0	0	0	0	1067	160	156	1028	0	
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:	143	0	159	0	0	0	0	1067	160	156	1028	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	143	0	159	0	0	0	0	1067	160	156	1028	0	
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:	143	0	159	0	0	0	0	1067	160	156	1028	0	
Saturation Flow Module:													
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	0.89	0.89	0.95	0.95	1.00	
Lanes:	0.47	0.00	0.53	0.00	0.00	0.00	0.00	2.61	0.39	1.00	2.00	0.00	
Final Sat.:	817	0	908	0	0	0	0	4425	664	1805	3610	0	
Capacity Analysis Module:													
Vol/Sat:	0.18	0.00	0.18	0.00	0.00	0.00	0.00	0.24	0.24	0.09	0.28	0.00	
Crit Moves:			****					****		****			
Green/Cycle:	0.31	0.00	0.31	0.00	0.00	0.00	0.00	0.43	0.43	0.15	0.59	0.00	
Volume/Cap:	0.56	0.00	0.56	0.00	0.00	0.00	0.00	0.56	0.56	0.56	0.49	0.00	
Delay/Veh:	29.9	0.0	29.9	0.0	0.0	0.0	0.0	21.6	21.6	41.6	12.1	0.0	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AdjDel/Veh:	29.9	0.0	29.9	0.0	0.0	0.0	0.0	21.6	21.6	41.6	12.1	0.0	
LOS by Move:	C	A	C	A	A	A	A	C	C	D	B	A	
HCM2kAvgQ:	8	0	8	0	0	0	0	10	10	4	9	0	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	252	0	0	670	0	0	0	332	0	0	861
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0				4.0			4.0
Lane Util. Factor		0.95			0.95				0.88			1.00
Frt		1.00			1.00				0.85			0.86
Flt Protected		1.00			1.00				1.00			1.00
Satd. Flow (prot)		3610			3610				2842			1644
Flt Permitted		1.00			1.00				1.00			1.00
Satd. Flow (perm)		3610			3610				2842			1644
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	268	0	0	713	0	0	0	353	0	0	916
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	112	0	0	7
Lane Group Flow (vph)	0	268	0	0	713	0	0	0	241	0	0	909
Turn Type		NA			NA				Perm			Perm
Protected Phases		4			8							
Permitted Phases									2			6
Actuated Green, G (s)		23.7			23.7				68.3			68.3
Effective Green, g (s)		23.7			23.7				68.3			68.3
Actuated g/C Ratio		0.24			0.24				0.68			0.68
Clearance Time (s)		4.0			4.0				4.0			4.0
Vehicle Extension (s)		3.0			3.0				3.0			3.0
Lane Grp Cap (vph)		855			855				1941			1122
v/s Ratio Prot		0.07			c0.20							
v/s Ratio Perm									0.08			c0.55
v/c Ratio		0.31			0.83				0.12			0.81
Uniform Delay, d1		31.4			36.3				5.5			11.2
Progression Factor		0.10			0.83				1.00			1.00
Incremental Delay, d2		0.2			6.9				0.1			6.4
Delay (s)		3.5			37.1				5.6			17.6
Level of Service		A			D				A			B
Approach Delay (s)		3.5			37.1			5.6			17.6	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Future Baseline With Project With Improvements

Scenario Report

Scenario:	OY WP AM
Command:	Default Command
Volume:	OY WP AM
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Project
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Future Baseline With Project With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.400
Loss Time (sec):	10	Average Delay (sec/veh):	14.9
Optimal Cycle:	46	Level Of Service:	B

Street Name:	Dwy 1							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R	
Control:	Split Phase			Split Phase			Permitted			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! 0	0	0	0	0	0	0	0	0	2	1
Volume Module:													
Base Vol:	17	0	15	0	0	0	0	1005	44	41	1233	0	
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:	17	0	15	0	0	0	0	1005	44	41	1233	0	
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:	17	0	15	0	0	0	0	1005	44	41	1233	0	
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:	17	0	15	0	0	0	0	1005	44	41	1233	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	17	0	15	0	0	0	0	1005	44	41	1233	0	
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:	17	0	15	0	0	0	0	1005	44	41	1233	0	
Saturation Flow Module:													
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	0.90	0.90	0.95	0.95	1.00	
Lanes:	0.53	0.00	0.47	0.00	0.00	0.00	0.00	2.87	0.13	1.00	2.00	0.00	
Final Sat.:	921	0	813	0	0	0	0	4940	216	1805	3610	0	
Capacity Analysis Module:													
Vol/Sat:	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.20	0.20	0.02	0.34	0.00	
Crit Moves:	****										****		
Green/Cycle:	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.33	0.33	0.55	0.87	0.00	
Volume/Cap:	0.63	0.00	0.63	0.00	0.00	0.00	0.00	0.63	0.63	0.04	0.39	0.00	
Delay/Veh:	69.9	0.0	69.9	0.0	0.0	0.0	0.0	29.4	29.4	10.6	1.4	0.0	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AdjDel/Veh:	69.9	0.0	69.9	0.0	0.0	0.0	0.0	29.4	29.4	10.6	1.4	0.0	
LOS by Move:	E	A	E	A	A	A	A	C	C	B	A	A	
HCM2kAvgQ:	2	0	2	0	0	0	0	10	10	1	4	0	

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Future Baseline With Project With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.431
Loss Time (sec):	10	Average Delay (sec/veh):	15.2
Optimal Cycle:	49	Level Of Service:	B

Street Name:	Dwy 3							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R	
Control:	Split Phase			Split Phase			Permitted			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! 0	0	0	0	0	0	0	0	0	2	1
Volume Module:													
Base Vol:	15	0	17	0	0	0	0	1023	41	44	1332	0	
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:	15	0	17	0	0	0	0	1023	41	44	1332	0	
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:	15	0	17	0	0	0	0	1023	41	44	1332	0	
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:	15	0	17	0	0	0	0	1023	41	44	1332	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	15	0	17	0	0	0	0	1023	41	44	1332	0	
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:	15	0	17	0	0	0	0	1023	41	44	1332	0	
Saturation Flow Module:													
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	0.90	0.90	0.95	0.95	1.00	
Lanes:	0.47	0.00	0.53	0.00	0.00	0.00	0.00	2.88	0.12	1.00	2.00	0.00	
Final Sat.:	807	0	915	0	0	0	0	4957	199	1805	3610	0	
Capacity Analysis Module:													
Vol/Sat:	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.21	0.21	0.02	0.37	0.00	
Crit Moves:			****								****		
Green/Cycle:	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.31	0.31	0.56	0.87	0.00	
Volume/Cap:	0.66	0.00	0.66	0.00	0.00	0.00	0.00	0.66	0.66	0.04	0.42	0.00	
Delay/Veh:	77.2	0.0	77.2	0.0	0.0	0.0	0.0	30.8	30.8	10.0	1.4	0.0	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AdjDel/Veh:	77.2	0.0	77.2	0.0	0.0	0.0	0.0	30.8	30.8	10.0	1.4	0.0	
LOS by Move:	E	A	E	A	A	A	A	C	C	A	A	A	
HCM2kAvgQ:	2	0	2	0	0	0	0	10	10	1	5	0	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	444	0	0	1565	0	0	0	395	0	0	546
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0				4.0			4.0
Lane Util. Factor		0.95			0.95				0.88			1.00
Frt		1.00			1.00				0.85			0.86
Flt Protected		1.00			1.00				1.00			1.00
Satd. Flow (prot)		3610			3610				2842			1644
Flt Permitted		1.00			1.00				1.00			1.00
Satd. Flow (perm)		3610			3610				2842			1644
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	472	0	0	1665	0	0	0	420	0	0	581
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	262	0	0	9
Lane Group Flow (vph)	0	472	0	0	1665	0	0	0	158	0	0	572
Turn Type		NA			NA				Perm			Perm
Protected Phases		2			6							
Permitted Phases									8			4
Actuated Green, G (s)		54.4			54.4				37.6			37.6
Effective Green, g (s)		54.4			54.4				37.6			37.6
Actuated g/C Ratio		0.54			0.54				0.38			0.38
Clearance Time (s)		4.0			4.0				4.0			4.0
Vehicle Extension (s)		3.0			3.0				3.0			3.0
Lane Grp Cap (vph)		1963			1963				1068			618
v/s Ratio Prot		0.13			c0.46							
v/s Ratio Perm									0.06			c0.35
v/c Ratio		0.24			0.85				0.15			0.93
Uniform Delay, d1		12.0			19.3				20.6			29.9
Progression Factor		0.50			0.75				1.00			1.00
Incremental Delay, d2		0.2			4.1				0.1			19.9
Delay (s)		6.2			18.6				20.7			49.8
Level of Service		A			B				C			D
Approach Delay (s)		6.2			18.6			20.7			49.8	
Approach LOS		A			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #16 Arrow Highway/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.742
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	59	Level Of Service:	C

Street Name:	Arrow Highway						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	0	0 0	2 0	0	0 1	1 0	3	0 0	0 0	2	0 2
Volume Module:												
Base Vol:	0	0	0	291	0	46	149	634	0	0	1485	1672
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	291	0	46	149	634	0	0	1485	1672
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	0	0	291	0	46	149	634	0	0	1485	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	291	0	46	149	634	0	0	1485	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	0	0	0	291	0	46	149	634	0	0	1485	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	2.00	2.00
Final Sat.:	0	0	0	2880	0	1600	1600	4800	0	0	3200	3200
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.10	0.00	0.03	0.09	0.13	0.00	0.00	0.46	0.00
Crit Moves:				****			****				****	

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Future Baseline With Project With Improvements

Scenario Report

Scenario:	OY WP PM
Command:	Default Command
Volume:	OY WP PM
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Project
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Future Baseline With Project With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.690
Loss Time (sec):	10	Average Delay (sec/veh):	12.0
Optimal Cycle:	53	Level Of Service:	B

Street Name:	Dwy 1						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Permitted			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! 0	0	0	0	0	0	2	1	0	1
Volume Module:												
Base Vol:	90	0	111	0	0	0	0	2287	102	74	1183	0
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:	90	0	111	0	0	0	0	2287	102	74	1183	0
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:	90	0	111	0	0	0	0	2287	102	74	1183	0
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:	90	0	111	0	0	0	0	2287	102	74	1183	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	0	111	0	0	0	0	2287	102	74	1183	0
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:	90	0	111	0	0	0	0	2287	102	74	1183	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	1.00	0.90	1.00	1.00	1.00	1.00	0.90	0.90	0.95	0.95	1.00
Lanes:	0.45	0.00	0.55	0.00	0.00	0.00	0.00	2.87	0.13	1.00	2.00	0.00
Final Sat.:	770	0	949	0	0	0	0	4936	220	1805	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.12	0.00	0.12	0.00	0.00	0.00	0.00	0.46	0.46	0.04	0.33	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.17	0.00	0.17	0.00	0.00	0.00	0.00	0.67	0.67	0.06	0.73	0.00
Volume/Cap:	0.69	0.00	0.69	0.00	0.00	0.00	0.00	0.69	0.69	0.69	0.45	0.00
Delay/Veh:	46.0	0.0	46.0	0.0	0.0	0.0	0.0	10.7	10.7	63.6	5.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.0	0.0	46.0	0.0	0.0	0.0	0.0	10.7	10.7	63.6	5.5	0.0
LOS by Move:	D	A	D	A	A	A	A	B	B	E	A	A
HCM2kAvgQ:	7	0	7	0	0	0	0	17	17	2	8	0

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Future Baseline With Project With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.711
Loss Time (sec):	10	Average Delay (sec/veh):	12.4
Optimal Cycle:	56	Level Of Service:	B

Street Name:	Dwy 3							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R	
Control:	Split Phase			Split Phase			Permitted			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! 0	0	0	0	0	0	0	0	0	2	1
Volume Module:													
Base Vol:	89	0	116	0	0	0	0	2357	100	80	1174	0	
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:	89	0	116	0	0	0	0	2357	100	80	1174	0	
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:	89	0	116	0	0	0	0	2357	100	80	1174	0	
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:	89	0	116	0	0	0	0	2357	100	80	1174	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	89	0	116	0	0	0	0	2357	100	80	1174	0	
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:	89	0	116	0	0	0	0	2357	100	80	1174	0	
Saturation Flow Module:													
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Adjustment:	0.90	1.00	0.90	1.00	1.00	1.00	1.00	0.90	0.90	0.95	0.95	1.00	
Lanes:	0.43	0.00	0.57	0.00	0.00	0.00	0.00	2.88	0.12	1.00	2.00	0.00	
Final Sat.:	746	0	973	0	0	0	0	4946	210	1805	3610	0	
Capacity Analysis Module:													
Vol/Sat:	0.12	0.00	0.12	0.00	0.00	0.00	0.00	0.48	0.48	0.04	0.33	0.00	
Crit Moves:	****							****		****			
Green/Cycle:	0.17	0.00	0.17	0.00	0.00	0.00	0.00	0.67	0.67	0.06	0.73	0.00	
Volume/Cap:	0.71	0.00	0.71	0.00	0.00	0.00	0.00	0.71	0.71	0.71	0.44	0.00	
Delay/Veh:	47.4	0.0	47.4	0.0	0.0	0.0	0.0	11.1	11.1	65.1	5.4	0.0	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AdjDel/Veh:	47.4	0.0	47.4	0.0	0.0	0.0	0.0	11.1	11.1	65.1	5.4	0.0	
LOS by Move:	D	A	D	A	A	A	A	B	B	E	A	A	
HCM2kAvgQ:	7	0	7	0	0	0	0	17	17	3	7	0	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1178	0	0	1015	0	0	0	693	0	0	871
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0				4.0			4.0
Lane Util. Factor		0.95			0.95				0.88			1.00
Frt		1.00			1.00				0.85			0.86
Flt Protected		1.00			1.00				1.00			1.00
Satd. Flow (prot)		3610			3610				2842			1644
Flt Permitted		1.00			1.00				1.00			1.00
Satd. Flow (perm)		3610			3610				2842			1644
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1214	0	0	1046	0	0	0	714	0	0	898
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	9	0	0	10
Lane Group Flow (vph)	0	1214	0	0	1046	0	0	0	705	0	0	888
Turn Type		NA			NA				Perm			Perm
Protected Phases		2			6							
Permitted Phases									8			4
Actuated Green, G (s)		37.1			37.1				54.9			54.9
Effective Green, g (s)		37.1			37.1				54.9			54.9
Actuated g/C Ratio		0.37			0.37				0.55			0.55
Clearance Time (s)		4.0			4.0				4.0			4.0
Vehicle Extension (s)		3.0			3.0				3.0			3.0
Lane Grp Cap (vph)		1339			1339				1560			902
v/s Ratio Prot		c0.34			0.29							
v/s Ratio Perm									0.25			c0.54
v/c Ratio		0.91			0.78				0.45			0.98
Uniform Delay, d1		29.8			27.9				13.5			22.1
Progression Factor		0.30			0.87				1.00			1.00
Incremental Delay, d2		7.7			4.4				0.2			25.9
Delay (s)		16.7			28.6				13.7			48.0
Level of Service		B			C				B			D
Approach Delay (s)		16.7			28.6			13.7			48.0	
Approach LOS		B			C			B			D	

Intersection Summary			
HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #16 Arrow Highway/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.760
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	62	Level Of Service:	C

Street Name:	Arrow Highway							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			Permitted			
Rights:	Include			Include			Include			Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lanes:	0 0	0 0	0	2 0	0 0	1	1 0	3 0	0	0 0	2 0	2	
Volume Module:													
Base Vol:	0	0	0	1049	0	114	40	1501	0	0	858	476	
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	1049	0	114	40	1501	0	0	858	476	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
PHF Volume:	0	0	0	1049	0	114	40	1501	0	0	858	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	0	0	0	1049	0	114	40	1501	0	0	858	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	
FinalVolume:	0	0	0	1049	0	114	40	1501	0	0	858	0	
Saturation Flow Module:													
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	2.00	2.00	
Final Sat.:	0	0	0	2880	0	1600	1600	4800	0	0	3200	3200	
Capacity Analysis Module:													
Vol/Sat:	0.00	0.00	0.00	0.36	0.00	0.07	0.03	0.31	0.00	0.00	0.27	0.00	
Crit Moves:				****				****		****			

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Future Baseline (Saturday) With Pr. With Improvements

Scenario Report

Scenario:	OY WP SAT
Command:	Default Command
Volume:	OY WP SAT
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Future Baseline (Saturday) With Pr. With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.558
Loss Time (sec):	10	Average Delay (sec/veh):	19.7
Optimal Cycle:	40	Level Of Service:	B

Street Name:	Dwy 1						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Permitted			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! 0	0	0	0	0	0	0	0	0	0
Volume Module:												
Base Vol:	149	0	149	0	0	0	0	1093	162	150	1046	0
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:	149	0	149	0	0	0	0	1093	162	150	1046	0
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:	149	0	149	0	0	0	0	1093	162	150	1046	0
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:	149	0	149	0	0	0	0	1093	162	150	1046	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	149	0	149	0	0	0	0	1093	162	150	1046	0
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:	149	0	149	0	0	0	0	1093	162	150	1046	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	0.89	0.89	0.95	0.95	1.00
Lanes:	0.50	0.00	0.50	0.00	0.00	0.00	0.00	2.61	0.39	1.00	2.00	0.00
Final Sat.:	865	0	865	0	0	0	0	4432	657	1805	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.17	0.00	0.17	0.00	0.00	0.00	0.00	0.25	0.25	0.08	0.29	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.31	0.00	0.31	0.00	0.00	0.00	0.00	0.44	0.44	0.15	0.59	0.00
Volume/Cap:	0.56	0.00	0.56	0.00	0.00	0.00	0.00	0.56	0.56	0.56	0.49	0.00
Delay/Veh:	30.2	0.0	30.2	0.0	0.0	0.0	0.0	21.0	21.0	42.1	11.9	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.2	0.0	30.2	0.0	0.0	0.0	0.0	21.0	21.0	42.1	11.9	0.0
LOS by Move:	C	A	C	A	A	A	A	C	C	D	B	A
HCM2kAvgQ:	8	0	8	0	0	0	0	10	10	4	9	0

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Future Baseline (Saturday) With Pr. With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.571
Loss Time (sec):	10	Average Delay (sec/veh):	19.8
Optimal Cycle:	41	Level Of Service:	B

Street Name:	Dwy 3							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			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! 0	0	0	0	0	0	0	0	0	2	1
Volume Module:													
Base Vol:	143	0	159	0	0	0	0	1125	160	156	1084	0	
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:	143	0	159	0	0	0	0	1125	160	156	1084	0	
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:	143	0	159	0	0	0	0	1125	160	156	1084	0	
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:	143	0	159	0	0	0	0	1125	160	156	1084	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	143	0	159	0	0	0	0	1125	160	156	1084	0	
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:	143	0	159	0	0	0	0	1125	160	156	1084	0	
Saturation Flow Module:													
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	0.89	0.89	0.95	0.95	1.00	
Lanes:	0.47	0.00	0.53	0.00	0.00	0.00	0.00	2.63	0.37	1.00	2.00	0.00	
Final Sat.:	817	0	908	0	0	0	0	4455	634	1805	3610	0	
Capacity Analysis Module:													
Vol/Sat:	0.18	0.00	0.18	0.00	0.00	0.00	0.00	0.25	0.25	0.09	0.30	0.00	
Crit Moves:			****					****		****			
Green/Cycle:	0.31	0.00	0.31	0.00	0.00	0.00	0.00	0.44	0.44	0.15	0.59	0.00	
Volume/Cap:	0.57	0.00	0.57	0.00	0.00	0.00	0.00	0.57	0.57	0.57	0.51	0.00	
Delay/Veh:	30.6	0.0	30.6	0.0	0.0	0.0	0.0	21.2	21.2	42.3	12.0	0.0	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AdjDel/Veh:	30.6	0.0	30.6	0.0	0.0	0.0	0.0	21.2	21.2	42.3	12.0	0.0	
LOS by Move:	C	A	C	A	A	A	A	C	C	D	B	A	
HCM2kAvgQ:	8	0	8	0	0	0	0	10	10	4	10	0	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	268	0	0	718	0	0	0	359	0	0	896
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0				4.0			4.0
Lane Util. Factor		0.95			0.95				0.88			1.00
Frt		1.00			1.00				0.85			0.86
Flt Protected		1.00			1.00				1.00			1.00
Satd. Flow (prot)		3610			3610				2842			1644
Flt Permitted		1.00			1.00				1.00			1.00
Satd. Flow (perm)		3610			3610				2842			1644
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	295	0	0	789	0	0	0	395	0	0	985
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	138	0	0	6
Lane Group Flow (vph)	0	295	0	0	789	0	0	0	257	0	0	979
Turn Type		NA			NA				Perm			Perm
Protected Phases		2			6							
Permitted Phases									8			4
Actuated Green, G (s)		27.0			27.0				65.0			65.0
Effective Green, g (s)		27.0			27.0				65.0			65.0
Actuated g/C Ratio		0.27			0.27				0.65			0.65
Clearance Time (s)		4.0			4.0				4.0			4.0
Vehicle Extension (s)		3.0			3.0				3.0			3.0
Lane Grp Cap (vph)		974			974				1847			1068
v/s Ratio Prot		0.08			c0.22							
v/s Ratio Perm									0.09			c0.60
v/c Ratio		0.30			0.81				0.14			0.92
Uniform Delay, d1		29.0			34.1				6.7			15.2
Progression Factor		0.11			0.86				1.00			1.00
Incremental Delay, d2		0.8			7.1				0.0			12.0
Delay (s)		4.0			36.6				6.8			27.2
Level of Service		A			D				A			C
Approach Delay (s)		4.0			36.6			6.8			27.2	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	24.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Future Baseline Plus Cumul. Pr. With Improvements

Scenario Report

Scenario:	Cumul WP AM
Command:	Default Command
Volume:	Cumul WP AM
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Project
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Future Baseline Plus Cumul. Pr. With Improvements

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #16 Arrow Highway/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.799
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	70	Level Of Service:	C

Street Name:	Arrow Highway						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	0 0	0	2 0	0 0	1	1 0	3 0	0	0 0	2 0	2
Volume Module:												
Base Vol:	0	0	0	411	0	78	159	658	0	0	1515	1740
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	411	0	78	159	658	0	0	1515	1740
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	411	0	78	159	658	0	0	1515	1740
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	0	0	411	0	78	159	658	0	0	1515	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	411	0	78	159	658	0	0	1515	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	0	0	0	411	0	78	159	658	0	0	1515	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	2.00	2.00
Final Sat.:	0	0	0	2880	0	1600	1600	4800	0	0	3200	3200
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.14	0.00	0.05	0.10	0.14	0.00	0.00	0.47	0.00
Crit Moves:				****			****				****	

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Future Baseline Plus Cumul. Pr. With Improvements

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #19 Avenida Barbosa/Arrow Highway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.858
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	83	Level Of Service:	D

Street Name:	Avenida Barbosa						Arrow Highway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	0 0	0	2 0	0 0	1	2 0	2 0	0	0 0	2 0	1
Volume Module:												
Base Vol:	0	0	0	223	0	183	390	483	0	0	1627	745
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	223	0	183	390	483	0	0	1627	745
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	223	0	183	390	483	0	0	1627	745
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	223	0	183	390	483	0	0	1627	745
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	223	0	183	390	483	0	0	1627	745
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	223	0	183	390	483	0	0	1627	745
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	2.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	2880	0	1600	2880	3200	0	0	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.08	0.00	0.11	0.14	0.15	0.00	0.00	0.51	0.47
Crit Moves:						****	****				****	

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Future Baseline Plus Cumul. Pr. With Improvements

Scenario Report

Scenario:	Cumul WP PM
Command:	Default Command
Volume:	Cumul WP PM
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Project
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Future Baseline Plus Cumul. Pr. With Improvements

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #16 Arrow Highway/Live Oak Ave

Cycle (sec):	120	Critical Vol./Cap.(X):	0.806
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	72	Level Of Service:	D

Street Name:	Arrow Highway						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	0 0	0	2 0	0 0	1	1 0	3 0	0	0 0	2 0	2
Volume Module:												
Base Vol:	0	0	0	1182	0	133	56	1529	0	0	888	537
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	1182	0	133	56	1529	0	0	888	537
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	1182	0	133	56	1529	0	0	888	537
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	0	0	0	1182	0	133	56	1529	0	0	888	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	1182	0	133	56	1529	0	0	888	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	0	0	0	1182	0	133	56	1529	0	0	888	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	1.00	3.00	0.00	0.00	2.00	2.00
Final Sat.:	0	0	0	2880	0	1600	1600	4800	0	0	3200	3200
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.41	0.00	0.08	0.04	0.32	0.00	0.00	0.28	0.00
Crit Moves:				****			****				****	

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Future Baseline Plus Cumul. Pr. With Improvements

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #19 Avenida Barbosa/Arrow Highway

Cycle (sec):	100	Critical Vol./Cap.(X):	0.677
Loss Time (sec):	10	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	47	Level Of Service:	B

Street Name:	Avenida Barbosa						Arrow Highway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lanes:	0 0	0 0	0	2 0	0 0	1	2 0	2 0	0	0 0	2 0	1
Volume Module:												
Base Vol:	0	0	0	477	0	408	260	947	0	0	740	248
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	477	0	408	260	947	0	0	740	248
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	477	0	408	260	947	0	0	740	248
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	477	0	408	260	947	0	0	740	248
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	477	0	408	260	947	0	0	740	248
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	477	0	408	260	947	0	0	740	248
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	1.00	2.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	2880	0	1600	2880	3200	0	0	3200	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.17	0.00	0.26	0.09	0.30	0.00	0.00	0.23	0.16
Crit Moves:						****	****				****	

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.418
Loss Time (sec):	10	Average Delay (sec/veh):	15.2
Optimal Cycle:	49	Level Of Service:	B

Street Name:	Dwy 1						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Permitted			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! 0	0	0	0	0	0	2	1	0	1
Volume Module:												
Base Vol:	17	0	15	0	0	0	0	1053	44	41	1293	0
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:	17	0	15	0	0	0	0	1053	44	41	1293	0
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:	17	0	15	0	0	0	0	1053	44	41	1293	0
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:	17	0	15	0	0	0	0	1053	44	41	1293	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	0	15	0	0	0	0	1053	44	41	1293	0
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:	17	0	15	0	0	0	0	1053	44	41	1293	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	0.90	0.90	0.95	0.95	1.00
Lanes:	0.53	0.00	0.47	0.00	0.00	0.00	0.00	2.88	0.12	1.00	2.00	0.00
Final Sat.:	921	0	813	0	0	0	0	4949	207	1805	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.21	0.21	0.02	0.36	0.00
Crit Moves:	****										****	
Green/Cycle:	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.32	0.32	0.55	0.87	0.00
Volume/Cap:	0.65	0.00	0.65	0.00	0.00	0.00	0.00	0.65	0.65	0.04	0.41	0.00
Delay/Veh:	75.7	0.0	75.7	0.0	0.0	0.0	0.0	29.9	29.9	10.5	1.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	75.7	0.0	75.7	0.0	0.0	0.0	0.0	29.9	29.9	10.5	1.4	0.0
LOS by Move:	E	A	E	A	A	A	A	C	C	B	A	A
HCM2kAvgQ:	2	0	2	0	0	0	0	11	11	1	4	0

Irwindale Regional Shopping Center
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.449
Loss Time (sec):	10	Average Delay (sec/veh):	15.5
Optimal Cycle:	53	Level Of Service:	B

