Overland Traffic Consultants, Inc.

TRAFFIC IMPACT ANALYSIS FOR CHEVRON TANK FARM MIXED-USE PROJECT

Located along Tank Farm Road
between S. Higuera St. & Broad St.
in the City and County of San Luis Obispo

Prepared by:

Overland Traffic Consultants, Inc.
South Office
952 Manhattan Beach Bl, #100
Manhattan Beach, California 90266
(310) 545-1235

November 2012

TRAFFIC IMPACT ANALYSIS FOR
CHEVRON TANK FARM

Located north and south of Tank Farm Road
East of South Higuera Street and West of Broad Street
South of the City of San Luis Obispo and
Within the County of San Luis Obispo

Prepared by:
Overland Traffic Consultants, Inc.
South Office
952 Manhattan Beach Boulevard, # 100
Manhattan Beach, California 90266
(310) 545-235

With Coordination and Assistance from:
Central Coast Transportation Consulting
14 North Ocean Street, # 132
P.O. Box 796
Cayucos, California 93430
(805) 316-0101

November, 2012

EXECUTIVE SUMMARY

This report documents the potential traffic impacts created by the Chevron Tank Farm project located within San Luis Obispo County south of the City of San Luis Obispo. The project proposes the remediation and development on a 332-acre site along Tank Farm Road east of South Higuera Street and west of Broad Street.

The remediation phase will be completed in approximately three years with development to follow over a 25 year time span. The goal is to develop approximately a total of 800,000 square feet of business park and service commercial uses in five phases. Different project descriptions are provided for the City and County development options. The City development option generates higher levels of traffic, up to 8,193 weekday daily trips with 1,039 trips during the morning peak hour and 1,068 trips during the evening peak hour.

The following scenarios were analyzed in this study:

- Existing Conditions using recent traffic counts
- Existing With Project Conditions
- Future Buildout Conditions
- Future Buildout With Project Conditions

Project impacts and levels of significance after mitigation are summarized in the table below.

INTERSECTION	TIME PERIOD	IMPACT STATUS	NOTES
EXISTING + PROJECT			
Intersection Impacts:			
Broad Street/Tank Farm Road	AM & PM Peak	Mitigated	Improvement currently under construction by City
CUMULATIVE + PROJECT			
Higuera Street/Prado Road	AM & PM Peak	Significant & Unavoidable	Right-of-way required
Los Osos Valley Rd./US 101 SB Ramps/Calle Joaquin	AM & PM Peak	Significant & Unavoidable	Need Caltrans approval Right-of-way required
Higuera Street/Tank Farm Road	AM & PM Peak	Significant & Unavoidable	Conflict with City Policy
Higuera St./Los Osos Valley Rd.	PM Peak	Significant & Unavoidable	Right-of-way required
Santa Fe Road/Tank Farm Road	PM Peak	Mitigated	

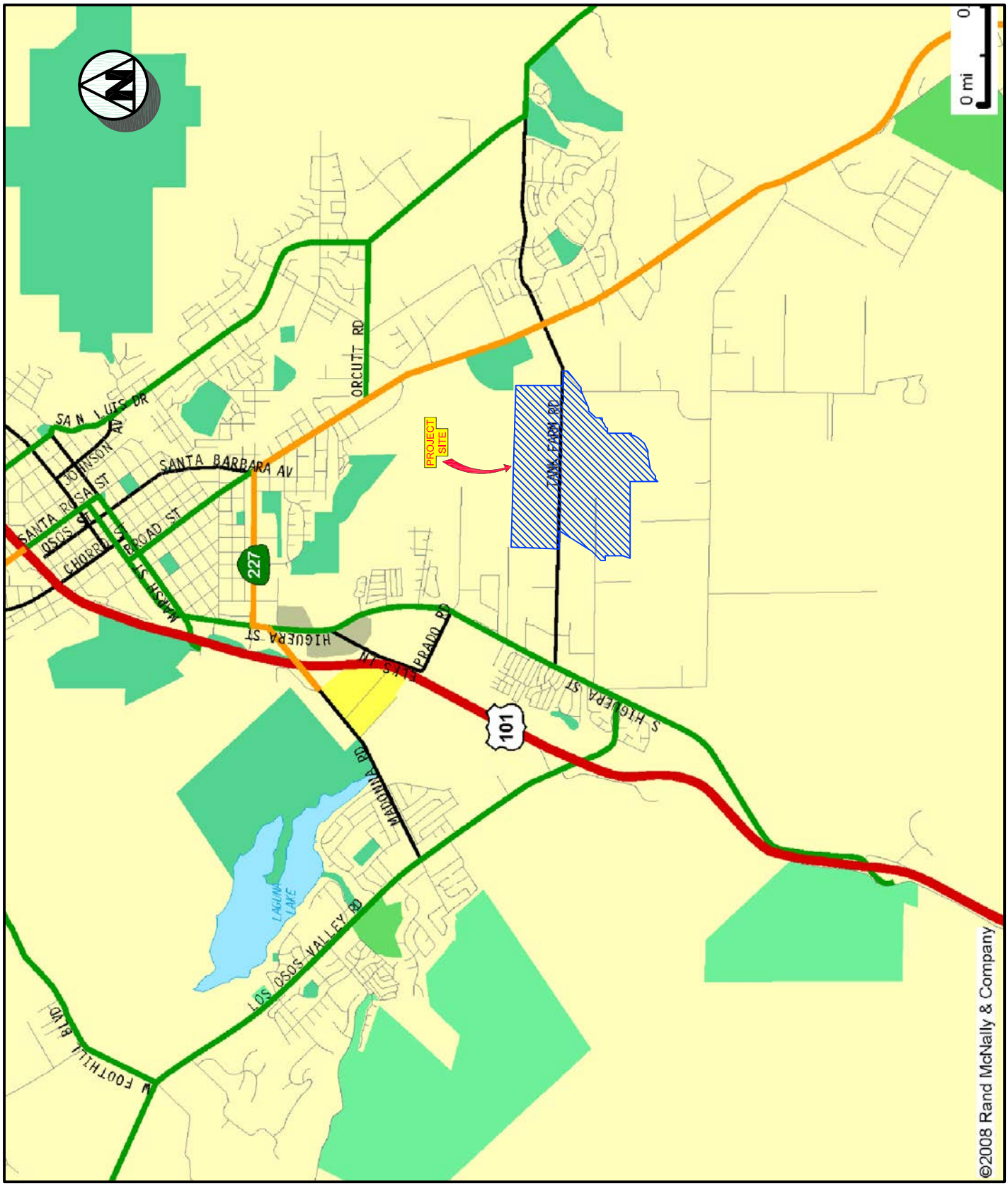
Broad Street/Tank Farm Road	AM & PM Peak	Significant & Unavoidable	Right-of-way required
Broad Street/Buckley Road	PM Peak	Significant & Unavoidable	Right-of-way required
Broad Street/Prado Road	AM Peak	Significant & Unavoidable	Right-of-way required
Operational Issues:			
Higuera Street/Vachell Lane	AM & PM Peak	Mitigated	Restrict left turns out

The project would have a significant impact on freeway facilities, worsening unacceptable operations under Cumulative With Project conditions. In addition to the impacts summarized above, the project would have a potentially significant impact to transit, bicycle, and pedestrian facilities.

The applicant shall work with the City and SLO Transit to provide adequate transit service and plan for the provision bus stops and amenities including bus bays, shelters, and benches. The proposed bicycle network is inconsistent with parts of the City's *Bicycle Transportation Plan*, and would require changes to the Plan or proposed project to achieve consistency and network continuity. Bicycle, pedestrian, and parking circulation on the site will need to be reviewed when a detailed site plan is developed.

Recommended access improvements include the construction of a multi-lane roundabout at Santa Fe Road and Tank Farm Road; re-designing Santa Fe Road as a two-lane facility with provision for four lanes in the future; adding turn pockets at Tank Farm Road and Road B, and consolidating access at the western parcel's driveways.

The applicant shall prepare a construction management plan to minimize construction impacts.



9/09

PROJECT SETTING

Overland Traffic Consultants, Inc.
27201 Tourney Road #206, Santa Clarita, CA 91355
(661)799-8423 v, (661)799-8456 f, OTC@overlandtraffic.com

TABLE OF CONTENTS Page

Chapter 1 - Introduction 1
Chapter 2 - Project Description 3
Chapter 3 - Environmental Setting 9
Existing Roadway Network 9
Existing Bicycle & Pedestrian Facilities 11
Existing Transit Facilities 12
Existing Volumes & Lane Configurations 13
Chapter 4 - Project Traffic Characteristics 17
Project Traffic Generation 17
Traffic Distribution, Assignment of Project Traffic, Future Improvements 23
Code Required Parking 32
Project Vehicular Access 34
Project Parking Circulation 35
Chapter 5 - Traffic Conditions Analysis 36
Analysis of Existing Traffic Conditions 36
Impact Criteria 41
Analysis of Existing + Project Traffic Conditions 42
Analysis of Future Conditions 45
Transit Evaluation with Project 54
Bicycle Evaluation with Project 55
Pedestrian Evaluation with Project 56
Project Construction Analysis 57
Chapter 6 – Mitigation Measures 60
Intersection Mitigation 62
Freeway Mitigation 67
Access Mitigation 68
On Site Circulation 69
Construction 69
Appendix A – County Circulation Map
Appendix B – City Bicycle Plans
Appendix C – Transit Routes
Appendix D – Delay Worksheets
Appendix E – Freeway Worksheets
Appendix F – Alternatives Summary

LIST OF FIGURES Page

Figure 1 Project Location 4
Figure 2 Project Site Plans 6-7
Figure 3 Existing Traffic Volumes AM Peak Hour 14
Figure 4 Existing Traffic Volumes PM Peak Hour 15
Figure 5 Study Intersection Characteristics 16
Figure 6 Future Intersection Characteristics 25
Figure 7 Overall Project Distribution 27
Figure 8 Project Traffic Assignment Percentages 28-29
Figure 9 Total Project Traffic Volumes 30-31
Figure 10 Future Without Project Traffic Volumes AM Peak Hour 47
Figure 11 Future Without Project Traffic Volumes PM Peak Hour 48
Figure 12 Future With Project Traffic Volumes AM Peak Hour 51
Figure 13 Future With Project Traffic Volumes PM Peak Hour 52

LIST OF TABLES Page

Table 1	Project Trip Generation Rates……	18
Table 2	Project Traffic Generation……	20-21
Table 3	Parking Requirements……	33
Table 4	Level of Service (LOS) Definitions – Intersections……	37
Table 5	LOS Definitions – Freeway Locations……	38
Table 6	Existing Traffic Conditions Summary Intersections……	39
Table 7	Existing Traffic Conditions Freeway Locations……	40
Table 8	Significant Impact Definitions……	41
Table 9	Existing + Project Intersection Traffic Conditions……	43
Table 10	Existing + Project Traffic Freeway Conditions……	44
Table 11	Without Project Traffic Intersection Conditions……	46
Table 12	Without Project Freeway Traffic Conditions……	49
Table 13	With Project Intersection Traffic Conditions……	50
Table 14	With Project Freeway Traffic Conditions……	53
Table 15	Transit Trips……	54
Table 16	Existing + Project + Mitigation Summary……	63
Table 17	Cumulative + Project Mitigation Summary……	66
Table 18	Impact & Effectiveness of Intersection Mitigation……	67

CHAPTER 1 INTRODUCTION

As part of the project's environmental review, an evaluation of the potential traffic impact of the proposed development on the surrounding area is required. Therefore, the traffic impact analyses in this traffic study has been conducted using the procedures adopted by the City of San Luis Obispo and County of San Luis Obispo to analyze the potential traffic impacts of new development projects. The intersections were evaluated using the Highway Capacity Manual 2000 (HCM) procedures. The HCM method calculates the delay of each individual study intersection based upon operating conditions of each intersection with influence from the neighboring intersections incorporating geometric characteristics of the intersection, traffic volumes, and signalization with signal timing or stop sign control. Any change to the intersection's peak hour operating condition caused by an increase/decrease in traffic volume can be quantified (i.e. traffic impact) using this analysis method.

Potential traffic impacts caused by a project that exceed limits established by the County or City of San Luis Obispo as specified in their respective traffic impact study guidelines. Any significantly impacted intersections are then evaluated for possible traffic mitigation measures.

The following scenarios are evaluated in this study:

(a) Existing conditions (based on counts provided by the City of San Luis Obispo supplemented with 2009 traffic counts);

(b) Existing plus project traffic without mitigation;

(c) Existing plus project traffic with mitigation, if necessary;

(d) Cumulative conditions without the project based on City of San Luis Obispo Model information;

(e) Cumulative conditions with the project and without mitigation;

(f) Cumulative conditions with the project and with mitigation, if necessary.

An analysis of the existing and future traffic conditions analysis has been completed at those locations expected to have the highest potential for significant traffic impacts. Weekday morning and afternoon peak hour conditions have been evaluated at 17 key intersections requested by the State Department of Transportation (Caltrans), County and City of San Luis Obispo for review. The intersections most likely to be affected by the development of the project were selected for analysis. It should be noted that future cumulative traffic conditions include the potential construction of other land development projects in the general vicinity of the project site. The future cumulative project conditions are based upon the City of San Luis Obispo traffic model. The future conditions include the evaluation of the intersection of Broad Street and Prado Road.

The intersections analyzed in this study are:

1. Broad Street and South Street/Santa Barbara Street;
2. Madonna Road and Northbound US-101 On/Off Ramps;
3. Madonna Road and Southbound US-101 On/Off Ramps;
4. Northbound US 101 Offramp/Elks Lane and NB US-101Onramp/Prado Road;
5. Prado Road and South Higuera Street;
6. Los Osos Valley Road and Southbound US-101 On/Off Ramps;
7. South Higuera Road and Tank Farm Road;
8. South Higuera Road and Vachell Lane;
9. Los Osos Valley Road and Northbound US-101 On/Off Ramps;
10. Los Osos Valley Road and South Higuera Road;
11. Broad Street and Orcutt Road;
12. Broad Street and Industrial Way;
13. Tank Farm Road and Santa Fe Road;
14. Broad Street and Tank Farm Road;
15. Aero Drive and Broad Street;
16. Buckley Road and Santa Fe Road;
17. Broad Street and Buckley Road/Hidden Springs.

CHAPTER 2 PROJECT DESCRIPTION

The project proposes the remediation and development on a 332-acre site along Tank Farm Road east of South Higuera Street and west of Broad Street. The site is located within San Luis Obispo County south of the City of San Luis Obispo. The location of the project site is shown on Figure 1.

The project consists of remediation and development. The remediation will be completed in approximately three years with development to follow over a 25 year time span. The goal is to develop approximately 800,000 square feet of business park and service commercial. The development would proceed with five phases of approximately 160,000 square feet each over a five year span for each phase. Since the project resides within the County of San Luis Obispo a proposed project has been established which fulfills the parameters and requirements of the County. However, the project area may include changes to the City of San Luis Obispo's Airport Area Specific Plan that anticipates future annexation of the area. Therefore, a second proposed project has been established which fulfills the parameters and requirements of the City.

The County of San Luis Obispo project includes a commercial service component to include 348,000 square feet of business park, 15,000 square feet of general retail, 5,000 square feet of specialized education/training facility, 70,000 square feet of hotel (115 rooms) and a 4 acre wastewater treatment facility. There is an industrial component to include 170,000 square feet of light manufacturing, 50,000 square feet of industrial research and development, 20,000 square feet of vehicle service and maintenance, 5,000 square feet of veterinary clinic/hospital/boarding, 10,000 square feet of photo and film processing, 10,000 square feet of printing and publishing, 50,000 square feet of indoor storage warehousing, and 50,000 square feet of wholesaling and distribution. The third component is 15 acres of recreation fields. The remaining 250 acres are for conservation and open space.

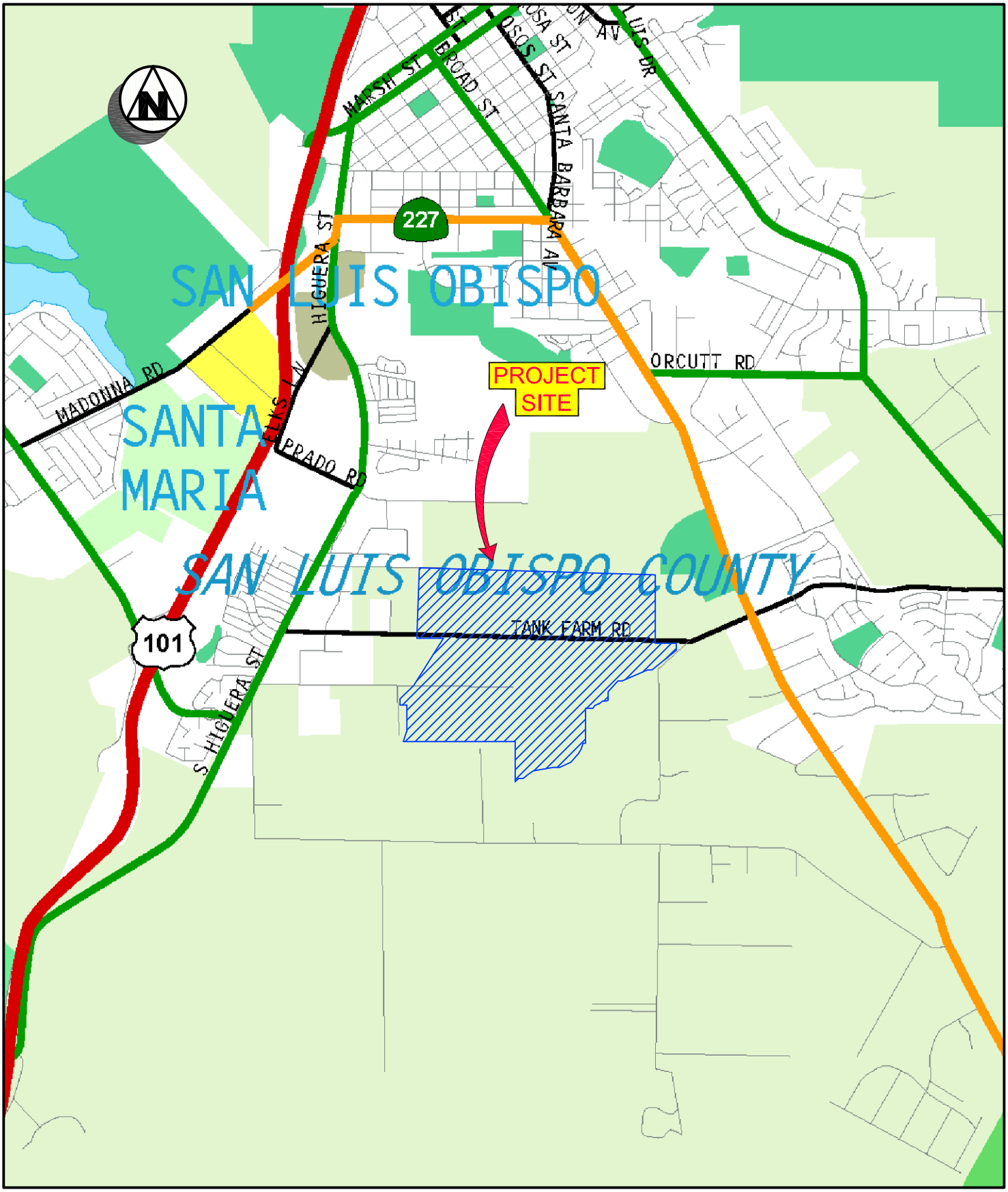


FIGURE 1

9/09

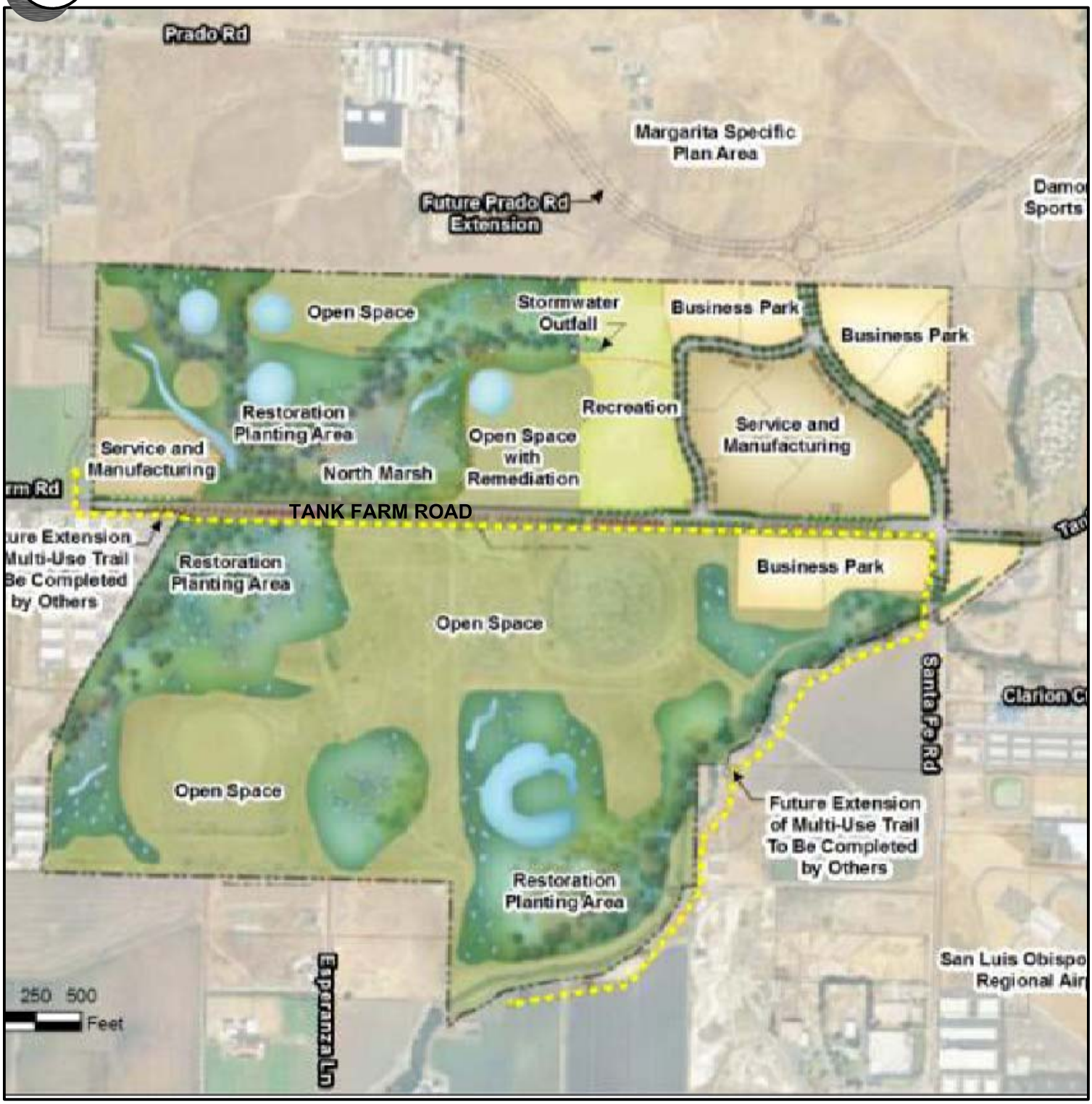
PROJECT LOCATION

Overland Traffic Consultants, Inc.
27201 Tourney Road #206, Santa Clarita, CA 91355
(661)799-8423 v, (661)799-8456 f, OTC@overlandtraffic.com

The City of San Luis Obispo project includes a business park area to include 348,000 square feet of business park, 10,000 square feet of printing and publishing, 70,000 square feet of hotel (115 rooms) and 5,000 square feet of specialized education/training facility. The County project incorporates service commercial development including such items as 170,000 square feet of light manufacturing, 50,000 square feet of industrial research and development, 15,000 square feet of general retail, 20,000 square feet of vehicle service and maintenance, 5,000 square feet of veterinary clinic/hospital/boarding, 10,000 square feet of photo and film processing, 50,000 square feet of indoor storage warehousing, and 50,000 square feet of wholesaling and distribution. The third component is the public facilities. These include 10,000 square feet of public transit maintenance & storage, 5,000 square feet of public fire station and training facility and 15 acres of recreational fields. The remaining 250 acres will be conservation and open space area.

While the County and City detail the components somewhat differently, the basic venue difference is that the County project has a Wastewater Treatment Facility and the City project does not. Instead the City project has a public transit maintenance and storage facility and public fire station and training facility which the County project does not.

Figure 2a and 2b provide the County and City anticipated layout for each of the project components. Two access roads will be developed as part of the project. Access Road A will provide vehicular access to a portion of the business park and intersects Santa Fe Road north of Tank Farm Road. Access Road B will provide access to the recreational area, portion of the service and manufacturing and portion of the business park. Access Road B intersects with Tank Farm Road and Santa Fe Road. Access Road A and Access Road B are proposed with one lane each direction.



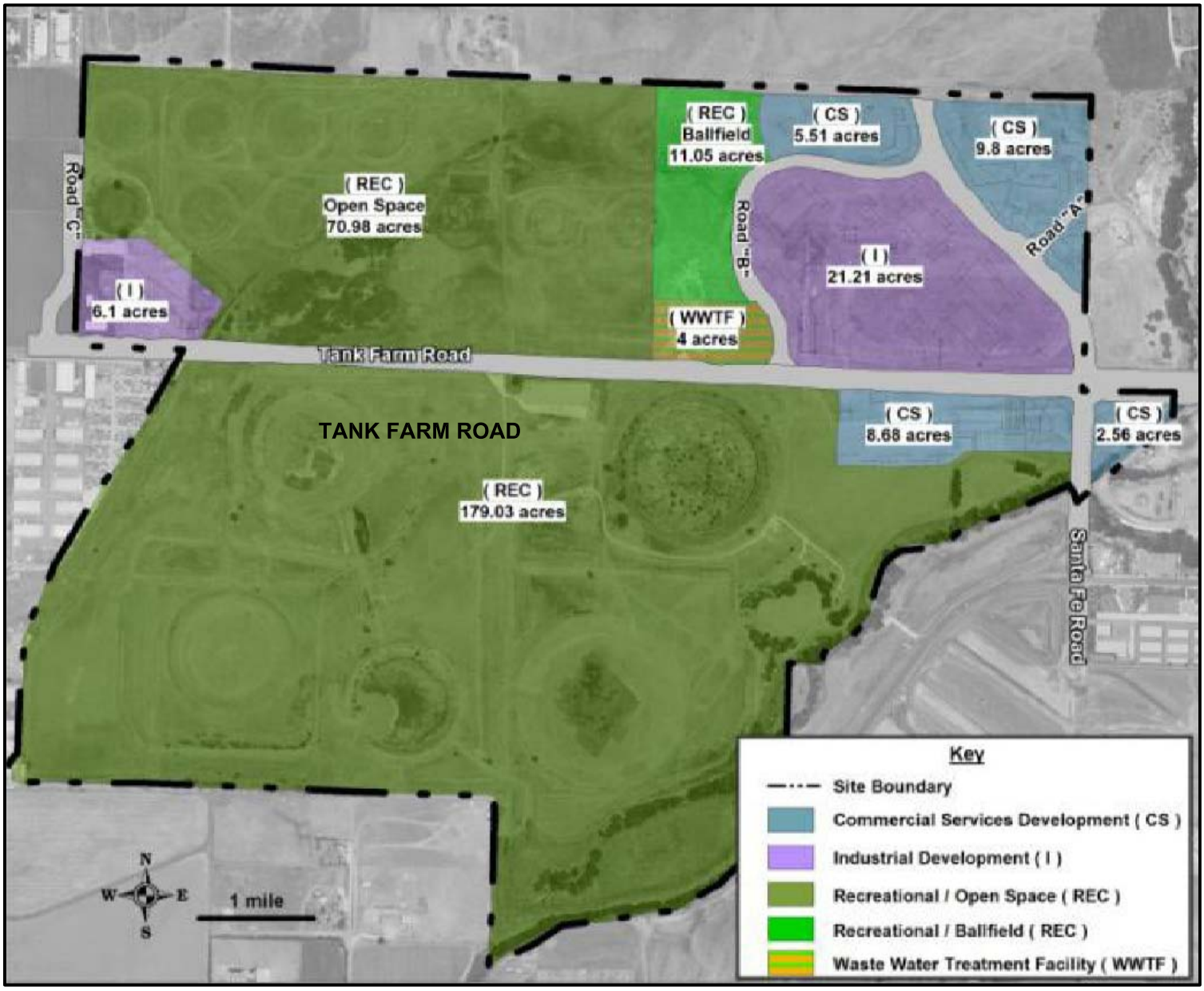
SOURCE PEP CHEVRON 2007

FIGURE 2a

12/2011

PROJECT AREA PLAN - CITY

Overland Traffic Consultants, Inc.
27201 Tourney Road #206, Santa Clarita, CA 91355
(661)799-8423 v, (661)799-8456 f, OTC@overlandtraffic.com



SOURCE PEP CHEVRON 2007

FIGURE 2b

12/2011

PROJECT AREA PLAN - COUNTY

Overland Traffic Consultants, Inc.
27201 Tourney Road #206, Santa Clarita, CA 91355
(661)799-8423 v, (661)799-8456 f, OTC@overlandtraffic.com

The project proposes numerous roadway and traffic control improvements as part of the project. In order to provide adequate circulation and access the project proposes the following improvements:

- Widen Tank Farm Road to provide two lanes in each direction with a 14 foot landscaped median and left turn lanes at intersections between South Higuera Road and Broad Street.

- Provide a 20 foot multiuse pathway/bikeway on the north side of Tank Farm Road between South Higuera Street and Broad Street.

- Widen and realign portion of Santa Fe Road to provide two lanes in each direction. Provide a multi-use bike path/ sidewalk on both sides of Santa Fe Road.

- Provide a new traffic signal at Tank Farm Road and Santa Fe Road.

- Provide a one quarter mile extension of Santa Fe Road north of Tank Farm Road and one lane in each direction with a 14 foot landscaped median.

These improvements are included as project components and considered as constructed in the exiting with project and cumulative analysis of the potential traffic impacts.

EXISTING ROADWAY NETWORK

The proposed project is located within the County of San Luis Obispo with the potential to be annexed to the City of San Luis Obispo. The project would affect roadways within both the City and County. Following are the existing local and regional freeways, highways and roadways likely to be influenced by the project traffic. The County circulation map is provided in Appendix A.

United States (US) Highway 101 operates in the north-south direction and is located west of the Project site. This Highway provides two lanes in each direction in the project vicinity. Freeway ramps are located at South Higuera Street, Los Osos Valley Road, Prado Road and Madonna Road. Caltrans reports that US Highway 101 carried approximately 56,000 vehicles per day (VPD) and 5,600 vehicles per hour (VPH) during the peak hours between Madonna Road and Los Osos Valley Road in 2008. US Highway 101 spans from Los Angeles through California, Oregon and Washington to the north with much of the highway along the coastline.

Broad Street Broad Street operates in the north-south direction and is located east of the Project Site. Broad Street provides two lanes in each direction in the Project vicinity. Turn lanes are provided at most major intersections. Caltrans reports that Broad Street (previously designated as State Route 227) carried approximately 22,800 VPD and 2,700 VPH during the peak hours at Tank Farm Road during 2008. Broad Street is designated as a truck route. It is a designated as a road of high or moderate scenic value. South Street is also designated as a truck route, and a road of moderate scenic value.

Aero Drive is designated as a local commercial street by the City. Local commercial streets are described as roadways which directly serve non-residential developments and carry traffic to commercial collector streets. Aero Drive operates in generally the east-west direction and provides access to San Luis Obispo Airport. Currently one lane in each direction are provided.

Buckley Road is designated as an Arterial Street by the City. Arterial Streets are described as roadways which provide circulation between activity centers and residential streets with two to four travel lanes. Buckley Road operates predominately in the east-west direction

and currently has one lane in each direction. It is designated as a road of high or moderate scenic value.

Elks Lane is designated as a Local Commercial Street by the City. Local Commercial Streets are described by the City as streets which directly service non-residential development and channel traffic to commercial collector streets. Elks Lane provides one lane in each direction in the Project vicinity.

South Higuera Street is a generally north-south roadway designated as an Arterial Street by the City. South Higuera Street is part of the City's truck route system and provides connection between downtown San Luis Obispo and U.S. Highway 101. It is designated as a road of high scenic value between Prado Road and Los Osos Valley Road, a road of moderate scenic value north of Prado Road, and a road of high or moderate scenic value south of Los Osos Valley Road.

Industrial Way is designated as a Commercial Collector Street. Commercial Collector Streets collect traffic from commercial areas and distribute them to the commercial arterials. Industrial Way operates in the east-west direction with one lane in each direction with on-street parking. Industrial Way spans from Broad Street to the railroad tracks in the Project vicinity.

Los Osos Valley Road is an east-west roadway designated as an Arterial Street from South Higuera Street to the southbound U.S. 101 Freeway ramps and again from west of Madonna Road. Between this span the roadway is designated as a Parkway Arterial. Portions of the roadway are designated as a high or moderate scenic route outside of the City limits and portions are designated as a high scenic route. Los Osos Valley Road provides one to two lanes in each direction in the Project vicinity. The roadway extends from South Higuera Street to the coast in Los Osos.

Madonna Road operates in the northeast-southwest direction and is designated as an Arterial Street by the City. It is part of the truck route system and designated as high or moderate scenic route outside of the City limits. Madonna Road provides two to three lanes in each direction and spans for the U.S. 101 Freeway to Los Osos Valley Road.

Orcutt Road is designated as an Arterial Street by the City. Orcutt provides a single lane in

each direction but widens between Broad Street and Laurel Lane to provide two lanes. Orcutt Road operates from Broad Street to Johnson Avenue in the Project vicinity. It is designated as a road of moderate scenic value within the City limits and a road of high or moderate scenic value outside of the City limits.

Prado Road is a planned Regional Route which will span between Madonna Road and Broad Street. One lane in each direction is currently provided between the east side of U.S. Highway 101 and the 400 block of Prado Road where the roadway terminates . Prado Road is designated as an existing and future truck route. Prado Road is also designated as a road of moderate scenic value between U.S. Highway 101 and South Higuera Street.

Santa Fe Road is designated as a Commercial Collector Street from Buckley Road to Prado Road. Currently Santa Fe road provides one lane in each direction between Buckley Road and Tank Farm Road where the roadway currently terminates.

Tank Farm Road is designated as a Parkway Arterial, part of the City's truck route system and provides high or moderate scenic value outside of the City limit. Currently one lane in each direction is provided. However the roadway expands at South Higuera Street and Broad Street to provide turn lanes and two lanes of travel are provided in each direction between Broad Street and the railroad tracks.

EXISTING BICYCLE AND PEDESTRIAN FACILITIES

Bicycle facilities are provided throughout the City and County. Bicycle paths, which are right-of-way reserved for bicycles and pedestrians that are completely separate from the streets (i.e., Class I Bike Paths), are provided through Meadow Park providing a connection between Bridge and Meadow Streets. Bicycle lanes, which are striped lanes for one-way bicycle travel (i.e., Class II Bike Paths), are provided along a majority of Broad Street, Los Osos Valley Road, Madonna Road, Tank Farm Road, Orcutt Road and South Higuera Street. Bicycle routes, which are lightly traveled streets where bicycles share the road with vehicles without delineating lines, are provided at various locations throughout the community (i.e., Class III Bike Paths). Portions of Tank Farm Road are designated for a future Bicycle Paths by the City of San Luis Obispo Bicycle Transportation Plan, 2007. Buckley Road and Prado Road are also designated for future bike lanes. Key figures from

the existing Bicycle Plan is provided in Appendix B.

EXISTING TRANSIT SERVICES

Transit services are provided in the area by AMTRAK, San Luis Obispo Transit (SLO Transit) and Regional Transit Authority (RTA).

AMTRAK provides two services in the area including the Coast Starlight and Pacific Surfliner routes. The train station is located at 1011 Railroad Avenue north east of Broad Street and Santa Barbara Avenue which is north of the Project Site. The Coast Starlight travels between Seattle and Los Angeles daily. The Pacific Surfliner travels between San Diego and San Luis Obispo with three daily trips in each direction.

SLO Transit provides services throughout the City including the Project area along South Street, Madonna Road, South Higuera Street, Broad Street, Orcutt Road, portions of Tank Farm Road (east of Broad Street), Prado Road, and Santa Barbara Avenue. Routes 1, 2, 3, 4, 5, and 6A/B service the greater San Luis Obispo area with stops every 30 to 40 minutes and service until approximately 10:30 p.m.

RTA provides services in the Project area with Routes 10 and 11 along South Higuera Street, as well as ADA paratransit services throughout the County.

Currently there is no fixed-route bus service along the Project frontage of Tank Farm Road. The closest transit stop to the Project Site is located on Broad Street near the Marigold Center serviced by SLO Transit, approximately 2,000 feet away from the eastern edge of the Project Site. The existing Transit services maps and some schedules are provided in Appendix C.

EXISTING VOLUMES AND LANE CONFIGURATIONS

Existing traffic conditions at 17 study intersections have been evaluated to determine baseline conditions in the study area. Traffic counts were conducted by an independent count company during October 2009 on three typical weekdays when schools were in session and on one Saturday at a single intersection. The counts were conducted on October 3, 6, 7 and 8, 2009. These existing counts were incorporated and compared to City of San Luis Obispo Model run counts. The analysis is based on a combination of the traffic counts conducted in 2009 and City model information for existing conditions. These elements are combined based upon City staff knowledge of operating conditions in the area and available data. The current traffic counts are provided in Figure 3 for the AM peak hour and Figure 4 for the PM peak hour. Figure 5 provides the existing lane configurations and traffic control devices of these intersections.

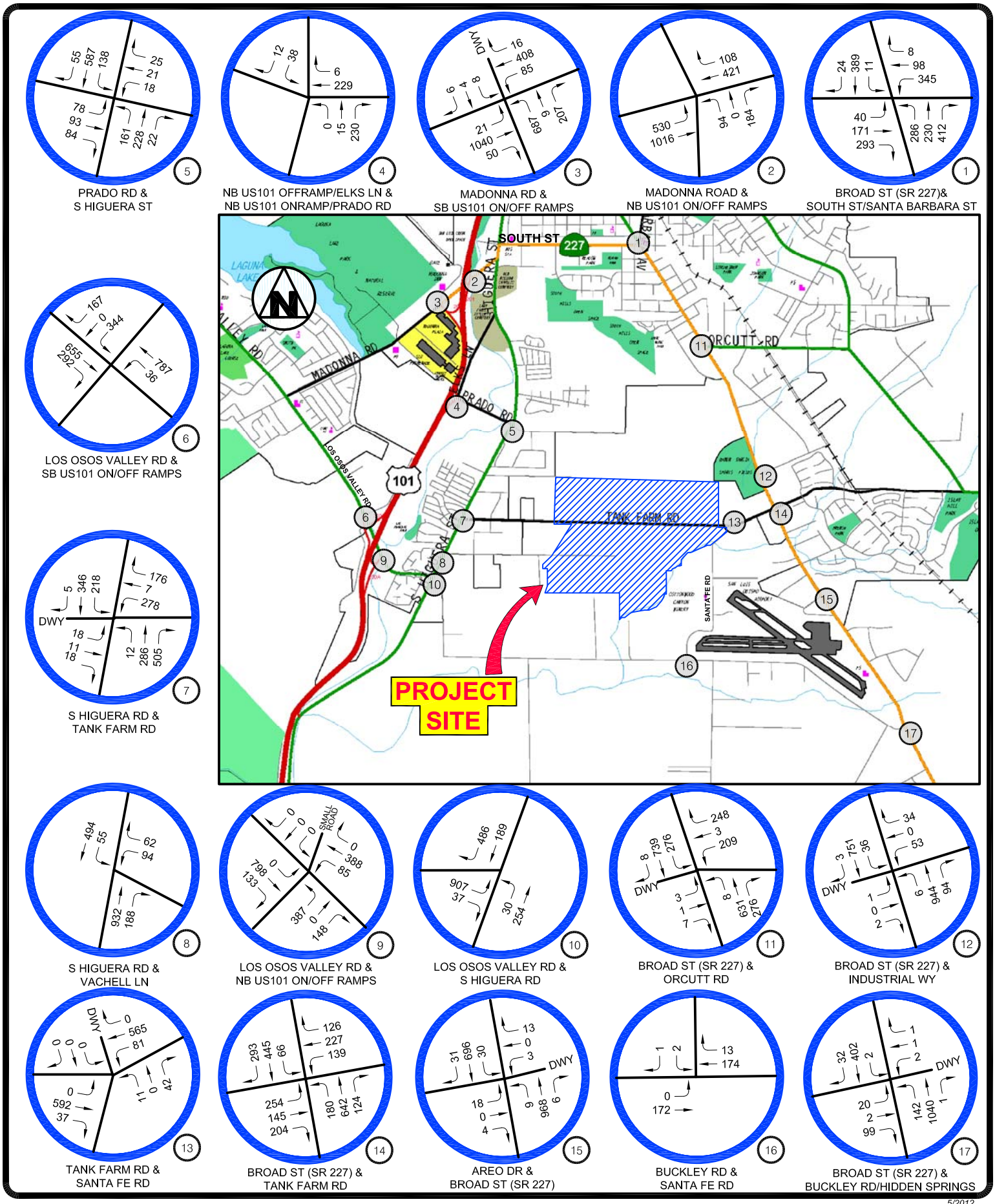
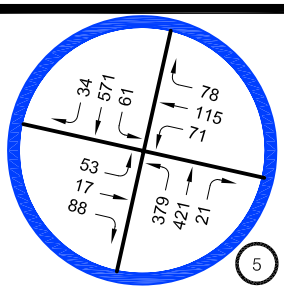


FIGURE 3

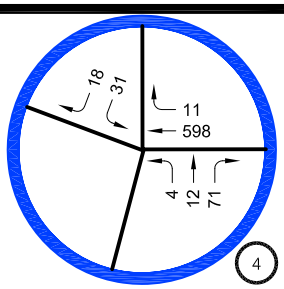
EXISTING BASE TRAFFIC VOLUMES
AM PEAK HOUR

5/2012

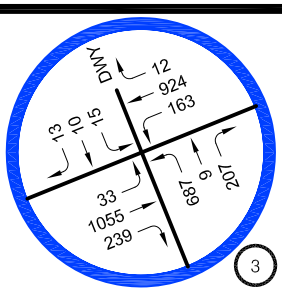
Overland Traffic Consultants, Inc.
952 Manhattan Beach Bl, #100 Manhattan Beach, Ca 90266
(310) 545-1235, OTC@overlandtraffic.com



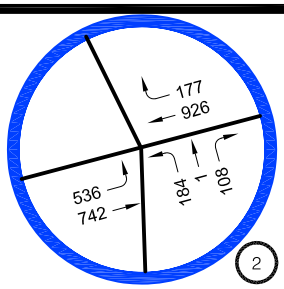
PRADO RD &
S HIGUERA ST



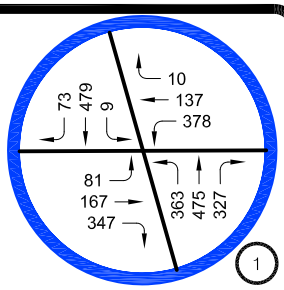
NB US101 OFFRAMP/ELKS LN &
NB US101 ONRAMP/PRADO RD



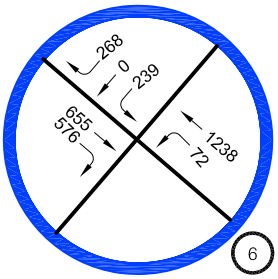
MADONNA RD &
SB US101 ON/OFF RAMPS



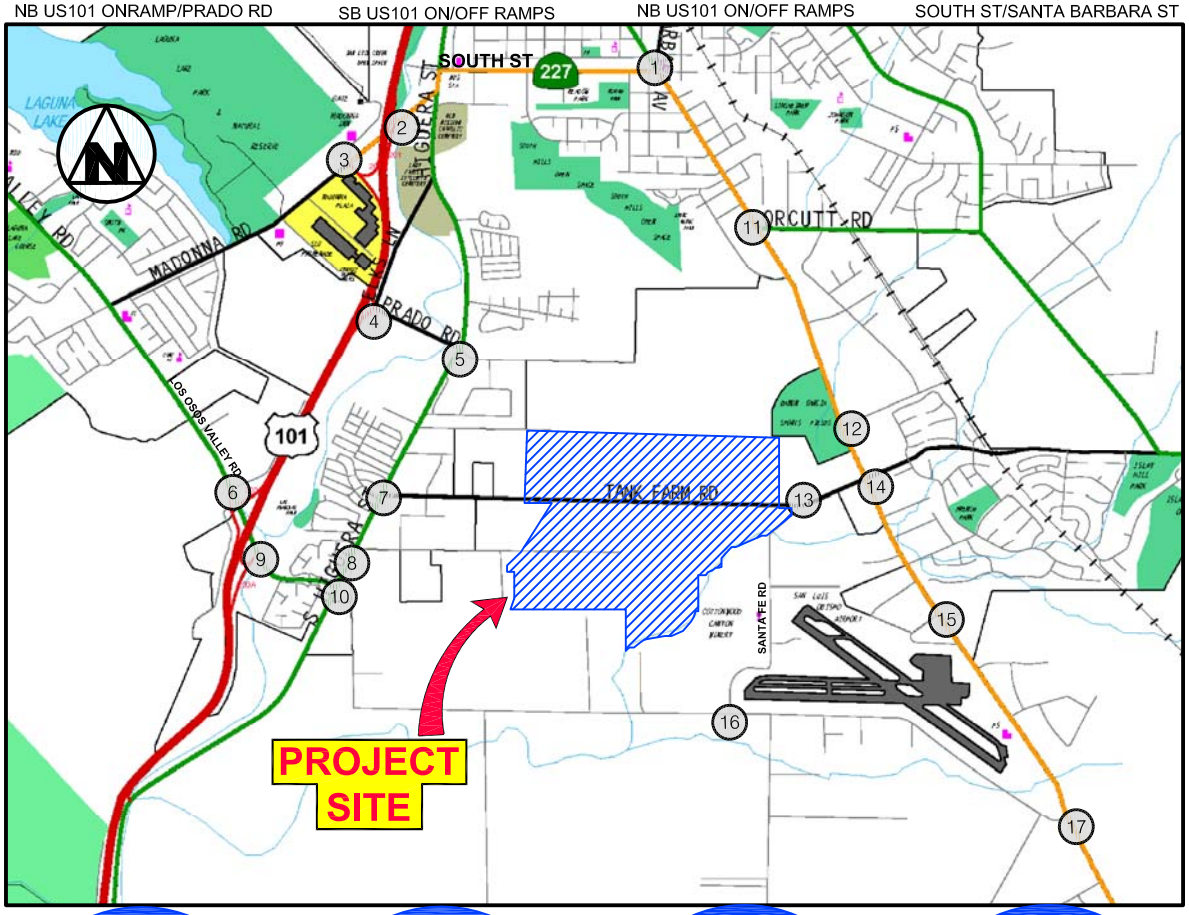
MADONNA ROAD &
NB US101 ON/OFF RAMPS

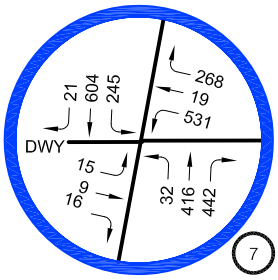


BROAD ST (SR 227)&
SOUTH ST/SANTA BARBARA ST

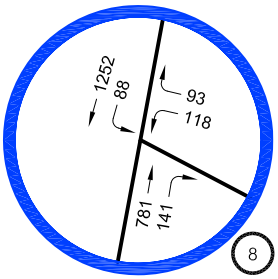


LOS OSOS VALLEY RD &
SB US101 ON/OFF RAMPS

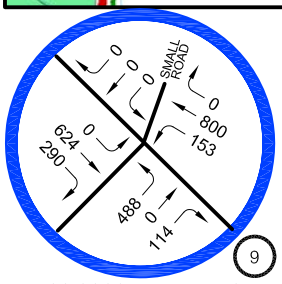




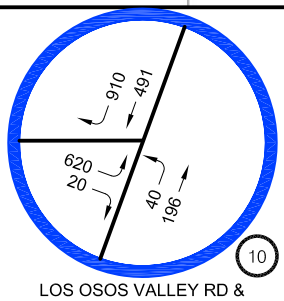
S HIGUERA RD &
TANK FARM RD



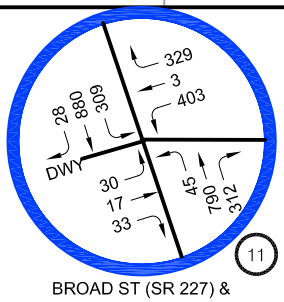
S HIGUERA RD &
VACHELL LN



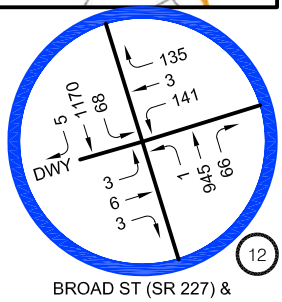
LOS OSOS VALLEY RD &
NB US101 ON/OFF RAMPS



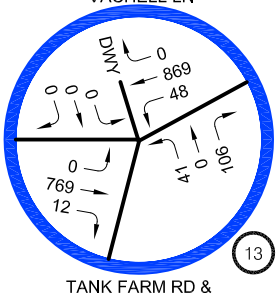
LOS OSOS VALLEY RD &
S HIGUERA RD



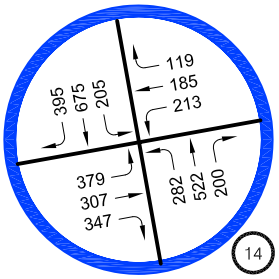
BROAD ST (SR 227) &
ORCUTT RD



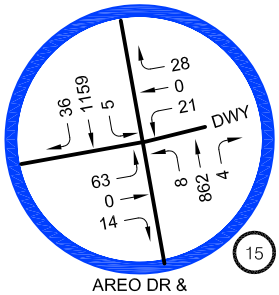
BROAD ST (SR 227) &
INDUSTRIAL WY



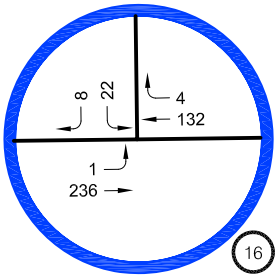
TANK FARM RD &
SANTA FE RD



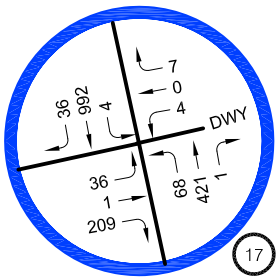
BROAD ST (SR 227) &
TANK FARM RD



AREO DR &
BROAD ST (SR 227)



BUCKLEY RD &
SANTA FE RD



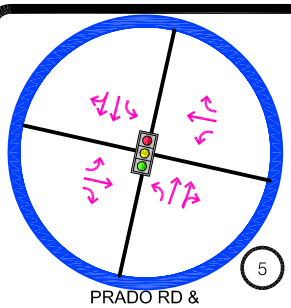
BROAD ST (SR 227) &
BUCKLEY RD/HIDDEN SPRINGS

FIGURE 4

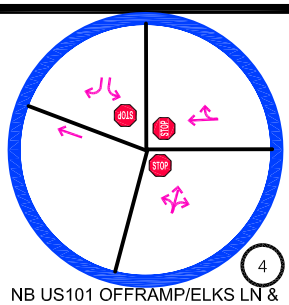
EXISTING BASE TRAFFIC VOLUMES
PM PEAK HOUR

5/2012

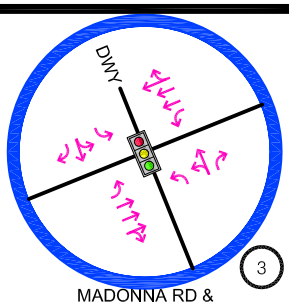
Overland Traffic Consultants, Inc.
952 Manhattan Beach Bl #100, Manhattan Beach, Ca 90266
(310) 545-1235 OTC@overlandtraffic.com



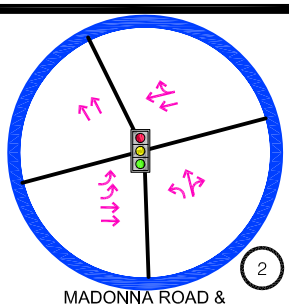
PRADO RD &
S HIGUERA ST



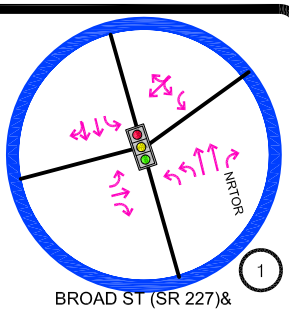
NB US101 OFFRAMP/ELKS LN &
NB US101 ONRAMP/PRADO RD



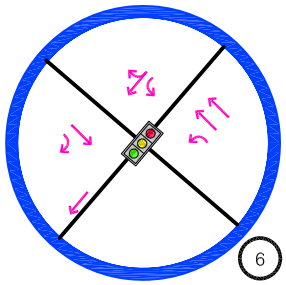
MADONNA RD &
SB US101 ON/OFF RAMPS



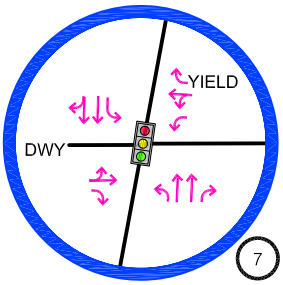
MADONNA ROAD &
NB US101 ON/OFF RAMPS



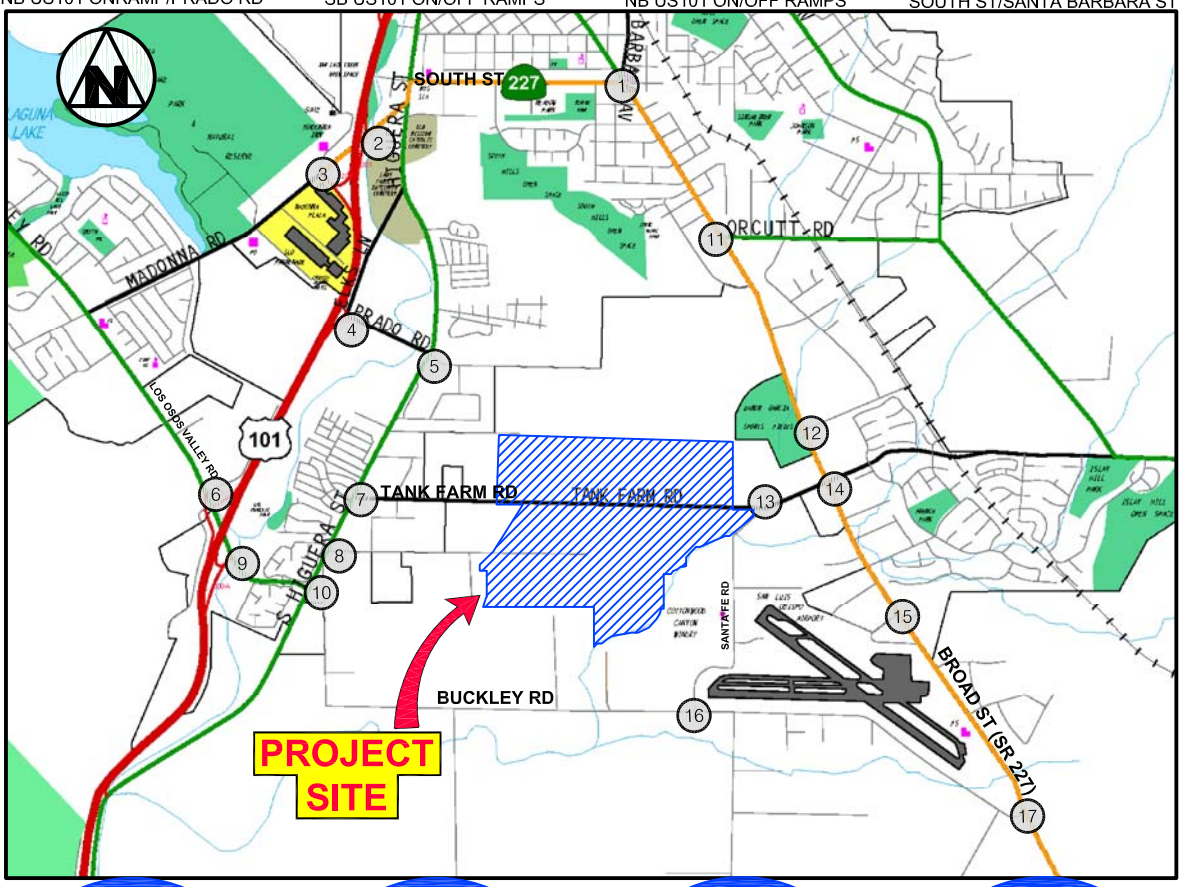
BROAD ST (SR 227)&
SOUTH ST/SANTA BARBARA ST

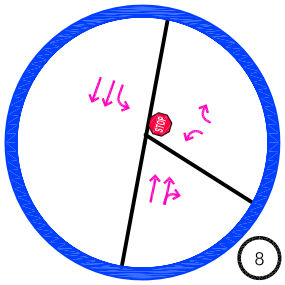


LOS OSOS VALLEY RD &
SB US101 ON/OFF RAMPS

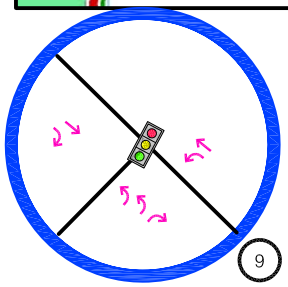


S HIGUERA RD &
TANK FARM RD

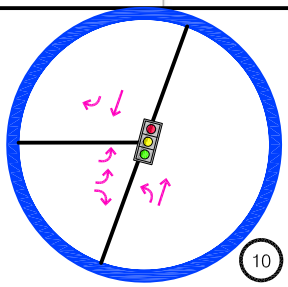




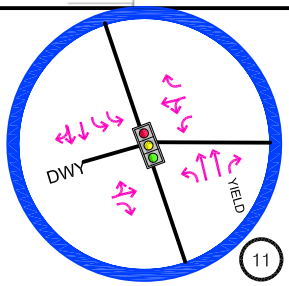
S HIGUERA RD &
VACHELL LN



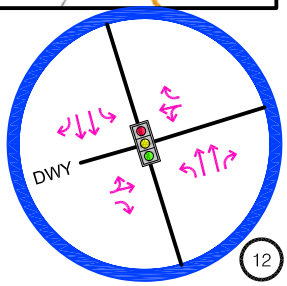
LOS OSOS VALLEY RD &
NB US101 ON/OFF RAMPS



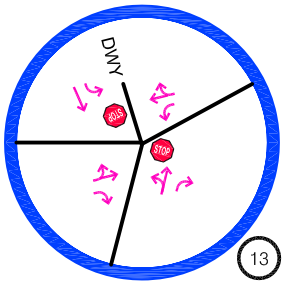
LOS OSOS VALLEY RD &
S HIGUERA RD



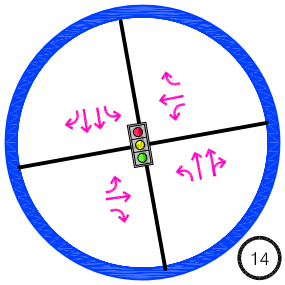
BROAD ST (SR 227) &
ORCUTT RD



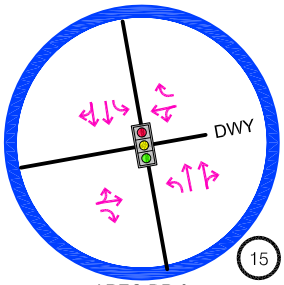
BROAD ST (SR 227) &
INDUSTRIAL WY



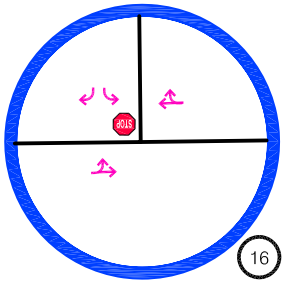
TANK FARM RD &
SANTA FE RD



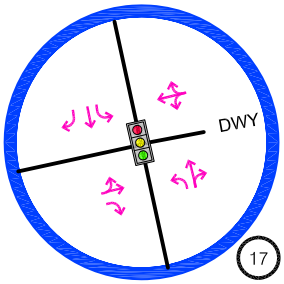
BROAD ST (SR 227) &
TANK FARM RD



AREO DR &
BROAD ST (SR 227)



BUCKLEY RD &
SANTA FE RD



BROAD ST (SR 227) &
BUCKLEY RD/HIDDEN SPRINGS

NRTOR = No right turn on red
DWY = Driveway
STOP SIGN CONTROL
TRAFFIC SIGNAL CONTROL

FIGURE 5

EXISTING
INTERSECTION CHARACTERISTICS

5/2012

Overland Traffic Consultants, Inc.
952 Manhattan Beach Bl, #100, Manhattan Beach, CA 90266
(310)545-1235 OTC@overlandtraffic.com

Project Traffic Generation

Traffic-generating characteristics of many land uses have been surveyed by the Institute of Transportation Engineers (ITE). The results of the traffic generation studies are published in a handbook titled Trip Generation, 8th Edition. This publication of traffic generation data has become the industry standard for estimating traffic generation for different land uses. Most of the proposed land for both plans are published in the hand book including, light industrial, industrial park, manufacturing, mini-warehouse, hotel, veterinary clinic, office park, research and development center, retail and vehicle service. Some of the proposed uses are not specifically stated but would operate similar to an evaluated land use. The ITE land use code is specified for each project component. The recreation park, fire station and training facility and wastewater treatment facility trip generation was based on anticipated usage. The vehicle trip generation for the transit maintenance center was based upon a similar use studied for the County of Los Angeles.