Street Name:	Dwy 3							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R	
Control:	Split Phase			Split Phase			Permitted			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! 0	0	0	0	0	0	0	0	0	2	1
Volume Module:													
Base Vol:	15	0	17	0	0	0	0	1071	41	44	1392	0	
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:	15	0	17	0	0	0	0	1071	41	44	1392	0	
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:	15	0	17	0	0	0	0	1071	41	44	1392	0	
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:	15	0	17	0	0	0	0	1071	41	44	1392	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	15	0	17	0	0	0	0	1071	41	44	1392	0	
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:	15	0	17	0	0	0	0	1071	41	44	1392	0	
Saturation Flow Module:													
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	0.90	0.90	0.95	0.95	1.00	
Lanes:	0.47	0.00	0.53	0.00	0.00	0.00	0.00	2.89	0.11	1.00	2.00	0.00	
Final Sat.:	807	0	915	0	0	0	0	4966	190	1805	3610	0	
Capacity Analysis Module:													
Vol/Sat:	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.22	0.22	0.02	0.39	0.00	
Crit Moves:			****								****		
Green/Cycle:	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.31	0.31	0.56	0.87	0.00	
Volume/Cap:	0.69	0.00	0.69	0.00	0.00	0.00	0.00	0.69	0.69	0.04	0.44	0.00	
Delay/Veh:	83.7	0.0	83.7	0.0	0.0	0.0	0.0	31.3	31.3	9.9	1.4	0.0	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AdjDel/Veh:	83.7	0.0	83.7	0.0	0.0	0.0	0.0	31.3	31.3	9.9	1.4	0.0	
LOS by Move:	F	A	F	A	A	A	A	C	C	A	A	A	
HCM2kAvgQ:	2	0	2	0	0	0	0	11	11	1	5	0	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	462	0	0	1698	0	0	0	532	0	0	596
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0				4.0			4.0
Lane Util. Factor		0.95			0.95				0.88			1.00
Frt		1.00			1.00				0.85			0.86
Flt Protected		1.00			1.00				1.00			1.00
Satd. Flow (prot)		3610			3610				2842			1644
Flt Permitted		1.00			1.00				1.00			1.00
Satd. Flow (perm)		3610			3610				2842			1644
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	491	0	0	1806	0	0	0	566	0	0	634
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	345	0	0	7
Lane Group Flow (vph)	0	491	0	0	1806	0	0	0	221	0	0	627
Turn Type		NA			NA				Perm			Perm
Protected Phases		2			6							
Permitted Phases									8			4
Actuated Green, G (s)		53.0			53.0				39.0			39.0
Effective Green, g (s)		53.0			53.0				39.0			39.0
Actuated g/C Ratio		0.53			0.53				0.39			0.39
Clearance Time (s)		4.0			4.0				4.0			4.0
Vehicle Extension (s)		3.0			3.0				3.0			3.0
Lane Grp Cap (vph)		1913			1913				1108			641
v/s Ratio Prot		0.14			c0.50							
v/s Ratio Perm									0.08			c0.38
v/c Ratio		0.26			0.94				0.20			0.98
Uniform Delay, d1		12.8			22.1				20.2			30.1
Progression Factor		1.67			0.77				1.00			1.00
Incremental Delay, d2		0.3			9.5				0.1			29.8
Delay (s)		21.7			26.4				20.3			59.9
Level of Service		C			C				C			E
Approach Delay (s)		21.7			26.4			20.3			59.9	
Approach LOS		C			C			C			E	

Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
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Scenario Report

Scenario:	Cumul WP PM
Command:	Default Command
Volume:	Cumul WP PM
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Project
Trip Distribution:	Project
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Future Baseline Plu Cumul. Pr. With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.702
Loss Time (sec):	10	Average Delay (sec/veh):	11.9
Optimal Cycle:	54	Level Of Service:	B

Street Name:	Dwy 1						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Permitted			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! 0	0	0	0	0	0	2	1	0	1
	0	2	0	0								
Volume Module:												
Base Vol:	90	0	111	0	0	0	0	2343	102	74	1246	0
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:	90	0	111	0	0	0	0	2343	102	74	1246	0
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:	90	0	111	0	0	0	0	2343	102	74	1246	0
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:	90	0	111	0	0	0	0	2343	102	74	1246	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	0	111	0	0	0	0	2343	102	74	1246	0
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:	90	0	111	0	0	0	0	2343	102	74	1246	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	1.00	0.90	1.00	1.00	1.00	1.00	0.90	0.90	0.95	0.95	1.00
Lanes:	0.45	0.00	0.55	0.00	0.00	0.00	0.00	2.87	0.13	1.00	2.00	0.00
Final Sat.:	770	0	949	0	0	0	0	4941	215	1805	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.12	0.00	0.12	0.00	0.00	0.00	0.00	0.47	0.47	0.04	0.35	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.17	0.00	0.17	0.00	0.00	0.00	0.00	0.68	0.68	0.06	0.73	0.00
Volume/Cap:	0.70	0.00	0.70	0.00	0.00	0.00	0.00	0.70	0.70	0.70	0.47	0.00
Delay/Veh:	47.0	0.0	47.0	0.0	0.0	0.0	0.0	10.7	10.7	65.3	5.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.0	0.0	47.0	0.0	0.0	0.0	0.0	10.7	10.7	65.3	5.6	0.0
LOS by Move:	D	A	D	A	A	A	A	B	B	E	A	A
HCM2kAvgQ:	7	0	7	0	0	0	0	17	17	2	8	0

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.723
Loss Time (sec):	10	Average Delay (sec/veh):	12.4
Optimal Cycle:	57	Level Of Service:	B

Street Name:	Dwy 3							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			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! 0	0	0	0	0	0	0	0	0	2	1
Volume Module:													
Base Vol:	89	0	116	0	0	0	0	2413	100	80	1237	0	
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:	89	0	116	0	0	0	0	2413	100	80	1237	0	
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:	89	0	116	0	0	0	0	2413	100	80	1237	0	
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:	89	0	116	0	0	0	0	2413	100	80	1237	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	89	0	116	0	0	0	0	2413	100	80	1237	0	
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:	89	0	116	0	0	0	0	2413	100	80	1237	0	
Saturation Flow Module:													
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Adjustment:	0.90	1.00	0.90	1.00	1.00	1.00	1.00	0.90	0.90	0.95	0.95	1.00	
Lanes:	0.43	0.00	0.57	0.00	0.00	0.00	0.00	2.88	0.12	1.00	2.00	0.00	
Final Sat.:	746	0	973	0	0	0	0	4951	205	1805	3610	0	
Capacity Analysis Module:													
Vol/Sat:	0.12	0.00	0.12	0.00	0.00	0.00	0.00	0.49	0.49	0.04	0.34	0.00	
Crit Moves:	****							****		****			
Green/Cycle:	0.16	0.00	0.16	0.00	0.00	0.00	0.00	0.67	0.67	0.06	0.74	0.00	
Volume/Cap:	0.72	0.00	0.72	0.00	0.00	0.00	0.00	0.72	0.72	0.72	0.47	0.00	
Delay/Veh:	48.5	0.0	48.5	0.0	0.0	0.0	0.0	11.2	11.2	66.9	5.5	0.0	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AdjDel/Veh:	48.5	0.0	48.5	0.0	0.0	0.0	0.0	11.2	11.2	66.9	5.5	0.0	
LOS by Move:	D	A	D	A	A	A	A	B	B	E	A	A	
HCM2kAvgQ:	8	0	8	0	0	0	0	17	17	3	8	0	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1187	0	0	1188	0	0	0	841	0	0	900
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0				4.0			4.0
Lane Util. Factor		0.95			0.95				0.88			1.00
Frt		1.00			1.00				0.85			0.86
Flt Protected		1.00			1.00				1.00			1.00
Satd. Flow (prot)		3610			3610				2842			1644
Flt Permitted		1.00			1.00				1.00			1.00
Satd. Flow (perm)		3610			3610				2842			1644
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1224	0	0	1225	0	0	0	867	0	0	928
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	8	0	0	5
Lane Group Flow (vph)	0	1224	0	0	1225	0	0	0	859	0	0	923
Turn Type		NA			NA				Perm			Perm
Protected Phases		2			6							
Permitted Phases									8			4
Actuated Green, G (s)		36.0			36.0				56.0			56.0
Effective Green, g (s)		36.0			36.0				56.0			56.0
Actuated g/C Ratio		0.36			0.36				0.56			0.56
Clearance Time (s)		4.0			4.0				4.0			4.0
Vehicle Extension (s)		3.0			3.0				3.0			3.0
Lane Grp Cap (vph)		1299			1299				1591			920
v/s Ratio Prot		0.34			c0.34							
v/s Ratio Perm									0.30			c0.56
v/c Ratio		0.94			0.94				0.54			1.00
Uniform Delay, d1		31.0			31.0				13.9			22.0
Progression Factor		0.28			0.82				1.00			1.00
Incremental Delay, d2		8.9			13.4				0.4			30.5
Delay (s)		17.6			38.9				14.2			52.5
Level of Service		B			D				B			D
Approach Delay (s)		17.6			38.9			14.2			52.5	
Approach LOS		B			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	30.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	95.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Irwindale Regional Shopping Center
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Scenario Report

Scenario:	Cumul WP SAT
Command:	Default Command
Volume:	Cumul WP SAT
Geometry:	OY
Impact Fee:	Default Impact Fee
Trip Generation:	Default
Trip Distribution:	Default
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 Dwy 1/Live Oak Ave

Cycle (sec):	100	Critical Vol./Cap.(X):	0.565
Loss Time (sec):	10	Average Delay (sec/veh):	19.5
Optimal Cycle:	41	Level Of Service:	B

Street Name:	Dwy 1						Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Permitted			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! 0	0	0	0	0	0	2	1	0	1
Lanes:	0	2	0	0								
Volume Module:												
Base Vol:	149	0	149	0	0	0	0	1124	162	150	1100	0
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:	149	0	149	0	0	0	0	1124	162	150	1100	0
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:	149	0	149	0	0	0	0	1124	162	150	1100	0
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:	149	0	149	0	0	0	0	1124	162	150	1100	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	149	0	149	0	0	0	0	1124	162	150	1100	0
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:	149	0	149	0	0	0	0	1124	162	150	1100	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	0.89	0.89	0.95	0.95	1.00
Lanes:	0.50	0.00	0.50	0.00	0.00	0.00	0.00	2.62	0.38	1.00	2.00	0.00
Final Sat.:	865	0	865	0	0	0	0	4447	641	1805	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.17	0.00	0.17	0.00	0.00	0.00	0.00	0.25	0.25	0.08	0.30	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.31	0.00	0.31	0.00	0.00	0.00	0.00	0.45	0.45	0.15	0.59	0.00
Volume/Cap:	0.56	0.00	0.56	0.00	0.00	0.00	0.00	0.56	0.56	0.56	0.51	0.00
Delay/Veh:	30.6	0.0	30.6	0.0	0.0	0.0	0.0	20.7	20.7	42.5	12.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.6	0.0	30.6	0.0	0.0	0.0	0.0	20.7	20.7	42.5	12.0	0.0
LOS by Move:	C	A	C	A	A	A	A	C	C	D	B	A
HCM2kAvgQ:	8	0	8	0	0	0	0	11	11	4	10	0

Irwindale Regional Shopping Center
City of Irwindale, Los Angeles County
Future Baseline Plus Cumul. Pr. With Improvements

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #7 Dwy 3/Live Oak Ave

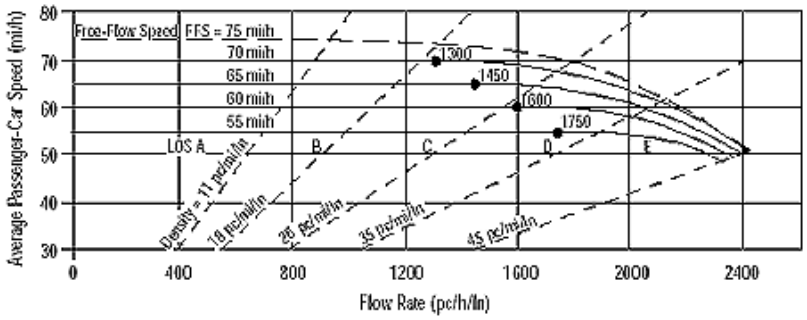
Cycle (sec):	100	Critical Vol./Cap.(X):	0.578
Loss Time (sec):	10	Average Delay (sec/veh):	19.7
Optimal Cycle:	42	Level Of Service:	B

Street Name:	Dwy 3							Live Oak Ave					
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Split Phase			Split Phase			Permitted			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! 0	0	0	0	0	0	0	0	0	2	1 0
Volume Module:													
Base Vol:	143	0	159	0	0	0	0	1156	160	156	1138	0	
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:	143	0	159	0	0	0	0	1156	160	156	1138	0	
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:	143	0	159	0	0	0	0	1156	160	156	1138	0	
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:	143	0	159	0	0	0	0	1156	160	156	1138	0	
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced Vol:	143	0	159	0	0	0	0	1156	160	156	1138	0	
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:	143	0	159	0	0	0	0	1156	160	156	1138	0	
Saturation Flow Module:													
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Adjustment:	0.91	1.00	0.91	1.00	1.00	1.00	1.00	0.89	0.89	0.95	0.95	1.00	
Lanes:	0.47	0.00	0.53	0.00	0.00	0.00	0.00	2.64	0.36	1.00	2.00	0.00	
Final Sat.:	817	0	908	0	0	0	0	4474	619	1805	3610	0	
Capacity Analysis Module:													
Vol/Sat:	0.18	0.00	0.18	0.00	0.00	0.00	0.00	0.26	0.26	0.09	0.32	0.00	
Crit Moves:			****					****		****			
Green/Cycle:	0.30	0.00	0.30	0.00	0.00	0.00	0.00	0.45	0.45	0.15	0.60	0.00	
Volume/Cap:	0.58	0.00	0.58	0.00	0.00	0.00	0.00	0.58	0.58	0.58	0.53	0.00	
Delay/Veh:	31.0	0.0	31.0	0.0	0.0	0.0	0.0	21.0	21.0	42.7	12.1	0.0	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
AdjDel/Veh:	31.0	0.0	31.0	0.0	0.0	0.0	0.0	21.0	21.0	42.7	12.1	0.0	
LOS by Move:	C	A	C	A	A	A	A	C	C	D	B	A	
HCM2kAvgQ:	8	0	8	0	0	0	0	10	10	4	11	0	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	270	0	0	767	0	0	0	384	0	0	922
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0				4.0			4.0
Lane Util. Factor		0.95			0.95				0.88			1.00
Frt		1.00			1.00				0.85			0.86
Flt Protected		1.00			1.00				1.00			1.00
Satd. Flow (prot)		3610			3610				2842			1644
Flt Permitted		1.00			1.00				1.00			1.00
Satd. Flow (perm)		3610			3610				2842			1644
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	297	0	0	843	0	0	0	422	0	0	1013
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	150	0	0	5
Lane Group Flow (vph)	0	297	0	0	843	0	0	0	272	0	0	1008
Turn Type		NA			NA				Perm			Perm
Protected Phases		2			6							
Permitted Phases									8			4
Actuated Green, G (s)		27.5			27.5				64.5			64.5
Effective Green, g (s)		27.5			27.5				64.5			64.5
Actuated g/C Ratio		0.28			0.28				0.64			0.64
Clearance Time (s)		4.0			4.0				4.0			4.0
Vehicle Extension (s)		3.0			3.0				3.0			3.0
Lane Grp Cap (vph)		992			992				1833			1060
v/s Ratio Prot		0.08			c0.23							
v/s Ratio Perm									0.10			c0.61
v/c Ratio		0.30			0.85				0.15			0.95
Uniform Delay, d1		28.6			34.3				7.0			16.3
Progression Factor		0.11			0.86				1.00			1.00
Incremental Delay, d2		0.8			8.9				0.0			17.0
Delay (s)		3.9			38.3				7.0			33.3
Level of Service		A			D				A			C
Approach Delay (s)		3.9			38.3			7.0			33.3	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4902*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1332*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*19.0*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	Existing NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4520	0.92	Level	0	0	1.000	1.00	4913
Ramp	382	0.92	Level	0	0	1.000	1.00	415
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.325 using Equation (Exhibit 25-5)

V_{12} = 1598 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	5328	See Exhibit 25-7	No
V_{R12}	2013	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 17.9 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.315 (Exibit 25-19)

S_R= 61.2 mph (Exhibit 25-19)

S_0= 65.8 mph (Exhibit 25-19)

S = 64.0 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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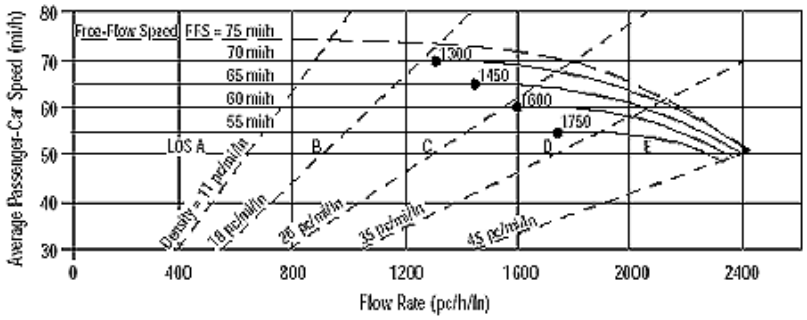
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*Arrow On-Ramp/Arrow On Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4520*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**		
Operational (LOS)			Design (N)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1228*	pc/h/ln	Design LOS		
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
D = v_p / S	*17.5*	pc/mi/ln	S		mi/h
LOS	*B*		D = v_p / S		pc/mi/ln
			Required Number of Lanes, N		

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Loop On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	Existing NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4208	0.92	Level	0	0	1.000	1.00	4574
Ramp	312	0.92	Level	0	0	1.000	1.00	339
UpStream								
DownStream								

Estimation of v_{12}

Merge Areas

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.335 using Equation (Exhibit 25-5)

V_{12} = 1531 pc/h

Diverge Areas

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	4913	See Exhibit 25-7	No
V_{R12}	1870	4600:All	No

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

Merge Areas

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.8 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Diverge Areas

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

Merge Areas

M_S = 0.311 (Exibit 25-19)

S_R= 61.3 mph (Exhibit 25-19)

S_0= 66.3 mph (Exhibit 25-19)

S = 64.3 mph (Exhibit 25-14)

Diverge Areas

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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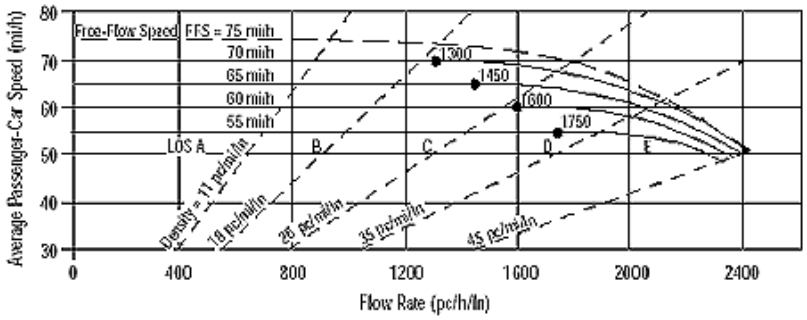
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*LiveOak Off-Ramp/Arrow On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4208*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1143*	pc/h/ln	Design LOS		
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
D = v_p / S	*16.3*	pc/mi/ln	S		mi/h
LOS	*B*		D = v_p / S		pc/mi/ln
			Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Live Oak Ave Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	Existing NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4958	0.92	Level	0	0	1.000	1.00	5389
Ramp	750	0.92	Level	0	0	1.000	1.00	815
UpStream								
DownStream								

Estimation of v_{12} — Merge Areas

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Estimation of v_{12} — Diverge Areas

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 2809 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5389	9600	No
V_{12}	2809	4400:All	No
$V_{FO} = V_F - V_R$	4574	9600	No
V_R	815	2000	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 27.1 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

D_s = 0.501 (Exhibit 25-19)

S_R= 56.0 mph (Exhibit 25-19)

S_0= 75.7 mph (Exhibit 25-19)

S = 63.9 mph (Exhibit 25-15)

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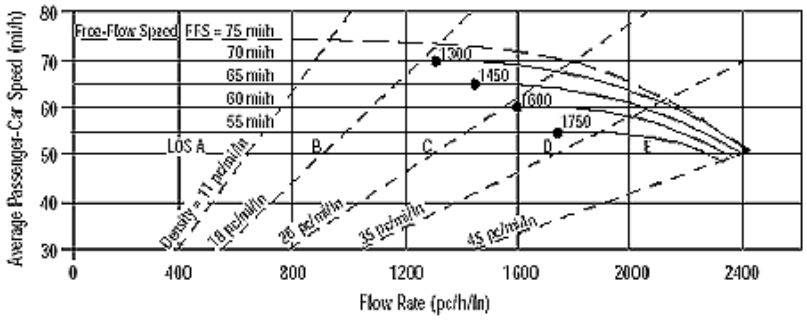
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*South of Live Oak Ave*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4958*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1347*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*19.2*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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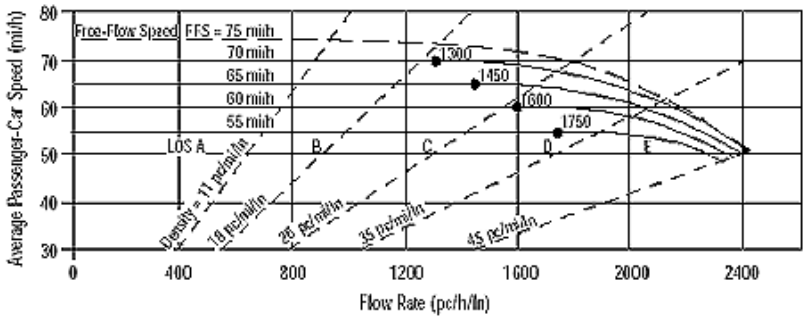
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*6341*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1723*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*68.6*	mi/h	S	mi/h
D = v_p / S	*25.1*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	Existing NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	6341	0.92	Level	0	0	1.000	1.00	6892
Ramp	896	0.92	Level	0	0	1.000	1.00	974
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3554 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	6892	9600	No
V_{12}	3554	4400:All	No
$V_{FO} = V_F - V_R$	5918	9600	No
V_R	974	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 31.7 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation

D_s = 0.516 (Exhibit 25-19)

S_R= 55.6 mph (Exhibit 25-19)

S_0= 74.2 mph (Exhibit 25-19)

S = 63.3 mph (Exhibit 25-15)

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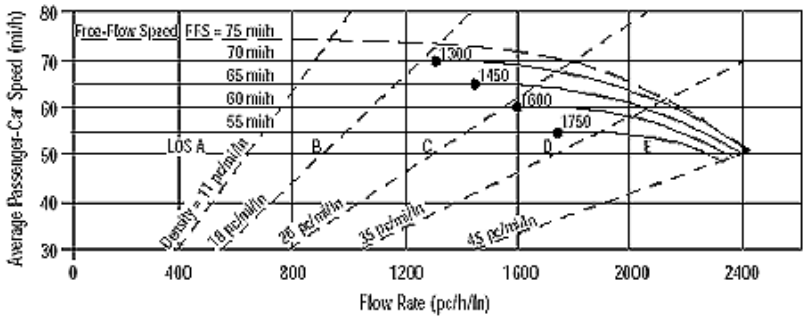
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*Arrow Off Ramp/Live Oak*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5445*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1480*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.8*	mi/h	S	mi/h
D = v_p / S	*21.2*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Live Oak Canyon On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	Existing NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5445	0.92	Level	0	0	1.000	1.00	5918
Ramp	1209	0.92	Level	0	0	1.000	1.00	1314
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.267 using Equation (Exhibit 25-5)

V_{12} = 1580 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	7232	See Exhibit 25-7	No
V_{R12}	2894	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.2 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

M_S = 0.345 (Exibit 25-19)

S_R= 60.4 mph (Exhibit 25-19)

S_0= 64.0 mph (Exhibit 25-19)

S = 62.5 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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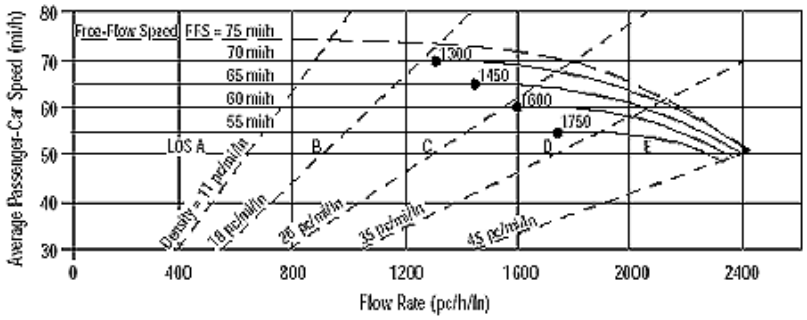
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*South of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*6654*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1808*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*67.8*	mi/h	S	mi/h
D = v_p / S	*26.7*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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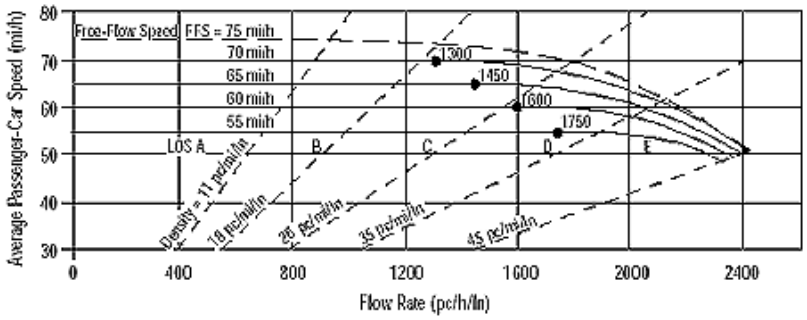
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4298*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1168*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*16.7*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	Existing NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4066	0.92	Level	0	0	1.000	1.00	4420
Ramp	232	0.92	Level	0	0	1.000	1.00	252
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.346 using Equation (Exhibit 25-5)

V_{12} = 1527 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	4672	See Exhibit 25-7	No
V_{R12}	1779	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.1 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.309 (Exibit 25-19)

S_R= 61.3 mph (Exhibit 25-19)

S_0= 66.6 mph (Exhibit 25-19)

S = 64.5 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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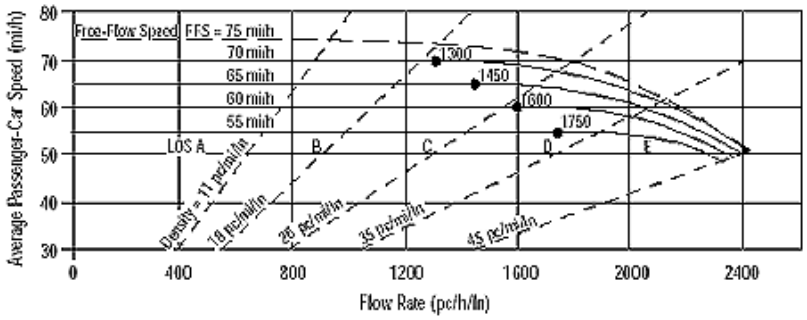
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	*Nancy Velgara*
Agency or Company	*LSA Associates*
Date Performed	*8/14/2014*
Analysis Time Period	*PM Peak Hour*

Site Information

Highway/Direction of Travel	*Northbound*
From/To	*Arrow On-Ramp/Arrow On-Ramp*
Jurisdiction	*LA County*
Analysis Year	*Existing NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4066*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Shoulder Lat. Clearance	*6.0*	ft
Interchange Density	*0.50*	I/mi
Number of Lanes, N	*4*	
FFS (measured)	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}		mi/h
f_{LC}		mi/h
f_{ID}		mi/h
f_N		mi/h
FFS	*70.0*	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1105*	pc/h/ln
S	*70.0*	mi/h
D = v_p / S	*15.8*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associate	Junction	Arrow Highway Loop On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	Existing NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3972	0.92	Level	0	0	1.000	1.00	4317
Ramp	94	0.92	Level	0	0	1.000	1.00	102
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.364 using Equation (Exhibit 25-5)

V_{12} = 1573 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	4419	See Exhibit 25-7	No
V_{R12}	1675	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 15.4 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.307 (Exibit 25-19)

S_R= 61.4 mph (Exhibit 25-19)

S_0= 66.9 mph (Exhibit 25-19)

S = 64.7 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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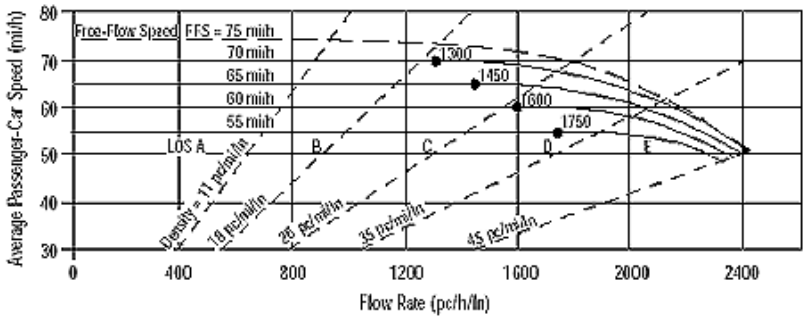
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	*Nancy Velgara*
Agency or Company	*LSA Associates*
Date Performed	*8/14/2014*
Analysis Time Period	*PM Peak Hour*

Site Information

Highway/Direction of Travel	*Northbound*
From/To	*LiveOak Off-Ramp/Arrow On-Ramp*
Jurisdiction	*La County*
Analysis Year	*Existing NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3972*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Shoulder Lat. Clearance	*6.0*	ft
Interchange Density	*0.50*	I/mi
Number of Lanes, N	*4*	
FFS (measured)	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}		mi/h
f_{LC}		mi/h
f_{ID}		mi/h
f_N		mi/h
FFS	*70.0*	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1079*	pc/h/ln
S	*70.0*	mi/h
D = v_p / S	*15.4*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Live Oak Avenue Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	Existing NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5274	0.92	Level	0	0	1.000	1.00	5733
Ramp	1302	0.92	Level	0	0	1.000	1.00	1415
UpStream								
DownStream								

Estimation of v_{12} — Merge Areas

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Estimation of v_{12} — Diverge Areas

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3298 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5733	9600	No
V_{12}	3298	4400:All	No
$V_{FO} = V_F - V_R$	4318	9600	No
V_R	1415	2000	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 31.3 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

D_s = 0.555 (Exhibit 25-19)

S_R= 54.5 mph (Exhibit 25-19)

S_0= 75.9 mph (Exhibit 25-19)

S = 61.9 mph (Exhibit 25-15)

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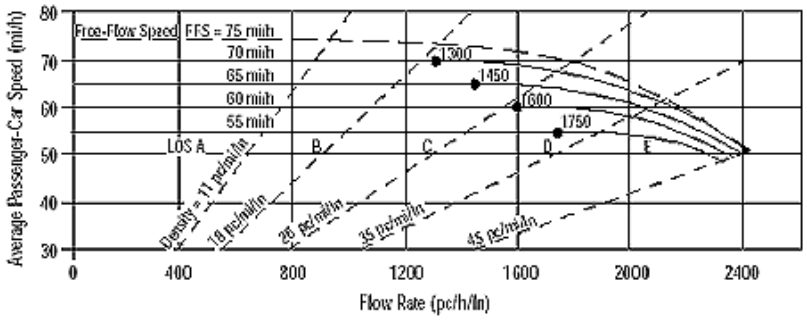
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*South of Live Oak Avenue*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5274*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1433*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*69.9*	mi/h	S		mi/h
D = v_p / S	*20.5*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*C*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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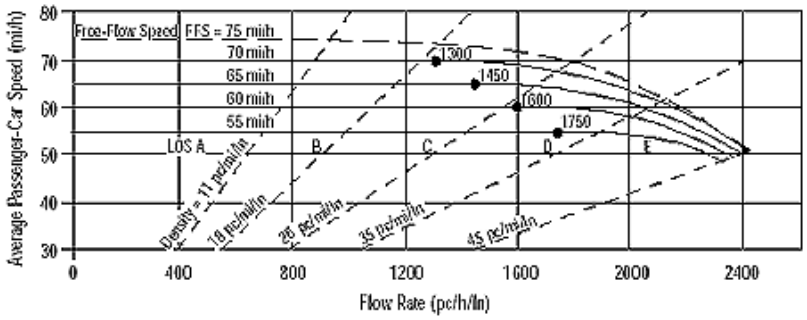
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5041*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1370*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*19.6*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	Existing NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5041	0.92	Level	0	0	1.000	1.00	5479
Ramp	584	0.92	Level	0	0	1.000	1.00	635
UpStream								
DownStream								

Estimation of v_{12} — Merge Areas

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Estimation of v_{12} — Diverge Areas

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 2747 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5479	9600	No
V_{12}	2747	4400:All	No
$V_{FO} = V_F - V_R$	4844	9600	No
V_R	635	2000	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 24.7 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

D_s = 0.485 (Exhibit 25-19)

S_R= 56.4 mph (Exhibit 25-19)

S_0= 75.4 mph (Exhibit 25-19)

S = 64.5 mph (Exhibit 25-15)

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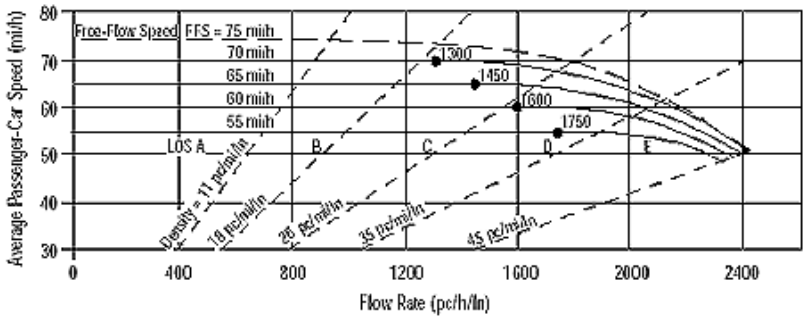
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*Arrow Off-Ramp/LiveOak On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4457*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1211*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*17.3*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Live Oak Canyon On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	Existing NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4457	0.92	Level	0	0	1.000	1.00	4845
Ramp	1551	0.92	Level	0	0	1.000	1.00	1686
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.220 using Equation (Exhibit 25-5)

V_{12} = 1068 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	6531	See Exhibit 25-7	No
V_{R12}	2754	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 22.0 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

M_S = 0.335 (Exibit 25-19)

S_R= 60.6 mph (Exhibit 25-19)

S_0= 65.0 mph (Exhibit 25-19)

S = 63.1 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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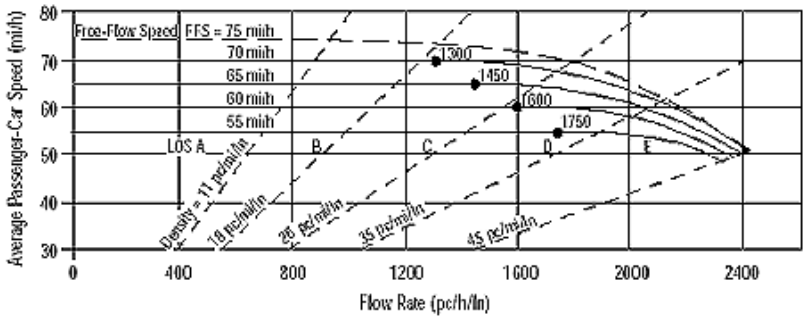
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*South of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6008*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1633*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.3*	mi/h	S	mi/h
D = v_p / S	*23.6*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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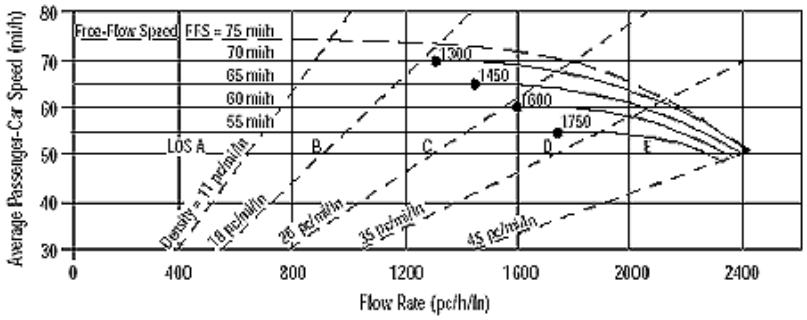
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4949*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1345*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*19.2*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	Existing WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4567	0.92	Level	0	0	1.000	1.00	4964
Ramp	382	0.92	Level	0	0	1.000	1.00	415
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.325 using Equation (Exhibit 25-5)

V_{12} = 1614 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	5379	See Exhibit 25-7	No
V_{R12}	2029	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 18.0 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.316 (Exibit 25-19)

S_R= 61.2 mph (Exhibit 25-19)

S_0= 65.8 mph (Exhibit 25-19)

S = 64.0 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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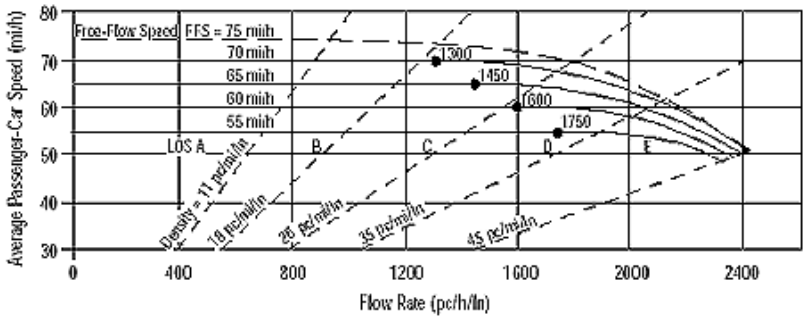
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*Arrow On-Ramp/Arrow On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4567*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1241*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*17.7*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*B*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Loop On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	Existing WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4208	0.92	Level	0	0	1.000	1.00	4574
Ramp	359	0.92	Level	0	0	1.000	1.00	390
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.328 using Equation (Exhibit 25-5)

V_{12} = 1502 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	4964	See Exhibit 25-7	No
V_{R12}	1892	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.9 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.312 (Exibit 25-19)

S_R= 61.3 mph (Exhibit 25-19)

S_0= 66.3 mph (Exhibit 25-19)

S = 64.3 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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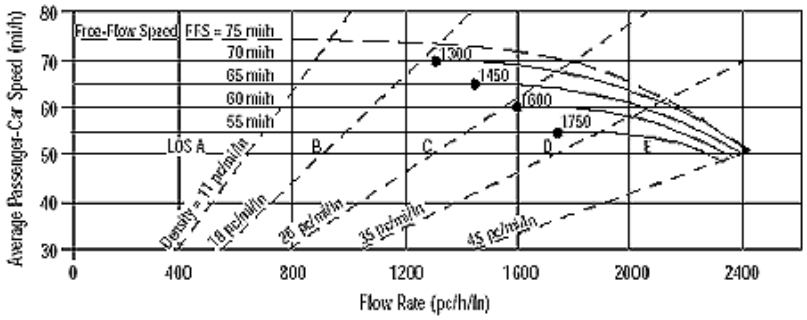
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*LiveOak Off-Ramp/Arrow On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4360*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**		
Operational (LOS)			Design (N)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1185*	pc/h/ln	Design LOS		
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
D = v_p / S	*16.9*	pc/mi/ln	S		mi/h
LOS	*B*		D = v_p / S		pc/mi/ln
			Required Number of Lanes, N		

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Live Oak Ave Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	Existing WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5089	0.92	Level	0	0	1.000	1.00	5532
Ramp	881	0.92	Level	0	0	1.000	1.00	958
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 2952 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5532	9600	No
V_{12}	2952	4400:All	No
$V_{FO} = V_F - V_R$	4574	9600	No
V_R	958	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 28.3 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation

D_s = 0.514 (Exhibit 25-19)

S_R= 55.6 mph (Exhibit 25-19)

S_0= 75.7 mph (Exhibit 25-19)

S = 63.4 mph (Exhibit 25-15)

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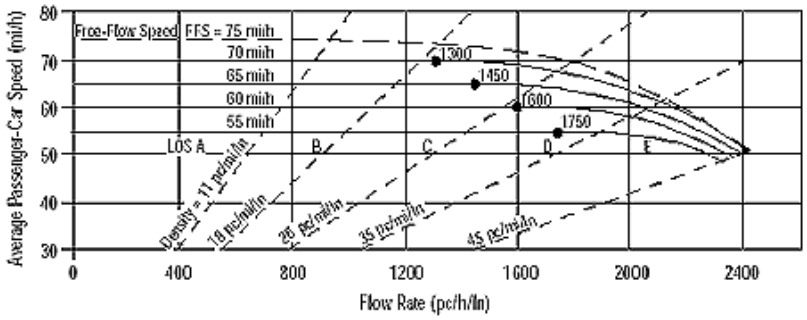
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*South of Live Oak Ave*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5089*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1383*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*19.8*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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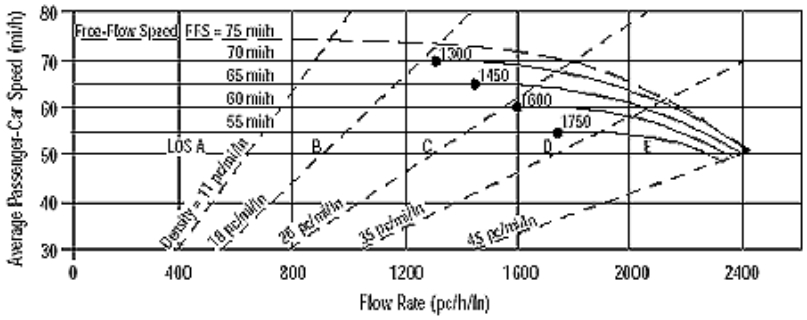
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*6468*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1758*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*68.3*	mi/h	S	mi/h
D = v_p / S	*25.7*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	Existing WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	6468	0.92	Level	0	0	1.000	1.00	7030
Ramp	1023	0.92	Level	0	0	1.000	1.00	1112
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3692 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	7030	9600	No
V_{12}	3692	4400:All	No
$V_{FO} = V_F - V_R$	5918	9600	No
V_R	1112	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 32.9 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation

D_s = 0.528 (Exhibit 25-19)

S_R= 55.2 mph (Exhibit 25-19)

S_0= 74.2 mph (Exhibit 25-19)

S = 62.8 mph (Exhibit 25-15)

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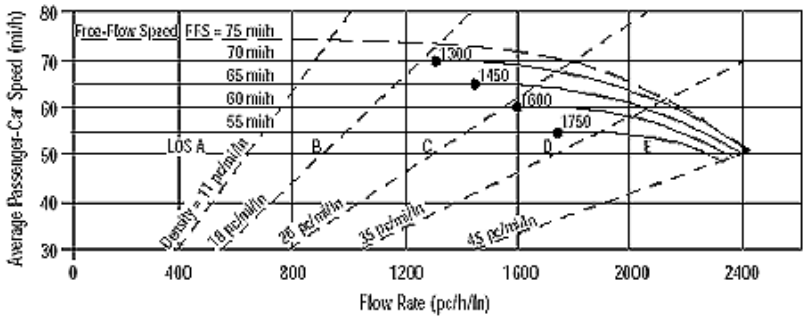
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*Arrow Off Ramp/Live Oak*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5445*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1480*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.8*	mi/h	S	mi/h
D = v_p / S	*21.2*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Live Oak Canyon On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	Existing WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5445	0.92	Level	0	0	1.000	1.00	5918
Ramp	1257	0.92	Level	0	0	1.000	1.00	1366
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.260 using Equation (Exhibit 25-5)

V_{12} = 1542 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	7284	See Exhibit 25-7	No
V_{R12}	2908	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.3 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

M_S = 0.346 (Exibit 25-19)

S_R= 60.3 mph (Exhibit 25-19)

S_0= 63.9 mph (Exhibit 25-19)

S = 62.4 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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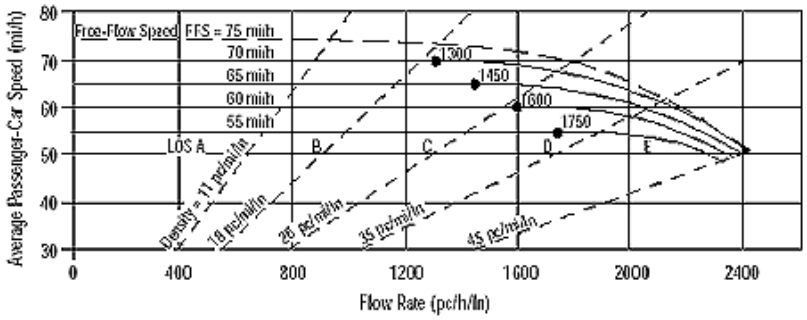
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*South of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Existing WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*6702*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1821*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*67.6*	mi/h	S	mi/h
D = v_p / S	*26.9*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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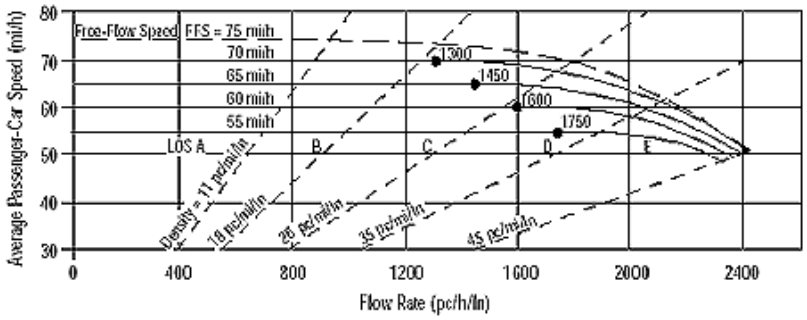
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4523*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1229*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*17.6*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	Existing WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4291	0.92	Level	0	0	1.000	1.00	4664
Ramp	232	0.92	Level	0	0	1.000	1.00	252
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.346 using Equation (Exhibit 25-5)

V_{12} = 1612 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	4916	See Exhibit 25-7	No
V_{R12}	1864	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.8 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.311 (Exibit 25-19)

S_R= 61.3 mph (Exhibit 25-19)

S_0= 66.3 mph (Exhibit 25-19)

S = 64.3 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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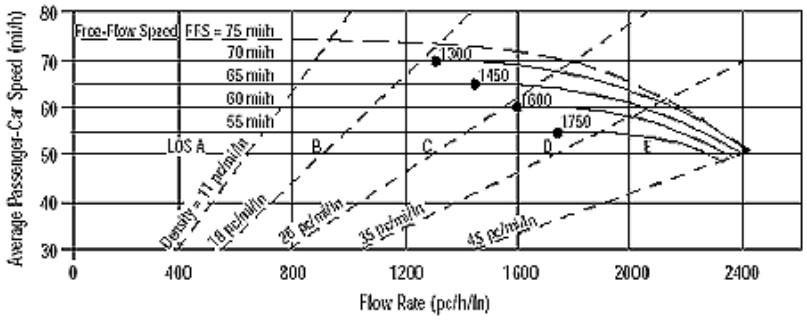
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*Arrow On-Ramp/Arrow On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4291*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1166*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*16.7*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*B*		Required Number of Lanes, N		

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associate	Junction	Arrow Highway Loop On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	Existing WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3972	0.92	Level	0	0	1.000	1.00	4317
Ramp	319	0.92	Level	0	0	1.000	1.00	347
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.334 using Equation (Exhibit 25-5)

V_{12} = 1441 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	4664	See Exhibit 25-7	No
V_{R12}	1788	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.1 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.309 (Exibit 25-19)

S_R= 61.3 mph (Exhibit 25-19)

S_0= 66.6 mph (Exhibit 25-19)

S = 64.5 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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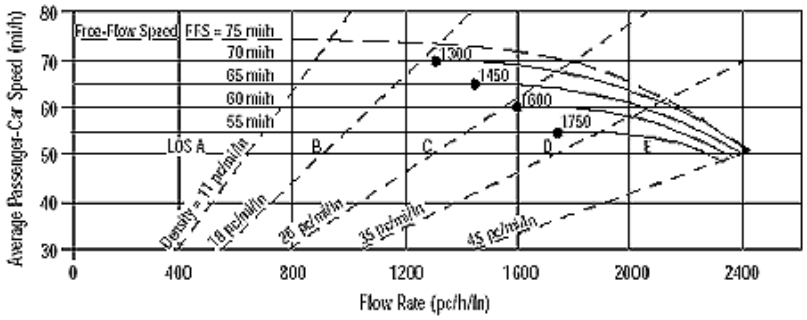
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	*Nancy Velgara*
Agency or Company	*LSA Associates*
Date Performed	*8/14/2014*
Analysis Time Period	*PM Peak Hour*

Site Information

Highway/Direction of Travel	*Northbound*
From/To	*LiveOak Off-Ramp/Arrow On-Ramp*
Jurisdiction	*La County*
Analysis Year	*Existing WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3972*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Shoulder Lat. Clearance	*6.0*	ft
Interchange Density	*0.50*	I/mi
Number of Lanes, N	*4*	
FFS (measured)	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}		mi/h
f_{LC}		mi/h
f_{ID}		mi/h
f_N		mi/h
FFS	*70.0*	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1079*	pc/h/ln
S	*70.0*	mi/h
D = v_p / S	*15.4*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Live Oak Avenue Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	Existing WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5435	0.92	Level	0	0	1.000	1.00	5908
Ramp	1463	0.92	Level	0	0	1.000	1.00	1590
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3473 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5908	9600	No
V_{12}	3473	4400:All	No
$V_{FO} = V_F - V_R$	4318	9600	No
V_R	1590	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 32.8 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation

D_s = 0.571 (Exhibit 25-19)

S_R= 54.0 mph (Exhibit 25-19)

S_0= 75.9 mph (Exhibit 25-19)

S = 61.3 mph (Exhibit 25-15)

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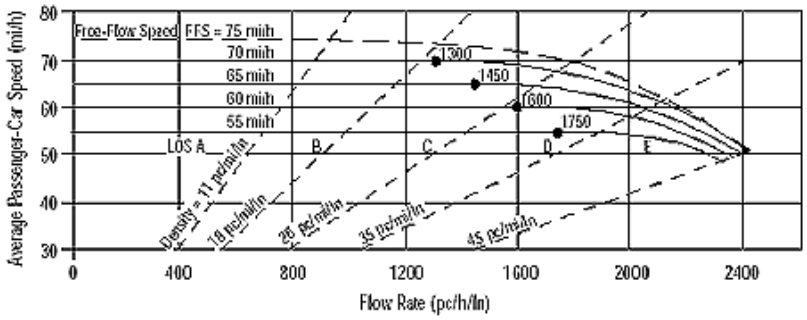
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*South of Live Oak Avenue*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5435*	veh/h	Peak-Hour Factor, PHF	*0.92*	
AADT		veh/day	%Trucks and Buses, P_T	*0*	
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*	
Peak-Hr Direction Prop, D			General Terrain:	*Level*	
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*	
Driver type adjustment	*1.00*		Up/Down %		

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1477*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.9*	mi/h	S	mi/h
D = v_p / S	*21.1*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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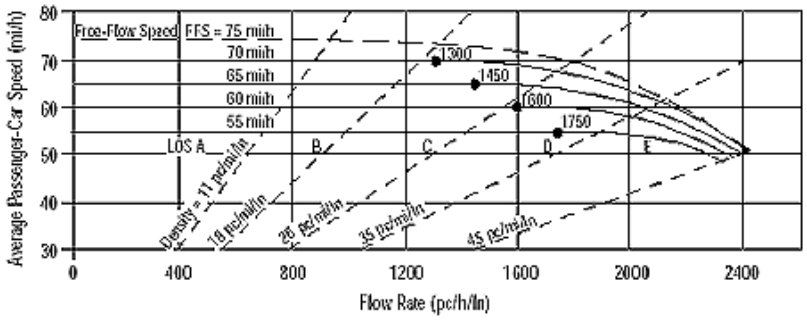
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5244*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1425*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.9*	mi/h	S	mi/h
D = v_p / S	*20.4*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	Existing WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5244	0.92	Level	0	0	1.000	1.00	5700
Ramp	787	0.92	Level	0	0	1.000	1.00	855
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 2967 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5700	9600	No
V_{12}	2967	4400:All	No
$V_{FO} = V_F - V_R$	4845	9600	No
V_R	855	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 26.6 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

D_s = 0.505 (Exhibit 25-19)

S_R= 55.9 mph (Exhibit 25-19)

S_0= 75.4 mph (Exhibit 25-19)

S = 63.8 mph (Exhibit 25-15)

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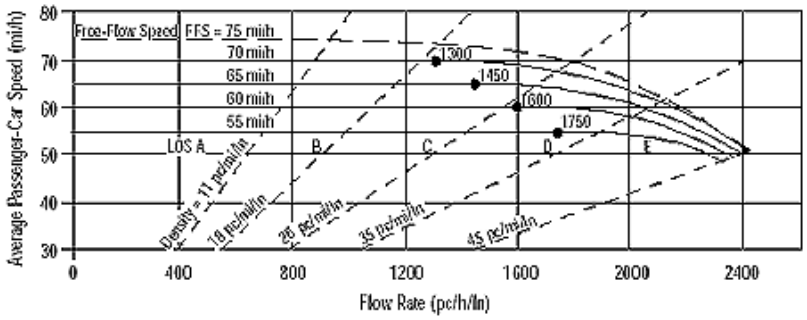
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*Arrow Off-Ramp/LiveOak On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4457*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**		
Operational (LOS)			Design (N)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1211*	pc/h/ln	Design LOS		
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
D = v_p / S	*17.3*	pc/mi/ln	S		mi/h
LOS	*B*		D = v_p / S		pc/mi/ln
			Required Number of Lanes, N		

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Live Oak Canyon On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	Existing WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4457	0.92	Level	0	0	1.000	1.00	4845
Ramp	1792	0.92	Level	0	0	1.000	1.00	1948
UpStream								
DownStream								

Estimation of v_{12} (Merge Areas)

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.188 using Equation (Exhibit 25-5)

V_{12} = 910 pc/h

Estimation of v_{12} (Diverge Areas)

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	6793	See Exhibit 25-7	No
V_{R12}	2858	4600:All	No

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 22.7 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = 0.342 (Exibit 25-19)

S_R= 60.4 mph (Exhibit 25-19)

S_0= 64.7 mph (Exhibit 25-19)

S = 62.8 mph (Exhibit 25-14)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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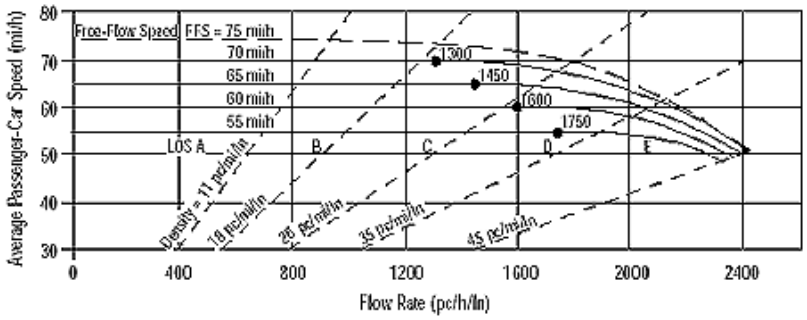
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*South of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Existing WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*6249*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1698*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*68.8*	mi/h	S	mi/h
D = v_p / S	*24.7*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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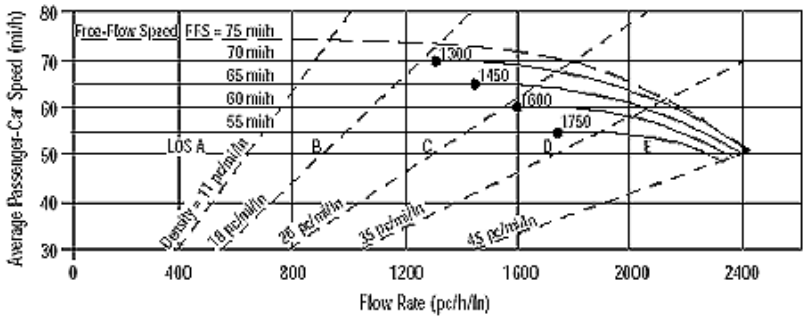
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Existing NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4814*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1308*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*18.7*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	Existing NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4586	0.92	Level	0	0	1.000	1.00	4985
Ramp	228	0.92	Level	0	0	1.000	1.00	248
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.346 using Equation (Exhibit 25-5)