Project trip generation rates for each of the components for both the County and City project are provided in Table 1.

Table 1
Project Traffic Generation Rates

ITE Code	Description	Daily Traffic	AM Peak Hour Total	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out
110	Light Industrial	6.97	0.92	88%	12%	0.97	12%	88%
120	General Heavy Industrial[8]	6.75	1.98	82%	18%	2.16	21%	79%
130	Industrial Park	6.96	0.84	82%	18%	0.86	21%	79%
140	Manufacturing[1]	3.82	0.73	78%	22%	0.73	36%	64%
151	Mini Warehouse[1]	2.50	0.15	59%	41%	0.26	51%	49%
310	Hotel - per room	8.17	0.56	61%	39%	0.59	53%	47%
417	Regional Park[2]	4.57	0.15	80%	20%	0.20	41%	59%
540	Jr Community College used for Training Facility	27.49	2.99	74%	26%	2.54	58%	42%
640	Veterinary Clinic[3]	44.00	4.08	72%	28%	4.72	39%	61%
750	Office Park	11.42	1.71	89%	11%	1.48	14%	86%
760	Research & Development Center[1]	8.11	1.22	83%	17%	1.07	15%	85%
820	Retail	42.94	1.00	61%	39%	3.73	49%	51%
942	Vehicle Service[5]	31.60	2.94	65%	35%	3.38	50%	50%

[1] In/out % not available for Sat (used PM)

[2] Regional park rates LU417 used for daily & PM, County park LU 412 used for AM, double Sat & Sat Pk for most conservative

[3] Daily, Sat, & Sat Peak not available - used 5X (AM + PM) for Daily, 2X Daily for Sat Daily & 2X PM for Sat Peak

[4] Daily not available - used 5x(AM+PM), Sat data not available - used 24 hour convenience store rates LU851

[5] Daily & Sat Peak not availabe - used 5X(AM+PM) for daily & PM for Sat peak

[6] Based on study for LA County Metro

[7] Based on conservative assumption for anticipated use

[8] Used for Waste Water Treatment Facility (WWTF)- no rates for in/out%(all) or Sat rates- % based on industrial park, sat estimated

Trip rates are per 1,000 sf except Park & WWTF which is per acre and hotel per room

The trip generation for the individual uses does not take into consideration vehicles which may be going through the area on the way to or from another land use, called pass-by trips. Nor does it consider interaction between the land uses where someone may visit more than one venue after parking once, called internal trips. These practices reduce overall trip generation to and from the area. Therefore, conservative reductions for internal use and pass-by trips are incorporated into the analysis. Table 2a displays the estimated trip generation for the County project description. Table 2b displays the estimated trip generation for the City project description.

The County and City projects create a similar overall trip generation. However, since there are some differences a comparison was conducted. It is noted that the City project trip generation is slightly higher than the County trip generation. Therefore, the City project description is analyzed in detail to provide a conservative estimate of potential project traffic impacts.

Table 2a
Estimated Project Traffic Generation – County Project

ITE Code	Description	Size	Daily Traffic	AM Peak Hour Total	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out
	Commercial Service								
750	Business Park*	348,000 sf	3,974	595	530	65	515	72	443
820	General Retail**	15,000 sf	644	15	9	6	56	27	29
	Pass-By	10%	(64)	(2)	(1)	(1)	(6)	(3)	(3)
	Subtotal Retail		580	13	8	5	50	24	26
	Spec. Education/Training Facility	5,000 sf	137	15	11	4	12	7	5
310	Hotel (115 rooms)	70,000 sf	940	64	39	25	68	36	32
120	Wastewater Treatment Facility	4 acres	27	8	6	2	9	2	7
	SUBTOTAL Commercial Service		5,658	695	594	101	654	141	513
	Industrial								
140	Light Manufacturing	170,000 sf	649	124	97	27	124	45	79
760	Industrial Research & Development	50,000 sf	406	61	51	10	53	8	45
942	Vehicle Repair & Maintenance	20,000 sf	632	59	38	21	68	34	34
	Internal Capture	10%	(63)	(6)	(4)	(2)	(6)	(3)	(3)
	Pass-By	10%	(57)	(5)	(3)	(2)	(6)	(3)	(3)
	Subtotal Vehicle Serivce		512	48	31	17	56	28	28
640	Vet Clinic/Hosp., Board, Lg Animals	5,000 sf	220	20	15	5	24	9	15
	Internal Capture	5%	(11)	(1)	(1)	(0)	(1)	(0)	(1)
	Pass-By	10%	(21)	(1)	(1)	(0)	(2)	(1)	(1)
	Subtotal Veterinary Clinic		188	18	13	5	21	8	13
110	Photo & Film Processing Lab	10,000 sf	70	9	8	1	10	1	9
110	Printing and Publishing	10,000 sf	70	9	8	1	10	1	9
151	Warehousing, Indoor Storage	50,000 sf	125	7	4	3	13	7	6
110	Wholesaling and Distribution	50,000 sf	349	46	40	6	49	6	43
	SUBTOTAL Industrial		2,368	322	252	70	336	104	232
	Recreation								
	Recreation Fields (typical case)***	15 acres	69	0	0	0	60	40	20
	SUBTOTAL Public Facilities		69	0	0	0	60	40	20
	Conservation/Open Space								
	Open Space	250 acres	0	0	0	0	0	0	0
	SUBTOTAL Open Space	250 acres	0	0	0	0	0	0	0
	TOTAL TANK FARM PROJECT - County Option		**8,095**	**1,017**	**846**	**171**	**1,050**	**285**	**765**

Table 2b
Estimated Project Traffic Generation – City Project

ITE Code	Description	Size	Daily Traffic	AM Peak Hour Total	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out
	Business Park								
750	Business Park*	348,000 sf	3,974	595	530	65	515	72	443
110	Printing and Publishing	10,000 sf	70	9	8	1	10	1	9
310	Hotel (115 rooms)	70,000 sf	940	64	39	25	68	36	32
540	Spec Education/Training Facility	5,000 sf	137	15	11	4	12	7	5
	SUBTOTAL Business Park		5,121	684	588	96	604	116	488
	Service Commercial Development								
140	Light Manufacturing	170,000 sf	649	124	97	27	124	45	79
760	Industrial Research & Development	50,000 sf	406	61	51	10	53	8	45
820	General Retail**	15,000 sf	644	15	9	6	56	27	29
	Pass-By	10%	(64)	(2)	(1)	(1)	(6)	(3)	(3)
	Subtotal Retail		580	13	8	5	50	24	26
942	Vehicle Repair & Maintenance	20,000 sf	632	59	38	21	68	34	34
	Internal Capture	10%	(63)	(6)	(4)	(2)	(6)	(3)	(3)
	Pass-By	10%	(57)	(5)	(3)	(2)	(6)	(3)	(3)
	Subtotal Vehicle Serivce		512	48	31	17	56	28	28
640	Vet Clinic/Hosp, Board, Lg Animals	5,000 sf	220	20	15	5	24	9	15
	Internal Capture	5%	(11)	(1)	(1)	(0)	(1)	(0)	(1)
	Pass-By	10%	(21)	(1)	(1)	(0)	(2)	(1)	(1)
	Subtotal Veterinary Clinic		188	18	13	5	21	8	13
110	Photo & Film Processing Lab	10,000 sf	70	9	8	1	10	1	9
151	Warehousing, Indoor Storage	50,000 sf	125	7	4	3	13	7	6
110	Wholesaling and Distribution	50,000 sf	349	46	40	6	49	6	43
	SUBTOTAL Service Commercial Development		2,878	326	252	74	375	126	249
	Public Facilities								
	Public Transit Maintenance & Strg	10,000 sf	45	2	1	1	2	1	1
	Public Fire Stn & Training Facility	5,000 sf	80	27	21	6	27	5	22
	Recreation Fields (typical case)***	15 acres	69	0	0	0	60	40	20
	SUBTOTAL Public Facilities		194	29	22	7	89	46	43
	Conservation/Open Space								
	Open Space	250 acres	0	0	0	0	0	0	0
	SUBTOTAL Open Space	250 acres	0	0	0	0	0	0	0
	TOTAL TANK FARM PROJECT - City Option		**8,193**	**1,039**	**862**	**177**	**1,068**	**288**	**780**

* pg 80 ITE 7th Edition a recommended Practice - Office Park is a planned development including uses such as banks, restaurants and service stations

** This retail rate already includes internal capture reduction

*** Active sports field activity varies from as 50 to 90 persons on a weekday, 1.5 person per car assummed for weekend activity divided into 4 peaks with the mid day peak in & out at 50%

Trip Distribution, Assignment of Project Traffic & Future Improvements

A primary factor affecting trip direction is the spatial distribution of residences for employees and visitors and distribution of vendors and support facilities which would generate project trip origins and destinations. The estimated project directional trip distribution is also based on the study area roadway network, traffic flow patterns in and out of this area of the City of San Luis Obispo and County of San Luis Obispo and consistency with previously approved traffic studies for this area.

Evaluation of Existing + Project provides a slightly different distribution pattern than Future Without Project and Future With Project because improvements to Prado Road are expected to change travel patterns in the area. Both With Project scenarios include roadway improvements noted as project components. Those are the only improvements in the Existing + Project Scenario evaluation. The Cumulative Without and With Project includes future planned improvements:

- A full freeway interchange will be constructed at Prado Road and US 101 Freeway.
- Prado Road will be extended from Madonna Road in the west to Broad Street in the east. The roadway extension will provide the following intersection improvements:
    - Signalization of the new freeway ramps with lane configurations as specified in the Prado Road/US 101 Project Study Report including dual west left turns with two westbound through lanes, a northbound left turn lane with a northbound shared through right turn lane, dual westbound through lanes and a westbound right turn lane.
    - Prado Road and South Higuera Street will be expanded to provide second east and westbound through lanes and a westbound right turn lane.
    - Prado Road and Broad Street will be reconstructed with one left turn lane, one through lane and one shared through right turn lane northbound, one

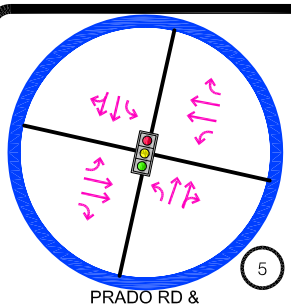
left turn lane, two through lanes and one right turn lane southbound, one left turn lane, two through lanes and one right turn lane eastbound and one shred left, through, right turn lane westbound.

- The Los Osos Valley Road and US 101 will be reconstructed as detailed in the Los Osos Valley Road/US 101 Initial Study with Mitigated Negative Declaration. Two alternatives were evaluated in the document. Alternative 6 was used as future conditions as it provides the more conservative scenario. The improvement includes widening the Los Osos Valley Road overcrossing of the US 101 Freeway to two lanes in each direction. The improvement also modifies the southbound US 101 Freeway ramps to connect to Calle Joaquin which eliminates the existing southbound offramp connection to Los Osos Valley Road.

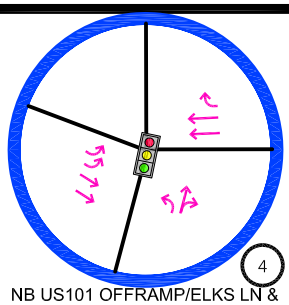
- Tank Farm widening to four lanes between South Higuera Road and Broad Street with a roundabout configuration at Santa Fe Road. Note that this improvement is also a project feature.

- Tank Farm Road and Broad Street will be widened to provide a second eastbound left turn lane and second northbound left turn lane.

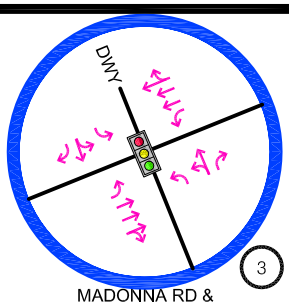
Figure 6 displays the future intersection lane configurations which incorporate these changes.



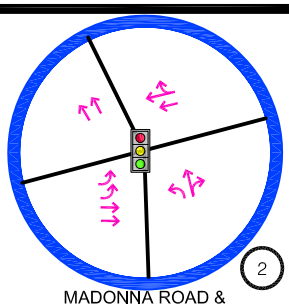
PRADO RD &
S HIGUERA ST



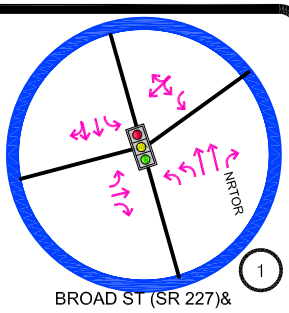
NB US101 OFFRAMP/ELKS LN &
NB US101 ONRAMP/PRADO RD



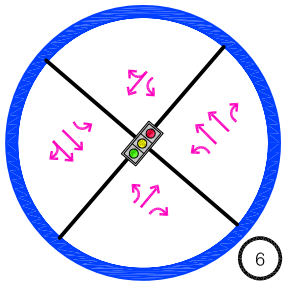
MADONNA RD &
SB US101 ON/OFF RAMPS



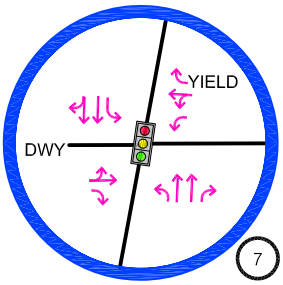
MADONNA ROAD &
NB US101 ON/OFF RAMPS



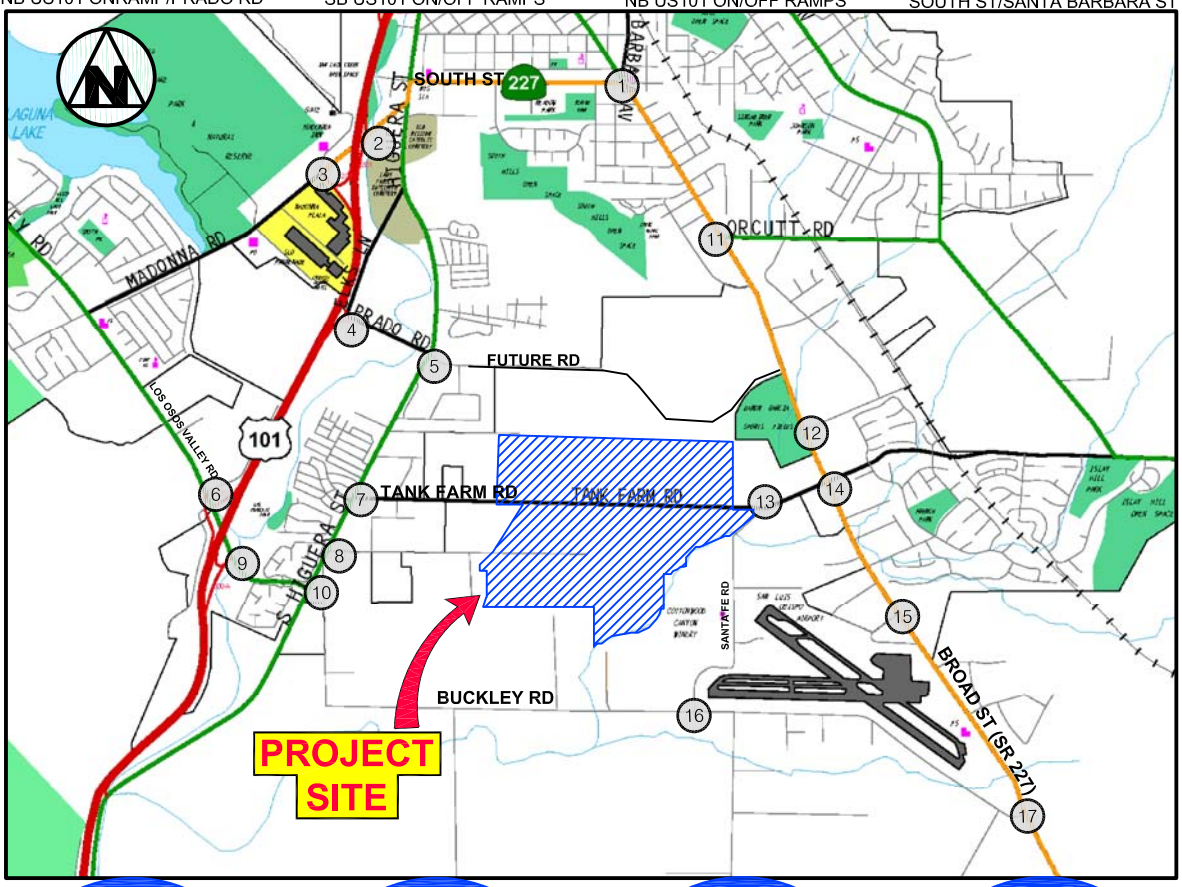
BROAD ST (SR 227)&
SOUTH ST/SANTA BARBARA ST

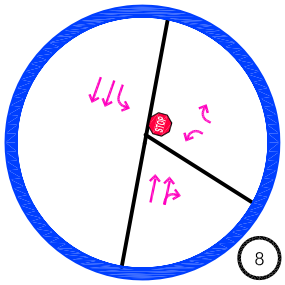


LOS OSOS VALLEY RD &
SB US101 ON/OFF RAMPS

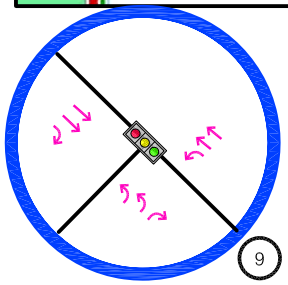


S HIGUERA RD &
TANK FARM RD

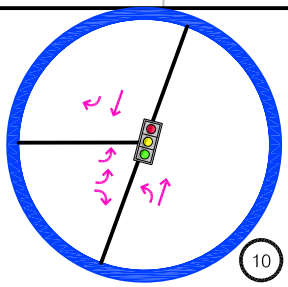




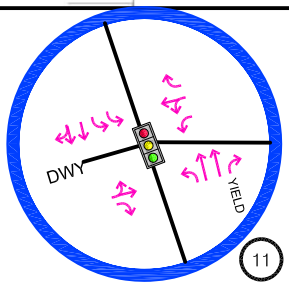
S HIGUERA RD &
VACHELL LN



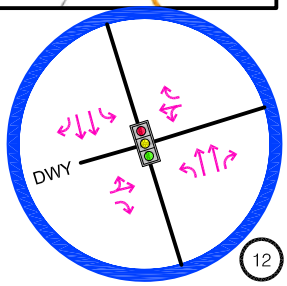
LOS OSOS VALLEY RD &
NB US101 ON/OFF RAMPS



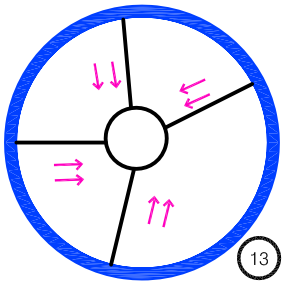
LOS OSOS VALLEY RD &
S HIGUERA RD



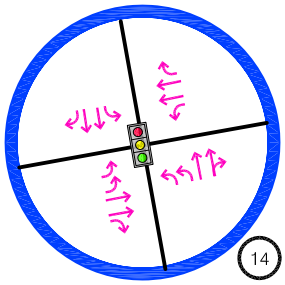
BROAD ST (SR 227) &
ORCUTT RD



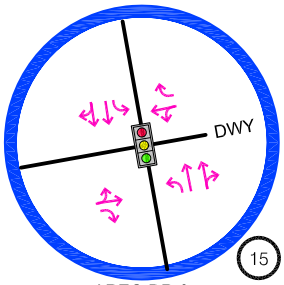
BROAD ST (SR 227) &
INDUSTRIAL WY



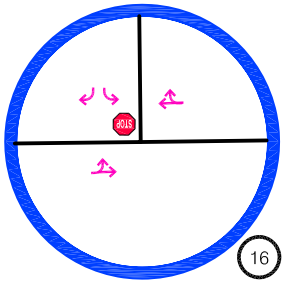
TANK FARM RD &
SANTA FE RD



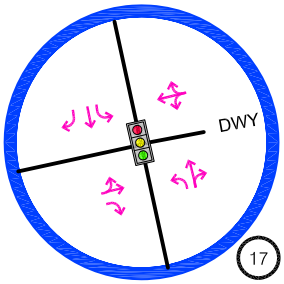
BROAD ST (SR 227) &
TANK FARM RD



AREO DR &
BROAD ST (SR 227)



BUCKLEY RD &
SANTA FE RD



BROAD ST (SR 227) &
BUCKLEY RD/HIDDEN SPRINGS

NRTOR = No right turn on red
DWY = Driveway
STOP SIGN CONTROL
TRAFFIC SIGNAL CONTROL

FIGURE 6

FUTURE
INTERSECTION CHARACTERISTICS

5/2012

Overland Traffic Consultants, Inc.
952 Manhattan Beach Bl, #100, Manhattan Beach, CA 90266
(310)545-1235 OTC@overlandtraffic.com

Project Trip Distribution

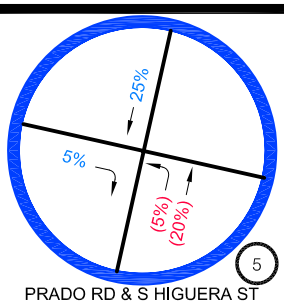
The project trips are distributed over the roadway network for Existing + Project differs from the Cumulative With Project scenarios because improvements to Prado Road would change travel patterns in the area. Figure 7 illustrates the estimated area wide project traffic distribution percentages for the project. Figure 8a and 8b shows the estimated project traffic percentages detailed at each of the selected study intersections. Figure 8a displays the project trips using the existing roadway network for the Existing + Project Evaluation. Figure 8b displays project distribution percentages for Cumulative Conditions with the Prado Road extension. Using the traffic assignment at each intersection for each scenario and the peak hour traffic volume as provided in the Table 2b (because it is the higher of the two), peak hour traffic volumes at each study location have been calculated and are shown in Figure 9a and 9b for each project distribution pattern. This estimated assignment of the project traffic flow provides the information necessary to analyze the potential traffic impacts generated by the project at the study intersections.

FIGURE 7

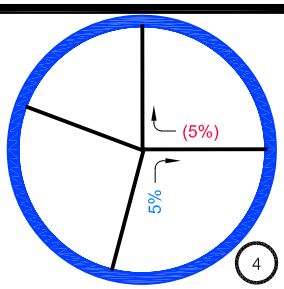
12/2011

OVERALL PROJECT DISTRIBUTION

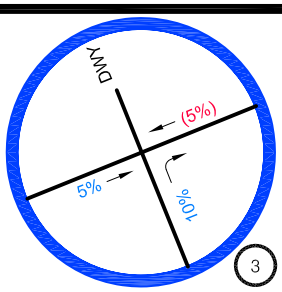
Overland Traffic Consultants, Inc.
952 Manhattan Beach Bl, #100, Manhattan Beach, Ca 90266
(310) 545-1235, OTC@overlandtraffic.com



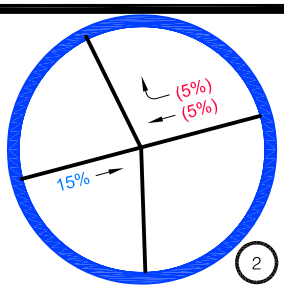
PRADO RD & S HIGUERA ST



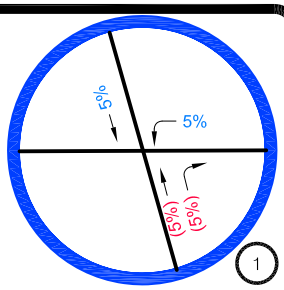
NB US101 OFFRAMP/ELKS LN &
NB US101 ONRAMP/PRADO RD



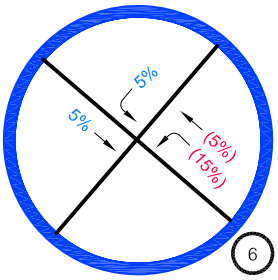
MADONNA RD &
SB US101 ON/OFF RAMPS



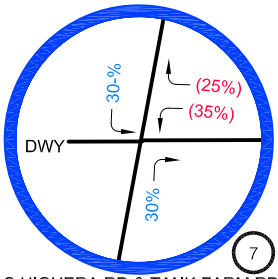
MADONNA ROAD &
NB US101 ON/OFF RAMPS



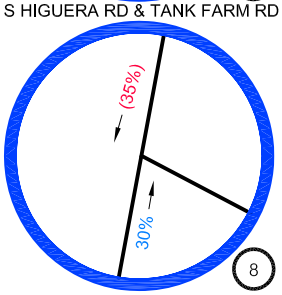
BROAD ST (SR 227)&
SOUTH ST/SANTA BARBARA ST