V_{12} = 1725 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	5233	See Exhibit 25-7	No
V_{R12}	1973	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 17.6 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.314 (Exibit 25-19)

S_R= 61.2 mph (Exhibit 25-19)

S_0= 65.9 mph (Exhibit 25-19)

S = 64.1 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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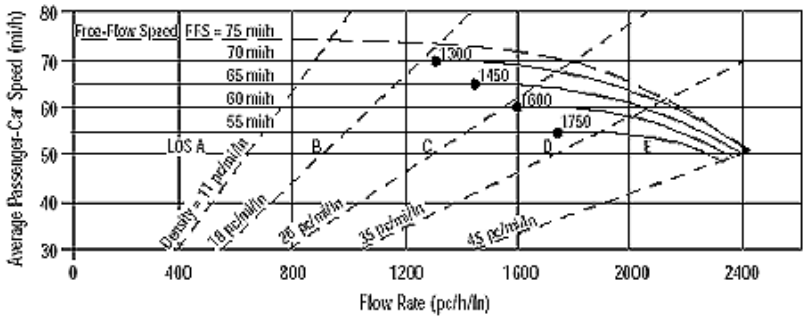
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*Arrow On-Ramp/Arrow On Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Existing NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4586*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1246*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*17.8*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*B*		Required Number of Lanes, N		

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Loop On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	Existing NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4410	0.92	Level	0	0	1.000	1.00	4793
Ramp	176	0.92	Level	0	0	1.000	1.00	191
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.353 using Equation (Exhibit 25-5)

V_{12} = 1693 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	4984	See Exhibit 25-7	No
V_{R12}	1884	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.9 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.312 (Exibit 25-19)

S_R= 61.3 mph (Exhibit 25-19)

S_0= 66.2 mph (Exhibit 25-19)

S = 64.3 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Live Oak Ave Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	Existing NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5196	0.92	Level	0	0	1.000	1.00	5648
Ramp	786	0.92	Level	0	0	1.000	1.00	854
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 2944 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5648	9600	No
V_{12}	2944	4400:All	No
$V_{FO} = V_F - V_R$	4794	9600	No
V_R	854	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 28.2 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation

D_s = 0.505 (Exhibit 25-19)

S_R= 55.9 mph (Exhibit 25-19)

S_0= 75.4 mph (Exhibit 25-19)

S = 63.8 mph (Exhibit 25-15)

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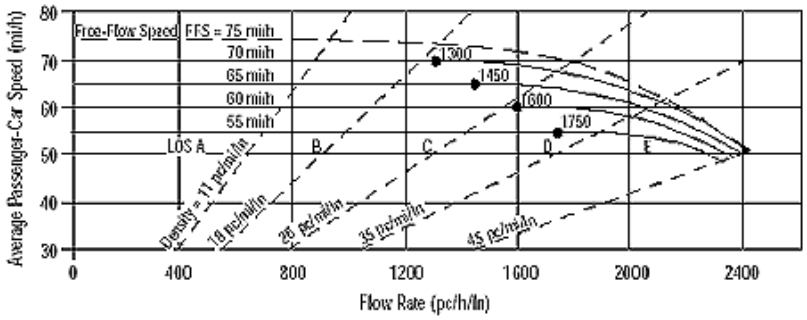
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*South of Live Oak Ave*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Existing NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5196*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1412*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*20.2*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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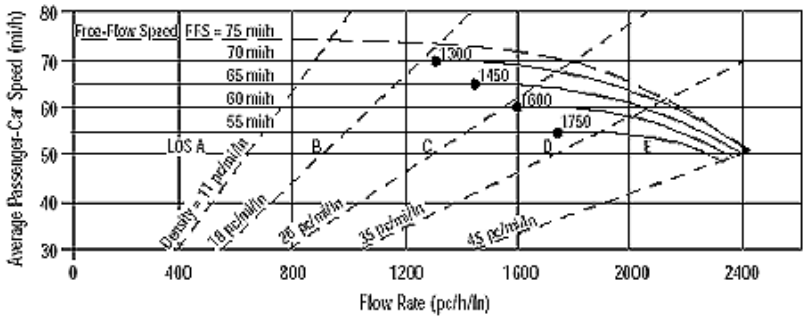
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Existing NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5152*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1400*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*20.0*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*C*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	Existing NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5152	0.92	Level	0	0	1.000	1.00	5600
Ramp	509	0.92	Level	0	0	1.000	1.00	553
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 2753 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5600	9600	No
V_{12}	2753	4400:All	No
$V_{FO} = V_F - V_R$	5047	9600	No
V_R	553	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 24.8 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

D_s = 0.478 (Exhibit 25-19)

S_R= 56.6 mph (Exhibit 25-19)

S_0= 75.1 mph (Exhibit 25-19)

S = 64.7 mph (Exhibit 25-15)

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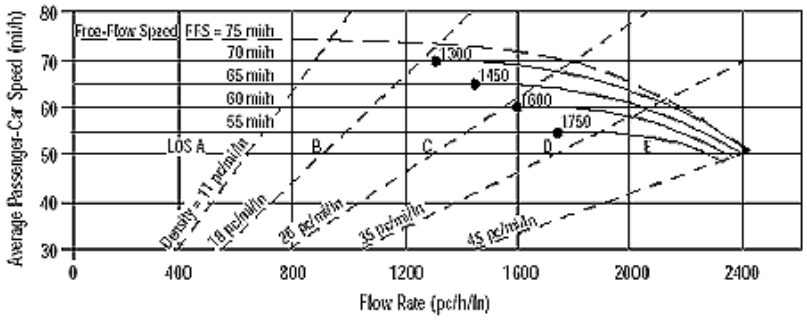
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*Arrow Off Ramp/Live Oak*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Existing NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4643*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1262*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*18.0*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Live Oak Canyon On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	Existing NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4643	0.92	Level	0	0	1.000	1.00	5047
Ramp	1031	0.92	Level	0	0	1.000	1.00	1121
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.291 using Equation (Exhibit 25-5)

V_{12} = 1469 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	6168	See Exhibit 25-7	No
V_{R12}	2590	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 21.0 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

M_S = 0.326 (Exibit 25-19)

S_R= 60.9 mph (Exhibit 25-19)

S_0= 65.4 mph (Exhibit 25-19)

S = 63.4 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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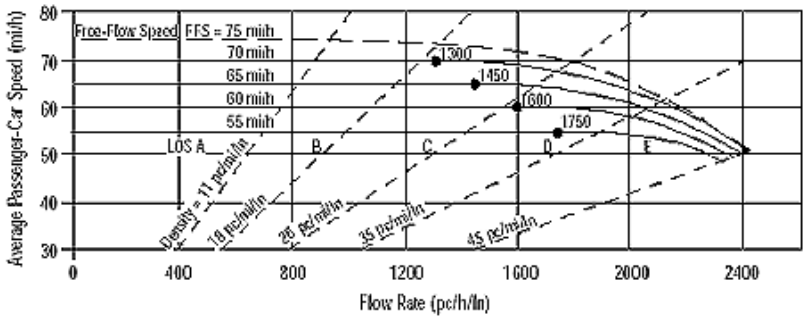
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*South of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Existing NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5674*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1542*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.7*	mi/h	S	mi/h
D = v_p / S	*22.1*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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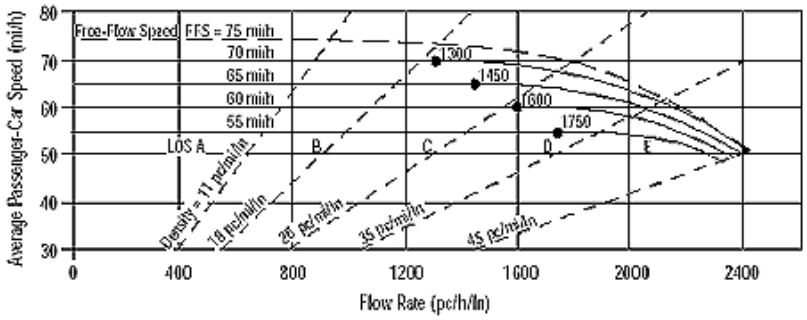
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Existing WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5195*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1412*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*20.2*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	Existing WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4967	0.92	Level	0	0	1.000	1.00	5399
Ramp	228	0.92	Level	0	0	1.000	1.00	248
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.346 using Equation (Exhibit 25-5)

V_{12} = 1869 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	5647	See Exhibit 25-7	No
V_{R12}	2117	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 18.7 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.318 (Exibit 25-19)

S_R= 61.1 mph (Exhibit 25-19)

S_0= 65.4 mph (Exhibit 25-19)

S = 63.7 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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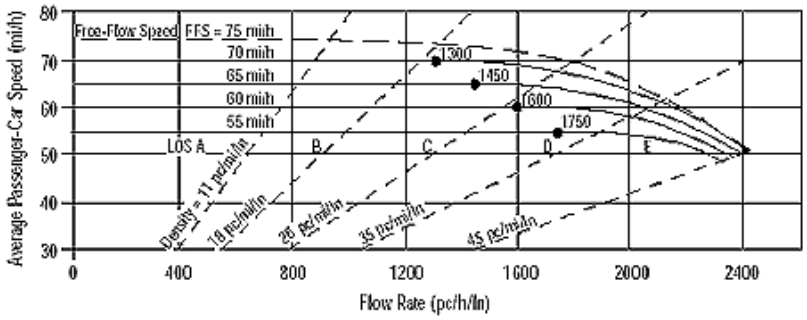
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*Arrow On-Ramp/Arrow On Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Existing WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4967*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1350*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*19.3*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*C*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Loop On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	Existing WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4410	0.92	Level	0	0	1.000	1.00	4793
Ramp	557	0.92	Level	0	0	1.000	1.00	605
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.301 using Equation (Exhibit 25-5)

V_{12} = 1445 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	5398	See Exhibit 25-7	No
V_{R12}	2050	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 18.1 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.316 (Exibit 25-19)

S_R= 61.1 mph (Exhibit 25-19)

S_0= 65.8 mph (Exhibit 25-19)

S = 63.9 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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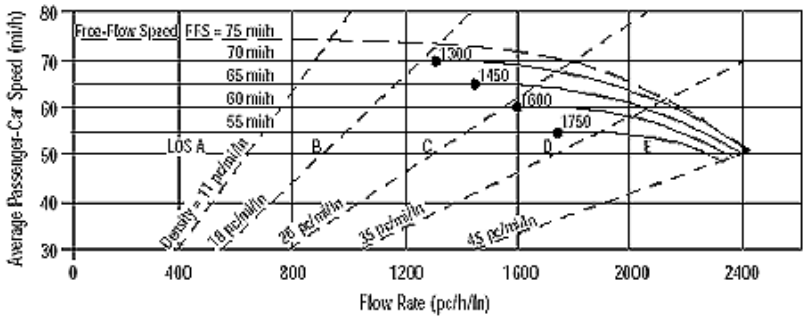
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*LiveOak Off-Ramp/Arrow On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Existing WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4410*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**		
Operational (LOS)			Design (N)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1198*	pc/h/ln	Design LOS		
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
D = v_p / S	*17.1*	pc/mi/ln	S		mi/h
LOS	*B*		D = v_p / S		pc/mi/ln
			Required Number of Lanes, N		

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Live Oak Ave Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	Existing WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5603	0.92	Level	0	0	1.000	1.00	6090
Ramp	1193	0.92	Level	0	0	1.000	1.00	1297
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3387 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	6090	9600	No
V_{12}	3387	4400:All	No
$V_{FO} = V_F - V_R$	4793	9600	No
V_R	1297	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 32.0 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation

D_s = 0.545 (Exhibit 25-19)

S_R= 54.7 mph (Exhibit 25-19)

S_0= 75.4 mph (Exhibit 25-19)

S = 62.3 mph (Exhibit 25-15)

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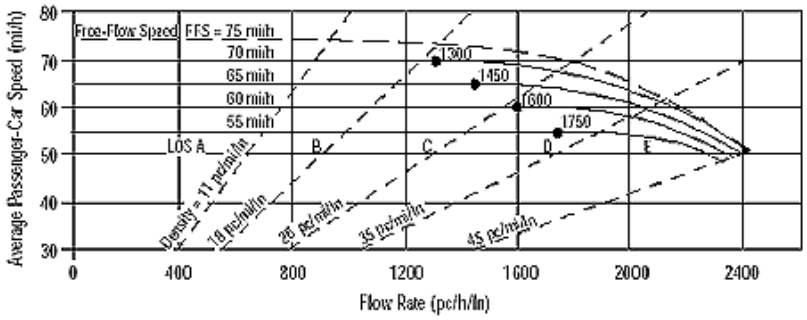
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*South of Live Oak Ave*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Existing WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5603*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1523*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.7*	mi/h	S	mi/h
D = v_p / S	*21.8*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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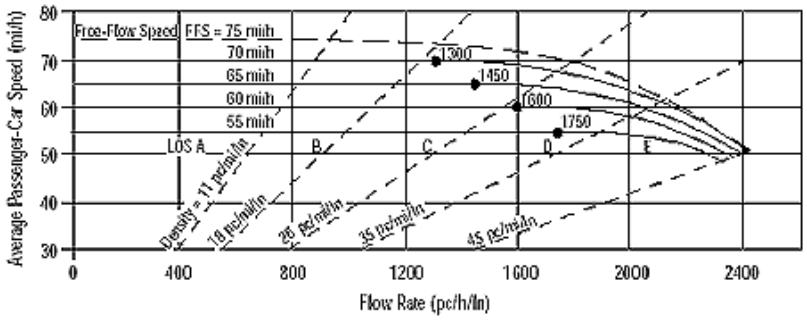
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Existing WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5587*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1518*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.8*	mi/h	S	mi/h
D = v_p / S	*21.8*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	Existing WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5587	0.92	Level	0	0	1.000	1.00	6073
Ramp	944	0.92	Level	0	0	1.000	1.00	1026
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3226 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	6073	9600	No
V_{12}	3226	4400:All	No
$V_{FO} = V_F - V_R$	5047	9600	No
V_R	1026	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 28.8 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation

D_s = 0.520 (Exhibit 25-19)

S_R= 55.4 mph (Exhibit 25-19)

S_0= 75.1 mph (Exhibit 25-19)

S = 63.2 mph (Exhibit 25-15)

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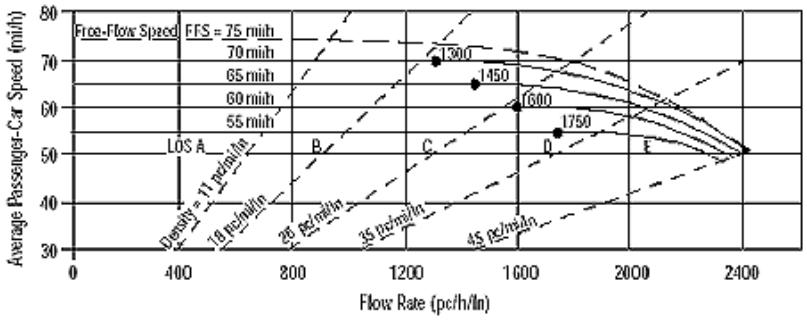
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*Arrow Off Ramp/Live Oak*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Existing WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4643*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1262*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*18.0*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Live Oak Canyon On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	Existing WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4643	0.92	Level	0	0	1.000	1.00	5047
Ramp	1457	0.92	Level	0	0	1.000	1.00	1584
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.233 using Equation (Exhibit 25-5)

V_{12} = 1177 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	6631	See Exhibit 25-7	No
V_{R12}	2761	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 22.1 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

M_S = 0.336 (Exibit 25-19)

S_R= 60.6 mph (Exhibit 25-19)

S_0= 64.8 mph (Exhibit 25-19)

S = 63.0 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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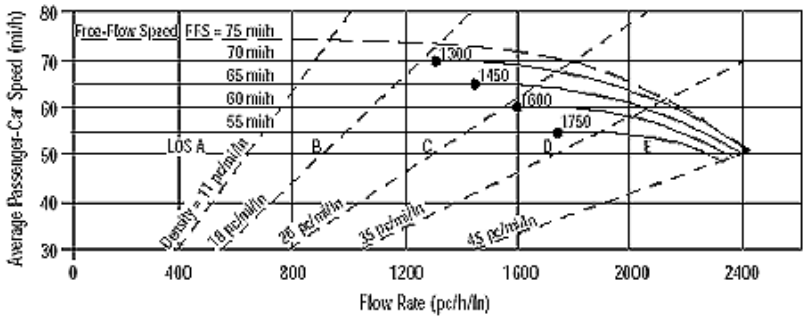
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*South of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Existing WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*6100*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1658*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.1*	mi/h	S	mi/h
D = v_p / S	*24.0*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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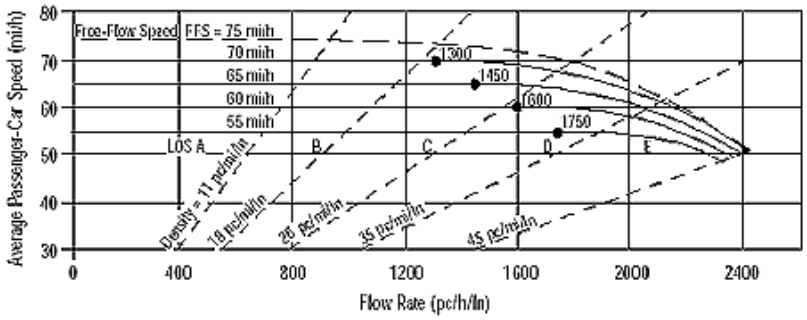
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*OY NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4989*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1356*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*19.4*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	OY NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4576	0.92	Level	0	0	1.000	1.00	4974
Ramp	413	0.92	Level	0	0	1.000	1.00	449
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.321 using Equation (Exhibit 25-5)

V_{12} = 1596 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	5423	See Exhibit 25-7	No
V_{R12}	2045	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 18.1 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.316 (Exibit 25-19)

S_R= 61.1 mph (Exhibit 25-19)

S_0= 65.7 mph (Exhibit 25-19)

S = 63.9 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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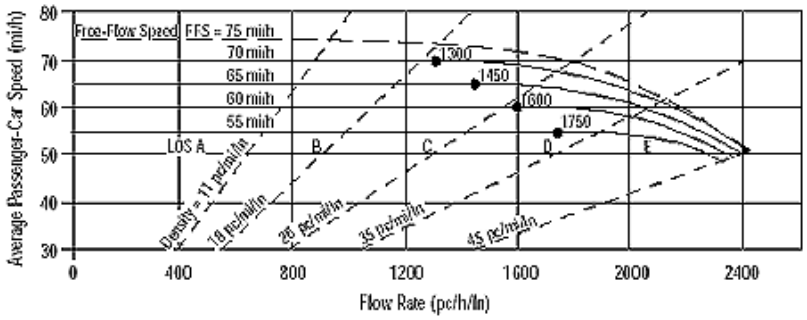
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	*Nancy Velgara*
Agency or Company	*LSA Associates*
Date Performed	*8/14/2014*
Analysis Time Period	*AM Peak Hour*

Site Information

Highway/Direction of Travel	*Northbound*
From/To	*Arrow On-Ramp/Arrow On-Ramp*
Jurisdiction	*LA County*
Analysis Year	*OY NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4576*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Shoulder Lat. Clearance	*6.0*	ft
Interchange Density	*0.50*	I/mi
Number of Lanes, N	*4*	
FFS (measured)	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}		mi/h
f_{LC}		mi/h
f_{ID}		mi/h
f_N		mi/h
FFS	*70.0*	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1243*	pc/h/ln
S	*70.0*	mi/h
D = v_p / S	*17.8*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Loop On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	OY NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4239	0.92	Level	0	0	1.000	1.00	4608
Ramp	337	0.92	Level	0	0	1.000	1.00	366
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.331 using Equation (Exhibit 25-5)

V_{12} = 1527 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	4974	See Exhibit 25-7	No
V_{R12}	1893	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.9 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.312 (Exibit 25-19)

S_R= 61.3 mph (Exhibit 25-19)

S_0= 66.3 mph (Exhibit 25-19)

S = 64.3 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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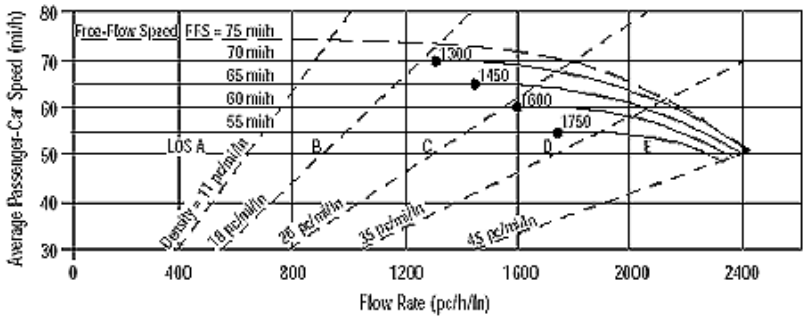
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*LiveOak Off-Ramp/Arrow On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*OY NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4239*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**		
Operational (LOS)			Design (N)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1152*	pc/h/ln	Design LOS		
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
D = v_p / S	*16.5*	pc/mi/ln	S		mi/h
LOS	*B*		D = v_p / S		pc/mi/ln
			Required Number of Lanes, N		

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Live Oak Ave Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	OY NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5049	0.92	Level	0	0	1.000	1.00	5488
Ramp	810	0.92	Level	0	0	1.000	1.00	880
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 2889 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5488	9600	No
V_{12}	2889	4400:All	No
$V_{FO} = V_F - V_R$	4608	9600	No
V_R	880	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 27.7 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

D_s = 0.507 (Exhibit 25-19)

S_R= 55.8 mph (Exhibit 25-19)

S_0= 75.6 mph (Exhibit 25-19)

S = 63.7 mph (Exhibit 25-15)

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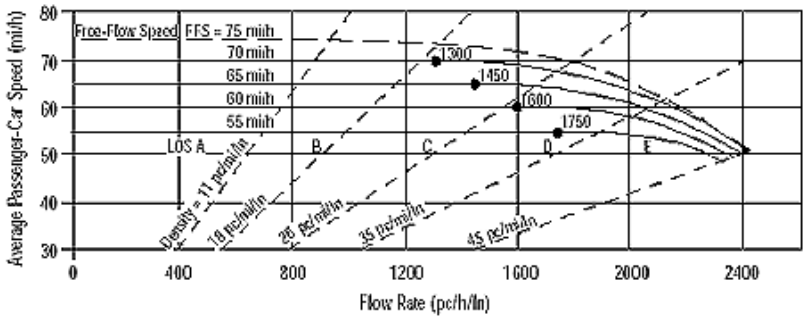
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*South of Live Oak Ave*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*OY NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5049*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1372*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*19.6*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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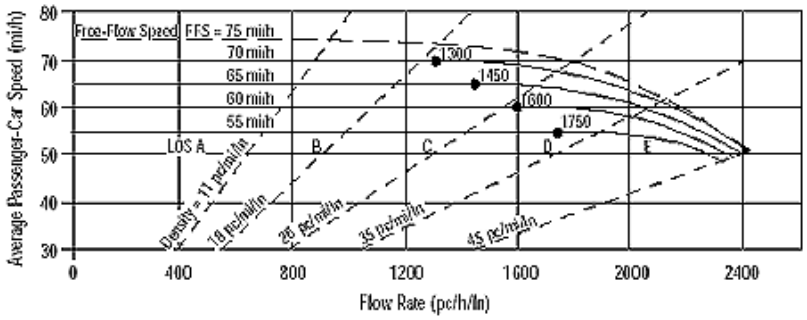
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*OY NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6436*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1749*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*68.4*	mi/h	S	mi/h
D = v_p / S	*25.6*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	OY NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	6436	0.92	Level	0	0	1.000	1.00	6996
Ramp	967	0.92	Level	0	0	1.000	1.00	1051
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3643 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	6996	9600	No
V_{12}	3643	4400:All	No
$V_{FO} = V_F - V_R$	5945	9600	No
V_R	1051	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 32.4 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation

D_s = 0.523 (Exhibit 25-19)

S_R= 55.4 mph (Exhibit 25-19)

S_0= 74.2 mph (Exhibit 25-19)

S = 63.0 mph (Exhibit 25-15)

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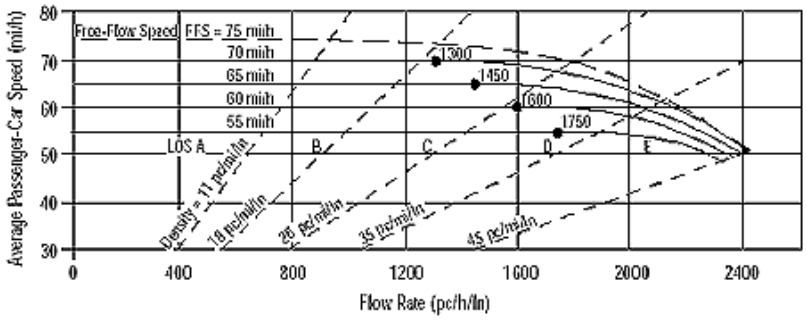
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*Arrow Off Ramp/Live Oak*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*OY NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5469*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1486*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*69.8*	mi/h	S		mi/h
D = v_p / S	*21.3*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*C*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Live Oak Canyon On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	OY NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5469	0.92	Level	0	0	1.000	1.00	5945
Ramp	1306	0.92	Level	0	0	1.000	1.00	1420
UpStream								
DownStream								

Estimation of v_{12} (Merge Areas)

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.254 using Equation (Exhibit 25-5)

V_{12} = 1509 pc/h

Estimation of v_{12} (Diverge Areas)

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	7365	See Exhibit 25-7	No
V_{R12}	2929	4600:All	No

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.5 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = 0.347 (Exibit 25-19)

S_R= 60.3 mph (Exhibit 25-19)

S_0= 63.8 mph (Exhibit 25-19)

S = 62.4 mph (Exhibit 25-14)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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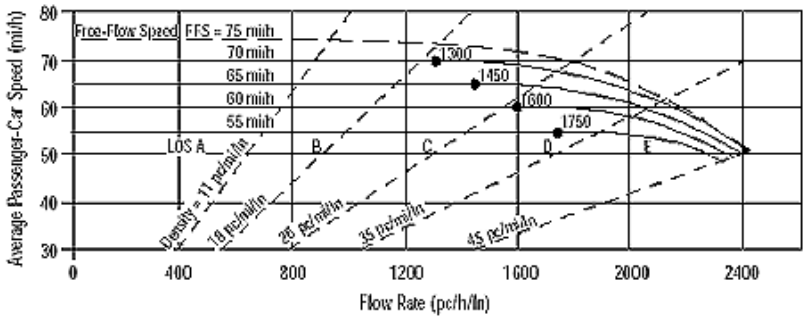
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*South of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*OY NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*6775*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1841*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*67.4*	mi/h	S	mi/h
D = v_p / S	*27.3*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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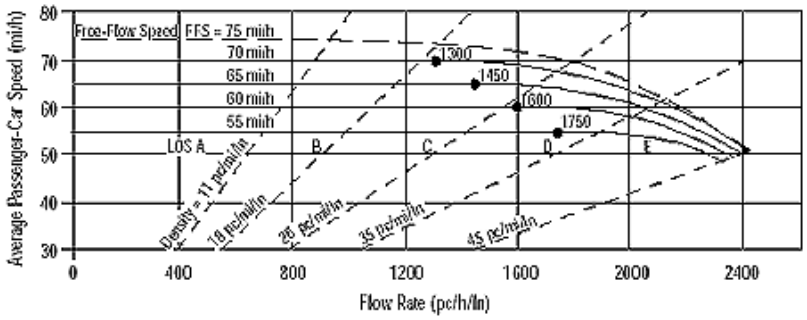
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*OY NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4317*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1173*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*16.8*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	OY NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4066	0.92	Level	0	0	1.000	1.00	4420
Ramp	251	0.92	Level	0	0	1.000	1.00	273
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.343 using Equation (Exhibit 25-5)

V_{12} = 1516 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	4693	See Exhibit 25-7	No
V_{R12}	1789	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.2 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.309 (Exibit 25-19)

S_R= 61.3 mph (Exhibit 25-19)

S_0= 66.6 mph (Exhibit 25-19)

S = 64.5 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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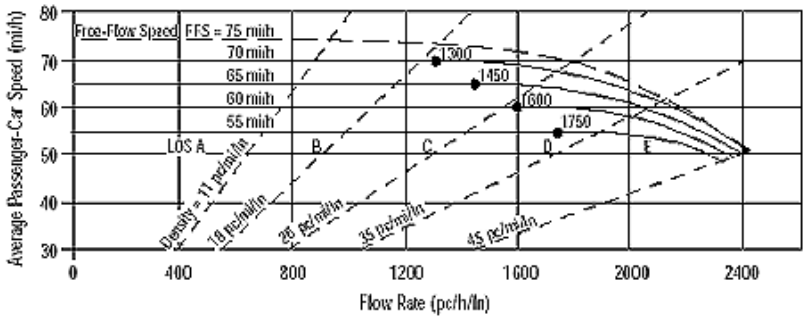
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	*Nancy Velgara*
Agency or Company	*LSA Associates*
Date Performed	*8/14/2014*
Analysis Time Period	*PM Peak Hour*

Site Information

Highway/Direction of Travel	*Northbound*
From/To	*Arrow On-Ramp/Arrow On-Ramp*
Jurisdiction	*LA County*
Analysis Year	*OY NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4066*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Shoulder Lat. Clearance	*6.0*	ft
Interchange Density	*0.50*	I/mi
Number of Lanes, N	*4*	
FFS (measured)	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}		mi/h
f_{LC}		mi/h
f_{ID}		mi/h
f_N		mi/h
FFS	*70.0*	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1105*	pc/h/ln
S	*70.0*	mi/h
D = v_p / S	*15.8*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associate	Junction	Arrow Highway Loop On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	OY NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3964	0.92	Level	0	0	1.000	1.00	4309
Ramp	102	0.92	Level	0	0	1.000	1.00	111
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.363 using Equation (Exhibit 25-5)

V_{12} = 1565 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	4420	See Exhibit 25-7	No
V_{R12}	1676	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 15.4 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.307 (Exibit 25-19)

S_R= 61.4 mph (Exhibit 25-19)

S_0= 66.9 mph (Exhibit 25-19)

S = 64.7 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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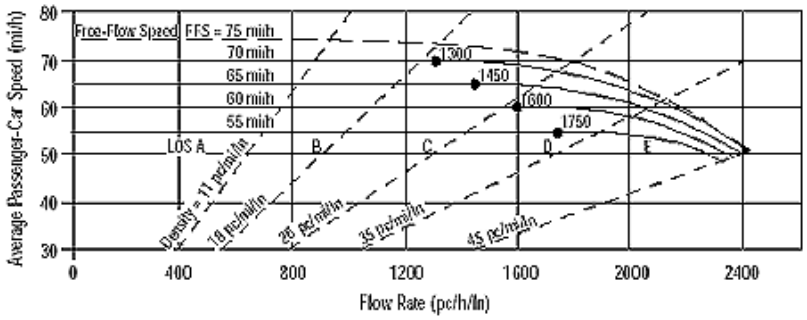
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*LiveOak Off-Ramp/Arrow On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*La County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*OY NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3964*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1077*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*15.4*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Live Oak Avenue Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	OY NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5370	0.92	Level	0	0	1.000	1.00	5837
Ramp	1406	0.92	Level	0	0	1.000	1.00	1528
UpStream								
DownStream								

Merge Areas | Diverge Areas

Estimation of v_{12} (Merge Areas)

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Estimation of v_{12} (Diverge Areas)

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3407 pc/h

Capacity Checks (Merge Areas)

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Capacity Checks (Diverge Areas)

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5837	9600	No
V_{12}	3407	4400:All	No
$V_{FO} = V_F - V_R$	4309	9600	No
V_R	1528	2000	No

Level of Service Determination (if not F) (Merge Areas)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Level of Service Determination (if not F) (Diverge Areas)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 32.2 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation (Merge Areas)

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Speed Estimation (Diverge Areas)

D_s = 0.566 (Exhibit 25-19)

S_R= 54.2 mph (Exhibit 25-19)

S_0= 76.0 mph (Exhibit 25-19)

S = 61.5 mph (Exhibit 25-15)

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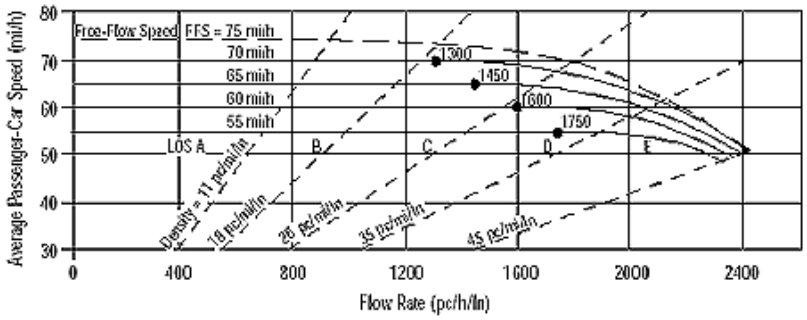
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*South of Live Oak Avenue*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*OY NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5370*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1459*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*69.9*	mi/h	S		mi/h
D = v_p / S	*20.9*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*C*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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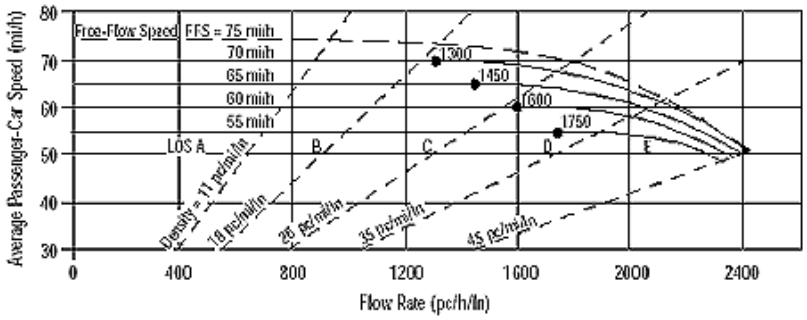
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*OY NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5370*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1459*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.9*	mi/h	S	mi/h
D = v_p / S	*20.9*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	OY NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5072	0.92	Level	0	0	1.000	1.00	5513
Ramp	630	0.92	Level	0	0	1.000	1.00	685
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 2790 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5513	9600	No
V_{12}	2790	4400:All	No
$V_{FO} = V_F - V_R$	4828	9600	No
V_R	685	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 25.1 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

D_s = 0.490 (Exhibit 25-19)

S_R= 56.3 mph (Exhibit 25-19)

S_0= 75.4 mph (Exhibit 25-19)

S = 64.3 mph (Exhibit 25-15)

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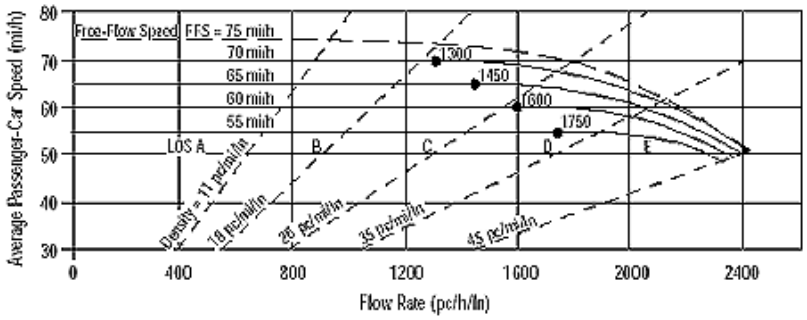
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	*Nancy Velgara*
Agency or Company	*LSA Associates*
Date Performed	*8/14/2014*
Analysis Time Period	*PM Peak Hour*

Site Information

Highway/Direction of Travel	*Southbound*
From/To	*Arrow Off-Ramp/LiveOak On-Ramp*
Jurisdiction	*LA County*
Analysis Year	*OY NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4442*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Shoulder Lat. Clearance	*6.0*	ft
Interchange Density	*0.50*	I/mi
Number of Lanes, N	*4*	
FFS (measured)	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}		mi/h
f_{LC}		mi/h
f_{ID}		mi/h
f_N		mi/h
FFS	*70.0*	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1207*	pc/h/ln
S	*70.0*	mi/h
D = v_p / S	*17.2*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Live Oak Canyon On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	OY NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4442	0.92	Level	0	0	1.000	1.00	4828
Ramp	1675	0.92	Level	0	0	1.000	1.00	1821
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.204 using Equation (Exhibit 25-5)

V_{12} = 983 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	6649	See Exhibit 25-7	No
V_{R12}	2804	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 22.3 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

M_S = 0.338 (Exibit 25-19)

S_R= 60.5 mph (Exhibit 25-19)

S_0= 64.9 mph (Exhibit 25-19)

S = 63.0 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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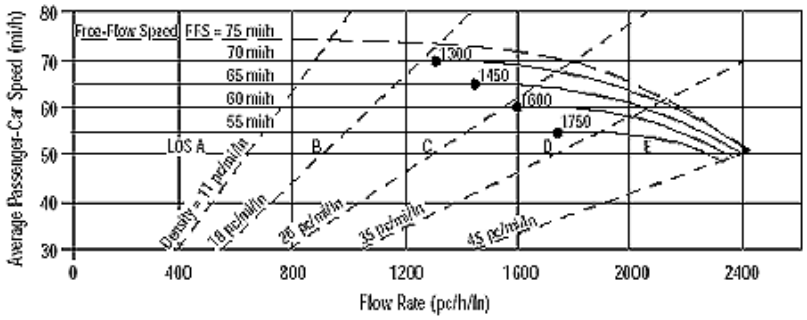
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*South of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*OY NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6117*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1662*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*69.1*	mi/h	S		mi/h
D = v_p / S	*24.1*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*C*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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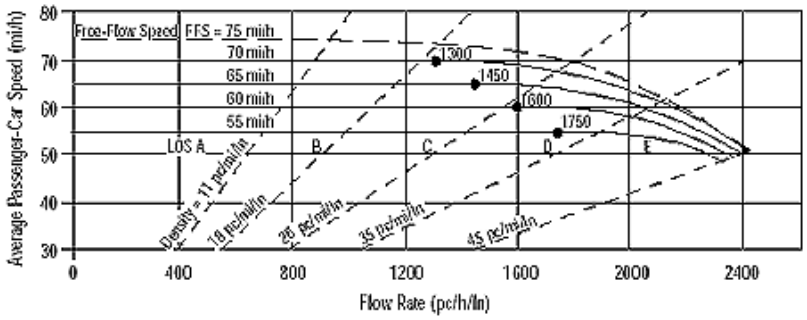
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*OY WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5036*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1368*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*19.5*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	OY WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4623	0.92	Level	0	0	1.000	1.00	5025
Ramp	413	0.92	Level	0	0	1.000	1.00	449
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.321 using Equation (Exhibit 25-5)

V_{12} = 1613 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	5474	See Exhibit 25-7	No
V_{R12}	2062	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 18.2 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.317 (Exibit 25-19)

S_R= 61.1 mph (Exhibit 25-19)

S_0= 65.7 mph (Exhibit 25-19)

S = 63.9 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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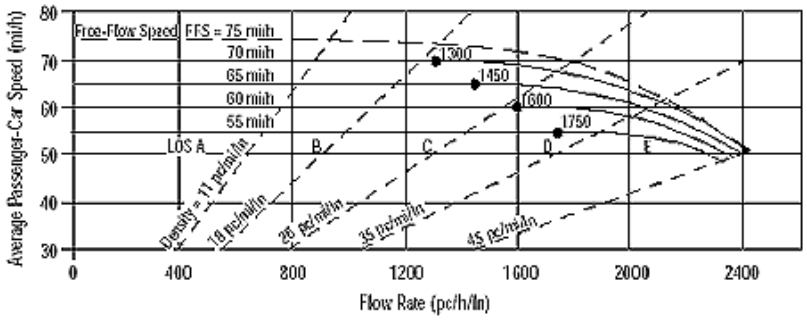
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*Arrow On-Ramp/Arrow On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*OY WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4623*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1256*	pc/h/ln	Design LOS		
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
D = v_p / S	*17.9*	pc/mi/ln	S		mi/h
LOS	*B*		D = v_p / S		pc/mi/ln
			Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Loop On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	OY WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4239	0.92	Level	0	0	1.000	1.00	4608
Ramp	384	0.92	Level	0	0	1.000	1.00	417
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.325 using Equation (Exhibit 25-5)

V_{12} = 1497 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	5025	See Exhibit 25-7	No
V_{R12}	1914	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 17.1 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.312 (Exibit 25-19)

S_R= 61.3 mph (Exhibit 25-19)

S_0= 66.2 mph (Exhibit 25-19)

S = 64.2 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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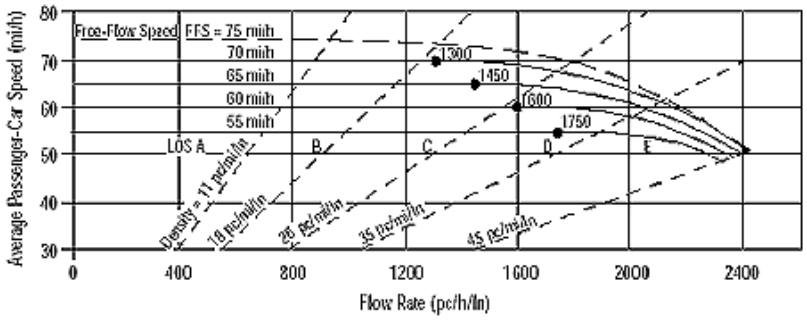
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*LiveOak Off-Ramp/Arrow On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*OY WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4693*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1275*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*18.2*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*C*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Live Oak Ave Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	OY WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5180	0.92	Level	0	0	1.000	1.00	5630
Ramp	941	0.92	Level	0	0	1.000	1.00	1023
UpStream								
DownStream								

Estimation of v_{12}

Merge Areas

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Diverge Areas

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3032 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5630	9600	No
V_{12}	3032	4400:All	No
$V_{FO} = V_F - V_R$	4607	9600	No
V_R	1023	2000	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 29.0 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

D_s = 0.520 (Exhibit 25-19)

S_R= 55.4 mph (Exhibit 25-19)

S_0= 75.6 mph (Exhibit 25-19)

S = 63.2 mph (Exhibit 25-15)

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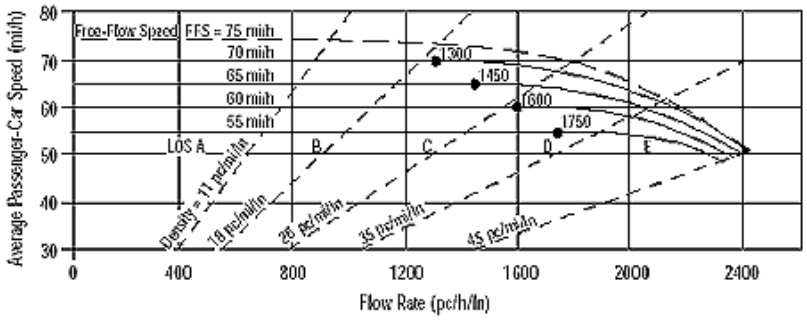
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*South of Live Oak Ave*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*OY WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5180*	veh/h	Peak-Hour Factor, PHF	*0.92*	
AADT		veh/day	%Trucks and Buses, P_T	*0*	
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*	
Peak-Hr Direction Prop, D			General Terrain:	*Level*	
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*	
Driver type adjustment	*1.00*		Up/Down %		

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1408*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*20.1*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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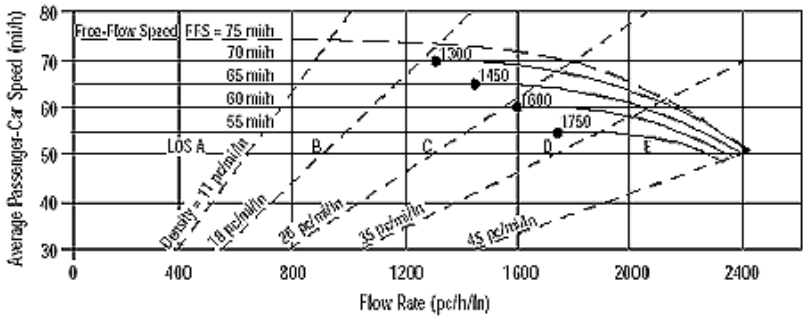
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*OY WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6563*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1783*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*68.0*	mi/h	S	mi/h
D = v_p / S	*26.2*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	OY WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	6563	0.92	Level	0	0	1.000	1.00	7134
Ramp	1094	0.92	Level	0	0	1.000	1.00	1189
UpStream								
DownStream								

Merge Areas | Diverge Areas

Estimation of v_{12} (Merge Areas)

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Estimation of v_{12} (Diverge Areas)

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3781 pc/h

Capacity Checks (Merge Areas)

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Capacity Checks (Diverge Areas)

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	7134	9600	No
V_{12}	3781	4400:All	No
$V_{FO} = V_F - V_R$	5945	9600	No
V_R	1189	2000	No

Level of Service Determination (if not F) (Merge Areas)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Level of Service Determination (if not F) (Diverge Areas)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 33.6 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation (Merge Areas)

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Speed Estimation (Diverge Areas)

D_s = 0.535 (Exhibit 25-19)

S_R= 55.0 mph (Exhibit 25-19)

S_0= 74.2 mph (Exhibit 25-19)

S = 62.6 mph (Exhibit 25-15)

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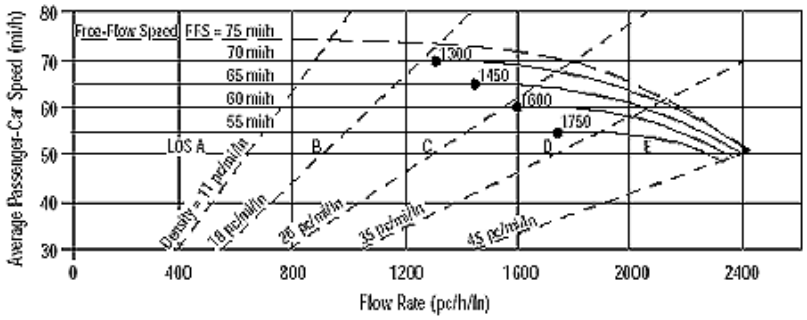
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*Arrow Off Ramp/Live Oak*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*OY WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5469*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1486*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*69.8*	mi/h	S		mi/h
D = v_p / S	*21.3*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*C*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Live Oak Canyon On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	OY WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5469	0.92	Level	0	0	1.000	1.00	5945
Ramp	1357	0.92	Level	0	0	1.000	1.00	1475
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.247 using Equation (Exhibit 25-5)

V_{12} = 1468 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	7420	See Exhibit 25-7	No
V_{R12}	2943	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.6 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

M_S = 0.348 (Exibit 25-19)

S_R= 60.3 mph (Exhibit 25-19)

S_0= 63.7 mph (Exhibit 25-19)

S = 62.3 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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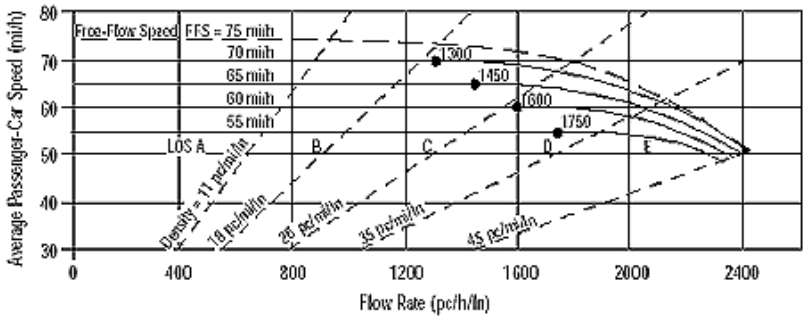
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*South of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*OY WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6826*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1855*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*67.2*	mi/h	S	mi/h
D = v_p / S	*27.6*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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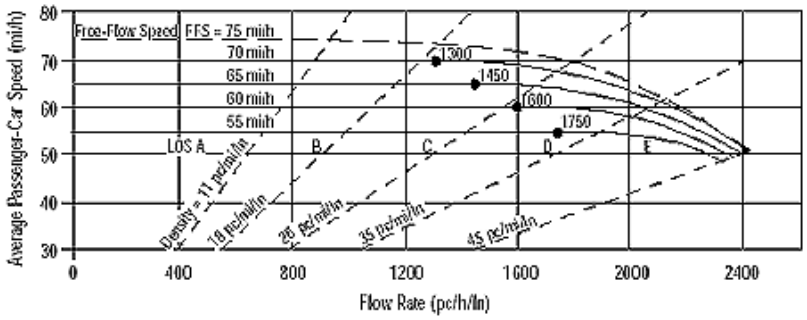
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*OY WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4542*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1234*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*17.6*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	OY WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4774	0.92	Level	0	0	1.000	1.00	5189
Ramp	251	0.92	Level	0	0	1.000	1.00	273
UpStream								
DownStream								

Estimation of v_{12} (Merge Areas)

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.343 using Equation (Exhibit 25-5)

V_{12} = 1780 pc/h

Estimation of v_{12} (Diverge Areas)

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	5462	See Exhibit 25-7	No
V_{R12}	2053	4600:All	No

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 18.2 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = 0.316 (Exibit 25-19)

S_R= 61.1 mph (Exhibit 25-19)

S_0= 65.7 mph (Exhibit 25-19)

S = 63.9 mph (Exhibit 25-14)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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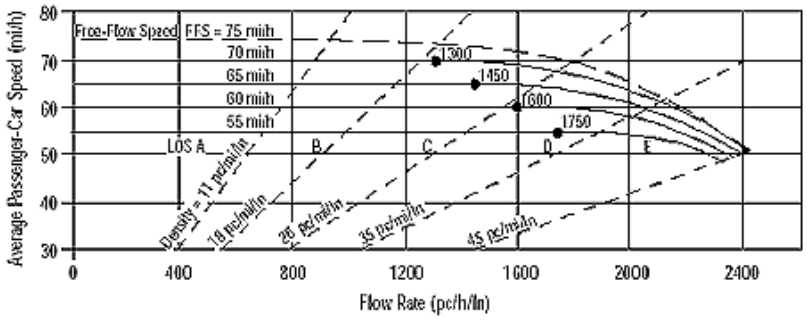

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*Arrow On-Ramp/Arrow On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*OY WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4291*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1166*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*16.7*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*B*		Required Number of Lanes, N		

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associate	Junction	Arrow Highway Loop On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	OY WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3964	0.92	Level	0	0	1.000	1.00	4309
Ramp	327	0.92	Level	0	0	1.000	1.00	355
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.333 using Equation (Exhibit 25-5)

V_{12} = 1434 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	4664	See Exhibit 25-7	No
V_{R12}	1789	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.1 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.309 (Exibit 25-19)

S_R= 61.3 mph (Exhibit 25-19)

S_0= 66.6 mph (Exhibit 25-19)

S = 64.5 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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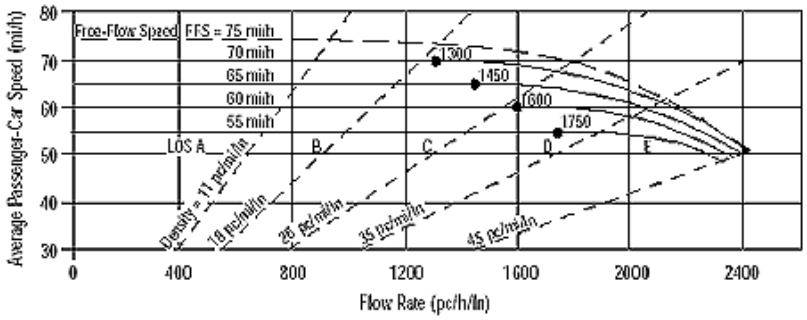

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*LiveOak Off-Ramp/Arrow On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*La County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*OY WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3964*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1077*	pc/h/ln	Design LOS		
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
D = v_p / S	*15.4*	pc/mi/ln	S		mi/h
LOS	*B*		D = v_p / S		pc/mi/ln
			Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Live Oak Avenue Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	OY WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5531	0.92	Level	0	0	1.000	1.00	6012
Ramp	1531	0.92	Level	0	0	1.000	1.00	1664
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3560 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	6012	9600	No
V_{12}	3560	4400:All	No
$V_{FO} = V_F - V_R$	4348	9600	No
V_R	1664	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 33.5 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation

D_s = 0.578 (Exhibit 25-19)

S_R= 53.8 mph (Exhibit 25-19)

S_0= 75.9 mph (Exhibit 25-19)

S = 61.1 mph (Exhibit 25-15)

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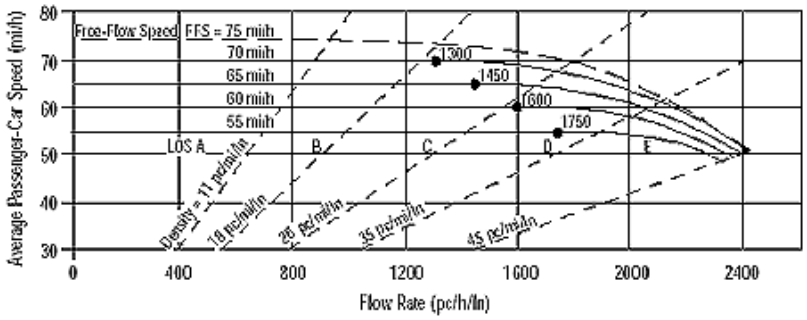

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*South of Live Oak Avenue*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*OY WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5531*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1503*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.8*	mi/h	S	mi/h
D = v_p / S	*21.5*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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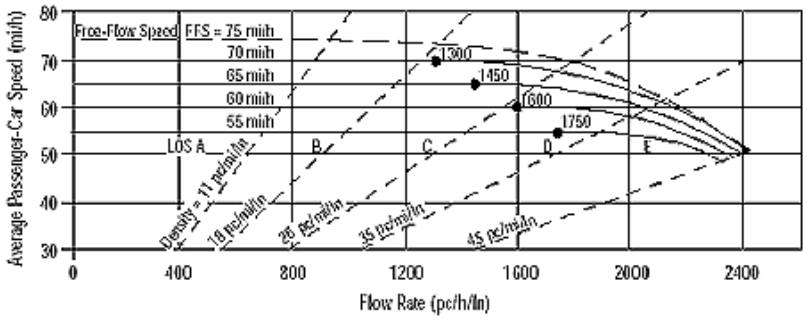
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*OY WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5275*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1433*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*69.9*	mi/h	S		mi/h
D = v_p / S	*20.5*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*C*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	OY WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5275	0.92	Level	0	0	1.000	1.00	5734
Ramp	833	0.92	Level	0	0	1.000	1.00	905
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3010 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5734	9600	No
V_{12}	3010	4400:All	No
$V_{FO} = V_F - V_R$	4829	9600	No
V_R	905	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 27.0 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