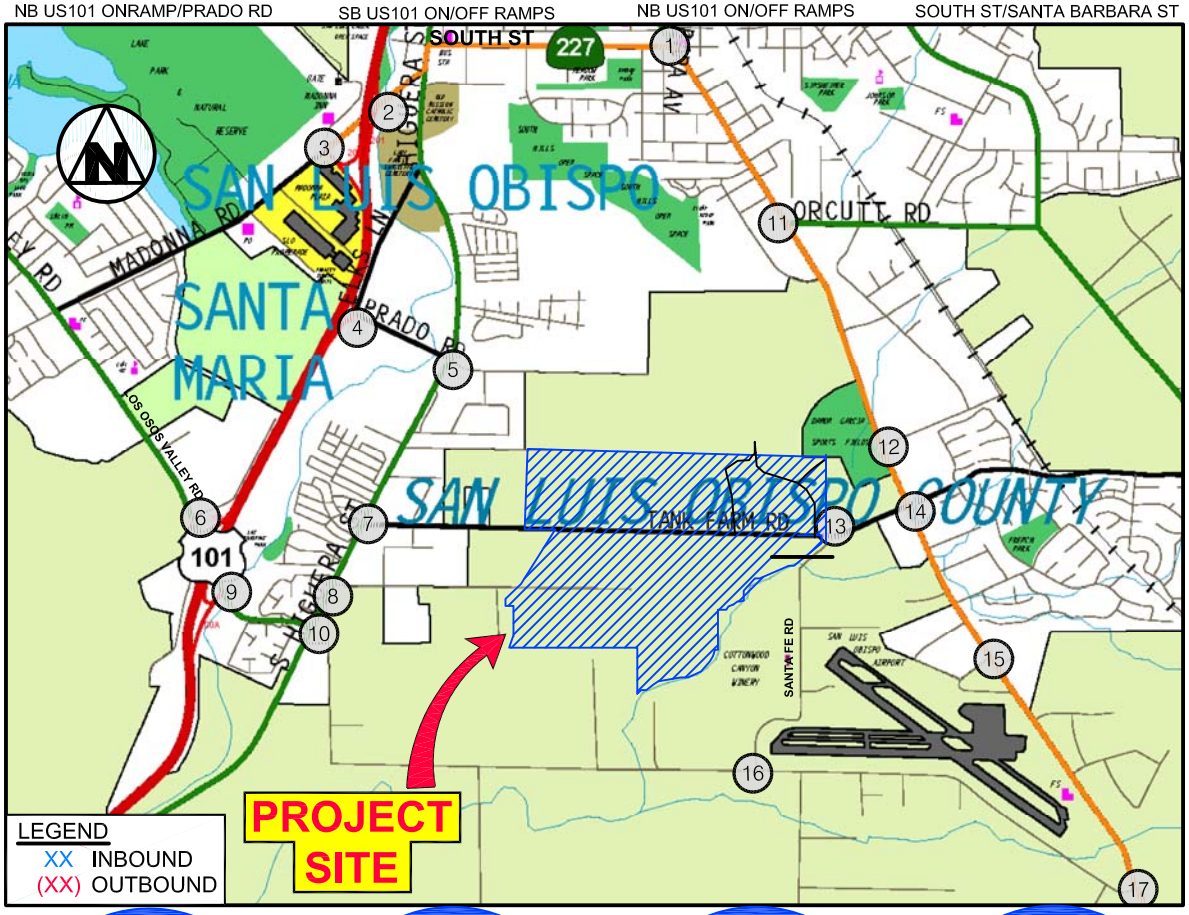
LOS OSOS VALLEY RD &
SB US101 ON/OFF RAMPS

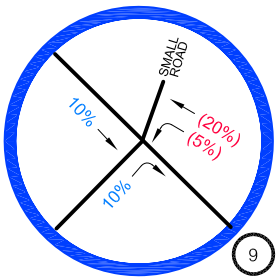


S HIGUERA RD & TANK FARM RD

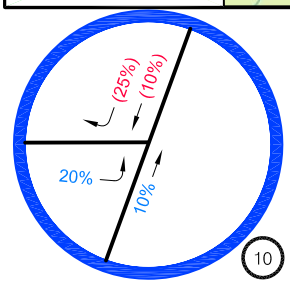


S HIGUERA RD & VACHELL LN

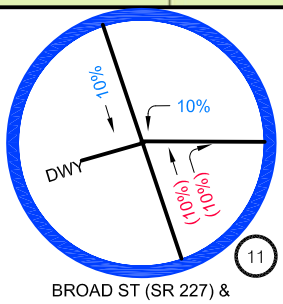




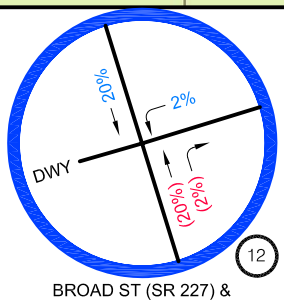
LOS OSOS VALLEY RD &
NB US101 ON/OFF RAMPS



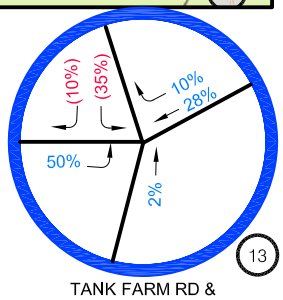
LOS OSOS VALLEY RD &
S HIGUERA RD



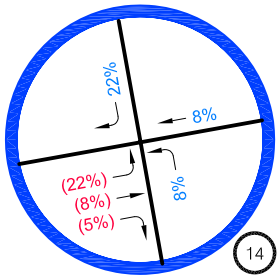
BROAD ST (SR 227) &
ORCUTT RD



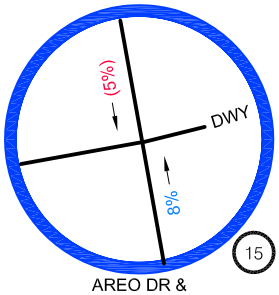
BROAD ST (SR 227) &
INDUSTRIAL WY



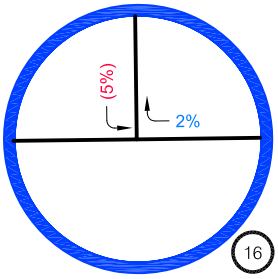
TANK FARM RD &
SANTA FE RD



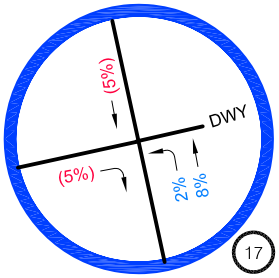
BROAD ST (SR 227) &
TANK FARM RD



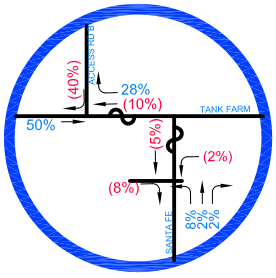
AREO DR &
BROAD ST (SR 227)



BUCKLEY RD &
SANTA FE RD



BROAD ST (SR 227) &
BUCKLEY RD/HIDDEN SPRINGS



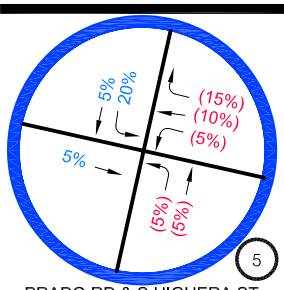
Tank Farm & Access Rd B
Santa Fe & Access s/o Tank Farm

FIGURE 8a

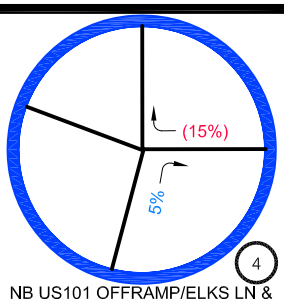
PROJECT TRIP DISTRIBUTION
WITHOUT PRADO ROAD EXTENSION
FOR EXISTING+PROJECT

6/2012

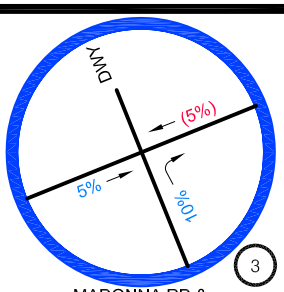
Overland Traffic Consultants, Inc.
952 Manhattan Beach Bl #100, Manhattan Beach, CA 90266
(310) 545-1235 OTC@overlandtraffic.com



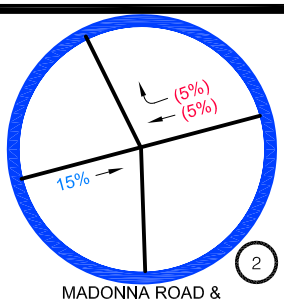
PRADO RD & S HIGUERA ST



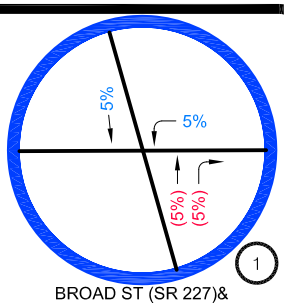
NB US101 OFFRAMP/ELKS LN &
NB US101 ONRAMP/PRADO RD



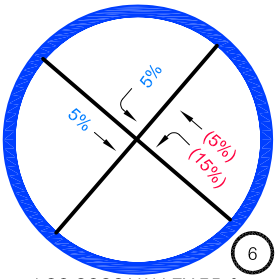
MADONNA RD &
SB US101 ON/OFF RAMPS



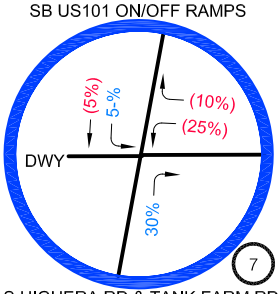
MADONNA ROAD &
NB US101 ON/OFF RAMPS



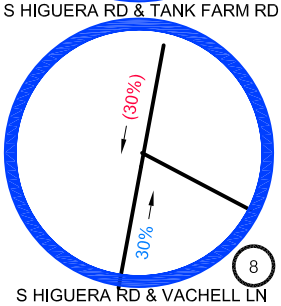
BROAD ST (SR 227)&
SOUTH ST/SANTA BARBARA ST



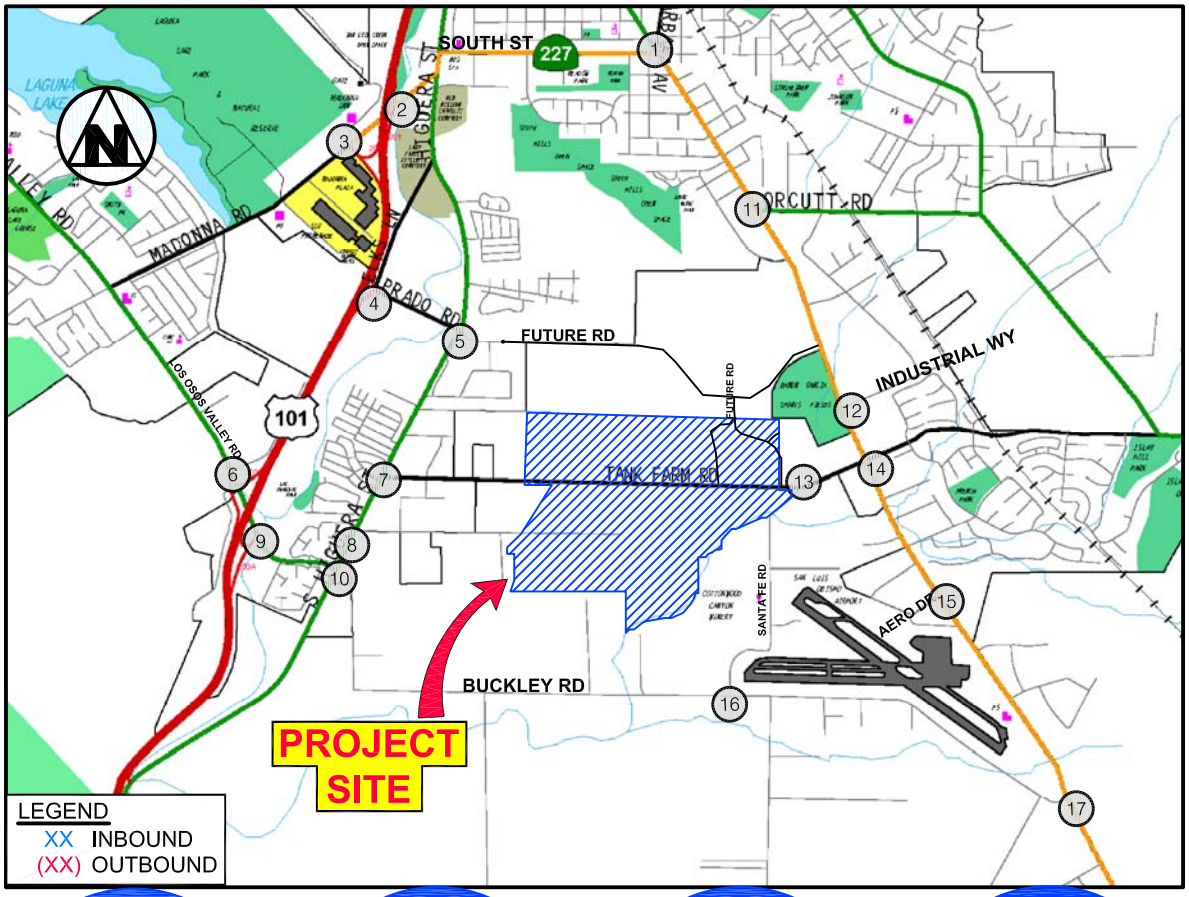
LOS OSOS VALLEY RD &
SB US101 ON/OFF RAMPS

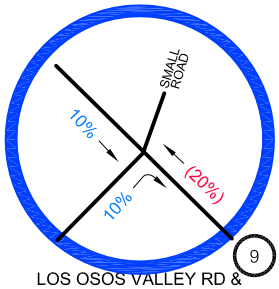


S HIGUERA RD & TANK FARM RD

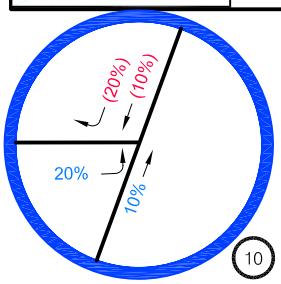


S HIGUERA RD & VACHELL LN

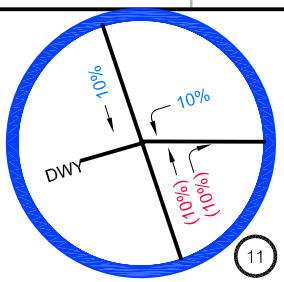




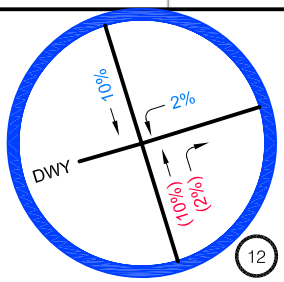
LOS OSOS VALLEY RD &
NB US101 ON/OFF RAMPS



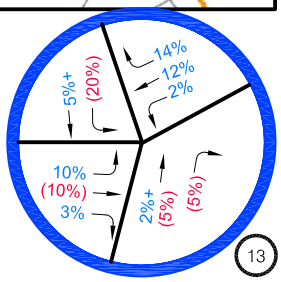
LOS OSOS VALLEY RD &
S HIGUERA RD



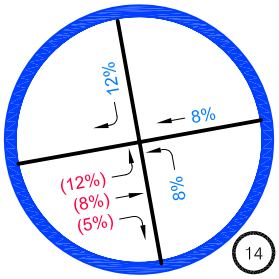
BROAD ST (SR 227) &
ORCUTT RD



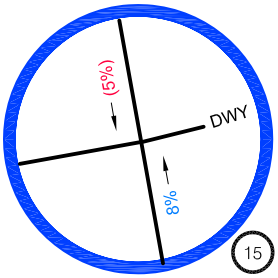
BROAD ST (SR 227) &
INDUSTRIAL WY



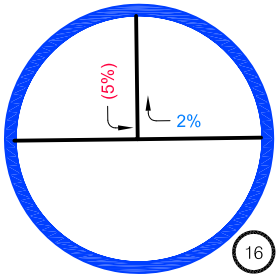
TANK FARM RD &
SANTA FE RD



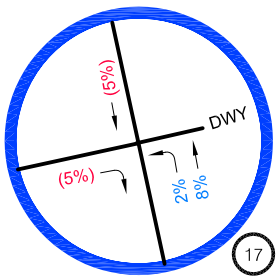
BROAD ST (SR 227) &
TANK FARM RD



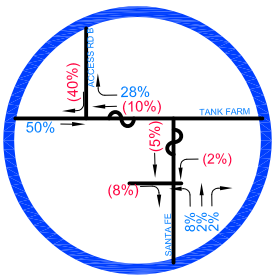
AREO DR &
BROAD ST (SR 227)



BUCKLEY RD &
SANTA FE RD



BROAD ST (SR 227) &
BUCKLEY RD/HIDDEN SPRINGS



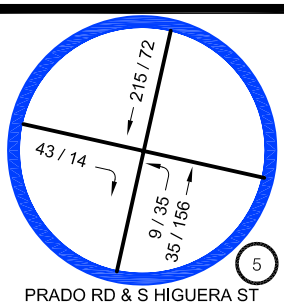
Tank Farm & Access Rd B
Santa Fe & Access s/o Tank Farm

FIGURE 8b

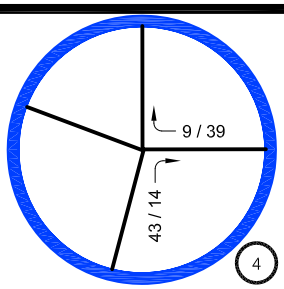
PROJECT TRIP DISTRIBUTION
WITH PRADO ROAD EXTENSION

6/2012

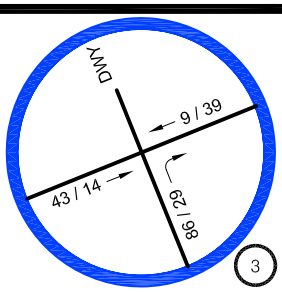
Overland Traffic Consultants, Inc.
952 Manhattan Beach Bl, #100, Manhattan Beach, CA 9026
(310) 545-1235 OTC@overlandtraffic.com



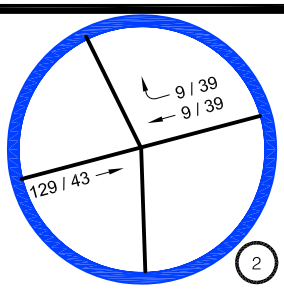
PRADO RD & S HIGUERA ST



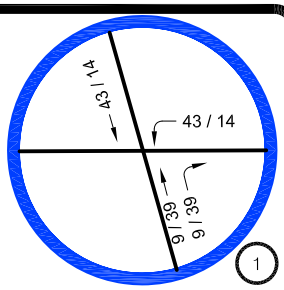
NB US101 OFFRAMP/ELKS LN &
NB US101 ONRAMP/PRADO RD



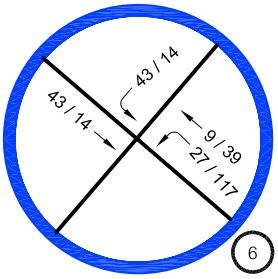
MADONNA RD &
SB US101 ON/OFF RAMPS



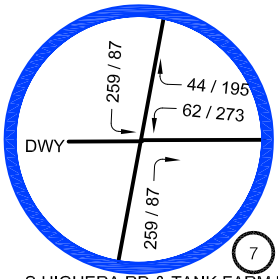
MADONNA ROAD &
NB US101 ON/OFF RAMPS



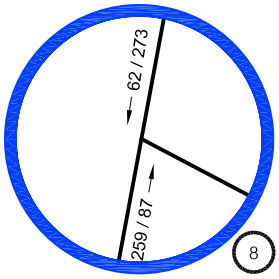
BROAD ST (SR 227)&
SOUTH ST/SANTA BARBARA ST



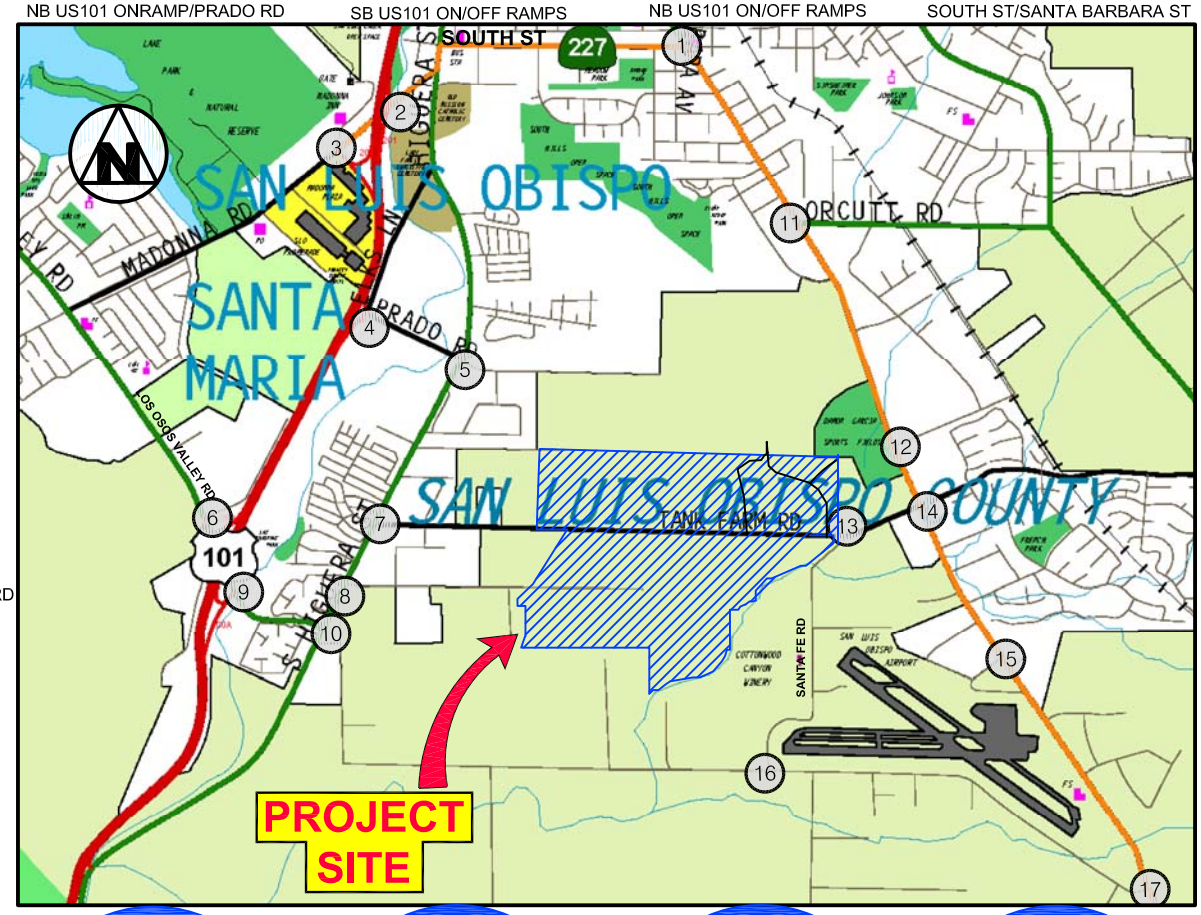
LOS OSOS VALLEY RD &
SB US101 ON/OFF RAMPS

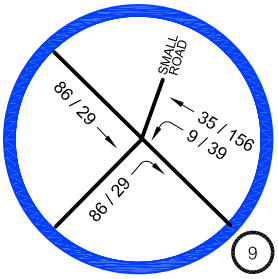


S HIGUERA RD & TANK FARM RD

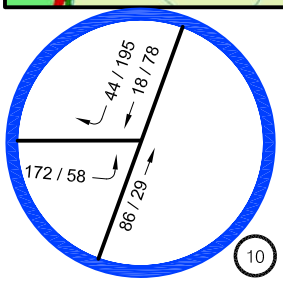


S HIGUERA RD & VACHELL LN

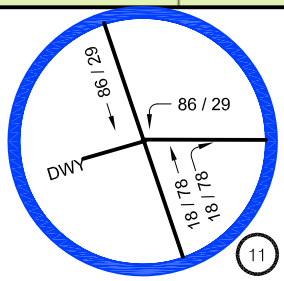




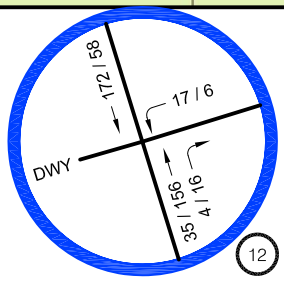
LOS OSOS VALLEY RD &
NB US101 ON/OFF RAMPS



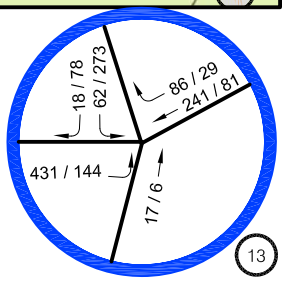
LOS OSOS VALLEY RD &
S HIGUERA RD



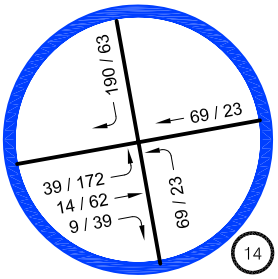
BROAD ST (SR 227) &
ORCUTT RD



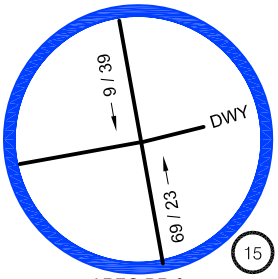
BROAD ST (SR 227) &
INDUSTRIAL WY



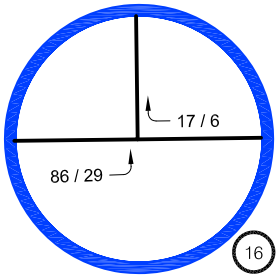
TANK FARM RD &
SANTA FE RD



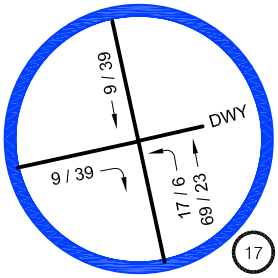
BROAD ST (SR 227) &
TANK FARM RD



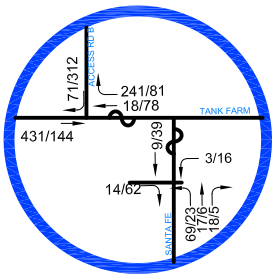
AREO DR &
BROAD ST (SR 227)



BUCKLEY RD &
SANTA FE RD



BROAD ST (SR 227) &
BUCKLEY RD/HIDDEN SPRINGS



Tank Farm & Access Rd B
Santa Fe & Access s/o Tank Farm

FIGURE 9a

PROJECT ONLY TRIPS
FOR EXISTING+PROJECT
AM PEAK HOUR/PM PEAK HOUR

6/2012

Overland Traffic Consultants, Inc.
952 Manhattan Beach Bl #100, Manhattan Beach, CA 90266
(310) 545-1235 OTC@overlandtraffic.com

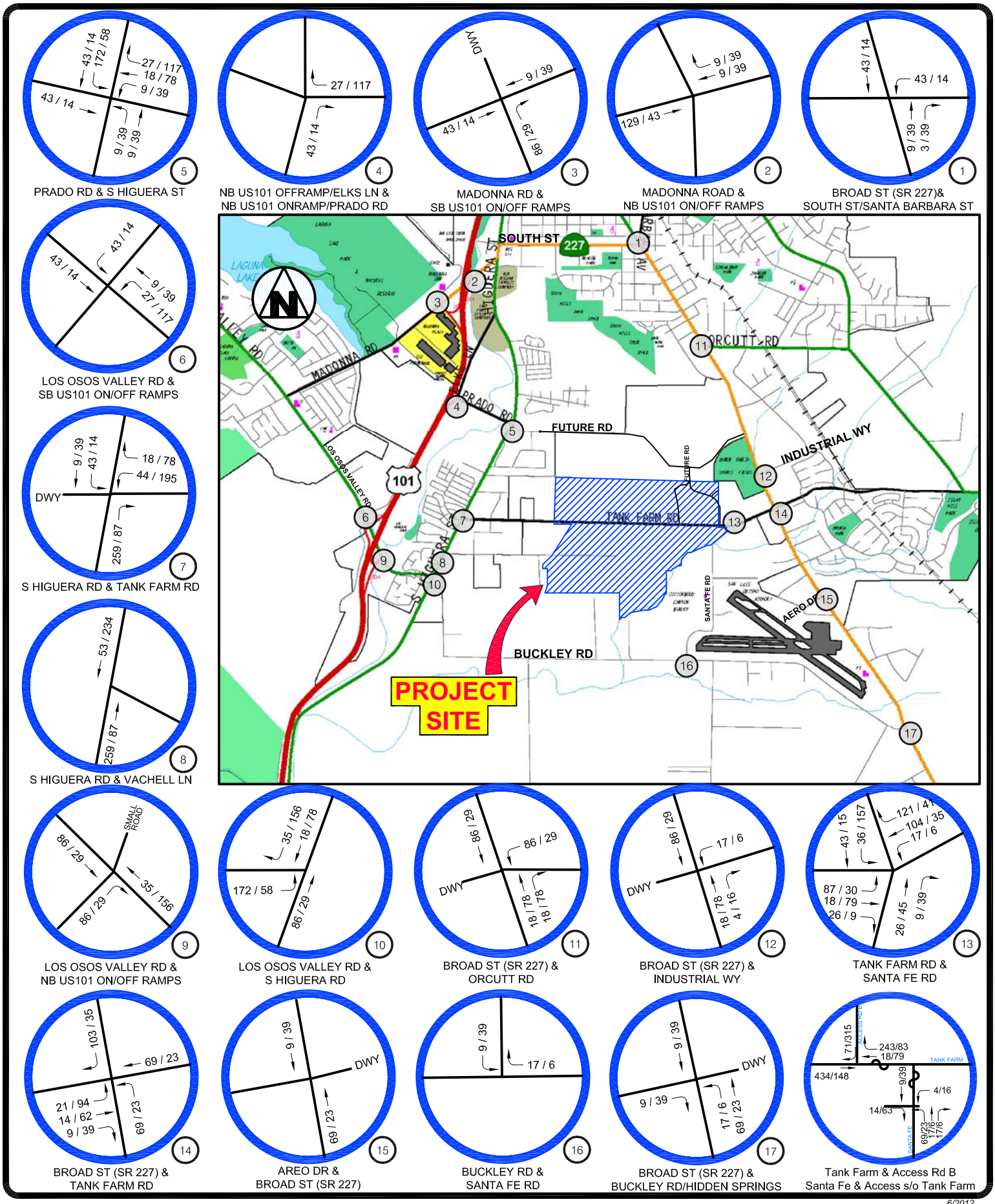


FIGURE 9b

PROJECT TRIPS ONLY
WITH PRADO ROAD EXTENSION

6/2012

Overland Traffic Consultants, Inc.
952 Manhattan Beach Bl, #100, Manhattan Beach, CA 90266
(310) 545-1235 OTC@overlandtraffic.com

Parking, Access & Circulation

PARKING

Parking for each of the components of the project will be based upon what is required by code. Minimum of code required parking will be available for each land use. Parking estimates were based on typical percentage of overall square footage for several land uses. The actual number of parking spaces required may vary from that listed in Table 3, as the final proposed land uses may change. In addition, the applicant may request up to a 10% shared parking reduction, 20% mixed use parking reduction, reduction for Transportation Demand Management plans, and surplus motorcycle and/or bicycle parking. The estimated required parking is noted in Table 3. Adequate code required parking for the components of the project will need to be verified upon application for building permits. No parking impacts are anticipated with this project.