D_s = 0.509 (Exhibit 25-19)

S_R= 55.7 mph (Exhibit 25-19)

S_0= 75.4 mph (Exhibit 25-19)

S = 63.6 mph (Exhibit 25-15)

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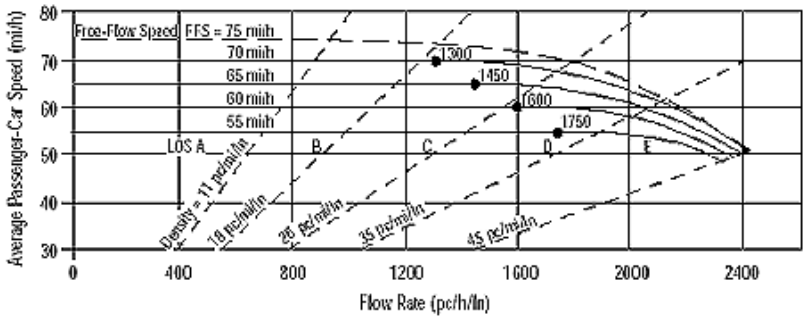
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*Arrow Off-Ramp/LiveOak On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*OY WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4442*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1207*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*17.2*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*B*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Live Oak Canyon On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	OY WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4442	0.92	Level	0	0	1.000	1.00	4828
Ramp	1927	0.92	Level	0	0	1.000	1.00	2095
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.169 using Equation (Exhibit 25-5)

V_{12} = 818 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	6923	See Exhibit 25-7	No
V_{R12}	2913	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.0 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

M_S = 0.346 (Exibit 25-19)

S_R= 60.3 mph (Exhibit 25-19)

S_0= 64.6 mph (Exhibit 25-19)

S = 62.7 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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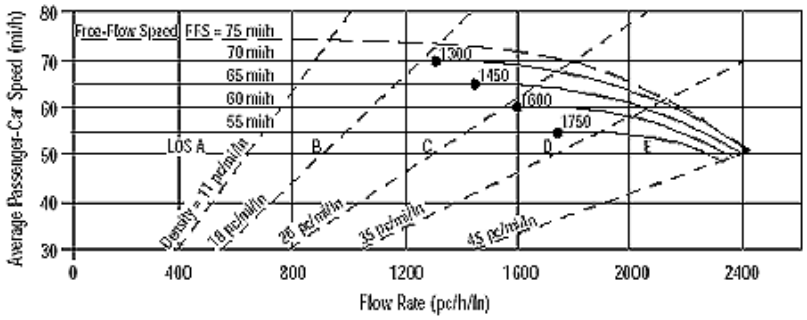
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*South of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*OY WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6369*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1731*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*68.5*	mi/h	S	mi/h
D = v_p / S	*25.3*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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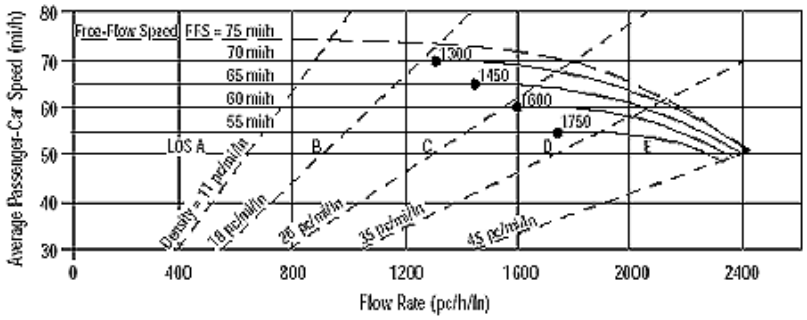
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*OY NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4879*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1326*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*18.9*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	OY NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4633	0.92	Level	0	0	1.000	1.00	5036
Ramp	246	0.92	Level	0	0	1.000	1.00	267
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.344 using Equation (Exhibit 25-5)

V_{12} = 1731 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	5303	See Exhibit 25-7	No
V_{R12}	1998	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 17.8 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.315 (Exibit 25-19)

S_R= 61.2 mph (Exhibit 25-19)

S_0= 65.9 mph (Exhibit 25-19)

S = 64.0 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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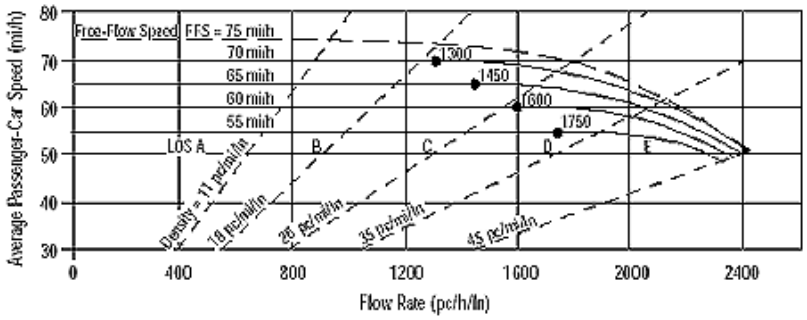
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*Arrow On-Ramp/Arrow On Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*OY NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4633*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1259*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*18.0*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*B*		Required Number of Lanes, N		

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Loop On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	OY NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4443	0.92	Level	0	0	1.000	1.00	4829
Ramp	190	0.92	Level	0	0	1.000	1.00	207
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.351 using Equation (Exhibit 25-5)

V_{12} = 1696 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	5036	See Exhibit 25-7	No
V_{R12}	1903	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 17.1 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.312 (Exibit 25-19)

S_R= 61.3 mph (Exhibit 25-19)

S_0= 66.2 mph (Exhibit 25-19)

S = 64.2 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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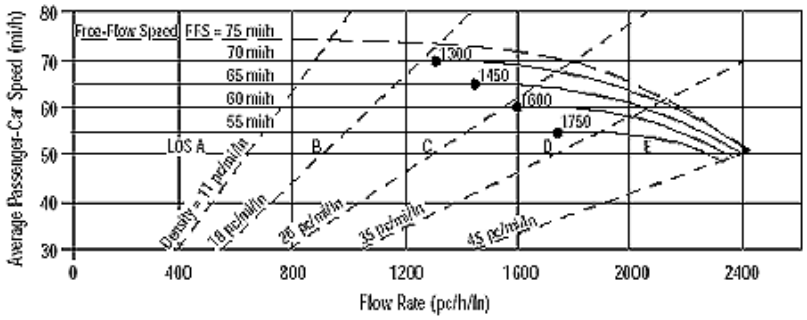
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	*Nancy Velgara*
Agency or Company	*LSA Associates*
Date Performed	*8/14/2014*
Analysis Time Period	*Saturday Peak Hour*

Site Information

Highway/Direction of Travel	*Northbound*
From/To	*LiveOak Off-Ramp/Arrow On-Ramp*
Jurisdiction	*LA County*
Analysis Year	*OY NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4443*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Shoulder Lat. Clearance	*6.0*	ft
Interchange Density	*0.50*	I/mi
Number of Lanes, N	*4*	
FFS (measured)	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}		mi/h
f_{LC}		mi/h
f_{ID}		mi/h
f_N		mi/h
FFS	*70.0*	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1207*	pc/h/ln
S	*70.0*	mi/h
D = v_p / S	*17.2*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Live Oak Ave Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	OY NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5292	0.92	Level	0	0	1.000	1.00	5752
Ramp	849	0.92	Level	0	0	1.000	1.00	923
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3028 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5752	9600	No
V_{12}	3028	4400:All	No
$V_{FO} = V_F - V_R$	4829	9600	No
V_R	923	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 28.9 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation

D_s = 0.511 (Exhibit 25-19)

S_R= 55.7 mph (Exhibit 25-19)

S_0= 75.4 mph (Exhibit 25-19)

S = 63.6 mph (Exhibit 25-15)

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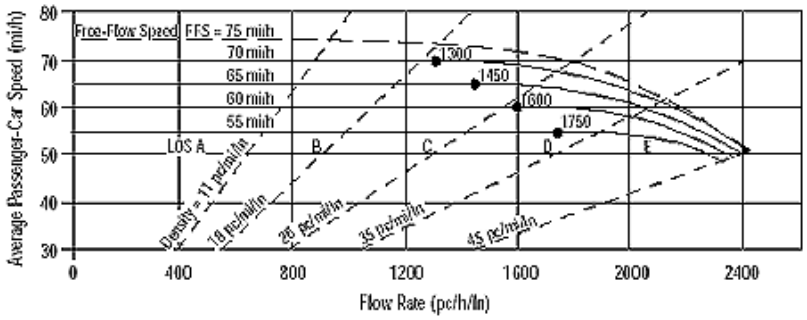
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*South of Live Oak Ave*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*OY NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5292*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1438*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.9*	mi/h	S	mi/h
D = v_p / S	*20.6*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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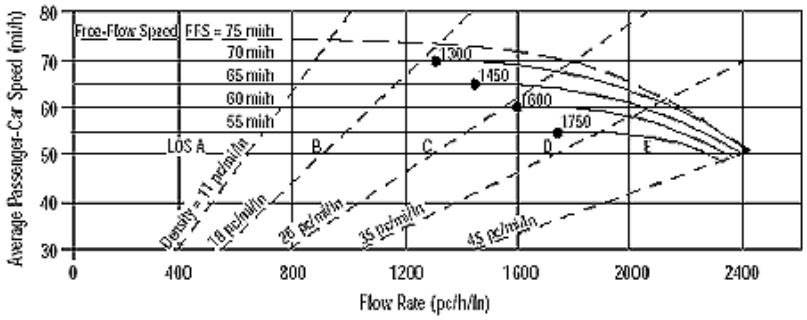
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*OY NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5210*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1416*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*20.2*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	OY NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5210	0.92	Level	0	0	1.000	1.00	5663
Ramp	549	0.92	Level	0	0	1.000	1.00	597
UpStream								
DownStream								

Estimation of v_{12}

Merge Areas

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Diverge Areas

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 2806 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5663	9600	No
V_{12}	2806	4400:All	No
$V_{FO} = V_F - V_R$	5066	9600	No
V_R	597	2000	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 25.2 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

D_s = 0.482 (Exhibit 25-19)

S_R= 56.5 mph (Exhibit 25-19)

S_0= 75.1 mph (Exhibit 25-19)

S = 64.6 mph (Exhibit 25-15)

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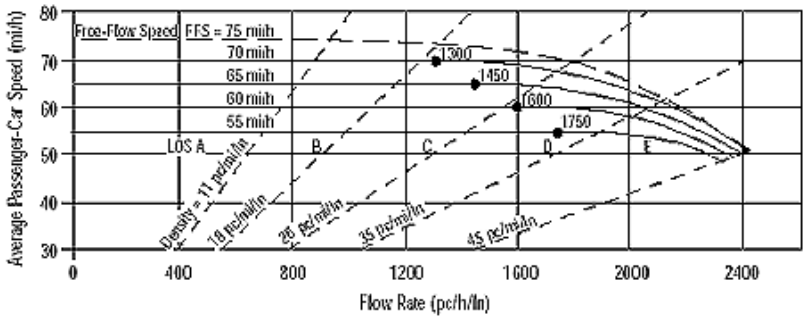
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*Arrow Off Ramp/Live Oak*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*OY NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4661*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1267*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*18.1*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Live Oak Canyon On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	OY NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4661	0.92	Level	0	0	1.000	1.00	5066
Ramp	1113	0.92	Level	0	0	1.000	1.00	1210
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.280 using Equation (Exhibit 25-5)

V_{12} = 1418 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	6276	See Exhibit 25-7	No
V_{R12}	2628	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 21.2 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

M_S = 0.328 (Exibit 25-19)

S_R= 60.8 mph (Exhibit 25-19)

S_0= 65.2 mph (Exhibit 25-19)

S = 63.3 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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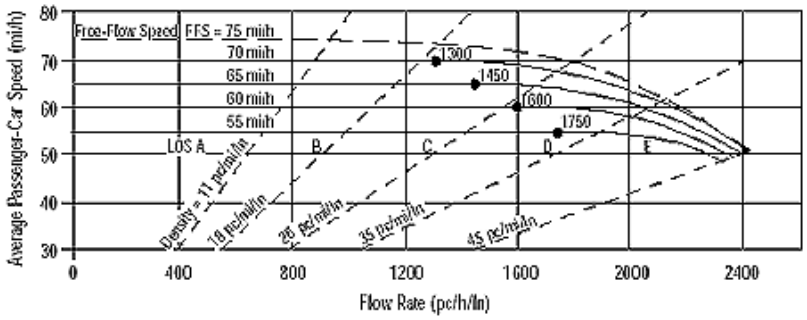
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*South of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*OY NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5774*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1569*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.6*	mi/h	S	mi/h
D = v_p / S	*22.6*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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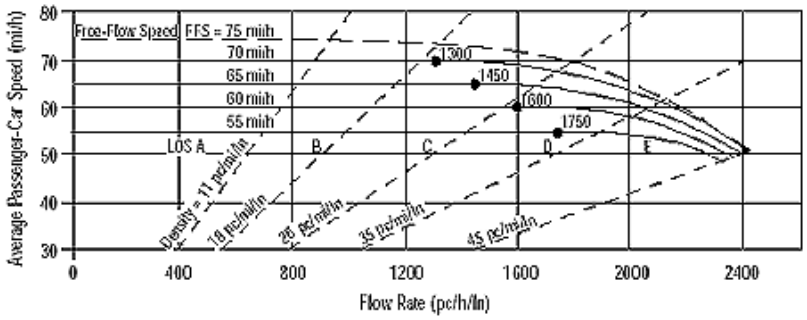
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*OY WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5260*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1429*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.9*	mi/h	S	mi/h
D = v_p / S	*20.4*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	OY WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5014	0.92	Level	0	0	1.000	1.00	5450
Ramp	246	0.92	Level	0	0	1.000	1.00	267
UpStream								
DownStream								

Estimation of v_{12}

Merge Areas

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.344 using Equation (Exhibit 25-5)

V_{12} = 1873 pc/h

Diverge Areas

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	5717	See Exhibit 25-7	No
V_{R12}	2140	4600:All	No

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 18.9 (pc/mi/ln)

LOS = B (Exhibit 25-4)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = 0.319 (Exibit 25-19)

S_R= 61.1 mph (Exhibit 25-19)

S_0= 65.4 mph (Exhibit 25-19)

S = 63.7 mph (Exhibit 25-14)

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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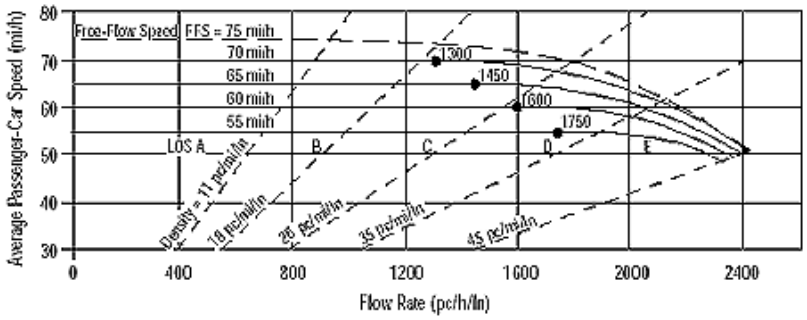
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	*Nancy Velgara*
Agency or Company	*LSA Associates*
Date Performed	*8/14/2014*
Analysis Time Period	*Saturday Peak Hour*

Site Information

Highway/Direction of Travel	*Northbound*
From/To	*Arrow On-Ramp/Arrow On Ramp*
Jurisdiction	*LA County*
Analysis Year	*OY WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5014*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs

Lane Width	*12.0*	ft
Rt-Shoulder Lat. Clearance	*6.0*	ft
Interchange Density	*0.50*	I/mi
Number of Lanes, N	*4*	
FFS (measured)	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h

Calc Speed Adj and FFS

f_{LW}		mi/h
f_{LC}		mi/h
f_{ID}		mi/h
f_N		mi/h
FFS	*70.0*	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1362*	pc/h/ln
S	*70.0*	mi/h
D = v_p / S	*19.5*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Loop On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	OY WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4443	0.92	Level	0	0	1.000	1.00	4829
Ramp	571	0.92	Level	0	0	1.000	1.00	621
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.299 using Equation (Exhibit 25-5)

V_{12} = 1446 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	5450	See Exhibit 25-7	No
V_{R12}	2067	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 18.2 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.317 (Exibit 25-19)

S_R= 61.1 mph (Exhibit 25-19)

S_0= 65.7 mph (Exhibit 25-19)

S = 63.9 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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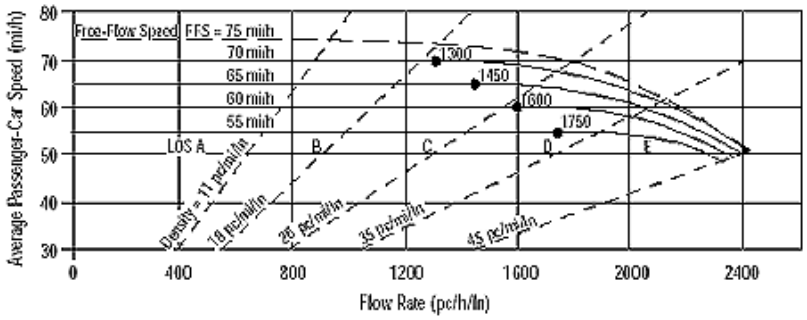
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*LiveOak Off-Ramp/Arrow On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*OY WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4443*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1207*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*17.2*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*B*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Live Oak Ave Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	OY WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5699	0.92	Level	0	0	1.000	1.00	6195
Ramp	1256	0.92	Level	0	0	1.000	1.00	1365
UpStream								
DownStream								

Estimation of v_{12} — Merge Areas

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Estimation of v_{12} — Diverge Areas

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3471 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	6195	9600	No
V_{12}	3471	4400:All	No
$V_{FO} = V_F - V_R$	4830	9600	No
V_R	1365	2000	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 32.8 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

D_s = 0.551 (Exhibit 25-19)

S_R= 54.6 mph (Exhibit 25-19)

S_0= 75.4 mph (Exhibit 25-19)

S = 62.1 mph (Exhibit 25-15)

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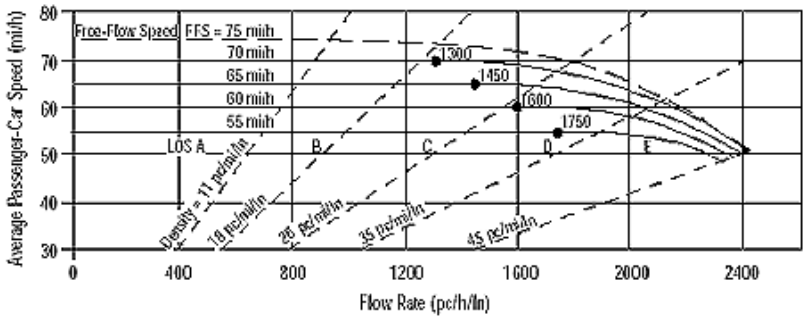
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*South of Live Oak Ave*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*OY WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5699*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1549*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.6*	mi/h	S	mi/h
D = v_p / S	*22.2*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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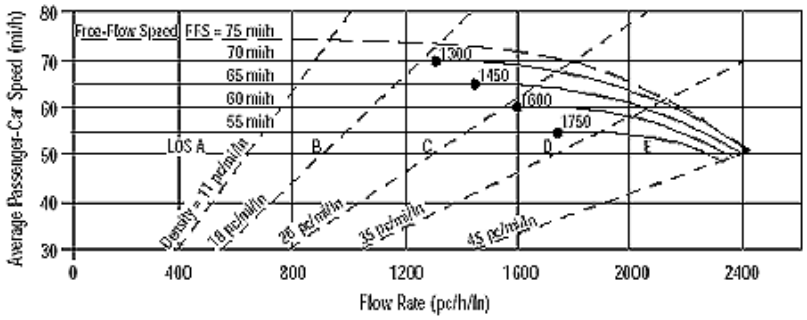
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*OY WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5645*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1534*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.7*	mi/h	S	mi/h
D = v_p / S	*22.0*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	OY WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5645	0.92	Level	0	0	1.000	1.00	6136
Ramp	984	0.92	Level	0	0	1.000	1.00	1070
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3279 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	6136	9600	No
V_{12}	3279	4400:All	No
$V_{FO} = V_F - V_R$	5066	9600	No
V_R	1070	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 29.3 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation

D_s = 0.524 (Exhibit 25-19)

S_R= 55.3 mph (Exhibit 25-19)

S_0= 75.1 mph (Exhibit 25-19)

S = 63.1 mph (Exhibit 25-15)

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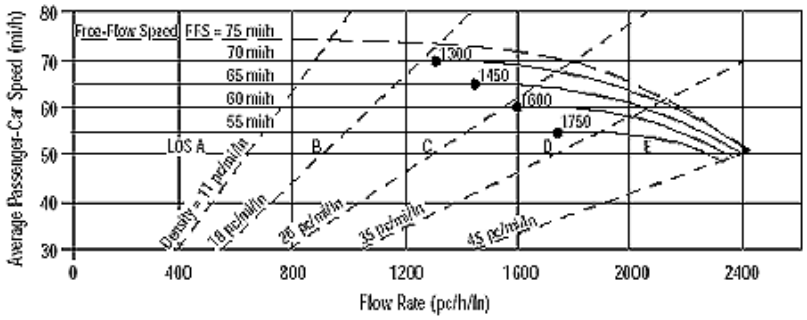
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*Arrow Off Ramp/Live Oak*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*OY WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4661*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1267*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*18.1*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*C*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Live Oak Canyon On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	OY WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4661	0.92	Level	0	0	1.000	1.00	5066
Ramp	1539	0.92	Level	0	0	1.000	1.00	1673
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.222 using Equation (Exhibit 25-5)

V_{12} = 1125 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	6739	See Exhibit 25-7	No
V_{R12}	2798	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 22.3 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

M_S = 0.338 (Exibit 25-19)

S_R= 60.5 mph (Exhibit 25-19)

S_0= 64.7 mph (Exhibit 25-19)

S = 62.9 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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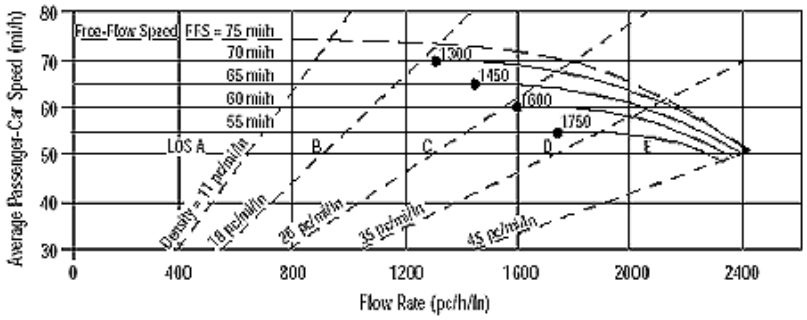
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*South of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*OY WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*6199*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1685*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*68.9*	mi/h	S	mi/h
D = v_p / S	*24.5*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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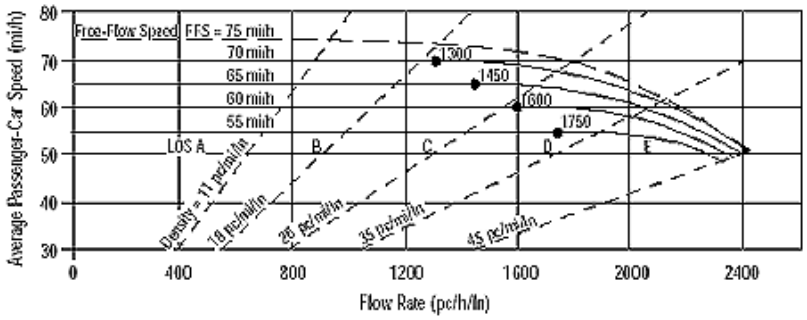
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Cumulative NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4979*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1353*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*19.3*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4400	0.92	Level	0	0	1.000	1.00	4783
Ramp	579	0.92	Level	0	0	1.000	1.00	629
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.298 using Equation (Exhibit 25-5)

V_{12} = 1428 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	5412	See Exhibit 25-7	No
V_{R12}	2057	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 18.1 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.317 (Exibit 25-19)

S_R= 61.1 mph (Exhibit 25-19)

S_0= 65.8 mph (Exhibit 25-19)

S = 63.9 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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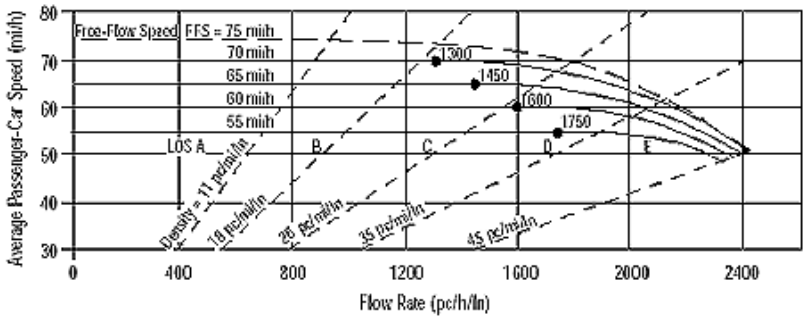
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*Arrow On-Ramp/Arrow On Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Cumulative NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4400*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**		
Operational (LOS)			Design (N)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1196*	pc/h/ln	Design LOS		
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
D = v_p / S	*17.1*	pc/mi/ln	S		mi/h
LOS	*B*		D = v_p / S		pc/mi/ln
			Required Number of Lanes, N		

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Loop On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4052	0.92	Level	0	0	1.000	1.00	4404
Ramp	348	0.92	Level	0	0	1.000	1.00	378
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.330 using Equation (Exhibit 25-5)

V_{12} = 1453 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	4782	See Exhibit 25-7	No
V_{R12}	1831	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.4 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.310 (Exibit 25-19)

S_R= 61.3 mph (Exhibit 25-19)

S_0= 66.5 mph (Exhibit 25-19)

S = 64.4 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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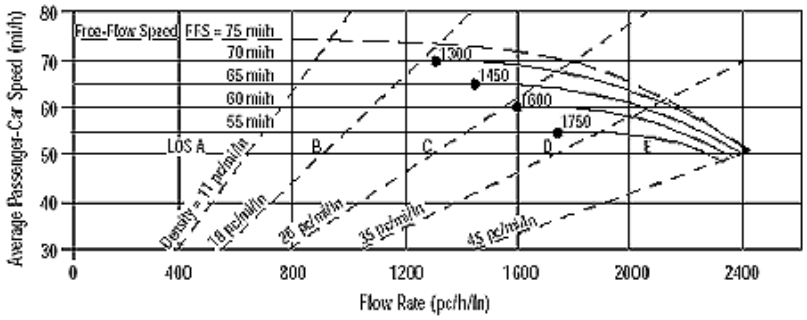
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*LiveOak Off-Ramp/Arrow On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Cumulative NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4052*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1101*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*15.7*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*B*		Required Number of Lanes, N		

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Live Oak Ave Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5049	0.92	Level	0	0	1.000	1.00	5488
Ramp	997	0.92	Level	0	0	1.000	1.00	1084
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3004 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5488	9600	No
V_{12}	3004	4400:All	No
$V_{FO} = V_F - V_R$	4404	9600	No
V_R	1084	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 28.7 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation

D_s = 0.526 (Exhibit 25-19)

S_R= 55.3 mph (Exhibit 25-19)

S_0= 75.8 mph (Exhibit 25-19)

S = 63.0 mph (Exhibit 25-15)

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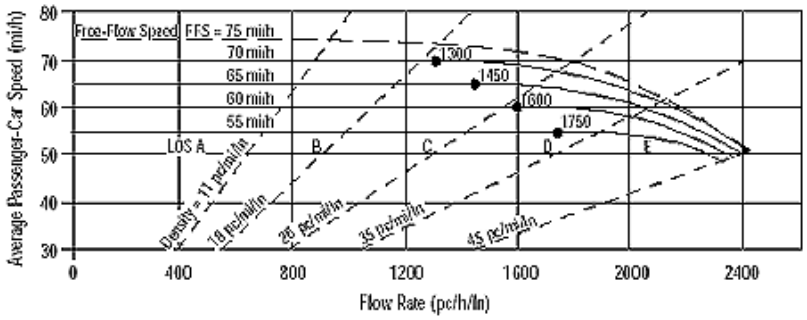
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*South of Live Oak Ave*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Cumulative NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5049*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1372*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*19.6*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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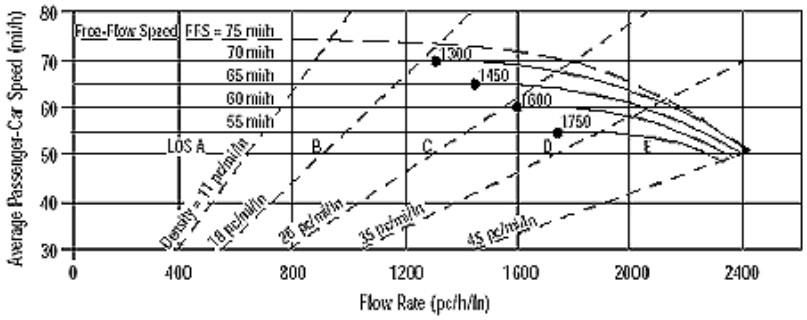
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Cumulative NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6463*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1756*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*68.3*	mi/h	S	mi/h
D = v_p / S	*25.7*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	6463	0.92	Level	0	0	1.000	1.00	7025
Ramp	1146	0.92	Level	0	0	1.000	1.00	1246
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3766 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	7025	9600	No
V_{12}	3766	4400:All	No
$V_{FO} = V_F - V_R$	5779	9600	No
V_R	1246	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 33.5 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation

D_s = 0.540 (Exhibit 25-19)

S_R= 54.9 mph (Exhibit 25-19)

S_0= 74.3 mph (Exhibit 25-19)

S = 62.5 mph (Exhibit 25-15)

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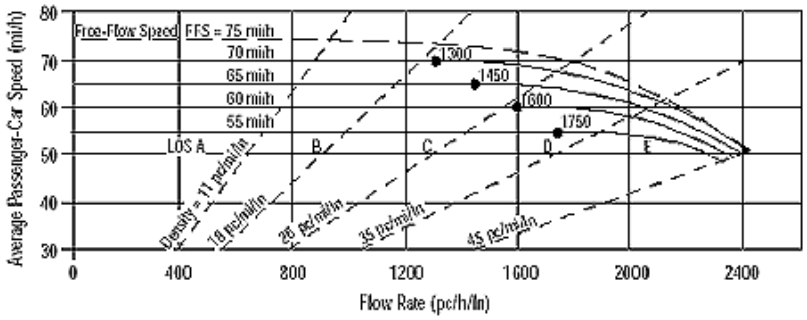
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*Arrow Off Ramp/Live Oak*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Cumulative NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5317*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1445*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.9*	mi/h	S	mi/h
D = v_p / S	*20.7*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Live Oak Canyon On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5317	0.92	Level	0	0	1.000	1.00	5779
Ramp	1458	0.92	Level	0	0	1.000	1.00	1585
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.233 using Equation (Exhibit 25-5)

V_{12} = 1347 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	7364	See Exhibit 25-7	No
V_{R12}	2932	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.4 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

M_S = 0.347 (Exibit 25-19)

S_R= 60.3 mph (Exhibit 25-19)

S_0= 63.8 mph (Exhibit 25-19)

S = 62.4 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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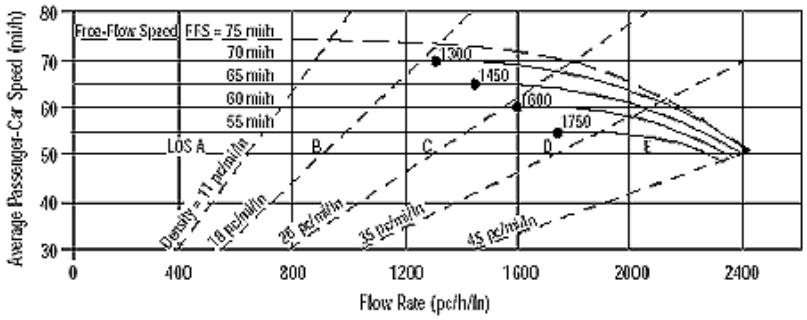
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*South of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Cumulative NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6775*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1841*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*67.4*	mi/h	S	mi/h
D = v_p / S	*27.3*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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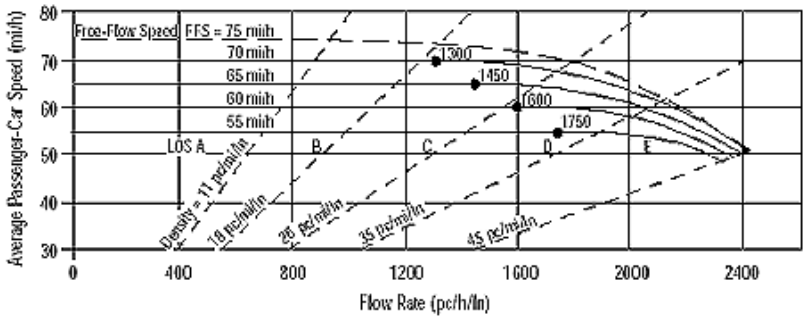
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4332*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1177*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*16.8*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3915	0.92	Level	0	0	1.000	1.00	4255
Ramp	417	0.92	Level	0	0	1.000	1.00	453
UpStream								
DownStream								

Estimation of v_{12} (Merge Areas)

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.320 using Equation (Exhibit 25-5)

V_{12} = 1364 pc/h

Estimation of v_{12} (Diverge Areas)

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	4708	See Exhibit 25-7	No
V_{R12}	1817	4600:All	No

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.3 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = 0.310 (Exibit 25-19)

S_R= 61.3 mph (Exhibit 25-19)

S_0= 66.6 mph (Exhibit 25-19)

S = 64.5 mph (Exhibit 25-14)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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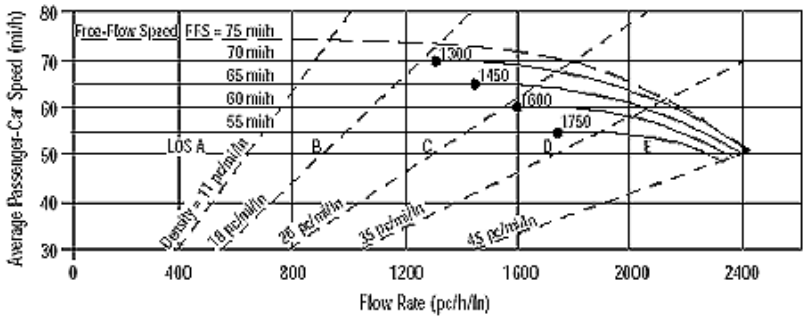
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*Arrow On-Ramp/Arrow On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*3915*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**		
Operational (LOS)			Design (N)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1064*	pc/h/ln	Design LOS		
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
D = v_p / S	*15.2*	pc/mi/ln	S		mi/h
LOS	*B*		D = v_p / S		pc/mi/ln
			Required Number of Lanes, N		

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associate	Junction	Arrow Highway Loop On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3787	0.92	Level	0	0	1.000	1.00	4116
Ramp	128	0.92	Level	0	0	1.000	1.00	139
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.360 using Equation (Exhibit 25-5)

V_{12} = 1481 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	4255	See Exhibit 25-7	No
V_{R12}	1620	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 14.9 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.306 (Exibit 25-19)

S_R= 61.4 mph (Exhibit 25-19)

S_0= 67.1 mph (Exhibit 25-19)

S = 64.8 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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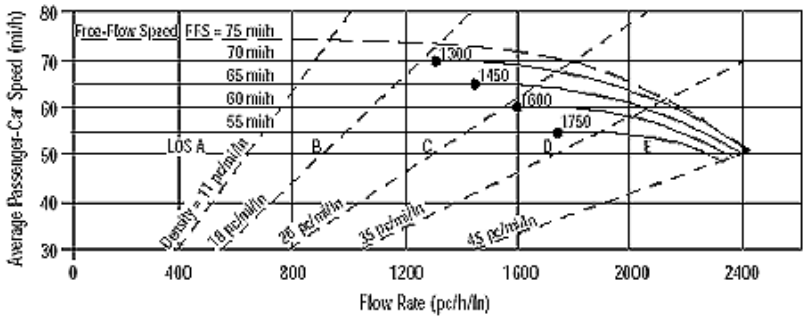
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*LiveOak Off-Ramp/Arrow On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*La County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3787*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)		
Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1029*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*14.7*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*B*		Required Number of Lanes, N		

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Live Oak Avenue Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp
- ☐ Yes ☐ On
- ☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp
- ☐ Yes ☐ On
- ☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5370	0.92	Level	0	0	1.000	1.00	5837
Ramp	1583	0.92	Level	0	0	1.000	1.00	1721
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3516 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5837	9600	No
V_{12}	3516	4400:All	No
$V_{FO} = V_F - V_R$	4116	9600	No
V_R	1721	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 33.1 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation

D_s = 0.583 (Exhibit 25-19)

S_R= 53.7 mph (Exhibit 25-19)

S_0= 76.2 mph (Exhibit 25-19)

S = 60.8 mph (Exhibit 25-15)

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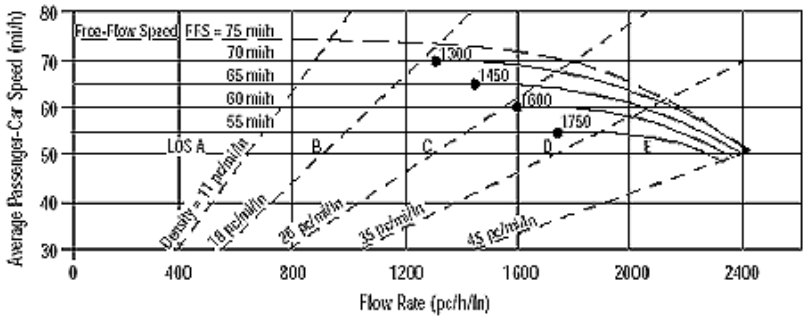
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*South of Live Oak Avenue*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5370*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1459*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.9*	mi/h	S	mi/h
D = v_p / S	*20.9*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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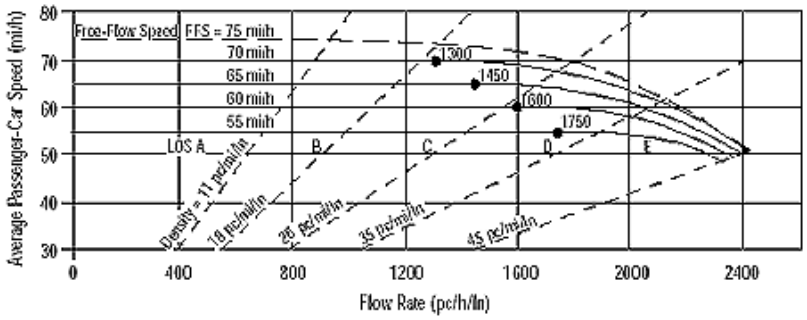
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5065*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1376*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*19.7*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5065	0.92	Level	0	0	1.000	1.00	5505
Ramp	809	0.92	Level	0	0	1.000	1.00	879
UpStream								
DownStream								

Estimation of v_{12}

Merge Areas

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Diverge Areas

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 2896 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5505	9600	No
V_{12}	2896	4400:All	No
$V_{FO} = V_F - V_R$	4626	9600	No
V_R	879	2000	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 26.8 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

D_s = 0.507 (Exhibit 25-19)

S_R= 55.8 mph (Exhibit 25-19)

S_0= 75.6 mph (Exhibit 25-19)

S = 63.7 mph (Exhibit 25-15)

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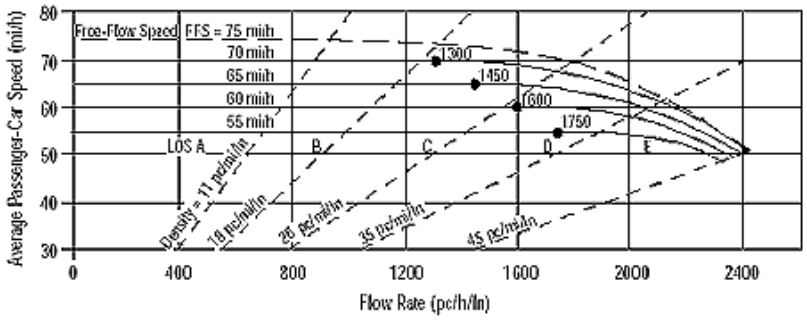
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*Arrow Off-Ramp/LiveOak On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4256*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**		
Operational (LOS)			Design (N)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1157*	pc/h/ln	Design LOS		
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
D = v_p / S	*16.5*	pc/mi/ln	S		mi/h
LOS	*B*		D = v_p / S		pc/mi/ln
			Required Number of Lanes, N		

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Live Oak Canyon On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4256	0.92	Level	0	0	1.000	1.00	4626
Ramp	1861	0.92	Level	0	0	1.000	1.00	2023
UpStream								
DownStream								

Estimation of v_{12}

Merge Areas

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.178 using Equation (Exhibit 25-5)

V_{12} = 825 pc/h

Diverge Areas

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	6649	See Exhibit 25-7	No
V_{R12}	2848	4600:All	No

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 22.6 (pc/mi/ln)

LOS = C (Exhibit 25-4)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = 0.341 (Exibit 25-19)

S_R= 60.4 mph (Exhibit 25-19)

S_0= 65.0 mph (Exhibit 25-19)

S = 62.9 mph (Exhibit 25-14)

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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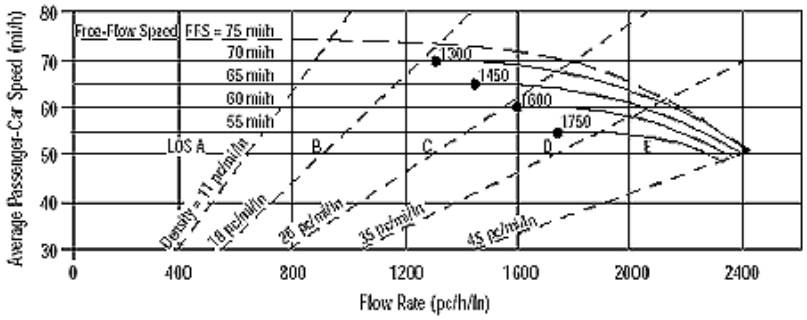
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*South of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6117*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1662*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.1*	mi/h	S	mi/h
D = v_p / S	*24.1*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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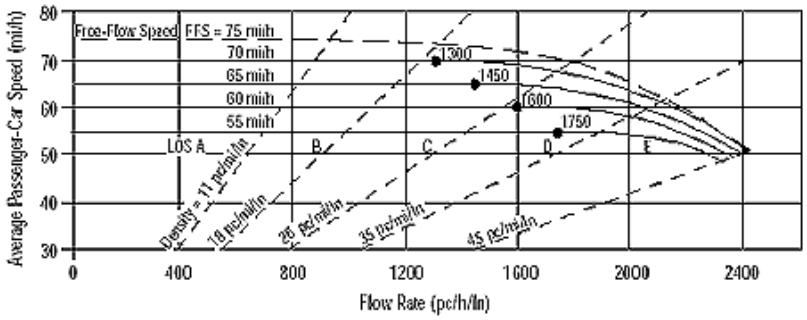
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Cumulative WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5026*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1366*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*19.5*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4447	0.92	Level	0	0	1.000	1.00	4834
Ramp	579	0.92	Level	0	0	1.000	1.00	629
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.298 using Equation (Exhibit 25-5)

V_{12} = 1443 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	5463	See Exhibit 25-7	No
V_{R12}	2072	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 18.2 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.317 (Exibit 25-19)

S_R= 61.1 mph (Exhibit 25-19)

S_0= 65.7 mph (Exhibit 25-19)

S = 63.9 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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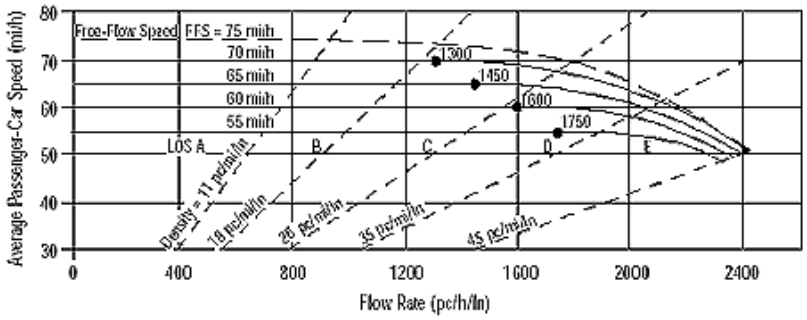
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*Arrow On-Ramp/Arrow On Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Cumulative WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4447*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1208*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*17.3*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*B*		Required Number of Lanes, N		

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Loop On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4052	0.92	Level	0	0	1.000	1.00	4404
Ramp	395	0.92	Level	0	0	1.000	1.00	429
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.323 using Equation (Exhibit 25-5)

V_{12} = 1425 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	4833	See Exhibit 25-7	No
V_{R12}	1854	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.6 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.311 (Exibit 25-19)

S_R= 61.3 mph (Exhibit 25-19)

S_0= 66.4 mph (Exhibit 25-19)

S = 64.4 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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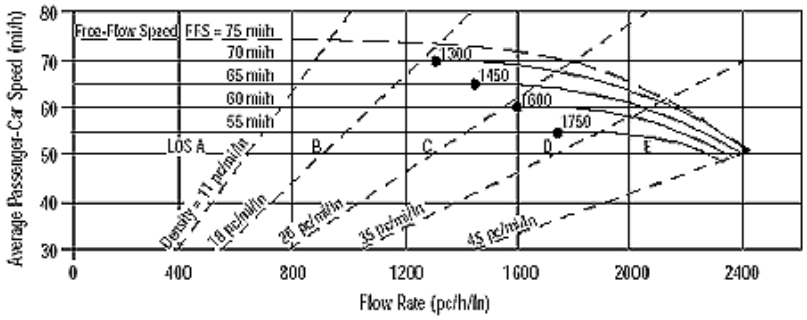
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*LiveOak Off-Ramp/Arrow On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Cumulative WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4052*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**		
Operational (LOS)			Design (N)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1101*	pc/h/ln	Design LOS		
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
D = v_p / S	*15.7*	pc/mi/ln	S		mi/h
LOS	*B*		D = v_p / S		pc/mi/ln
			Required Number of Lanes, N		

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Live Oak Ave Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5180	0.92	Level	0	0	1.000	1.00	5630
Ramp	1128	0.92	Level	0	0	1.000	1.00	1226
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3146 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5630	9600	No
V_{12}	3146	4400:All	No
$V_{FO} = V_F - V_R$	4404	9600	No
V_R	1226	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 30.0 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation

D_s = 0.538 (Exhibit 25-19)

S_R= 54.9 mph (Exhibit 25-19)

S_0= 75.8 mph (Exhibit 25-19)

S = 62.5 mph (Exhibit 25-15)

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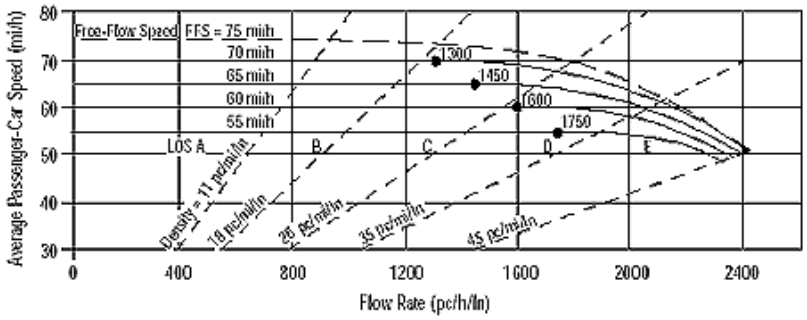
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*South of Live Oak Ave*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Cumulative WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5180*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1408*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*20.1*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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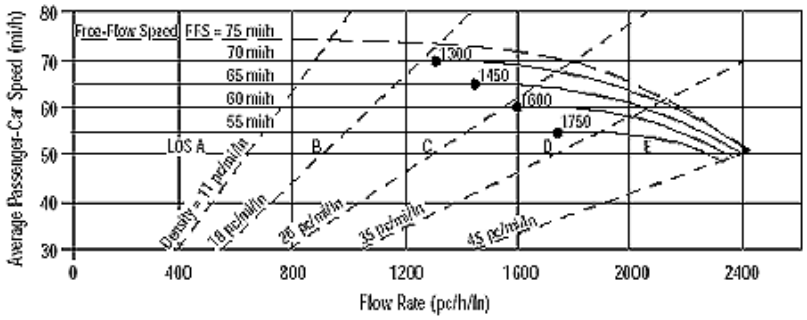
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Cumulative WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6590*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1791*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*68.0*	mi/h	S	mi/h
D = v_p / S	*26.4*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	6590	0.92	Level	0	0	1.000	1.00	7163
Ramp	1273	0.92	Level	0	0	1.000	1.00	1384
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3904 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	7163	9600	No
V_{12}	3904	4400:All	No
$V_{FO} = V_F - V_R$	5779	9600	No
V_R	1384	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 34.7 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation

D_s = 0.553 (Exhibit 25-19)

S_R= 54.5 mph (Exhibit 25-19)

S_0= 74.3 mph (Exhibit 25-19)

S = 62.1 mph (Exhibit 25-15)

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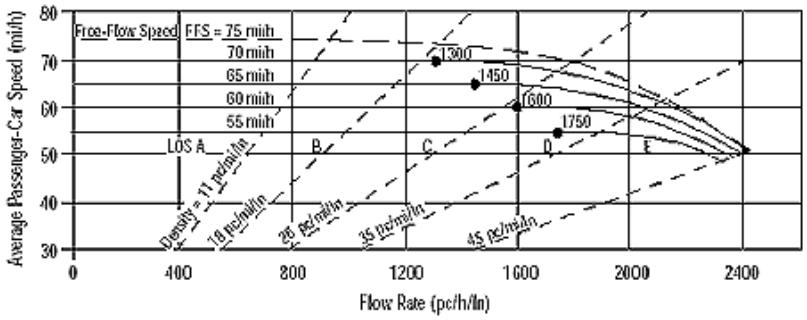

Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*Arrow Off Ramp/Live Oak*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Cumulative WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5317*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1445*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.9*	mi/h	S	mi/h
D = v_p / S	*20.7*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Live Oak Canyon On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	AM Peak Hour	Analysis Year	Cumulative WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5317	0.92	Level	0	0	1.000	1.00	5779
Ramp	1506	0.92	Level	0	0	1.000	1.00	1637
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.227 using Equation (Exhibit 25-5)

V_{12} = 1310 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	7416	See Exhibit 25-7	No
V_{R12}	2947	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.5 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

M_S = 0.348 (Exibit 25-19)

S_R= 60.2 mph (Exhibit 25-19)

S_0= 63.8 mph (Exhibit 25-19)

S = 62.3 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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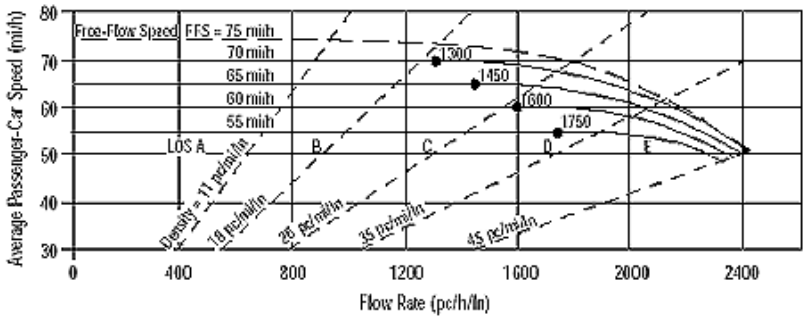
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*South of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*AM Peak Hour*	Analysis Year	*Cumulative WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6823*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1854*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*67.2*	mi/h	S	mi/h
D = v_p / S	*27.6*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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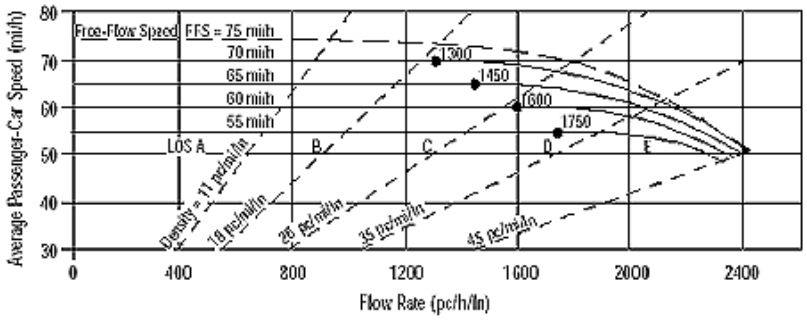
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4557*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1238*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*17.7*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4140	0.92	Level	0	0	1.000	1.00	4500
Ramp	417	0.92	Level	0	0	1.000	1.00	453
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.320 using Equation (Exhibit 25-5)

V_{12} = 1442 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	4953	See Exhibit 25-7	No
V_{R12}	1895	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.9 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.312 (Exibit 25-19)

S_R= 61.3 mph (Exhibit 25-19)

S_0= 66.3 mph (Exhibit 25-19)

S = 64.3 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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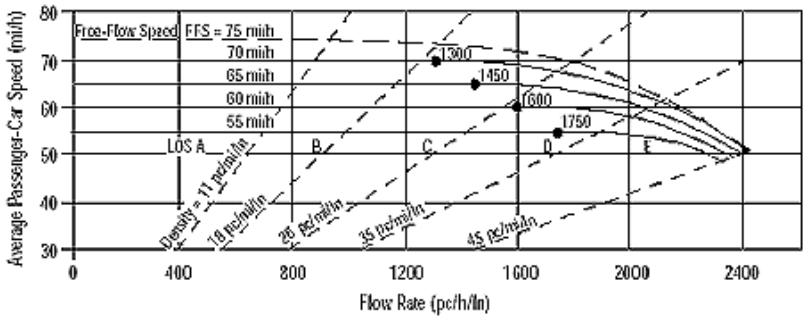
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*Arrow On-Ramp/Arrow On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4140*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**		
Operational (LOS)			Design (N)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1125*	pc/h/ln	Design LOS		
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
D = v_p / S	*16.1*	pc/mi/ln	S		mi/h
LOS	*B*		D = v_p / S		pc/mi/ln
			Required Number of Lanes, N		

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associate	Junction	Arrow Highway Loop On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3787	0.92	Level	0	0	1.000	1.00	4116
Ramp	353	0.92	Level	0	0	1.000	1.00	384
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.329 using Equation (Exhibit 25-5)