Table 3
City of San Luis Obispo
Code Required Parking

Description	Size	City Code Required Parking		Number of Required Parking Spaces
Business Park	348,000 sf	1 per 300 sf		1,160
Printing and Publishing	10,000 sf	1 per 300 sf		33
Hotel (115 rooms)[1]	70,000 sf	1 per room		115
		1 per 60 sf	restaurant customer use area	21
		1 per 100 sf	food prep area	13
Specialized Education/Training Facility[2]	5,000 sf	1 per 50 sf	per classroom floor area	70
Light Manufacturing[3]	170,000 sf	1 per 300 sf	accessory office area	11
		1 per 300-500 sf	manufacturing area	333
		1 per 1500 sf	outdoor manufacturing area	0
Industrial Research & Development[4]	50,000 sf	1 per 300 sf	office or lab	67
		1 per 500 sf	indoor assembly or fab area	50
		1 per 1500 sf	outdoor work or indoor whs	3
General Retail	15,000 sf	1 per 300 sf		50
Vehicle Service Repair & Maintenance	20,000 sf	1 per 500 sf		40
Vet Clinic/Hosp, Board, Lg Animals	5,000 sf	1 per 500 sf		10
Photo & Film Processing Lab	10,000 sf	1 per 300 sf		33
Warehousing, Indoor Storage[5]	50,000 sf	1 per 300 sf	office	3
		1 per 1500 sf	indoor storage area	33
Wholesaling and Distribution[6]	50,000 sf	1 per 300 sf	office area	17
		1 per 1,000 sf	indoor sales/storage	45
		1 per 2,000 sf	outdoor sales area	0
Public Transit Maintenance & Storage[7]	10,000 sf	1 per 300 sf	office/waiting area	3
		1 per 1,000 sf	house/garage area	9
Public Fire Station and Training Facility	5,000 sf	1 per 500 sf	of public safety facility	10
Recreation Fields (typical case)[8]	15 acre	1 per 100 sf	of play surface	100
Open Space	250 acres	per acre		0
TOTAL TANK FARM PROJECT - City Option				**2,230**

1 Estimated 2500 sf of restaurant area with 50% customer use area
2 Estimated as 70% classroom area
3 Estimated as 2% office balance indoor (used average of 500 sf for manufacturing area)
4 Estimated 40% office/lab, 50% assembly, 10% storage
5 Estimated 2% office
6 Estimated as 10% office balance indoor sales/storage
7 Estimated as 10% office
8 Estimated as 10000 sf of play surface

PROJECT ACCESS

Vehicular site access will be provided via Santa Fe Road, Road B, and two driveways on Tank Farm Road serving the Western Parcel of the project. Once complete, the Prado Road extension will provide an additional route to access the project via Santa Fe Road. The following recommendations are provided to improve access to the site.

- Tank Farm Road/Santa Fe Road: Under Existing With Project conditions during the AM peak hour, the eastbound left turn movement would exceed the storage capacity of the turn pocket and spill back on to Tank Farm Road, which could create a potentially unsafe situation. The 95th percentile queues are projected to exceed 350 feet, thereby blocking through traffic. There are two potential improvements to reduce these queues.
  - The construction of a multi-lane roundabout would reduce the 95th percentile queue to 100 feet while maintaining LOS B operations during the AM peak hour. This improvement is consistent with the intersection control in the Airport Area Specific Plan (AASP).
  - The addition of a second eastbound left turn lane would eliminate queue spillback and maintain acceptable operations, but is inconsistent with the AASP.
- Santa Fe Road is proposed to be a four-lane roadway with turn pockets at intersections. Since this roadway would primarily serve project traffic, the ADT is expected to be below 9,000 vehicles. A two-lane configuration with turn pockets would provide adequate capacity for vehicular traffic, while improving conditions for pedestrians and cyclists. It is recommended that Santa Fe Road be designed as a two-lane roadway with turn pockets.
- Tank Farm Road/Road B: This intersection is proposed to provide right in/right out access only. A right turn pocket should be provided for decelerating westbound traffic entering the project site and a departure acceleration lane on Tank Farm Road west of Road B for right turns out.
- Tank Farm Road/Western Parcel Driveways: Two driveways are proposed on Tank Farm Road at the Western Parcel. The eastern driveway would be a right

in/right out only access point and the western driveway would permit all turning movements. The Western Parcel would generate its highest level of traffic during the PM peak hour, with 31 vehicles entering and 59 exiting. The western full-access driveway would be located less than 200 feet from other driveways to the east and west. Given the proximity of adjacent driveways and the amount and speed of traffic on Tank Farm Road, it is recommended that access to the Western Parcel be consolidated with adjacent parcels to minimize the potential for vehicular conflicts. One potential consolidated access point is Old Windmill Road, which is located approximately 1,000 feet west of the project and would require coordination with nearby property owners. It is recommended that this optimal design be initiated by the applicant. However, if negotiations are not mutually agreeable, an alternative would be that the access be designed to provide a dedicate left turn lane, right turn lane, departure acceleration lane and traffic signal evaluation 1 year and 5 years after final certificates of occupancy of the westerly parcels. The applicant would be required to design and install signal or roundabout if found warranted by City.

ON-SITE CIRCULATION

The adequacy of on-site circulation should be reviewed when a plan showing all driveways and parking lots has been prepared. In addition to meeting the City's engineering standards, the on-site parking and circulation should be designed with the following recommendations in mind.

Bicycle and pedestrian facilities should be designed to minimize the potential for conflicts with vehicles, and to provide direct and convenient access to building entrances. Intersections between Class I bike paths and roadways on the project site should be designed with adequate sight distance and signage to ensure safe and comfortable mobility.

The on-site pedestrian and bicycle network shall be complete and continuous, and provide direct and convenient access between individual buildings on the project site and between the project site and nearby land uses.

Analysis of Existing Traffic Conditions

The traffic conditions analysis was conducted using Highway Capacity Manual 2000 (HCM) methodology for signalized, two-way stopped and all-way stopped intersections method. Synchro Version 8 software by Trafficware was used to measure delay. The study intersections were evaluated using this methodology established by the City of San Luis Obispo. The baseline peak hour traffic counts were used along with intersection lane configurations, signal phasing and timing to determine the intersection's operating condition. A roadway network was established using the software. The base Synchro models were established by the City of San Luis Obispo.

The HCM methodology calculates the amount of delay per vehicle based upon the intersection traffic volumes. At signalized locations, the average delay per vehicle is reported. At stop sign controlled locations, the delay per vehicle is reported for the movement experiencing the highest delay.

Once the delay has been calculated, operating characteristics are assigned a level of service grade (A through F) to estimate the level of congestion and stability of the traffic flow. The term Level of Service (LOS) is used by traffic engineers to describe the quality of traffic flow. Table 4 shows definitions of the LOS grades for signalized and unsignalized locations.

The level of service definition for freeway segments differs from the delay methodology used for intersections. Operating conditions along the freeway are based on the density of the traffic and is expressed in vehicles per mile per lane (veh/mi/lane). This methodology has been adopted by Caltrans District 5 to evaluate mainline freeway operating conditions and is based on the Highway Capacity Manual. Highway Capacity Software by McTrans entitled HCS+ was used to evaluate freeway operating conditions. Table 5 shows the definitions of the LOS grades for freeway locations.

Table 4
Level of Service (LOS) Definitions for Signalized and Unsignalized Locations

LEVEL OF SERVICE	SIGNALIZED INTERSECTION DELAY (seconds)	UNSIGNALIZED INTERSECTION DELAY (seconds)	DESCRIPTION OF OPERATING CONDITION
A	Less than 10	Less than 10	Excellent conditions. No loaded cycles and little to no delay.
B	> 10 to 20	> 10 to 15	Very good conditions. A stable flow of traffic.
C	> 20 to 35	> 15 to 25	Good conditions. Stable operations continue. Loading is intermittent. Occasionally drivers may have to wait and backups may develop behind turning vehicles.
D	> 35 to 55	> 25 to 35	Fair conditions. Approaching instability. Delays may be lengthy during short times within the peak hours.
E	> 55 to 80	> 35 to 50	Poor conditions. At or near capacity with possible long queues for left turning vehicles. Full utilization of every signal cycle is seldom attained.
F	> 80	> 50	Failure conditions. Gridlock with stoppages of long duration.

There is a difference in the delay assignment for each level of service for signalized and unsignalized location. Average delay representation for signalized intersections is for all vehicles passing through the intersection. However delay for unsignalized intersections represents the minor movement with the greatest delay.

Table 5
Level of Service Definitions for Freeway Segments

Level of Service	Description	Density (veh/mi/ln)
A	Free flow speeds prevail.	≤ 11
B	Free flow speeds continue. The maneuverability only slightly restricted.	> 11 to 18
C	Speeds at or near free flow speeds. Maneuverability within the traffic stream is noticeably restricted, lane changes require more care.	> 18 to 26
D	Speeds decline slightly with increasing flows. Maneuverability within the traffic stream is more limited with reduced driver comfort.	> 26 to 35
E	Operation at capacity. No usable gaps with little room to maneuver. Disruptions create queuing.	> 35 to 45
F	Breakdown in traffic flow. Failure.	> 45

The existing delay and LOS values are summarized in Table 6 for study intersections and Table 7 for the freeway segments. Supporting capacity worksheets are contained in Appendix D. The existing freeway segment levels of service are provided in Table 7.

Table 6
Existing Intersection Traffic Conditions

No.	Intersection	Peak Hour	Existing DELAY	Existing LOS
1.	Broad Street (SR 227) &	AM	23.8	C
	South St/Santa Barbara Av	PM	28.8	C
2.	Madonna Road &	AM	19.4	B
	NB US 101 On/Off Ramps	PM	25.2	C
3.	Madonna Road &	AM	29.5	C
	SB US 101 On/Off Ramps	PM	36.4	D
4.	NB US 101 Off Ramp/Elks Ln &	AM	9.3	A
	NB US 101 On Ramp/Prado Rd*	PM	19.7	C
5.	Prado Road &	AM	18.6	B
	S Higuera Street	PM	23.7	C
6.	Los Osos Valley Road &	AM	22.0	C
	SB US 101 On/Off Ramps	PM	22.2	C
7.	S Higuera Street &	AM	23.2	C
	Tank Farm Road	PM	28.3	C
8.	S Higuera Street &	AM	13.7	B
	Vachell Lane*	PM	32.6	D
9.	Los Osos Valley Road &	AM	18.5	B
	NB US 101 On/Off Ramps	PM	17.3	B
10.	Los Osos Valley Road &	AM	12.4	B
	S Higuera Road	PM	16.0	B
11.	Broad Street (SR 227) &	AM	17.7	B
	Orcutt Road	PM	27.7	C
12.	Broad Street (SR 227) &	AM	10.2	B
	Industrial Way	PM	16.6	B
13.	Tank Farm Road &	AM	1.1	A
	Santa Fe Road*	PM	10.6	B
14.	Broad Street (SR 227) &	AM	37.1	D
	Tank Farm Road	PM	43.5	D
15.	Aero Drive &	AM	8.8	A
	Broad Street (SR 227)	PM	13.8	B
16.	Buckley Road &	AM	0.1	A
	Santa Fe Road*	PM	0.8	A
17.	Broad Street (SR 227) &	AM	17.5	B
	Buckley Road	PM	10.9	B

* unsignalized locations

The existing traffic volumes were displayed previously in Figure 3 and 4 for the AM and PM Peak Hour respectively.

Table 7
Existing Freeway Operating Conditions

Location	Direction	Peak Hour	Density (veh/mi/ln)	LOS
US 101 south of Los Osos Valley Road	Northbound	AM	23.7	C
		PM	19.0	C
	Southbound	AM	12.5	B
		PM	24.4	C
US 101 north of Los Osos Valley Road	Northbound	AM	21.4	C
		PM	17.5	B
	Southbound	AM	13.2	B
		PM	23.8	C
Source: US 101/Los Osos Valley Rd Interchange PA & ED, September 2007 Fehr & Peers				

Significant Impacts Definitions

Intersections were evaluated for potential impacts based upon impact criteria established by the County of San Luis Obispo and City of San Luis Obispo. These impacts are defined as follows:

Table 8a
City and County Requirements
Significant Impact Criteria for Roads and Intersections

- Signalized intersections: a significant impact would occur if the addition of project traffic degrades operations from LOS D or better to LOS E or F; or if project traffic is added to an intersection operating at LOS E or F.

- Unsignalized intersections: a significant impact would occur if the addition of project traffic causes intersection operations to degrade to an unacceptable level and the peak hour signal warrant is met.

- All intersections: a significant impact would occur if the project's access to a public street causes a potentially unsafe situation.

- Pedestrian and bicycle facilities: a significant impact would occur if the project conflicts with existing or planned pedestrian or bicycle facilities; or if the project creates a pedestrian or bicycle demand without providing adequate facilities.

- Transit facilities: a significant impact would occur if the project conflicts with existing or planned facilities; or if the project does not provide adequate facilities for pedestrians and cyclists to access transit routes and stops.

Table 8b
Caltrans District 5 Requirements
Significant Impact Criteria

Caltrans District 5 strives to maintain operations at LOS C or better, but recognizes that in urban areas such as San Luis Obispo LOS D or better is acceptable. A significant impact would occur if a project causes operations to degrade from LOS D or better to LOS E or F; or if project traffic is added to a locations operating at LOS E, or F.

Analysis of Existing + Project Traffic Conditions

As required, a determination of how project traffic would affect existing conditions has been conducted. The area wide roadway improvements such as the extension of Prado Road and Los Osos Valley Road and US 101 Southbound freeway ramps are not yet completed. These elements were not included in the existing plus project analysis. However, the project features, such as widening Tank Farm Road and signalizing Tank Farm Road and Santa Fe Road are included. The project traffic, based upon distribution without future roadway improvements was added to the existing conditions and compared to determine if there were any significant traffic impacts. Significant impact criteria as noted in the Significant Impact Definition Section in Table 8 used to determine significant impacts. Table 9 displays the Existing Plus Project Traffic Conditions at the 17 study intersections.

Table 9
Existing + Project Summary Conditions

No.	Intersection	Peak Hour	Existing DELAY	Existing LOS	Existing + Project DELAY	Existing + Project LOS		Change	Significant Impact?
1.	Broad Street (SR 227) &	AM	23.8	C	25.3	C	+	1.5	NO
	South St/Santa Barbara Av	PM	28.8	C	29.3	C	+	0.5	NO
2.	Madonna Road &	AM	19.4	B	19.4	B	+	0.0	NO
	NB US 101 On/Off Ramps	PM	25.2	C	25.4	C	+	0.2	NO
3.	Madonna Road &	AM	29.5	C	29.5	C	+	0.0	NO
	SB US 101 On/Off Ramps	PM	36.4	D	36.5	D	+	0.1	NO
4.	NB US 101 Off Ramp/Elks Ln &	AM	9.3	A	9.7	A	+	0.4	NO
	NB US 101 On Ramp/Prado Rd*	PM	19.7	C	23.4	C	+	3.7	NO
5.	Prado Road &	AM	18.6	B	20.7	C	+	2.1	NO
	S Higuera Street	PM	23.7	C	25.1	C	+	1.4	NO
6.	Los Osos Valley Road &	AM	22.0	C	23.8	C	+	1.8	NO
	SB US 101 On/Off Ramps	PM	22.2	C	27.8	C	+	5.6	NO
7.	S Higuera Street &	AM	23.2	C	43.7	D	+	20.5	NO
	Tank Farm Road	PM	28.3	C	39.3	D	+	11.0	NO
8.	S Higuera Street &	AM	13.7	B	35.8	E	+	22.1	NO'
	Vachell Lane*	PM	32.6	D	64.2	F	+	31.6	NO'
9.	Los Osos Valley Road &	AM	18.5	B	22.9	C	+	4.4	NO
	NB US 101 On/Off Ramps	PM	17.3	B	20.3	C	+	3.0	NO
10.	Los Osos Valley Road &	AM	12.4	B	14.3	B	+	1.9	NO
	S Higuera Road	PM	16.0	B	23.9	C	+	7.9	NO
11.	Broad Street (SR 227) &	AM	17.7	B	19.7	B	+	2.0	NO
	Orcutt Road	PM	27.7	C	38.4	C	+	10.7	NO
12.	Broad Street (SR 227) &	AM	10.2	B	11.2	B	+	1.0	NO
	Industrial Way	PM	16.6	B	17.9	B	+	1.3	NO
13.	Tank Farm Road &	AM	1.1	A	20.2	C	+	19.1	NO
	Santa Fe Road*	PM	10.6	B	20.9	C	+	10.3	NO
14.	Broad Street (SR 227) &	AM	37.1	D	59.2	E	+	22.1	**YES**
	Tank Farm Road	PM	43.5	D	70.9	E	+	27.4	**YES**
15.	Aero Drive &	AM	8.8	A	9.0	A	+	0.2	NO
	Broad Street (SR 227)	PM	13.8	B	14.1	B	+	0.3	NO
16.	Buckley Road &	AM	0.1	A	0.3	A	+	0.2	NO
	Santa Fe Road*	PM	0.8	A	1.8	A	+	1.0	NO
17.	Broad Street (SR 227) &	AM	17.5	B	24.1	C	+	6.6	NO
	Buckley Road	PM	10.9	B	14.3	B	+	3.4	NO

* unsignalized location

Delay = Calculated using Highway Capacity Method which is seconds of delay per vehicle

' unsignalized location not an impact since it does not meet signal warrants - delay on minor st

The intersection of Broad Street and Tank Farm Road has been identified as significantly impacted using the County and City significant impact criteria. Mitigation has been identified to reduce this significant impact and is further discussed in the mitigation section of this report.

The traffic volumes have been added to the existing traffic volumes along the US 101 Freeway in the vicinity of the project. Table 10 displays the results of this analysis. Appendix E provides the analysis worksheets. The addition of the project traffic creates no significant traffic impacts. The addition of the project results in the same level of service at all locations, all time periods with the exception of Northbound US 101 South of Los Osos Valley Road which increases from LOS B to LOS C. This is within operational allowances and does not create a significant traffic impact.

Table 10
Existing + Project Freeway Operations Summary

Location	Direction	Peak Hour	Density (veh/mi/ln)	LOS
US 101 south of Los Osos Valley Road	Northbound	AM	25.0	C
		PM	19.4	C
	Southbound	AM	12.2	B
		PM	24.6	C
US 101 north of Los Osos Valley Road	Northbound	AM	21.8	C
		PM	17.6	B
	Southbound	AM	13.0	B
		PM	22.9	C

Analysis of Future Traffic Conditions

Future traffic volume projections have been developed to analyze the traffic conditions after completion of other planned land developments. The future conditions were then estimated with the cumulative projects along with the proposed project. Pursuant to the City of San Luis Obispo traffic impact guidelines, the following steps have been taken to develop the future traffic volume estimate:

(a) Base year project year 2035 through the City of San Luis Obispo Traffic Model Run (without Unocal Collector Road) including future roadway and intersection improvements;

(b) Traffic in (a) + proposed project at buildout (without Unocal Collector Road);

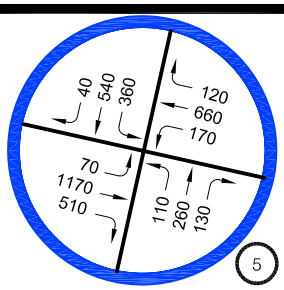
(c) Traffic in (b) + proposed traffic mitigation, as necessary.

The Without Project Scenario includes elements of the City of San Luis Obispo General Plan which are anticipated to be completed at the time of the project. Table 11 provides a summary of future conditions with programmed improvements but without the proposed project. The resultant intersection volumes are displayed in Figure 10 and 11 for AM and PM Peak Hours respectively.

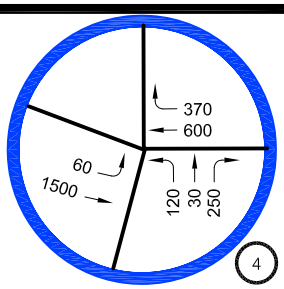
Table 11

Future Conditions With Future Growth Cumulative Projects
Without Project

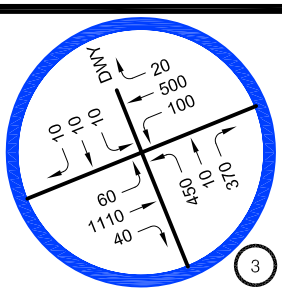
No.	Intersection	Peak Hour	Existing DELAY	Existing LOS	Future (2035) Cumulative WITHOUT Project DELAY	Future (2035) Cumulative WITHOUT Project LOS		Change
1.	Broad Street (SR 227) &	AM	23.8	C	32.6	C	+	8.8
	South St/Santa Barbara Av	PM	28.8	C	33.4	C	+	4.6
2.	Madonna Road &	AM	19.4	B	17.4	B		-2.0
	NB US 101 On/Off Ramps	PM	25.2	C	23.7	C		-1.5
3.	Madonna Road &	AM	29.5	C	25.5	C		-4.0
	SB US 101 On/Off Ramps	PM	36.4	D	28.5	C		-7.9
4.	NB US 101 Off Ramp/Elks Ln &	AM	9.3	A	12.3	B	+	3.0
	NB US 101 On Ramp/Prado Rd	PM	19.7	C	15.8	B		-3.9
5.	Prado Road &	AM	18.6	B	63.9	E	+	45.3
	S Higuera Street	PM	23.7	C	92.7	F	+	69.0
6.	Los Osos Valley Road &	AM	22.0	C	51.7	D	+	29.7
	SB US 101 On/Off Ramps	PM	22.2	C	52.7	D	+	30.5
7.	S Higuera Street &	AM	23.2	C	78.2	E	+	55.0
	Tank Farm Road	PM	28.3	C	93.1	F	+	64.8
8.	S Higuera Street &	AM	13.7	B	459.0	F	+	445.3
	Vachell Lane	PM	32.6	D	677.3	F	+	644.7
9.	Los Osos Valley Road &	AM	18.5	B	23.0	C	+	4.5
	NB US 101 On/Off Ramps	PM	17.3	B	17.0	B		-0.3
10.	Los Osos Valley Road &	AM	12.4	B	25.8	C	+	13.4
	S Higuera Road	PM	16.0	B	118.0	F	+	102.0
11.	Broad Street (SR 227) &	AM	17.7	B	29.9	C	+	12.2
	Orcutt Road	PM	27.7	C	45.7	D	+	18.0
12.	Broad Street (SR 227) &	AM	10.2	B	18.6	B	+	8.4
	Industrial Way	PM	16.6	B	30.1	C	+	13.5
13.	Tank Farm Road &	AM	1.1	A	12.5	B	+	11.4
	Santa Fe Road*	PM	10.6	B	22.6	C	+	12.0
14.	Broad Street (SR 227) &	AM	37.1	D	53.2	D	+	16.1
	Tank Farm Road	PM	43.5	D	57.1	E	+	13.6
15.	Aero Drive &	AM	8.8	A	10.2	B	+	1.4
	Broad Street (SR 227)	PM	13.8	B	25.9	C	+	12.1
16.	Buckley Road &	AM	0.1	A	0.5	A	+	0.4
	Santa Fe Road	PM	0.8	A	0.9	A	+	0.1
17.	Broad Street (SR 227) &	AM	17.5	B	31.5	C	+	14.0
	Buckley Road	PM	10.9	B	259.9	F	+	249.0
18.	Broad Street &	AM			51.8	D		
	Prado Road (NEW)	PM			28.8	C		



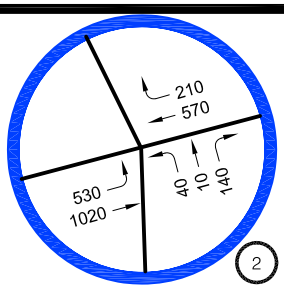
PRADO RD &
S HIGUERA ST



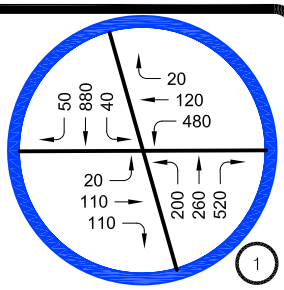
NB US101 OFFRAMP/ELKS LN &
NB US101 ONRAMP/PRADO RD



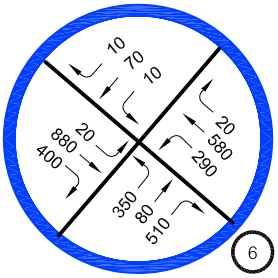
MADONNA RD &
SB US101 ON/OFF RAMPS



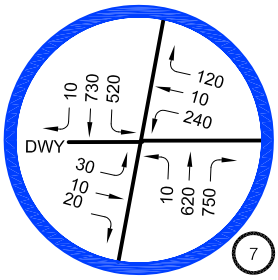
MADONNA ROAD &
NB US101 ON/OFF RAMPS



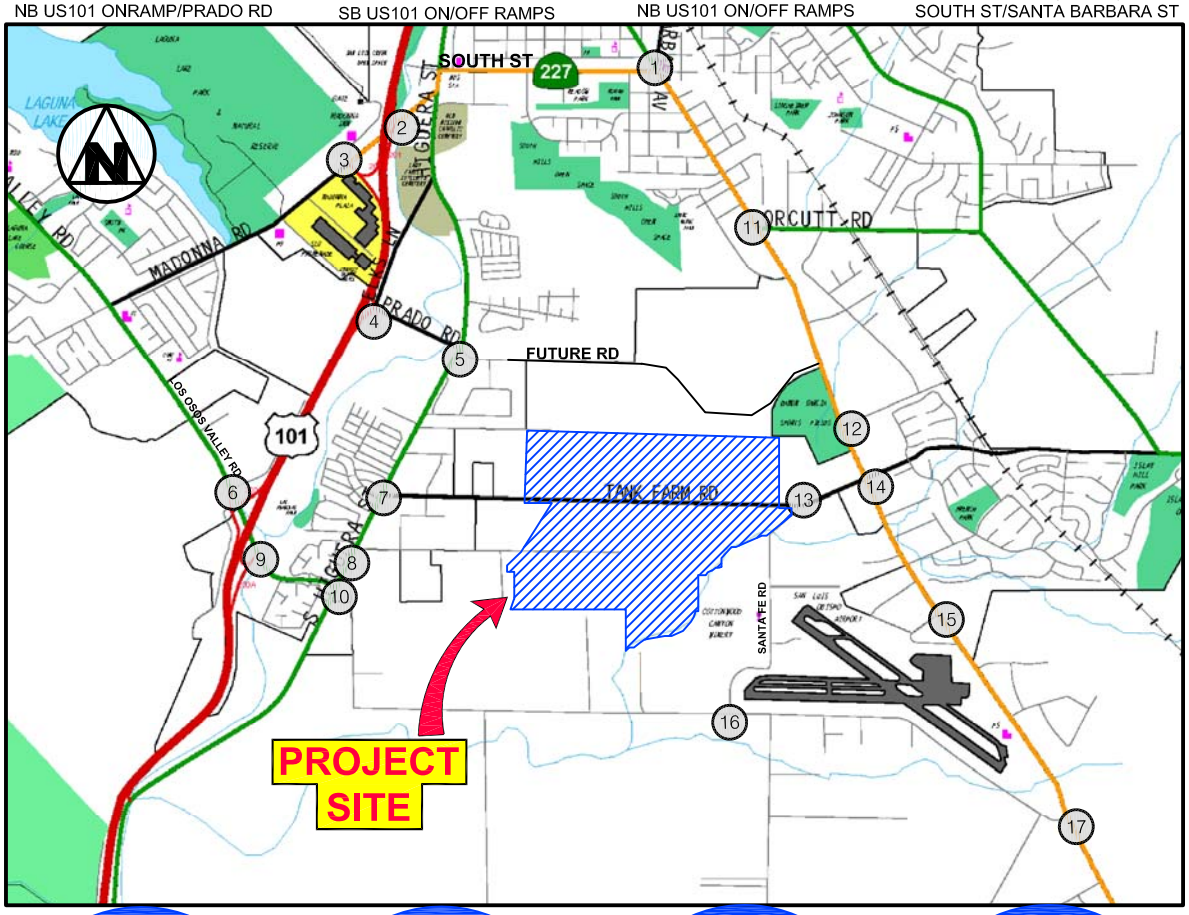
BROAD ST (SR 227)&
SOUTH ST/SANTA BARBARA ST

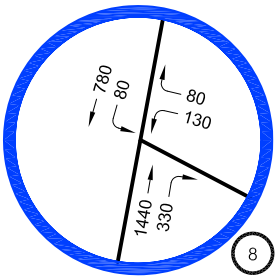


LOS OSOS VALLEY RD &
SB US101 ON/OFF RAMPS

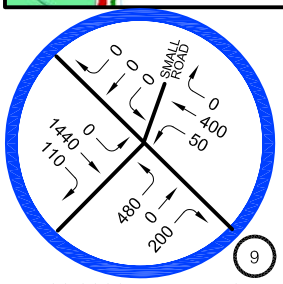


S HIGUERA RD &
TANK FARM RD

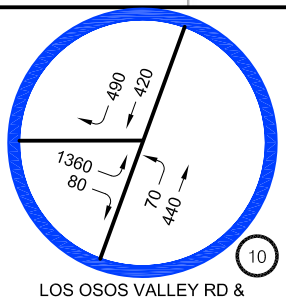




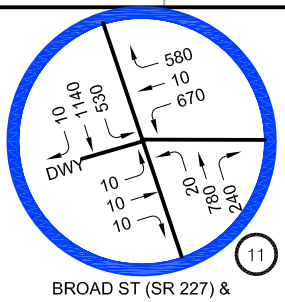
S HIGUERA RD &
VACHELL LN



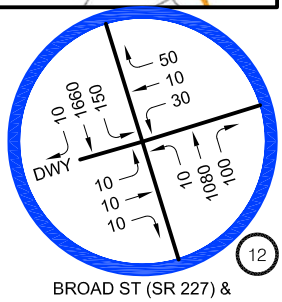
LOS OSOS VALLEY RD &
NB US101 ON/OFF RAMPS