V_{12} = 1355 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	4500	See Exhibit 25-7	No
V_{R12}	1739	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 15.7 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.308 (Exibit 25-19)

S_R= 61.4 mph (Exhibit 25-19)

S_0= 66.8 mph (Exhibit 25-19)

S = 64.6 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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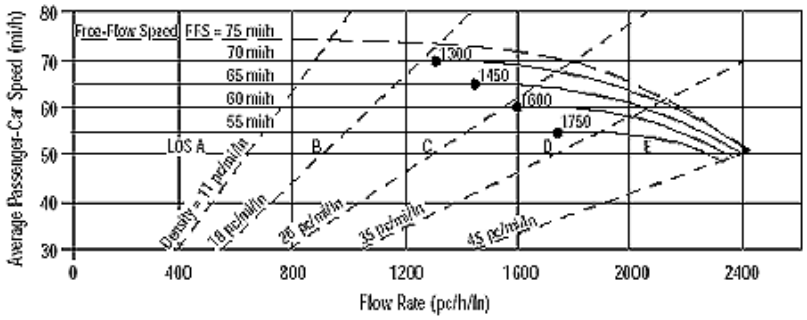
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*LiveOak Off-Ramp/Arrow On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*La County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3787*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1029*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*14.7*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*B*		Required Number of Lanes, N		

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Live Oak Avenue Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5531	0.92	Level	0	0	1.000	1.00	6012
Ramp	1744	0.92	Level	0	0	1.000	1.00	1896
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3691 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	6012	9600	No
V_{12}	3691	4400:All	No
$V_{FO} = V_F - V_R$	4116	9600	No
V_R	1896	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 34.6 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation

D_s = 0.599 (Exhibit 25-19)

S_R= 53.2 mph (Exhibit 25-19)

S_0= 76.2 mph (Exhibit 25-19)

S = 60.2 mph (Exhibit 25-15)

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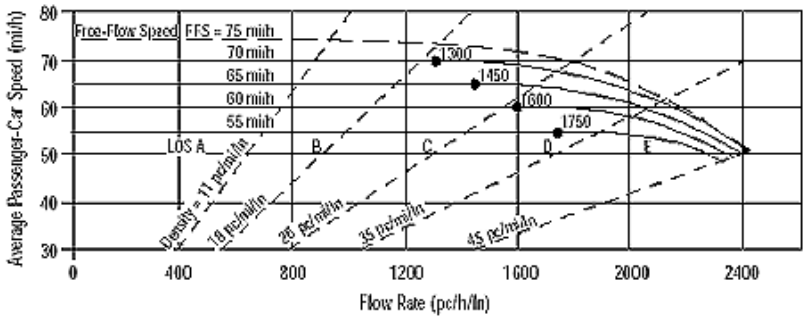
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*South of Live Oak Avenue*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5531*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1503*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.8*	mi/h	S	mi/h
D = v_p / S	*21.5*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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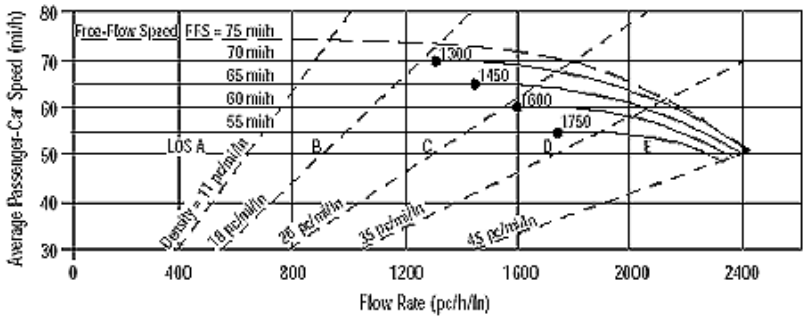
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5268*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1432*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.9*	mi/h	S	mi/h
D = v_p / S	*20.5*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5268	0.92	Level	0	0	1.000	1.00	5726
Ramp	1012	0.92	Level	0	0	1.000	1.00	1100
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3117 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5726	9600	No
V_{12}	3117	4400:All	No
$V_{FO} = V_F - V_R$	4626	9600	No
V_R	1100	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 27.9 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

D_s = 0.527 (Exhibit 25-19)

S_R= 55.2 mph (Exhibit 25-19)

S_0= 75.6 mph (Exhibit 25-19)

S = 63.0 mph (Exhibit 25-15)

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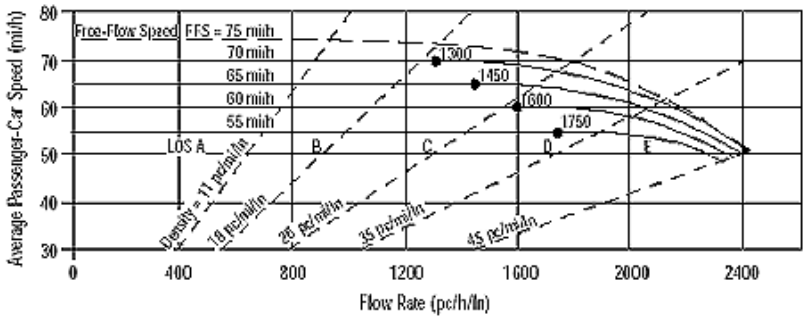
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*Arrow Off-Ramp/LiveOak On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4256*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1157*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*16.5*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*B*		Required Number of Lanes, N		

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Live Oak Canyon On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	PM Peak Hour	Analysis Year	Cumulative WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4256	0.92	Level	0	0	1.000	1.00	4626
Ramp	2102	0.92	Level	0	0	1.000	1.00	2285
UpStream								
DownStream								

Merge Areas | Diverge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.146 using Equation (Exhibit 25-5)

V_{12} = 674 pc/h

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	6911	See Exhibit 25-7	No
V_{R12}	2959	4600:All	No

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.3 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = 0.349 (Exibit 25-19)

S_R= 60.2 mph (Exhibit 25-19)

S_0= 64.7 mph (Exhibit 25-19)

S = 62.7 mph (Exhibit 25-14)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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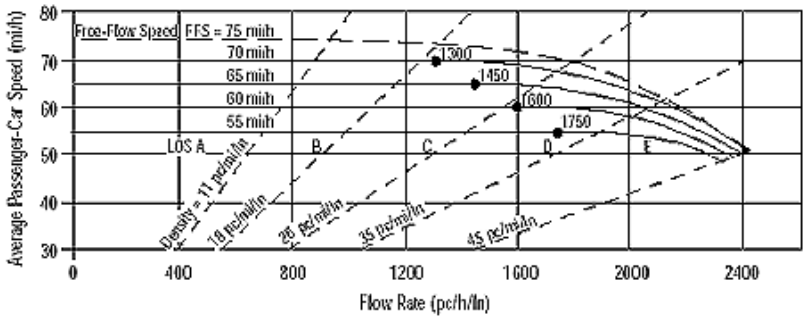
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*South of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*PM Peak Hour*	Analysis Year	*Cumulative WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6358*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1728*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*68.6*	mi/h	S	mi/h
D = v_p / S	*25.2*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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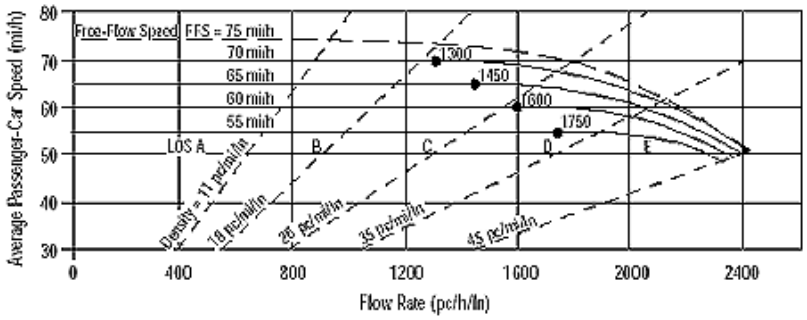
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Cumulative NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4156*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1129*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*16.1*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	Cumulative NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3883	0.92	Level	0	0	1.000	1.00	4221
Ramp	273	0.92	Level	0	0	1.000	1.00	297
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.340 using Equation (Exhibit 25-5)

V_{12} = 1435 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	4518	See Exhibit 25-7	No
V_{R12}	1732	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 15.7 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.308 (Exibit 25-19)

S_R= 61.4 mph (Exhibit 25-19)

S_0= 66.8 mph (Exhibit 25-19)

S = 64.6 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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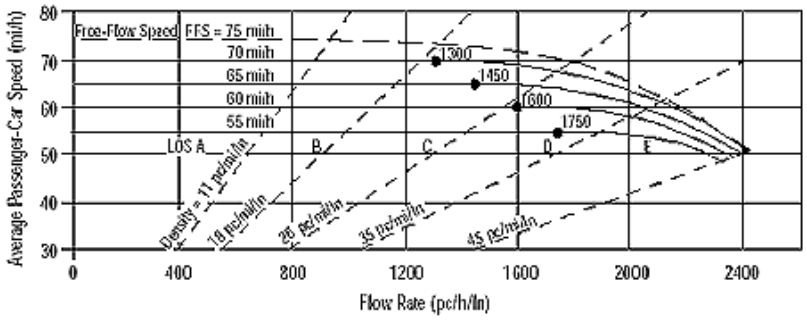
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*Arrow On-Ramp/Arrow On Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Cumulative NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3883*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1055*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*15.1*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*B*		Required Number of Lanes, N		

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Loop On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	Cumulative NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3658	0.92	Level	0	0	1.000	1.00	3976
Ramp	225	0.92	Level	0	0	1.000	1.00	245
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.346 using Equation (Exhibit 25-5)

V_{12} = 1378 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	4221	See Exhibit 25-7	No
V_{R12}	1623	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 14.9 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.306 (Exibit 25-19)

S_R= 61.4 mph (Exhibit 25-19)

S_0= 67.1 mph (Exhibit 25-19)

S = 64.8 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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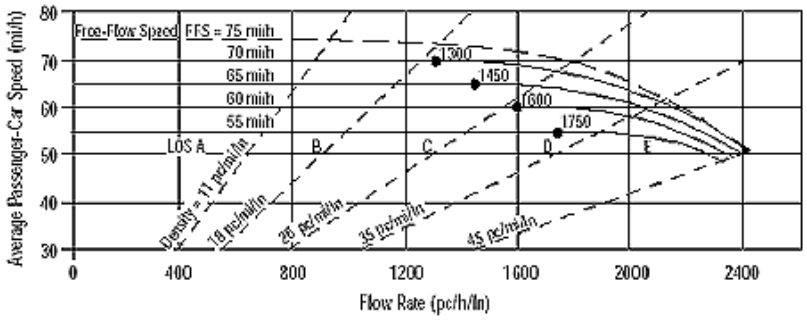
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*LiveOak Off-Ramp/Arrow On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Cumulative NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*3658*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**		
Operational (LOS)			Design (N)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*994*	pc/h/ln	Design LOS		
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
D = v_p / S	*14.2*	pc/mi/ln	S		mi/h
LOS	*B*		D = v_p / S		pc/mi/ln
			Required Number of Lanes, N		

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Live Oak Ave Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	Cumulative NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4558	0.92	Level	0	0	1.000	1.00	4954
Ramp	900	0.92	Level	0	0	1.000	1.00	978
UpStream								
DownStream								

Estimation of v_{12}

Merge Areas

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Diverge Areas

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 2712 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	4954	9600	No
V_{12}	2712	4400:All	No
$V_{FO} = V_F - V_R$	3976	9600	No
V_R	978	2000	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 26.2 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

D_s = 0.516 (Exhibit 25-19)

S_R= 55.6 mph (Exhibit 25-19)

S_0= 76.3 mph (Exhibit 25-19)

S = 63.4 mph (Exhibit 25-15)

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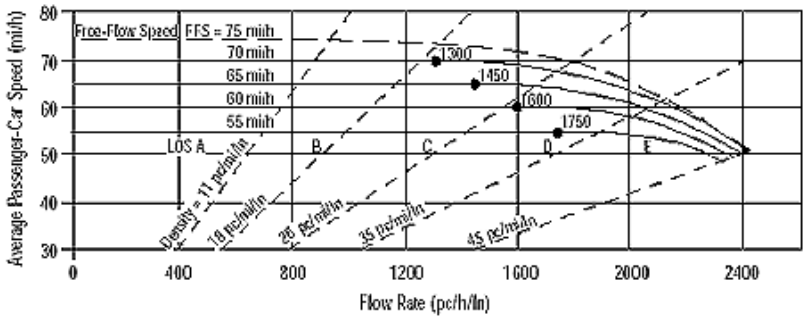
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*South of Live Oak Ave*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Cumulative NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4558*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1239*	pc/h/ln	Design LOS	
S	*70.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
D = v_p / S	*17.7*	pc/mi/ln	S	mi/h
LOS	*B*		D = v_p / S	pc/mi/ln
			Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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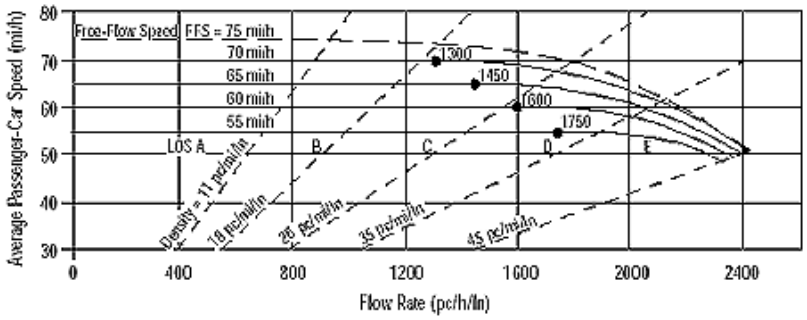
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Cumulative NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4807*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1306*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*18.7*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	Cumulative NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4807	0.92	Level	0	0	1.000	1.00	5225
Ramp	591	0.92	Level	0	0	1.000	1.00	642
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 2640 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5225	9600	No
V_{12}	2640	4400:All	No
$V_{FO} = V_F - V_R$	4583	9600	No
V_R	642	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 23.8 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

D_s = 0.486 (Exhibit 25-19)

S_R= 56.4 mph (Exhibit 25-19)

S_0= 75.7 mph (Exhibit 25-19)

S = 64.5 mph (Exhibit 25-15)

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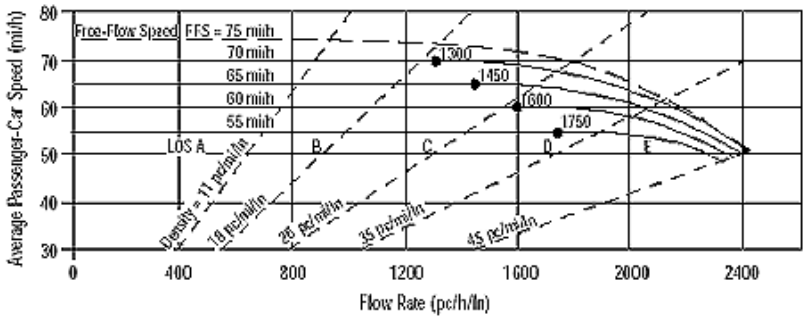
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*Arrow Off Ramp/Live Oak*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Cumulative NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4216*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1146*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*16.4*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Live Oak Canyon On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	Cumulative NP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4216	0.92	Level	0	0	1.000	1.00	4583
Ramp	1156	0.92	Level	0	0	1.000	1.00	1257
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.274 using Equation (Exhibit 25-5)

V_{12} = 1256 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	5840	See Exhibit 25-7	No
V_{R12}	2513	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 20.3 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

M_S = 0.322 (Exibit 25-19)

S_R= 61.0 mph (Exhibit 25-19)

S_0= 65.8 mph (Exhibit 25-19)

S = 63.6 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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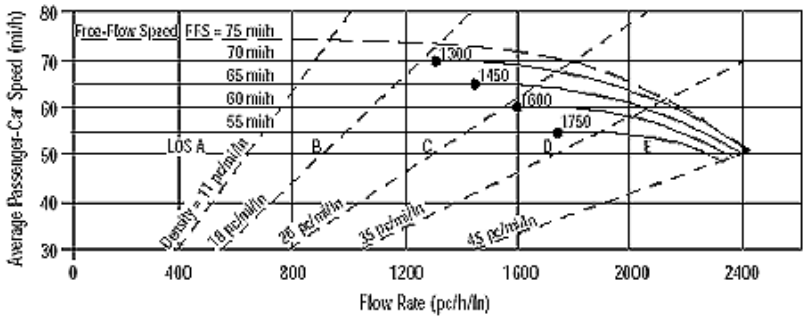
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*South of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Cumulative NP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5372*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1460*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.9*	mi/h	S	mi/h
D = v_p / S	*20.9*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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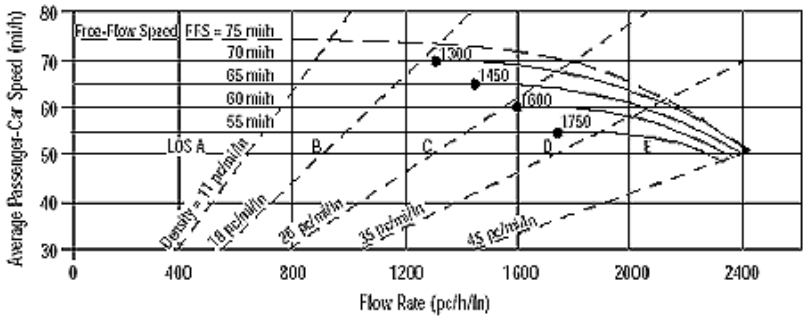
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Cumulative WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4537*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1233*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*17.6*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	Cumulative WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4264	0.92	Level	0	0	1.000	1.00	4635
Ramp	273	0.92	Level	0	0	1.000	1.00	297
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.340 using Equation (Exhibit 25-5)

V_{12} = 1576 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	4932	See Exhibit 25-7	No
V_{R12}	1873	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.8 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.311 (Exibit 25-19)

S_R= 61.3 mph (Exhibit 25-19)

S_0= 66.3 mph (Exhibit 25-19)

S = 64.3 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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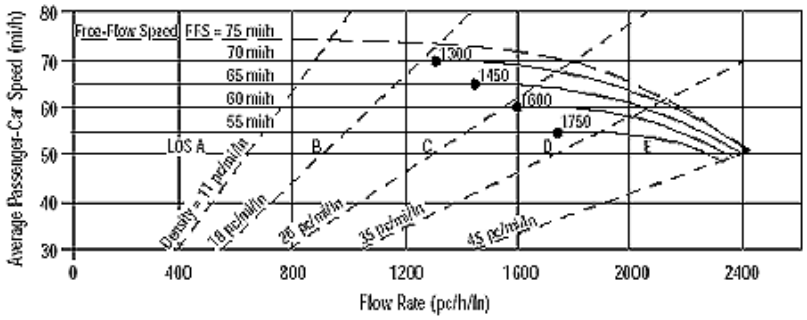
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*Arrow On-Ramp/Arrow On Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Cumulative WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4264*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1159*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*16.6*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*B*		Required Number of Lanes, N		

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Arrow Highway Loop On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	Cumulative WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3658	0.92	Level	0	0	1.000	1.00	3976
Ramp	606	0.92	Level	0	0	1.000	1.00	659
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.295 using Equation (Exhibit 25-5)

V_{12} = 1172 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	4635	See Exhibit 25-7	No
V_{R12}	1831	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.3 (pc/mi/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.310 (Exibit 25-19)

S_R= 61.3 mph (Exhibit 25-19)

S_0= 66.8 mph (Exhibit 25-19)

S = 64.5 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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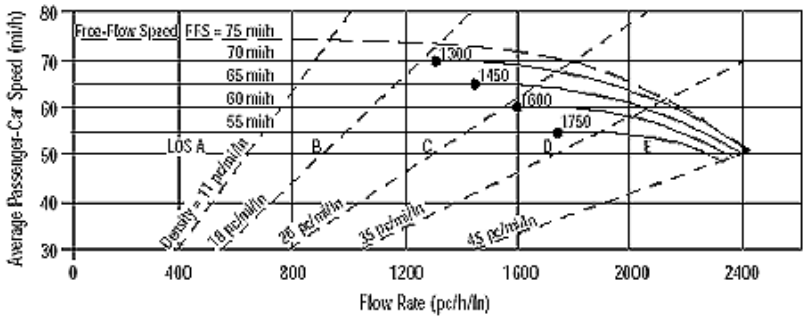
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*LiveOak Off-Ramp/Arrow On-Ramp*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Cumulative WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3658*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)		
			Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*994*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S	*70.0*	mi/h	S		mi/h
D = v_p / S	*14.2*	pc/mi/ln	D = v_p / S		pc/mi/ln
LOS	*B*		Required Number of Lanes, N		

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Northbound
Agency or Company	LSA Associates	Junction	Live Oak Ave Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	Cumulative WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4965	0.92	Level	0	0	1.000	1.00	5397
Ramp	1307	0.92	Level	0	0	1.000	1.00	1421
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3155 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5397	9600	No
V_{12}	3155	4400:All	No
$V_{FO} = V_F - V_R$	3976	9600	No
V_R	1421	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 30.0 (pc/mi/ln)

LOS = D (Exhibit 25-4)

Speed Estimation

D_s = 0.556 (Exhibit 25-19)

S_R= 54.4 mph (Exhibit 25-19)

S_0= 76.3 mph (Exhibit 25-19)

S = 61.8 mph (Exhibit 25-15)

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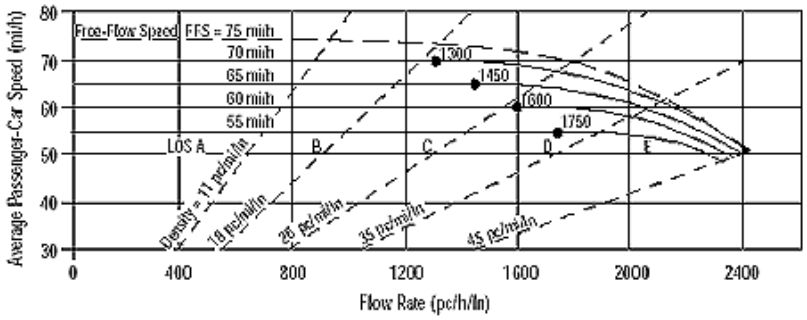
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Northbound*
Agency or Company	*LSA Associates*	From/To	*South of Live Oak Ave*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Cumulative WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4965*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1349*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*19.3*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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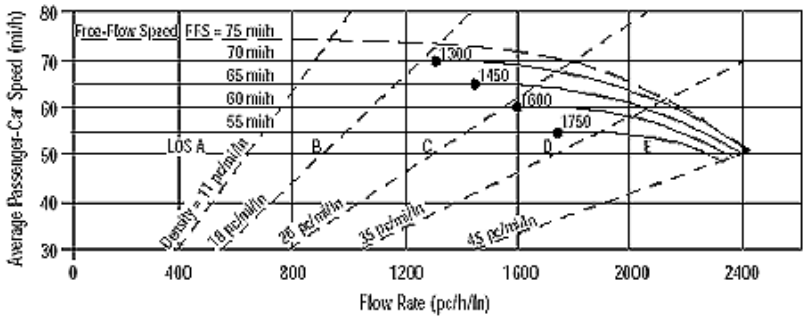
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*North of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Cumulative WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5242*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1424*	pc/h/ln	Design LOS	
S	*69.9*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
D = v_p / S	*20.4*	pc/mi/ln	S	mi/h
LOS	*C*		D = v_p / S	pc/mi/ln
			Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Arrow Highway Slip Off-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	Cumulative WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5242	0.92	Level	0	0	1.000	1.00	5698
Ramp	1026	0.92	Level	0	0	1.000	1.00	1115
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}			
V_{R12}			

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-11)

V_{12} = 3113 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$	5698	9600	No
V_{12}	3113	4400:All	No
$V_{FO} = V_F - V_R$	4583	9600	No
V_R	1115	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = 27.9 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

D_s = 0.528 (Exhibit 25-19)

S_R= 55.2 mph (Exhibit 25-19)

S_0= 75.7 mph (Exhibit 25-19)

S = 62.9 mph (Exhibit 25-15)

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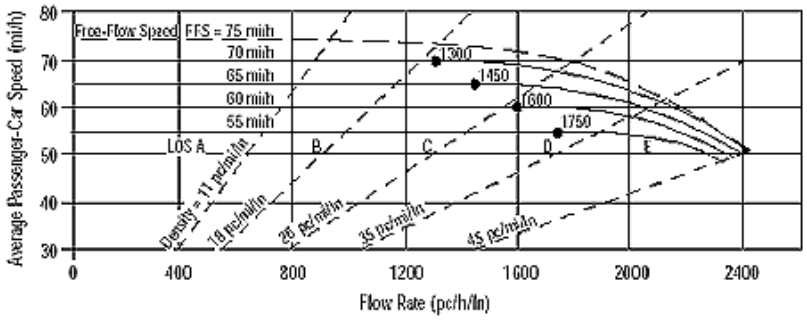
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

General Information		Site Information	
Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*Arrow Off Ramp/Live Oak*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Cumulative WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4216*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Speed Inputs			Calc Speed Adj and FFS		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1146*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*70.0*	mi/h	S	mi/h
D = v_p / S	*16.4*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary / Factor Location

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Nancy Velgara	Freeway/Dir of Travel	Southbound
Agency or Company	LSA Associates	Junction	Live Oak Canyon On-Ramp
Date Performed	8/13/2014	Jurisdiction	LA County
Analysis Time Period	Saturday Peak Hour	Analysis Year	Cumulative WP

Project Description Irwindale Regional Shopping Center

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

Vu = veh/h

Terrain: Level

S_{FF} = 70.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4216	0.92	Level	0	0	1.000	1.00	4583
Ramp	1582	0.92	Level	0	0	1.000	1.00	1720
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.216 using Equation (Exhibit 25-5)

V_{12} = 991 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	6303	See Exhibit 25-7	No
V_{R12}	2711	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 21.6 (pc/mi/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

M_S = 0.333 (Exibit 25-19)

S_R= 60.7 mph (Exhibit 25-19)

S_0= 65.3 mph (Exhibit 25-19)

S = 63.2 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-11)

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI} = V_F$			
V_{12}			
$V_{FO} = V_F - V_R$			
V_R			

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.0009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

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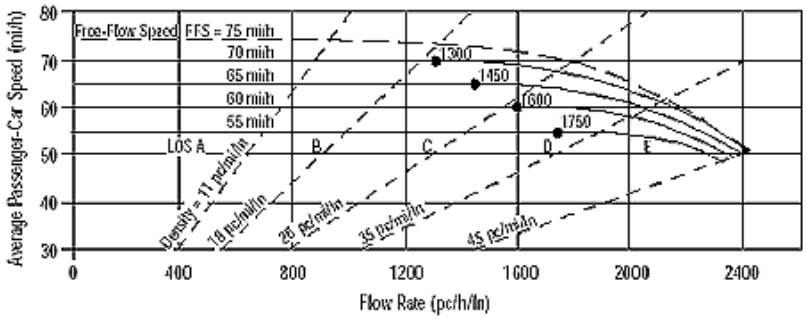
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information / Site Information

Analyst	*Nancy Velgara*	Highway/Direction of Travel	*Southbound*
Agency or Company	*LSA Associates*	From/To	*South of Arrow Highway*
Date Performed	*8/14/2014*	Jurisdiction	*LA County*
Analysis Time Period	*Saturday Peak Hour*	Analysis Year	*Cumulative WP*

Project Description Irwindale Regional Shopping Center

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5797*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*0*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*1.000*

Speed Inputs / Calc Speed Adj and FFS

Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*70.0*	mi/h	FFS	*70.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures / Design (N)

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1575*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*69.5*	mi/h	S	mi/h
D = v_p / S	*22.6*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary / Factor Location

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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