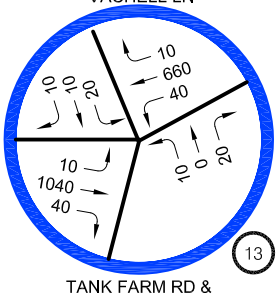
LOS OSOS VALLEY RD &
S HIGUERA RD



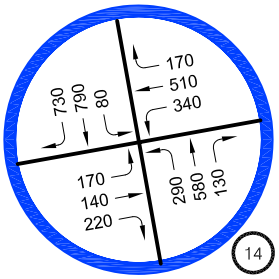
BROAD ST (SR 227) &
ORCUTT RD



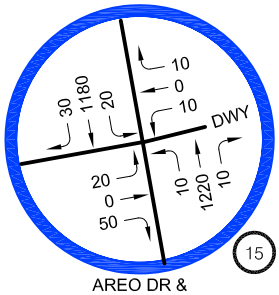
BROAD ST (SR 227) &
INDUSTRIAL WY



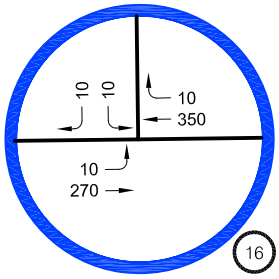
TANK FARM RD &
SANTA FE RD



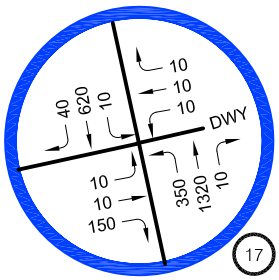
BROAD ST (SR 227) &
TANK FARM RD



AREO DR &
BROAD ST (SR 227)



BUCKLEY RD &
SANTA FE RD



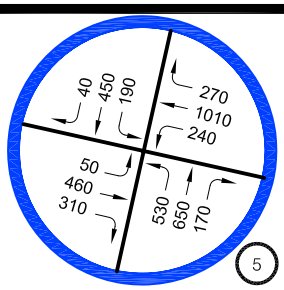
BROAD ST (SR 227) &
BUCKLEY RD/HIDDEN SPRINGS

FIGURE 10

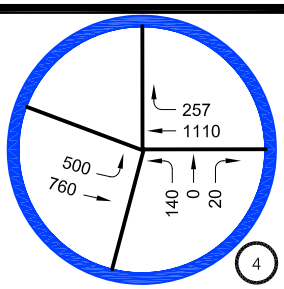
FUTURE (2035) TRAFFIC VOLUMES
WITH PRADO ROAD EXTENSION - WITHOUT PROJECT
AM PEAK HOUR

6/2012

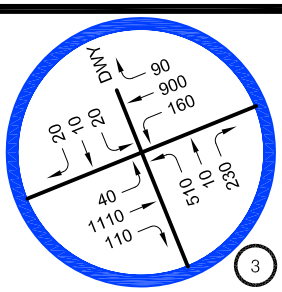
Overland Traffic Consultants, Inc.
952 Manhattan Beach Bl #100, Manhattan Beach, Ca 90266
(310) 545-1235 OTC@overlandtraffic.com



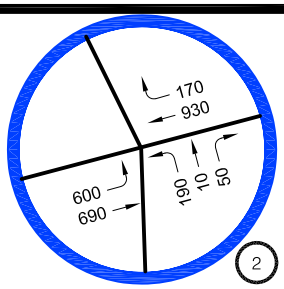
PRADO RD &
S HIGUERA ST



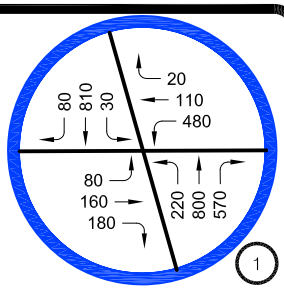
NB US101 OFFRAMP/ELKS LN &
NB US101 ONRAMP/PRADO RD



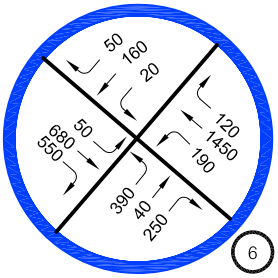
MADONNA RD &
SB US101 ON/OFF RAMPS



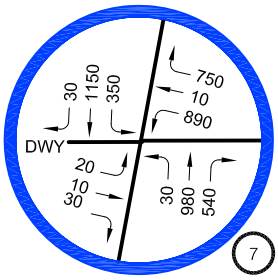
MADONNA ROAD &
NB US101 ON/OFF RAMPS



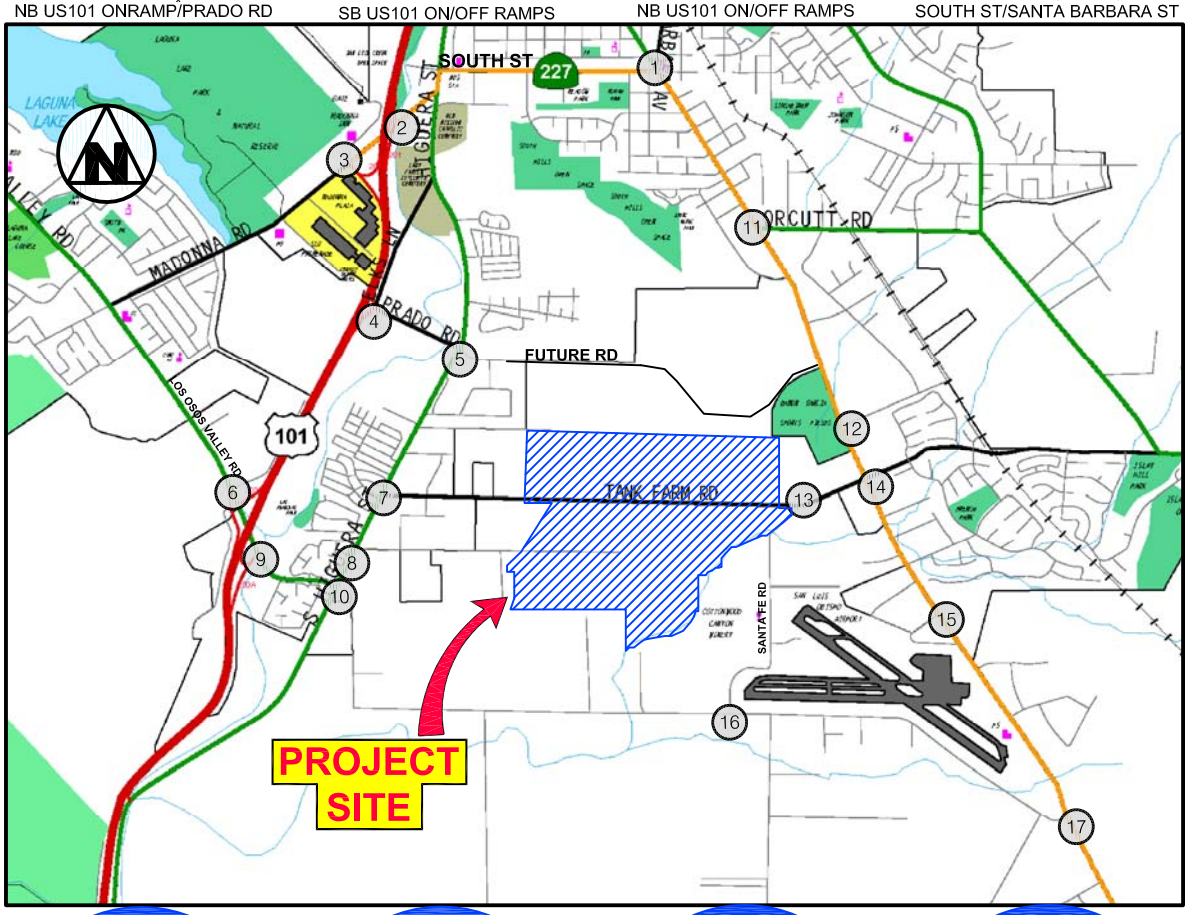
BROAD ST (SR 227)&
SOUTH ST/SANTA BARBARA ST

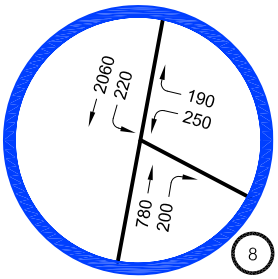


LOS OSOS VALLEY RD &
SB US101 ON/OFF RAMPS

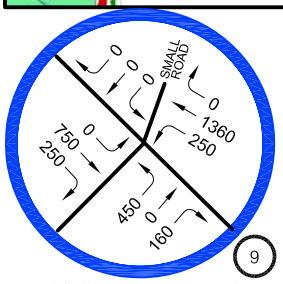


S HIGUERA RD &
TANK FARM RD

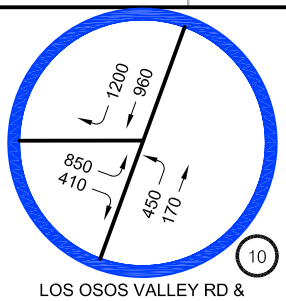




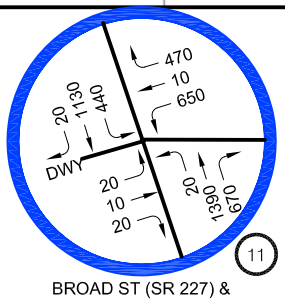
S HIGUERA RD &
VACHELL LN



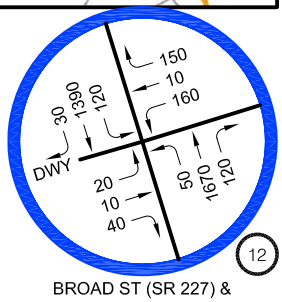
LOS OSOS VALLEY RD &
NB US101 ON/OFF RAMPS



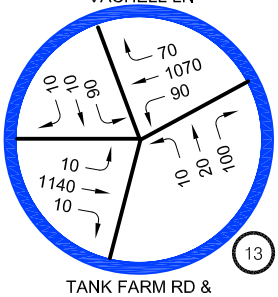
LOS OSOS VALLEY RD &
S HIGUERA RD



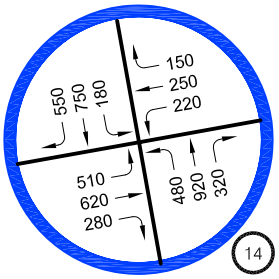
BROAD ST (SR 227) &
ORCUTT RD



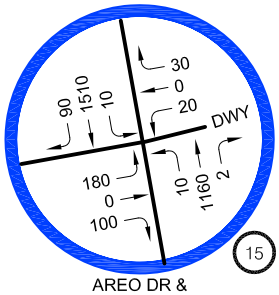
BROAD ST (SR 227) &
INDUSTRIAL WY



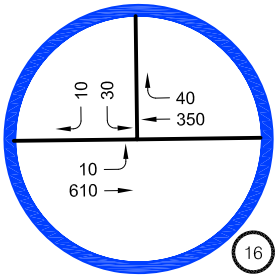
TANK FARM RD &
SANTA FE RD



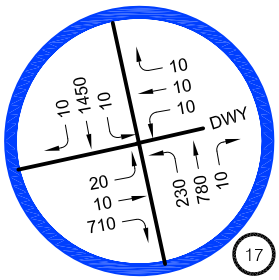
BROAD ST (SR 227) &
TANK FARM RD



AREO DR &
BROAD ST (SR 227)



BUCKLEY RD &
SANTA FE RD



BROAD ST (SR 227) &
BUCKLEY RD/HIDDEN SPRINGS

FIGURE 11

FUTURE (2035) TRAFFIC VOLUMES
WITH PRADO ROAD EXTENSION - WITHOUT PROJECT
PM PEAK HOUR

6/2012

Overland Traffic Consultants, Inc.
952 Manhattan Beach Bl #100, Manhattan Beach, Ca 90266
(310) 545-1235 OTC@overlandtraffic.com

The freeway volumes were also evaluated with future buildout conditions without the project. Future freeway volumes are anticipated to increase to unacceptable levels over LOS D as indicated in Table 12 below.

Table 12
Future 2035 Freeway Operating Conditions
Without Project

Location	Direction	Peak Hour	Density (veh/mi/ln)	LOS
US 101 south of Los Osos Valley Road	Northbound	AM	36.4	E
		PM	25.3	C
	Southbound	AM	17.0	B
		PM	35.7	E
US 101 north of Los Osos Valley Road	Northbound	AM	30.6	D
		PM	24.4	C
	Southbound	AM	17.5	B
		PM	33.6	D
Source: US 101/Los Osos Valley Rd Interchange PA & ED, September 2007 Fehr & Peers				

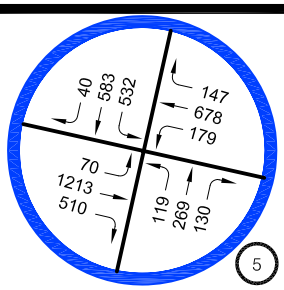
The Fehr & Peers report indicates that the addition of a third freeway lane would improve the freeway operating conditions back to acceptable levels.

With Project Evaluation

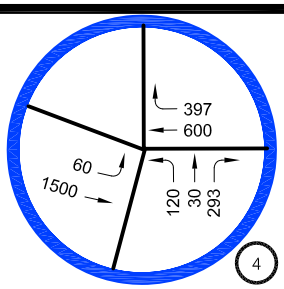
The Synchro analysis was then expanded to include the proposed project added to the study intersection volumes including the project improvements. A total of 10 intersections have been identified as significantly impacted using the significant impact criteria. The results of the With Project scenario are displayed in Table 13. The resultant intersection volumes are displayed in Figure 12 and 13 for AM and PM Peak Hours respectively. Project mitigation has been identified to reduce these significant impacts and is discussed in the Mitigation Section of the report.

Table 13
Future Conditions With Cumulative Projects
With Project

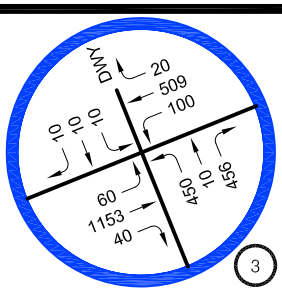
No.	Intersection	Peak Hour	Future (2035) Cumulative WITHOUT Project DELAY	LOS	Future Cumulative With Project DELAY	LOS		Increase	Significant Impact?
1.	Broad Street (SR 227) &	AM	32.6	C	35.4	D	+	2.8	NO
	South St/Santa Barbara Av	PM	33.4	C	34.4	C	+	1.0	NO
2.	Madonna Road &	AM	17.4	B	17.6	B	+	0.2	NO
	NB US 101 On/Off Ramps	PM	23.7	C	24.0	C	+	0.3	NO
3.	Madonna Road &	AM	25.5	C	25.9	C	+	0.4	NO
	SB US 101 On/Off Ramps	PM	28.5	C	28.6	C	+	0.1	NO
4.	NB US 101 Off Ramp/Elks Ln &	AM	12.3	B	13.7	B	+	1.4	NO
	NB US 101 On Ramp/Prado Rd	PM	15.8	B	15.7	B		-0.1	NO
5.	Prado Road &	AM	63.9	E	94.8	F	+	30.9	**YES**
	S Higuera Street	PM	92.7	F	117.0	F	+	24.3	**YES**
6.	Los Osos Valley Road &	AM	51.7	D	59.8	E	+	8.1	**YES**
	SB US 101 On/Off Ramps	PM	52.7	D	59.4	E	+	6.7	**YES**
7.	S Higuera Street &	AM	78.2	E	110.1	F	+	31.9	**YES**
	Tank Farm Road	PM	93.1	F	126.2	F	+	33.1	**YES**
8.	S Higuera Street &	AM	459.0	F	414.0	F		-45.0	**YES**
	Vachell Lane	PM	677.3	F	623.4	E		-53.9	**YES**
9.	Los Osos Valley Road &	AM	23.0	C	24.2	C	+	1.2	NO
	NB US 101 On/Off Ramps	PM	17.0	B	18.0	B	+	1.0	NO
10.	Los Osos Valley Road &	AM	25.8	C	40.3	D	+	14.5	NO
	S Higuera Road	PM	118.0	F	152.1	F	+	34.1	**YES**
11.	Broad Street (SR 227) &	AM	29.9	C	33.1	D	+	3.2	NO
	Orcutt Road	PM	45.7	D	50.2	D	+	4.5	NO
12.	Broad Street (SR 227) &	AM	18.6	B	19.7	B	+	1.1	NO
	Industrial Way	PM	30.1	C	34.1	C	+	4.0	NO
13.	Tank Farm Road &	AM	12.5	B	20.3	C	+	7.8	NO
	Santa Fe Road*	PM	22.6	C	86.3	F	+	63.7	**YES**
14.	Broad Street (SR 227) &	AM	53.2	D	86.5	F	+	33.3	**YES**
	Tank Farm Road	PM	57.1	E	63.4	E	+	6.3	**YES**
15.	Aero Drive &	AM	10.2	B	10.3	B	+	0.1	NO
	Broad Street (SR 227)	PM	25.9	C	26.6	C	+	0.7	NO
16.	Buckley Road &	AM	0.5	A	0.7	A	+	0.2	NO
	Santa Fe Road	PM	0.9	A	2.0	A	+	1.1	NO
17.	Broad Street (SR 227) &	AM	31.5	C	40.4	D	+	8.9	NO
	Buckley Road	PM	259.9	F	286.6	F	+	26.7	**YES**
18.	Broad Street &	AM	51.8	D	61.4	E	+	9.6	**YES**
	Prado Road (NEW)	PM	28.8	C	32.4	C	+	3.6	NO



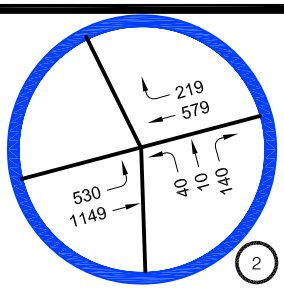
PRADO RD &
S HIGUERA ST



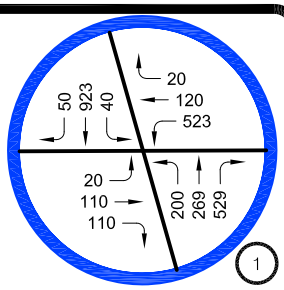
NB US101 OFFRAMP/ELKS LN &
NB US101 ONRAMP/PRADO RD



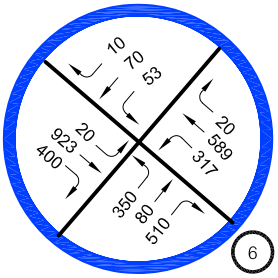
MADONNA RD &
SB US101 ON/OFF RAMPS



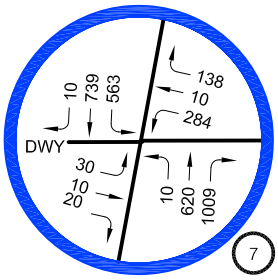
MADONNA ROAD &
NB US101 ON/OFF RAMPS



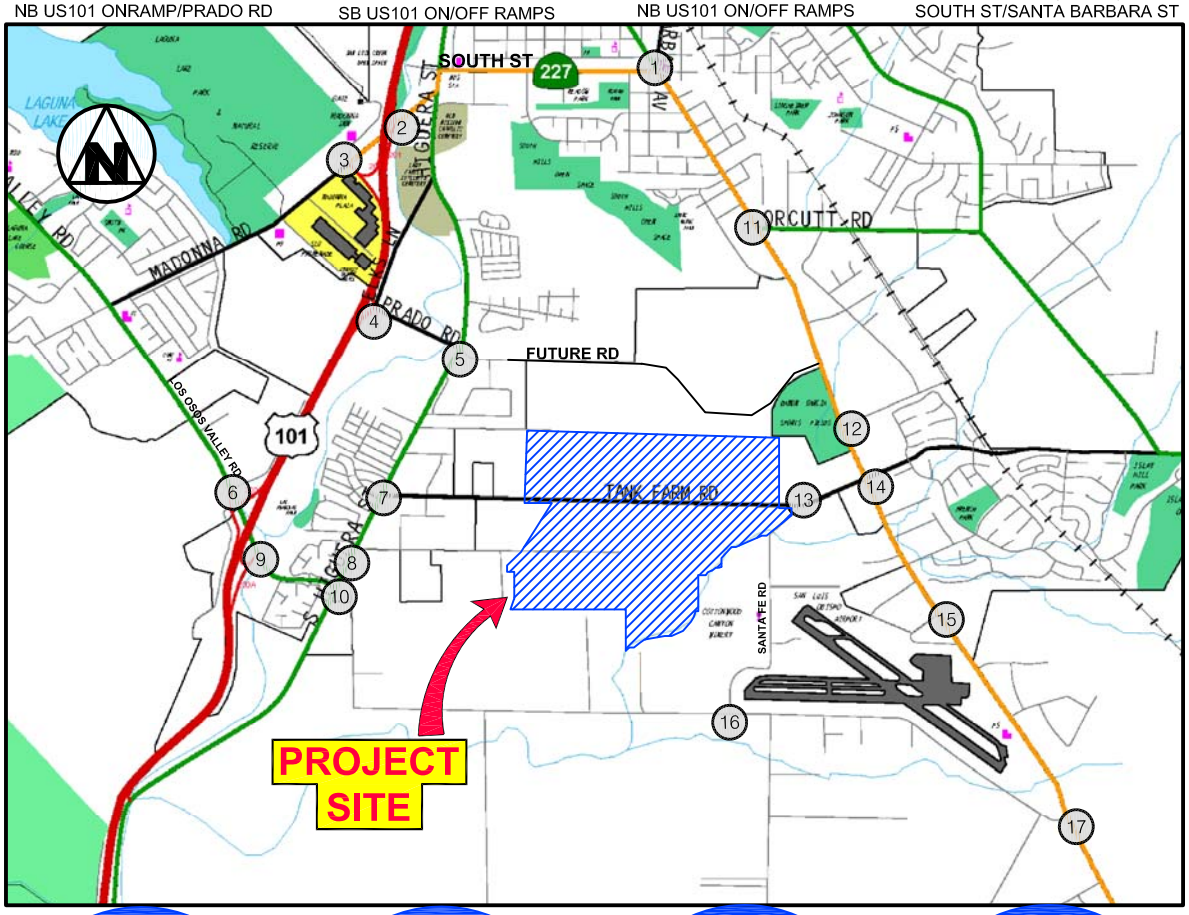
BROAD ST (SR 227)&
SOUTH ST/SANTA BARBARA ST

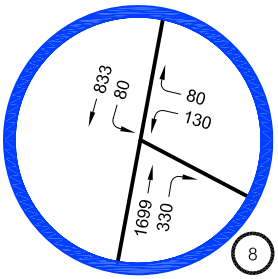


LOS OSOS VALLEY RD &
SB US101 ON/OFF RAMPS

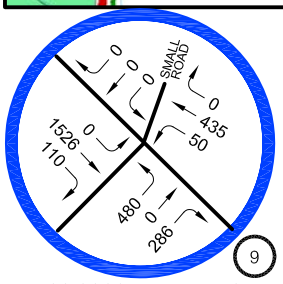


S HIGUERA RD &
TANK FARM RD

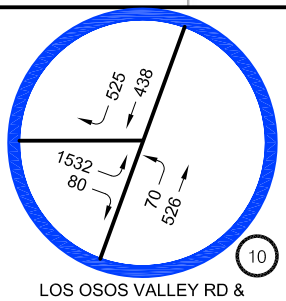




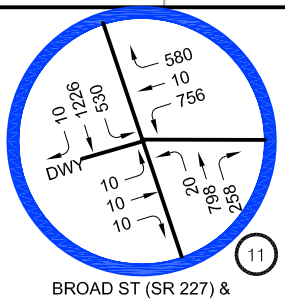
S HIGUERA RD &
VACHELL LN



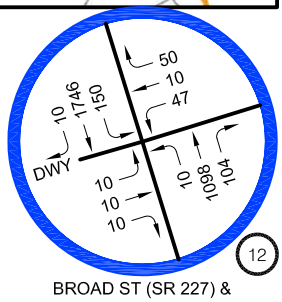
LOS OSOS VALLEY RD &
NB US101 ON/OFF RAMPS



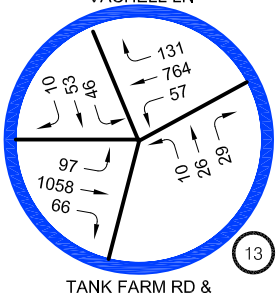
LOS OSOS VALLEY RD &
S HIGUERA RD



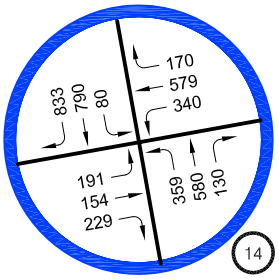
BROAD ST (SR 227) &
ORCUTT RD



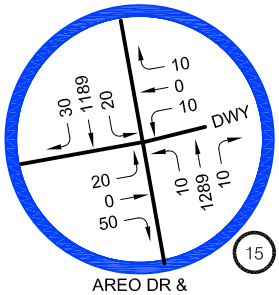
BROAD ST (SR 227) &
INDUSTRIAL WY



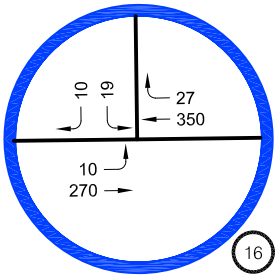
TANK FARM RD &
SANTA FE RD



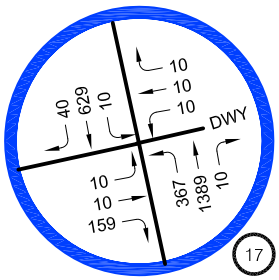
BROAD ST (SR 227) &
TANK FARM RD



AREO DR &
BROAD ST (SR 227)



BUCKLEY RD &
SANTA FE RD



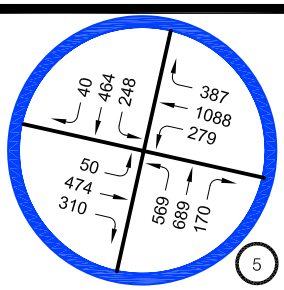
BROAD ST (SR 227) &
BUCKLEY RD/HIDDEN SPRINGS

FIGURE 12

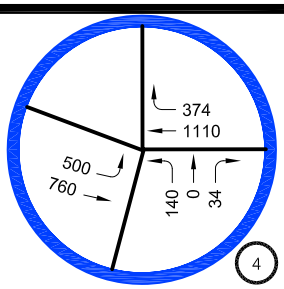
FUTURE (2035) TRAFFIC VOLUMES
WITH PRADO ROAD EXTENSION - WITH PROJECT
AM PEAK HOUR

6/2012

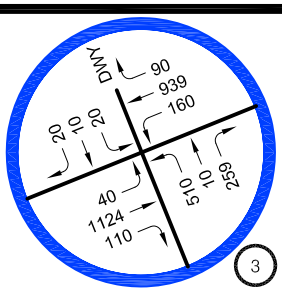
Overland Traffic Consultants, Inc.
952 Manhattan Beach Bl #100, Manhattan Beach, Ca 90266
(310) 545-1235 OTC@overlandtraffic.com



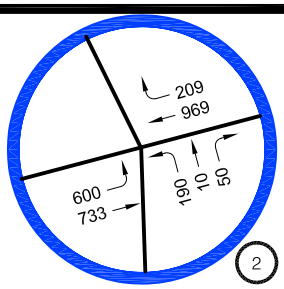
PRADO RD &
S HIGUERA ST



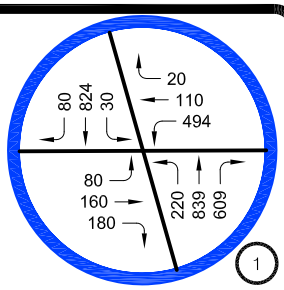
NB US101 OFFRAMP/ELKS LN &
NB US101 ONRAMP/PRADO RD



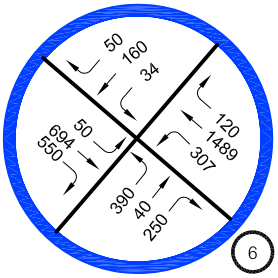
MADONNA RD &
SB US101 ON/OFF RAMPS



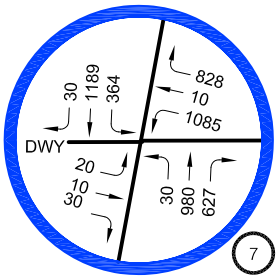
MADONNA ROAD &
NB US101 ON/OFF RAMPS



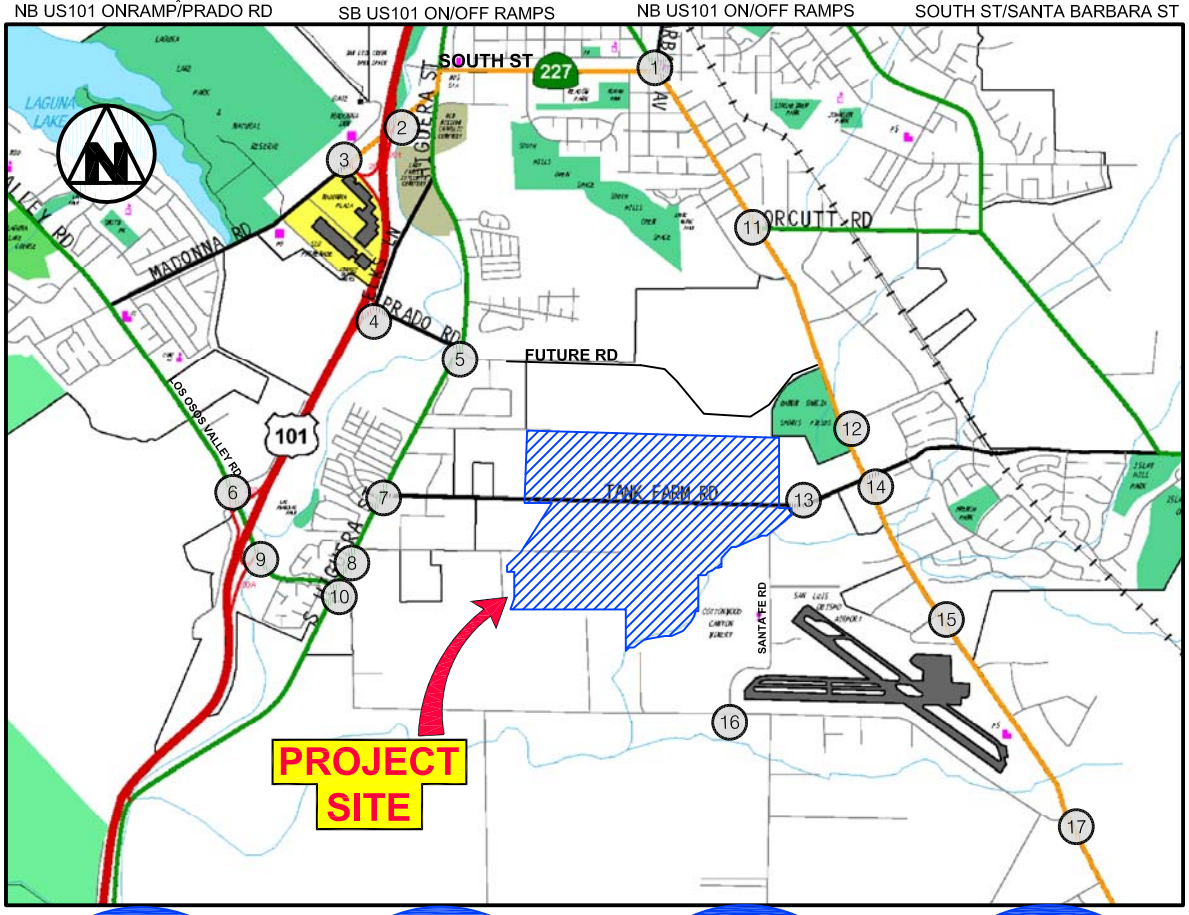
BROAD ST (SR 227)&
SOUTH ST/SANTA BARBARA ST

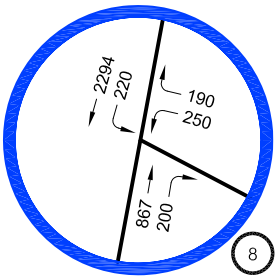


LOS OSOS VALLEY RD &
SB US101 ON/OFF RAMPS

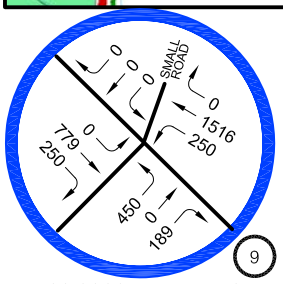


S HIGUERA RD &
TANK FARM RD

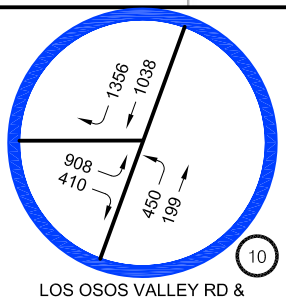




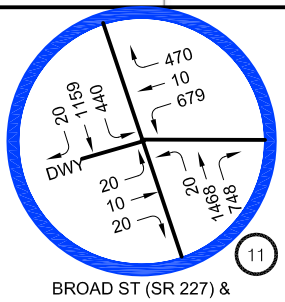
S HIGUERA RD &
VACHELL LN



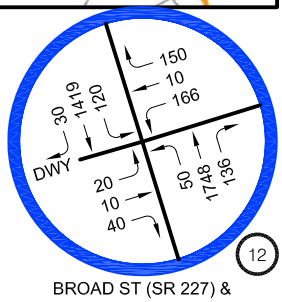
LOS OSOS VALLEY RD &
NB US101 ON/OFF RAMPS



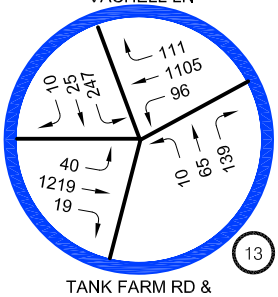
LOS OSOS VALLEY RD &
S HIGUERA RD



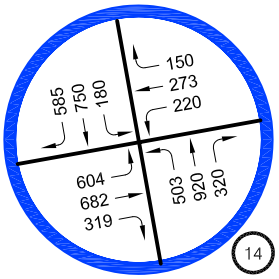
BROAD ST (SR 227) &
ORCUTT RD



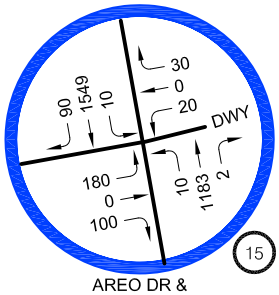
BROAD ST (SR 227) &
INDUSTRIAL WY



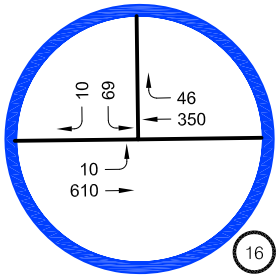
TANK FARM RD &
SANTA FE RD



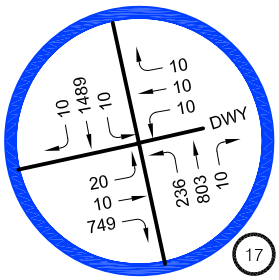
BROAD ST (SR 227) &
TANK FARM RD



AREO DR &
BROAD ST (SR 227)



BUCKLEY RD &
SANTA FE RD



BROAD ST (SR 227) &
BUCKLEY RD/HIDDEN SPRINGS

FIGURE 13

FUTURE (2035) TRAFFIC VOLUMES
WITH PRADO ROAD EXTENSION - WITH PROJECT
PM PEAK HOUR

6/2012

Overland Traffic Consultants, Inc.
952 Manhattan Beach Bl #100, Manhattan Beach, Ca 90266
(310) 545-1235 OTC@overlandtraffic.com

The project traffic has been added to the without project traffic conditions along the freeway segments to determine if the project will further degrade the freeway operations. Table 14 indicates that none of the freeways will be altered in the future with the addition of the project traffic. Worksheets for the analysis are provided in Appendix E. The LOS does not change along any of the segments. However, the project will add to the already identified poor operating conditions without the project along each segment. This is a significant impact. The addition of a third north and southbound travel lane improves the LOS to acceptable levels.

Table 14
Future 2035 Freeway Summary
with Project

Location	Direction	Peak Hour	Density (veh/mi/ln)	LOS
US 101 south of Los Osos Valley Road	Northbound	AM	39.6	E
		PM	25.9	C
	Southbound	AM	17.2	B
		PM	38.7	E
US 101 north of Los Osos Valley Road	Northbound	AM	31.9	D
		PM	24.5	C
	Southbound	AM	17.9	B
		PM	34.6	D
Source: US 101/Los Osos Valley Rd Interchange PA & ED, September 2007 Fehr & Peers				

Transit Analysis

The SLOCOG 2010 RTP indicated that ridership on the San Luis Obispo Transit increased 19% between the 2000 and 2009 years. The increase in ridership is attributed to a combination of factors including increases in transit services, frequency of services, customer amenities (such as enhanced bus shelters) and increased gasoline prices.

Transit trips were estimated using the County of Los Angeles Congestion Management Program (CMP) 2004 guidelines, which indicate that person trips can be estimated by multiplying the total trips generated by 1.4. Transit trips may be calculated by multiplying the person trips generated by 3.5%. The estimated transit trip generation calculation is displayed below in Table 15.

Table 15
Transit Trips

	DAILY	AM PEAK HOUR	PM PEAK HOUR
PROJECT TRIPS	8,193	1,039	1,068
PERSON TRIPS (trips X 1.4)	11,470	1,455	1,495
TRANSIT TRIPS (person trips X 3.5%)	401	51	52

The City's 2009 *Short Range Transit Plan* summarizes near-term changes planned for the transit network. The plan includes a new cross-town route connecting the eastern and southern portions of the City with the Madonna Plaza area. This route would serve Tank Farm Road between Higuera Street and Broad Street with 60 minute headways. The Airport Area Specific Plan describes a similar route, and calls for the implementation of transit service in the area as development levels become supportive of transit.

The proposed project may burden the planned cross-town route's capacity. This is a potentially significant impact.

Bicycle Analysis

The SLOCOG indicates that between 2000 and 2008 US Census data indicates that employed persons biking to work has grown from 1,376 to 3,130 persons. This is a 127% increase in the mode of transportation usage. The City of San Luis Obispo conducted a Bicycle Count Data Report December 2008. This report indicated bicycle count data at Orcutt Road and Broad Street of 42 cyclist in year 2000 and 78 in year 2008, at Tank Farm Road and Broad Street as 28 in year 2000 and 49 in year 2008, and at Broad Street and South Street as 71 in year 2000 and 137 in year 2008. The cycling community is growing within this area. Employees and patrons of this project will be encouraged to utilize this mode of transportation and will be providing amenities to service the existing and future riding community.

The City of San Luis Obispo requires bicycle parking spaces based upon the zoning of the property. The Zoning Code dictates the number of spaces and their breakdown between short term and long term spaces. Short term spaces for use by visitors and patrons of commercial and industrial uses. Bicycle racks are used to satisfy this need. Long term bicycle parking spaces are for use by employees of commercial and industrial uses. Fully enclosed lockers are required. The number of bicycle parking spaces varies between 5% and 15% of the required auto spaces depending on the zone. With the short term spaces varying between a minimum of 50% and 10% of these bicycle parking spaces. Long term bicycle spaces are required a minimum of 40% to 80% of the required bicycle parking spaces. The parking and bicycle parking code is provided in Appendix B.

Planned Bicycle Facilities

The City's 2007 *Bicycle Transportation Plan* shows existing and planned bicycle facilities. Numerous bikeways exist in the study area, and more are planned. Planned bicycle facilities in the study area include:

- A Class I bike path along Tank Farm Road from Santa Fe Road to Tank Farm Creek
- A Class I bike path connecting Tank Farm Road to Buckley Road along Tank Farm Creek
- A Class I bike path along San Luis Creek south of Tank Farm Road from Santa Fe Road to Esperanza Lane
- A Class I bike path along Acacia Creek from Tank Farm Road to the Damon Garcia sports fields near Industrial Way

- Class I bike path and Class II bike lanes along the Prado Road extension.
- Class II bike lanes on the future Unocal Collector Road between Tank Farm Road and the future Prado Road extension
- Class II bike lanes on Santa Fe Road from Buckley Road to Prado Road

Key maps from the Bicycle Transportation Plan are provided in Appendix B.

Project Bicycle Improvements

The project proposes all of the above improvements, with the following exceptions:

- Instead of a Class I bike path on the south side of Tank Farm Road, the project would construct a single 20-foot multiuse path on the north side of Tank Farm Road.
- The project would not construct the Class I bike path connecting Tank Farm Road to Buckley Road along Tank Farm Creek.
- The project would not construct the Unocal Collector Road and associated bike lanes.
- Some of the Class I bike path alignments shown in the *Bicycle Transportation Plan* would be modified. For example, the path shown crossing the project site from north to south is proposed to go around the northwestern perimeter of the project site. Similarly, the bike path along San Luis Creek follows the project boundary west rather than following the creek as planned.

These inconsistencies with the City's Bike Plan are a potentially significant impact.

<u>Pedestrian Analysis</u>

The City's Circulation Element and the Airport Area Specific Plan emphasize the importance of a walkable community. The proposed project would increase the demand for pedestrian travel, both within the site and between the site and external land uses.

While detailed site plans are not available at this time, the preliminary plans provide typical public street cross-sections illustrating the planned pedestrian facilities. The project would provide sidewalks along both sides of all public roads on the site, including Roads A, B, and C, Santa Fe Road, and Tank Farm Road. Most sidewalks would be separated from the roadway by a planter area and, in some cases, a parking lane.

In addition to sidewalks, the Class I bike paths would also serve pedestrians.

Construction Analysis

SUMMARY

The proposed truck routes should be modified to avoid use of the Los Osos Valley Road interchange. Traffic generated during the remediation and construction phases of the project is much lower than the traffic generated by the proposed uses on the site, and would therefore not result in impacts beyond those identified in the with project analysis scenarios. The project shall prepare a construction traffic management plan to minimize any potential transportation impacts.

PROPOSED TRUCK ROUTES

Figure 5 of the City's Circulation Element shows the City's truck routes, which include Tank Farm Road, South Higuera Street, Prado Road, and Highway 101.

The proposed truck route for transporting materials to and from the project site uses Tank Farm Road to South Higuera Street, then Highway 101. Access to and from destinations to the south on Highway 101 are proposed via either the Los Osos Valley Road interchange or the South Higuera Street interchange. Access to and from destinations to the north on Highway 101 are proposed via either the Los Osos Valley Road interchange or the Prado Road on-ramp. Site access would be provided via a single access point on Tank Farm Road, controlled by a temporary traffic signal.

Route Recommendations

Signage at the Los Osos Valley Road/South Higuera Street intersection indicates that trucks should continue south on South Higuera Street instead of turning on Los Osos Valley Road. Based on this posted signage and the potential for the project's construction phases to coincide with reconstruction of the Los Osos Valley Road interchange, it is recommended that all project-related truck traffic avoid the Los Osos Valley Road interchange.

Trucks with destinations to the south should use the on- and off-ramps at the South Higuera Street interchange, while trucks destined to the north should use the Prado Road on-ramp and the South Higuera off-ramp.

REMEDIATION AND CONSTRUCTION TRAFFIC ESTIMATES

Truck traffic would be generated during remediation, construction, and active use of the occupied land uses. This section evaluates the traffic generated by the remediation and construction phases of the project.

Remediation Traffic

The remediation phase of the proposed project would generate traffic from employees and contractors accessing the site, trucks hauling hydrocarbon-affected soils, equipment delivery, and hauling of other materials.

Remediation activity is expected to involve between 29-45 employees, plus extra truck drivers as needed. Approximately 196,250 cubic yards of materials (including a 25% contingency factor) are expected to be exported from the site, and 82,000 cubic yards of fill would be imported. Assuming a typical capacity of 15 cubic yards per truck, these correspond to 13,083 round trips for materials export and 5,467 round trips for materials import. These trips are expected to occur over a two-year period.

The highest intensity of truck traffic is expected to occur during months 21 and 22 of the remediation process, when activities will focus on Reservoirs 5 and 7 and the North Marsh area. Approximately 177 heavy truck round trips are expected per day at this time. Approximately 90 auto round trips are expected for employees on the site during this time.

Assuming a heavy truck is equivalent to 1.5 passenger cars, these volumes correspond to 356 daily passenger car trips (177*1.5 + 90). Given that these trips would be spread throughout the day, remediation trip generation is significantly lower than the trip generation associated with the project.

Redevelopment Construction Traffic

Development of the site would occur once the remediation process is complete. Construction traffic would be generated by the delivery of equipment and materials and construction employees accessing the site.

An estimated 1,624 total truck round trips would be required for the delivery of construction materials and equipment, corresponding to a maximum of 110 daily truck round trips. Approximately 150 employees would work on site, resulting in up to 150 daily round trips. This is less than the traffic projected for both the remediation phase and trip generation associated with the project, so is not expected to result in additional impacts.

Remediation and Construction Recommendations

The traffic associated with the remediation and construction of the project could be a potentially significant impact. Before issuance of building permits, the applicant shall develop a construction traffic management plan for review and approval by the Public Works department. The plan shall include at least the following items:

- Identification of haul routes for materials hauling and equipment deliveries.
- Monitoring program for street surface conditions so that damage or debris resulting from construction or remediation of the project can be identified and corrected by the applicant.
- A traffic control plan showing proposed temporary traffic control measures, including lane closure procedures and accommodation for pedestrians and cyclists.
- A scheduling plan showing hours of operation to minimize traffic congestion during peak hours and special events.

The preparation of this plan would reduce construction impacts to less-than-significant levels.

Alternatives

Eight project alternatives have evaluated. The alternatives include:

- No Action Alternative
- No Project Alternative
- Excavation Alternative
- Airport Area Specific Plan Development Alternative
- County General Plan Development Alternative
- Tank Farm Road/Santa Fe Roundabout Alternative
- Prado Road Alternative

The trip generation and evaluation of these alternatives is provided in Appendix F.

Significant Traffic Impacts

Intersection Impacts

Existing + Project

The following potential significant intersections have been identified in the existing + project traffic conditions:

Broad Street and Tank Farm Road – AM & PM Peak Hour

The following potential significant operations impacts where left-turn moves would exceed the lane storage length have been identified:

South Higuera Street and Prado Road – PM Peak Hour

South Higuera Street and Tank Farm Road – AM & PM Peak Hour

Buildout + Project

The following potential significant intersections have been identified in the future with project traffic conditions:

Prado Road and South Higuera Street – AM & PM Peak Hour

Los Osos Valley Road and Southbound US 101 On/Off Ramps – AM & PM Peak Hour

South Higuera Street and Tank Farm Road – AM & PM Peak Hour

South Higuera Street and Vachell Lane – AM & PM Peak Hour

Los Osos Valley Road and South Higuera Street – PM Peak Hour

Tank Farm Road and Santa Fe Road – PM Peak Hour

Broad Street and Tank Farm Road – AM & PM Peak Hour

Broad Street and Buckley Road – PM Peak Hour

Prado Road and Broad Street – AM Peak Hour

Improvements have been identified to reduce these significant impacts. Area wide improvements are recommended to reduce reliance on single occupant vehicles by project. The area wide improvements identified below will encourage project owners, tenants, employees and visitors as well and the community in general to seek alternative modes of transportation. While these improvements have been recommended to reduce project trips they are difficult to quantify. As such, they are recommended to address growth created by the project and reduce vehicle trips.

Area Wide Improvements

Transit Services

The level of transit trips shown in Table 17 may burden the planned cross-town route if it provides one bus every 60 minutes. As noted in the Airport Area Specific Plan, it may be necessary to modify planned transit service to accommodate the demand.

The project developer shall work with the City and SLO Transit to provide adequate transit service and plan for the provision bus stops and amenities including bus bays, shelters, and benches. Direct pedestrian and bicycle connections shall be provided to bus stops.

Bicycle and Pedestrian Facilities

The proposed project will have a potentially significant impact on pedestrian and bicycle facilities. The proposed bicycle network is inconsistent with parts of the City's *Bicycle Transportation Plan*, and would require changes to the Plan or proposed project to achieve consistency. The proposed project is consistent with the Airport Area Specific Plan's design standards requiring sidewalks on both sides of the street for all classifications of streets within developed areas.

Bicycle and pedestrian circulation on the site will need to be reviewed when a detailed site plan is developed. Similarly, the new internal site intersections and modified public street intersections shall meet the City's standards for accommodation of bicycles and pedestrians.

Intersection Improvements

Existing + Project

The project was evaluated for existing conditions with the project added. This did not include potential future improvements such as freeway ramp changes, intersection improvements by others or the extension of Prado Road. One intersection has been identified with potential significant traffic impacts with the project. Three intersections have been identified with potential operational intersection impacts.

These impacts can be reduced with the project mitigation as noted below.

Broad Street and Tank Farm Road – The addition of project traffic during the AM and PM peak hours would reduce operations from LOS D to LOS E. The design and installation of a second eastbound left turn lane would improve operations to a LOS D during both time periods. This improvement is currently being implemented by the City of San Luis Obispo. As of November 2012, this improvement is under construction. With implementation of the second eastbound left turn lane the intersection is no longer impacted and the intersection is no longer significantly impacted.

South Higuera Street and Prado Road - The addition of project traffic would degrade operations and create northbound left turn queues during the PM Peak Hours which exceed the current storage length. No mitigation has been identified.

Higuera Street and Tank Farm Road – The addition of project traffic would degrade operations and create southbound and westbound left turn queues during the AM and PM Peak Hours which exceed the current storage length. No mitigation has been identified.

South Higuera Street and Vachell Lane – The addition of project traffic would degrade operations and create westbound left turn delays during the AM and PM Peak Hours. This intersection is currently not signalized and is not anticipated to meet signal warrants with existing + project traffic volumes. An alternative measure would be to restrict left turns from Vachell Lane to South Higuera Street. This improvement would require the installation of a left turn pocket and u-turn phase at the intersection of Suburban Road and South Higuera Street. The extension of Buckley Road to South Higuera Street would also provide an alternative route for vehicles now turning left from Vachell Lane.

The effectiveness of the mitigation measures is displayed in Table 16.

Table 16

Existing + Project Delay Summary
With Mitigation

No.	Intersection	Peak Hour	Existing DELAY	Existing LOS	Existing + Project DELAY	Existing + Project LOS	Existing+Project with Mitigation DELAY	Existing+Project with Mitigation LOS	Existing+Project with Mitigation Change	Significant Impact?
3.	Madonna Road &	AM	29.5	C	29.5	C	29.5	C	0.0	NO
	SB US 101 On/Off Ramps	PM	36.4	D	36.5	D	34.5	C	-1.9	NO
14.	Broad Street (SR 227) &	AM	37.1	D	59.2	E	46.0	D	8.9	NO
	Tank Farm Road	PM	43.5	D	70.9	E	43.1	D	-0.4	NO

Future with Cumulative +Project

The full buildout project was evaluated to determine where significant traffic impacts may occur. These impacts can be reduced with the project mitigation as noted below. The impacts at the intersections of Higuera Street and Tank Farm Road, Broad Street and Orcutt Road and Santa Fe Road and Tank Farm Road would be reduced to a level of insignificance with mitigation. The intersections of South Higuera Street and Prado Road, Los Osos Valley Road and US 101 Southbound Ramps/Calle Joaquin, South Higuera Street and Tank Farm Road, South Higuera Street and Los Osos Valley Road, Broad Street, Tank Farm Road and Broad Street and Buckley Road, and Prado Road and Broad Street would remain significant unavoidable impacts until right-of-way requirements are established and proposed improvements are implemented.

Improvement measures are described as follows:

South Higuera Street and Prado Road – The addition of Project traffic creates significant traffic impacts during the a.m. and p.m. Peak Hours. In order to achieve acceptable levels of service, all four approaches would need to be widened to include dual left turn lanes, two through lanes, and a right turn lane on each approach. These improvements would improve conditions to remove the significant impact during the a.m. and p.m. Peak Hours. The improvements would require additional right-of-way not currently under the jurisdiction

of the City and potential relocation of existing residences in the property on the northeast corner of the intersection. This significant impact at South Higuera Street and Prado Road would remain significant and unavoidable until the right-of-way is obtained, any secondary impacts are mitigated, and the project is completed.

Los Osos Valley Road and US 101 Southbound Ramps/Calle Joaquin – The addition of project traffic creates significant traffic impacts during the AM and PM Peak Hours. The design and installation of a dedicated northbound left turn lane added to the future improvement on Calle Joaquin would reduce the significant impact to a level of insignificance.

South Higuera Street and Tank Farm Road – The addition of project traffic creates significant traffic impacts during the AM and PM Peak Hours. The design and installation of a second westbound right turn lane and overlap phase and a second southbound left turn would reduce the severity of the impact but not to a level of insignificance. These improvements would require additional right-of-way not currently under the jurisdiction of the City. Therefore, the impact at this intersection would remain significant and unavoidable until the right-of-way is obtained.

South Higuera Street and Vachell Lane – The addition of project traffic creates significant traffic impacts during the AM and PM Peak Hours. Restricting left turns from Vachell Lane to South Higuera Street would reduce the impact to a level of insignificance.

South Higuera Street and Los Osos Valley Road- The addition of project traffic creates a significant traffic impact during the PM Peak Hour. The design and installation of a second southbound through lane, second southbound right-turn lane, and an eastbound right turn overlap phase concurrent with the northbound left turn would reduce this impact to a level of insignificance. However, the improvements would require additional right-of-way not currently under the jurisdiction of the City. This significant impact would remain significant and unavoidable until the right-of-way is obtained, any secondary impacts are mitigated, and the project is completed.

Santa Fe Road and Tank Farm Road - The addition of project traffic creates a significant traffic impact during the PM Peak Hour. The design and installation of a two-lane roundabout would reduce this impact to a level of insignificance.

Broad Street and Tank Farm Road - The addition of project traffic creates significant traffic impacts during the AM and PM Peak Hours. The design and installation of a northbound right turn lane and design and installation of a southbound right turn overlap phase concurrent with the eastbound left would reduce this impact to a level of insignificance. However, the improvement may require additional right-of-way not currently under the jurisdiction of the City. The AASP impact fee program should be amended to include this project. This significant impact would remain significant and unavoidable until the right-of-way is obtained, any secondary impacts are mitigated, and the project is completed.

Broad Street and Buckley Road - The addition of project traffic creates a significant traffic impact during the PM Peak Hour. The design and installation of a second northbound left turn lane, and a second southbound through lane would reduce this impact to a level of insignificance. The improvements would require additional right-of-way not currently under the jurisdiction of the City. This significant impact would remain significant and unavoidable until the right-of-way is obtained, any secondary impacts are mitigated, and the project is completed.

Broad Street/Prado Road – The addition of project traffic creates a significant traffic impact during the AM peak hour. The design and installation of a second northbound left-turn lane would reduce this impact to a level of insignificance. However, the improvement may require additional right-of-way not currently under the jurisdiction of the City. This significant impact would remain significant and unavoidable until the right-of-way is obtained.

The effectiveness of the mitigation measures is displayed in Table 17.

Table 17
Future Buildout + Project Delay Summary
With Mitigation

No.	Intersection	Peak Hour	Future (2035) Buildout Without Project DELAY	LOS	Future Buildout With Project DELAY	LOS	Future Buildout WITH PROJECT WITH MITIGATION DELAY	LOS	Change	Residual Impact?
5.	Prado Road &	AM	63.9	E	94.8	F	46.8	D	-17.1	NO
	S Higuera Street	PM	92.7	F	117.0	F	54.8	D	-37.9	NO
6.	Los Osos Valley Road &	AM	51.7	D	59.8	E	35.4	C	-16.3	NO
	SB US 101 On/Off Ramps	PM	52.7	D	59.4	E	50.1	D	-2.6	NO
7.	S Higuera Street &	AM	78.2	E	110.1	F	47.6	D	-30.6	NO
	Tank Farm Road	PM	93.1	F	126.2	F	64.4	E	-28.7	**YES**
8.	S Higuera Street &	AM	459.0	F	414.0	F	1.7	A	-457.3	NO
	Vachell Lane	PM	677.3	F	623.4	E	1.8	A	-675.5	NO
10.	Los Osos Valley Road &	AM	25.8	C	40.3	D	31.7	C	5.9	NO
	S Higuera Road	PM	118.0	F	152.1	F	54.6	D	-63.4	NO
13.	Tank Farm Road &	AM	12.5	B	20.3	C	12.5	B	0.0	NO
	Santa Fe Road*	PM	22.6	C	86.3	F	22.6	C	0.0	NO
14.	Broad Street (SR 227) &	AM	53.2	D	86.5	F	50.8	D	-2.4	NO
	Tank Farm Road	PM	57.1	E	63.4	E	46.7	D	-10.4	NO
17.	Broad Street (SR 227) &	AM	31.5	C	40.4	D	9.5	A	-22.0	NO
	Buckley Road	PM	259.9	F	286.6	F	46.8	D	-213.1	NO
18.	Broad Street &	AM	51.8	D	61.4	E	32.2	C	-19.6	NO
	Prado Road NEW	PM	28.8	C	32.4	C	32.4	C	3.6	NO

The intersections which are significantly impact, the time periods that they are significantly impacted, and their status after feasible mitigation is summarized below in Table 18 for both the Existing + Project and Buildout with Project scenarios.

Table 18
Mitigation Effectiveness Summary

INTERSECTION	TIME PERIOD	IMPACT STATUS	NOTES
EXISTING + PROJECT			
Intersection Impacts:			
Broad Street/Tank Farm Road	AM & PM Peak	Mitigated	Improvement currently out to bid for construction by City
Operational Issues:			
South Higuera/Prado Road	PM Peak	Significant & Unavoidable	Right-of-way required
South Higuera/Tank Farm Road	AM & PM Peak	Significant & Unavoidable	Right-of-way required
Higuera Street/Vachell Lane	AM & PM Peak	Mitigated	
CUMULATIVE + PROJECT			
Higurea Street/Prado Road	AM & PM Peak	Significant & Unavoidable	Right-of-way required
Los Osos Valley Rd./US 101 SB Ramps/Calle Joaquin	AM & PM Peak	Significant & Unavoidable	Right-of-way required
Higuera Street/Tank Farm Road	AM & PM Peak	Significant & Unavoidable	Conflict with City Policy
Higuera Street/Vachell Lane	AM & PM Peak	Mitigated	Two mitigation options
Higuera St./Los Osos Valley Rd.	PM Peak	Significant & Unavoidable	Right-of-way required
Santa Fe Road/Tank Farm Road	PM Peak	Mitigated	
Broad Street/Tank Farm Road	AM & PM Peak	Significant & Unavoidable	Right-of-way required
Broad Street/Buckley Road	PM Peak	Significant & Unavoidable	Right-of-way required
Broad Street/Prado Road	AM Peak	Significant & Unavoidable	Right-of-way required

FREEWAYS

The project would worsen unacceptable freeway operations, which is a significant impact. No feasible mitigation measures have been identified. The impact remains significant and unavoidable.

PARKING

The project will provide code required parking or provide a shared parking analysis to justify reduced parking. No parking impacts are anticipated with the project.

ACCESS IMPROVEMENTS

- Tank Farm Road/Santa Fe Road: There are two potential improvements to reduce these queues.
  - The construction of a multi-lane roundabout. This improvement is consistent with the intersection control in the Airport Area Specific Plan (AASP).
  - The addition of a second eastbound left turn lane. This improvement is inconsistent with the AASP.
- Santa Fe Road is proposed to be a four-lane roadway with turn pockets at intersections. A two-lane configuration with turn pockets would provide adequate capacity for vehicular traffic, while improving conditions for pedestrians and cyclists. It is recommended that Santa Fe Road be designed as a two-lane roadway with turn pockets.
- Tank Farm Road/Road B: A right turn pocket should be provided for decelerating westbound traffic entering the project site and a departure acceleration lane on Tank Farm Road west of Road B for right turns out.
- Tank Farm Road/Western Parcel Driveways: Two driveways are proposed on Tank Farm Road at the Western Parcel. The eastern driveway would be a right in/right out only access point and the western driveway would permit all turning movements. Given the proximity of adjacent driveways and the amount and speed of traffic on Tank Farm Road, it is recommended that access to the Western Parcel be consolidated with adjacent parcels to minimize the potential for vehicular conflicts. It is recommended that this optimal design be initiated by the developer. However, if negotiations are not mutually agreeable, an alternative would be that the access be designed to provide a dedicate left turn lane, right turn lane, departure acceleration lane and traffic signal evaluation 1 year and 5 years after final certificates of occupancy of the westerly parcels. Developer to design and install signal if found warranted by City.

ON-SITE CIRCULATION

The adequacy of on-site circulation should be reviewed when a plan showing all driveways and parking lots has been prepared. The plans should be submitted to the City of San Luis Obispo for review and approval. All plans should meet the City's engineering standards with bicycle and pedestrian facilities designed to minimize the potential for conflicts with vehicles, and to provide direct and convenient access to building entrances. Intersections between Class I bike paths and roadways on the project site should be designed with adequate sight distance and signage to ensure safe and comfortable mobility.

The on-site pedestrian and bicycle network shall be complete and continuous, and provide direct and convenient access between individual buildings on the project site and between the project site and nearby land uses.

CONSTRUCTION

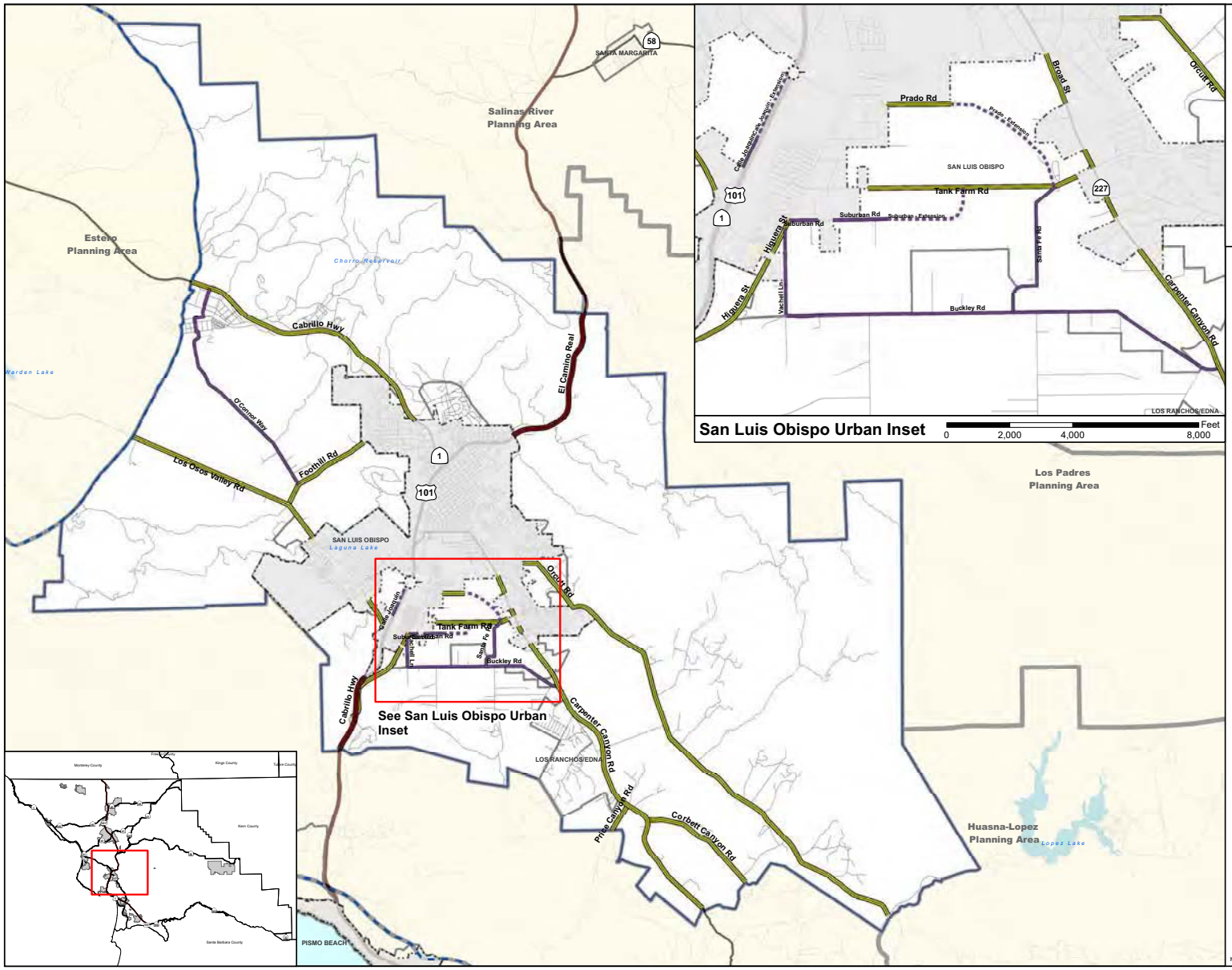
The traffic associated with the remediation and construction of the project could be a potentially significant impact. Before issuance of building permits, the applicant shall develop a construction traffic management plan for review and approval by the Public Works department. The plan shall include at least the following items:

- Identification of haul routes for materials hauling and equipment deliveries.
- Monitoring program for street surface conditions so that damage or debris resulting from construction or remediation of the project can be identified and corrected by the applicant.
- A traffic control plan showing proposed temporary traffic control measures, including lane closure procedures and accommodation for pedestrians and cyclists.
- A scheduling plan showing hours of operation to minimize traffic congestion during peak hours and special events.

The preparation of this plan would reduce construction impacts to less-than-significant levels.

APPENDIX A

COUNTY OF SAN LUIS OBISPO CIRCULATION MAP



Geographic Technology & Design
DEPARTMENT OF PLANNING & BUILDING

0 5,000 10,000 20,000
Feet

SAN LUIS OBISPO PLANNING AREA

CIRCULATION MAP

LEGEND

- Major Lakes
- Coastal Zone
- City Limits
- URL/VRL

San Luis Obispo Circulation Classification

- Principal Arterial
- Arterial
- Arterial - Proposed
- Collector
- Collector - Proposed
- Interchange - Proposed

Principal Arterials

Cabrillo - Hwy 101

Arterials

Broad
CA Hwy 1
Carpenter Canyon - Hwy 227
Corbett Canyon
Foothill
Higuera
Los Osos Valley
Orcutt
Prado
Price Canyon
Tank Farm

Collectors

Buckley
Calle Joaquin
O'Connor
Santa Fe
Suburban
Vachell

Collectors - Proposed

Calle Joaquin - Extension
Prado - Extension
Suburban - Extension

NOTE: Designations are not shown within city corporate boundaries

March 7, 2008

APPENDIX B

CITY OF SAN LUIS OBISPO BICYCLE PLANS

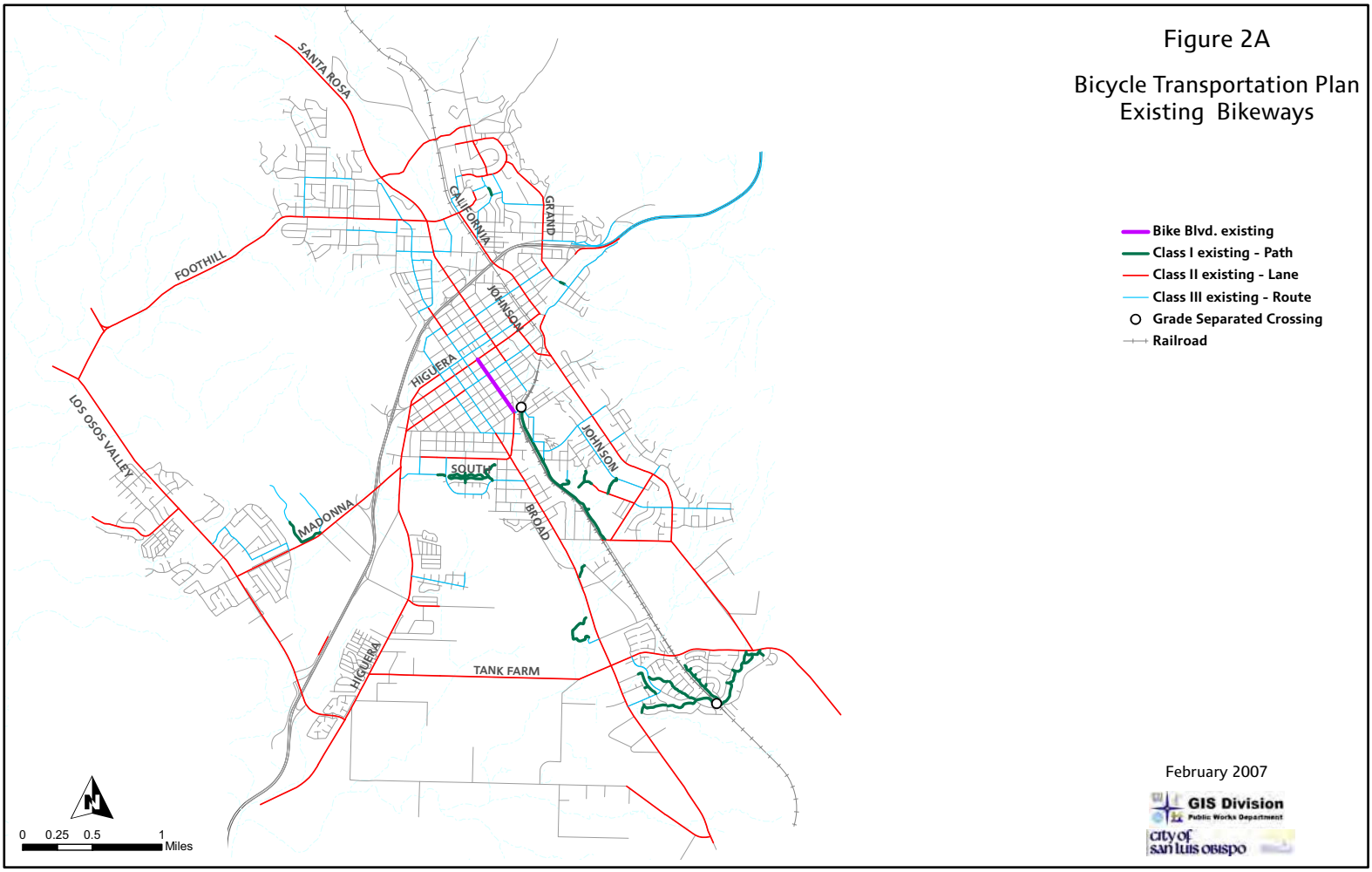


Figure 2A

Bicycle Transportation Plan
Existing Bikeways

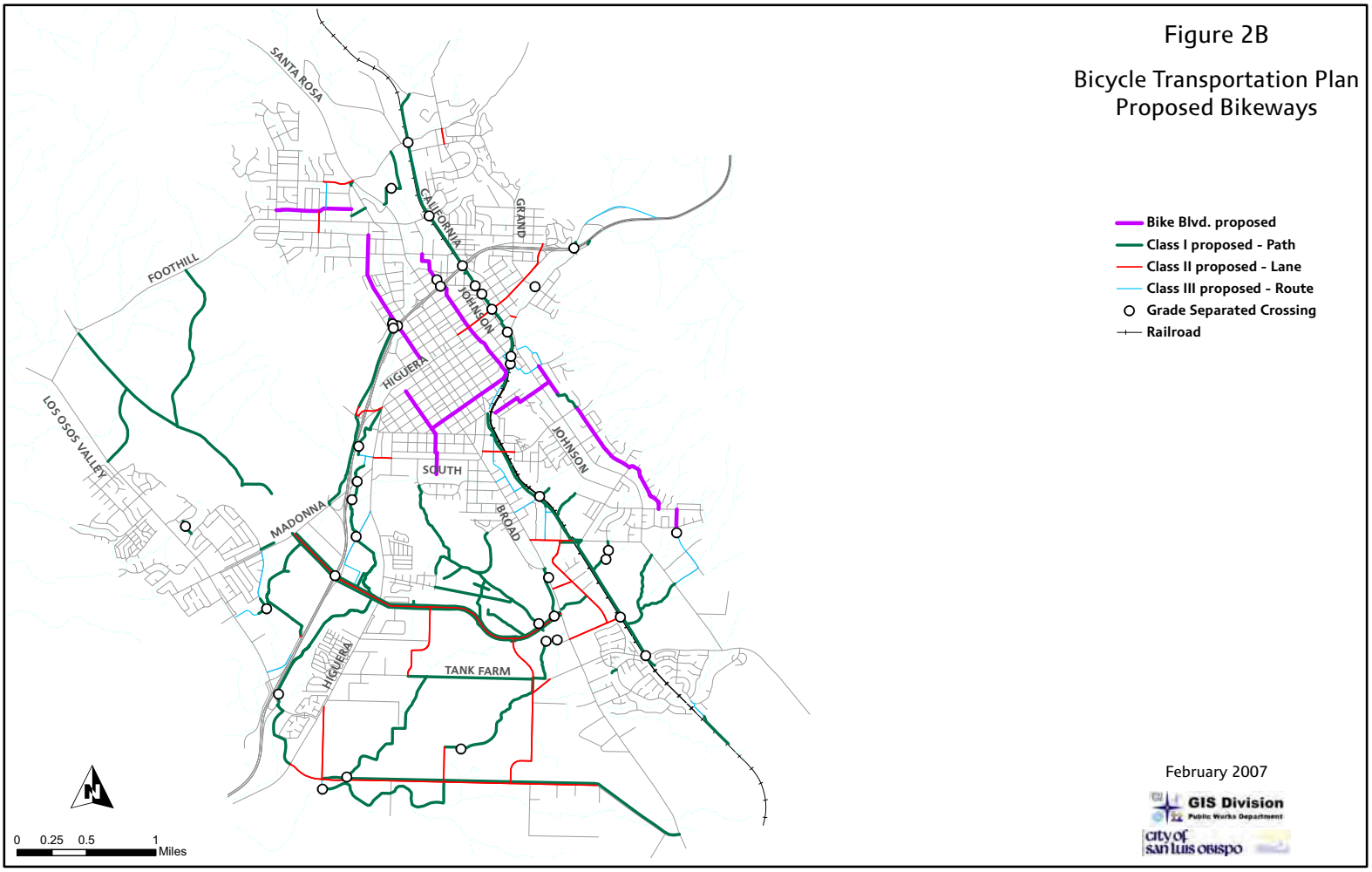


Figure 2B
Bicycle Transportation Plan
Proposed Bikeways
Bike Blvd. proposed
Class I proposed - Path
Class II proposed - Lane
Class III proposed - Route
Grade Separated Crossing
Railroad
SANTA ROSA
CALIFORNIA
GRAND
FOOTHILL
JOHNSON
HIGUERA
LOS OSOS VALLEY
SOUTH
MADONNA
BROAD
TANK FARM
0 0.25 0.5 1 Miles
February 2007
GIS Division
Public Works Department
city of
san luis obispo

APPENDIX C

TRANSIT ROUTES

CITY OF SAN LUIS OBISPO

Transit Map

FALL 2008

- 1 Broad, Johnson/Highland
- 2 South Higuera/Suburban
- 3 Broad, Johnson/Marigold
- 4 Madonna/Laguna Lake/Cal Poly
- 5 Cal Poly/Laguna Lake/Madonna
- 6a Cal Poly/Highland
- 6b Cal Poly/Downtown
- T Downtown Trolley

Downtown Trolley

The Trolley loops from North Monterey Street to the Downtown area every 15-20 minutes.

Thursdays	3:30pm – 9:00pm
Fridays & Saturdays	Noon – 9:00pm
Sundays	Noon – 5:30pm

The Downtown Trolley runs the Sunday schedule on

- New Year's Eve
- New Year's Day
- Martin Luther King Day
- President's Day
- Labor Day
- Memorial Day
- Independence Day
- Thanksgiving Friday
- Thanksgiving Saturday

No Trolley service on Thanksgiving or Christmas Day.

December's reduced schedule will be displayed in the Trolley beginning in November.

For SLO Transit schedule information, call (805) 541-2877.

For RTA transfer information, call (805) 541-2228.

route indicator
direction of travel
transfer zone
regular stop
time stop
stop with electronic arrival-time sign

- playground
- train station
- bus station
- airport
- hospital
- golf course
- post office
- school
- trailhead
- parking structure
- mobile home park
- fire station
- university
- police station

- schools
- parks
- open space

KILOMETERS ½ 1

MILES ¼ ½ ¾ 1

080916 © Copyright 2008 City of San Luis Obispo. All rights reserved.

San Luis Obispo Transit

www.slocity.org/visit/gsp

City of San Luis Obispo

Transit Map

June 2009

Bus Stop Locations

Bold represents time stops
e represents Electronic Time

Ubicaciones de Paradas de Autobuses
Las letras gruesas representan las horas de paradas.
"e" representa la hora electrónica

Arrival Signs
Señales de llegada

If you work in downtown SLO, to see if you are eligible for a **free bus pass**, call **805.781.7531.**

Route 1
Route 1 Serves the following bus stops:
(Transfer Options)

Downtown Transit Center (2, 3, 4, 5, 6b) e
Nipomo at Higuera
Marsh at Broad
Broad at Islay
Broad at Funston (4, 5)
Broad at Caudill
Broad at The Brickyard
Orcutt at Laurel Creek
Orcutt at Laurel (3)
Orcutt at Johnson
Johnson at Gregory
Southwood at Woodside
Southwood at Laurel
Laurel at Laurel Lane Market
Augusta at Laurel (3)
Augusta at Sierra
Augusta at Bishop
Johnson at Bishop
Johnson at Lizzie
Johnson at Marsh
Monterey at Toro
Downtown Transit Center (2, 3, 4, 5, 6b) e
Santa Rosa at Murray
Foothill at University Square (5, 6a) e
Foothill at Ferrini
Foothill at Cuesta
Highland at Cuesta
Highland at Jeffrey
Patricia at Highland
Patricia at Foothill (5)
Foothill at La Entrada (4)
Foothill at Cuesta
Foothill at Ferrini
Foothill at Chorro (4, 6a)
Foothill at Casa (4)
Casa at Deseret
Murray at Casa
Santa Rosa at Murray
Downtown Transit Center (2, 3, 4, 5, 6b) e

Route 2
Route 2 Serves the following bus stops:
(Transfer Options)

Downtown Transit Center (1, 3, 4, 5, 6b) e
Nipomo at Higuera
Nipomo at Marsh
Pismo at Carmel
Pismo at Archer
Higuera at South (4, 5)
Higuera at Bridge
Prado Day Center**
Higuera at Prado
Higuera at Granada
Higuera at Silver City
Tank Farm at Higuera
Higuera at Suburban
Higuera at Hind
Higuera at Prado (Soc. Serv.)
Higuera at Margarita (DMV)*
Higuera at Chumash Trailer
Higuera at Elks
Higuera at South (4, 5)
Marsh at Archer
Marsh at Broad
Marsh at Chorro
Marsh at Osos
Santa Rosa at Higuera
Downtown Transit Center (1, 3, 4, 5, 6b) e

* Route 2 service in evening hours only
** Route 2 does not serve in evening hours

Watch for Cal-Poly Route and Stop Changes in September 2009

Route 3
Route 3 Serves the following bus stops:
(Transfer Options)

Downtown Transit Center (1, 2, 4, 5, 6b) e
Marsh at Johnson
Johnson at Lizzie
Johnson at Bishop
Johnson at Sydney
Johnson at Lucille
Laurel at Augusta (1)
Laurel at Southwood
Laurel at Camden
Orcutt at Laurel (1)
Orcutt at Johnson
Tank Farm at Wavertree
Tank Farm at Hollyhock
Tank Farm at Poinsettia
Broad at Marigold Center
Broad at Hopkins
Broad at Rockview
Broad at the Brickyard
Broad at Humbert
Broad at Santa Barbara (4, 5)
Chorro at Upham
Chorro at Islay
Chorro at Marsh
Chorro at Monterey
Downtown Transit Center (1, 2, 4, 5, 6b) e

Route 4
Route 4 Serves the following bus stops:
(Transfer Options)

Downtown Transit Center (1, 2, 3, 5, 6b) e
Santa Rosa at Marsh
Santa Rosa at Buchon
Santa Barbara at Church
Santa Barbara at High
South at Broad (1, 3)
South at King
South at Parker (2) (Greyhound) e
Madonna Rd. at Madonna Plaza
Promenade
Madonna at Oceanaire
LOVR at Madonna
LOVR at Irish Hills
LOVR at Auto Park Way
LOVR at Laguna Village
LOVR at Oceanaire
LOVR at Laguna Lane
Perfumo at Del Rio
LOVR at Descanso
LOVR at Diablo
LOVR at Valle Vista
Foothill at Blarney
La Entrada at Del Norte
Ramona at Tassajara
Ramona at Palomar e
Foothill at Chorro (1)
Foothill at Casa
Kennedy Library
Performing Arts Center
Grand at McCollum
Grand at Wilson
Mill at Grand
Mill at California
Mill at Johnson
Mill at Santa Rosa
Downtown Transit Center (1, 2, 3, 6b) e

Route 5
Route 5 Serves the following bus stops:
(Transfer Options)

Downtown Transit Center (1, 2, 3, 6b) e
Mill at Santa Rosa
Mill at Johnson
Mill at California
Mill at Grand
Grand at Abbott
Grand at McCollum
Performing Arts Center
Kennedy Library
Cal Poly Mustang Stadium
Foothill at Casa
Foothill at University Square (1) e
Foothill at Ferrini
Foothill at Cuesta
Foothill at Rosita
Foothill at Blarney
LOVR at Valle Vista
LOVR at Diablo
Perfumo at Del Rio
Descanso at Del Rio
Descanso at LOVR
LOVR at Laguna Lane
LOVR at Oceanaire
LOVR at Laguna Village
LOVR at Madonna
LOVR at Irish Hills
LOVR at Auto Park Way
Madonna at Oceanaire
Promenade
Madonna Road at Madonna Plaza
South at Parker (Greyhound) (2) e
South at Exposition
South at King
South at Meadow Park (1, 3)
Santa Barbara at High
Santa Barbara at Church
Amtrack Station e
Santa Rosa at Leff
Santa Rosa at Buchon
Santa Rosa at Higuera
Downtown Transit Center (1, 2, 3, 6b) e

Route 6a
Route 6a Serves the following bus stops:
(Transfer Options)

Kennedy Library
Highland at Mt. Bishop
Highland at Cuesta
Highland at Jeffrey
Patricia at Highland
Patricia at Foothill (5)
La Entrada at Del Norte
Ramona at Tassajara
Foothill at Chorro (1)
Casa at Murray
Casa at Deseret
Kennedy Library

Route 6b
Route 6b Serves the following bus stops:
(Transfer Options)

Kennedy Library
Performing Arts Center
Grand at McCollum
Grand at Wilson
Mill at Park
Mill at California
Mill at Johnson
Mill at Santa Rosa
Downtown Transit Center (1, 2, 3, 4, 5) e
Mill at Santa Rosa
Mill at Johnson
Mill at California
California at Phillips
California at Taft
Kennedy Library

TARIFAS

Regular	$1.25
3ra edad (62+ años), discapacitados	$0.60
Titular de la tarjeta de Medicare	$0.60
Niños – menores de 5 años con adulto pagando (límite 2 niños) y VIP 80+	Gratis
Trolley	$0.25

Se requiere la tarifa exacta. Los conductores no dan cambio. Todos los servicios y tarifas están sujetos a cambios sin aviso. *Se requiere identificación válida para calificar para el descuento de tarifa de 3ra edad y de discapacitados. Los pasajeros deben presentar identificación adecuada al abordar para recibir el descuento de tarifa. Se aceptan las tarjetas de Medicare como una forma de identificación para recibir el descuento. Años Descuento edad será de 63 + a partir de julio 1, 2010

TRANSBORDOS

De SLO Transit	Gratis
Del DowntownTrolley	Tarifa completa

Se les requiere a los pasajeros que pidan por transbordos al abordar el autobús. Los transbordos son válidos por una hora y para la misma dirección para completar su viaje.

PASES

(Pases de 31 días)

Pase regular	$37.00
Pase de estudiante (K-12)	$25.00
Pase de 3ra edad/discapacitados	$12.50
* Pase de 7 días	$14.00
* Pase de 5 días	$ 10.00
* Pase de 3 días	$ 6.00
* Pase de 1 día	$ 3.00
* Pase de 1 día regionales	$ 4.50

SLO Transit no se responsabiliza por pases extraviados, robados ó dañados. SLO Transit acepta el pase de Tránsito Regional.
*Se venden en el autobús – se requiere el cambio exacto

FARES

Regular	$1.25
Senior (62+), Disabled,	$0.60
Medicare Card Holders*	$0.60
Children & VIP Pass 80+ under 5 years with fare paying adult (maximum of 2 children)	Free
Trolley	$0.25

***Exact fare required. Drivers do not carry or make change.** All services and fares are subject to change without notice.*

*Valid identification is requested to qualify for senior and disabled discounted fare. Passengers must present proper identification when boarding to receive discount fares. Medicare cards are an acceptable form of identification to receive discount fares. Senior Discount age will be 63+ effective July 1st, 2010

TRANSFERS

From SLO Transit	Free
From Downtown Trolley	Full Fare

Passengers are requested to ask for transfers when boarding. Transfers are valid for one hour and for the same direction to complete your trip.

PASSES

31 Day Regular	$37.00
31 Day Student K-12th Grade	$25.00
31 Day Senior/Disabled	$12.50
*7 Day Pass	$14.00
*5 Day Pass	$10.00
*3 Day Pass	$ 6.00
*1 Day Pass	$ 3.00
*Regional Day Pass	$ 4.50

SLO Transit is not responsible for lost, stolen, or damaged passes. **SLO Transit honors the Regional Transit Pass and the Regional Day Pass.**

*** Sold on bus - exact change required**

Time Stop Schedule *Horario de Horas de Paradas*

Bold represents P.M. times *Letras gruesas representan horas P.M.*

San Luis Obispo Transit is available on www.Google.com/transit

San Luis Obispo Transit estará disponible en www.Google.com/transit

1 Broad/Johnson/University Square — Weekdays

Downtown Transit Ctr Depart	Broad/Funston	Orcutt/Laurel	Johnson Lizzie	Downtown Transit Ctr	Foothill/University Square	Patricia/Foothill	Santa Rosa/Murray	Downtown Transit Ctr Arrive
					6:53	6:58	7:04	7:09
7:15	7:25	7:31	7:40	7:47	7:53	7:58	8:04	8:09
8:15	8:25	8:31	8:40	8:47	8:53	8:58	9:04	9:09
9:15	9:25	9:31	9:40	9:47	9:53	9:58	10:04	10:09
10:15	10:25	10:31	10:40	10:47	10:53	10:58	11:04	11:09
11:15	11:25	11:31	11:40	11:47	11:53	11:58	**12:04**	**12:09**
12:15	**12:25**	**12:31**	**12:40**	**12:47**	**12:53**	**12:58**	**1:04**	**1:09**
1:15	**1:25**	**1:31**	**1:40**	**1:47**	**1:53**	**1:58**	**2:04**	**2:09**
2:15	**2:25**	**2:31**	**2:40**	**2:47**	**2:53**	**2:58**	**3:04**	**3:09**
3:15	**3:25**	**3:31**	**3:40**	**3:47**	**3:53**	**3:58**	**4:04**	**4:09**
4:15	**4:25**	**4:31**	**4:40**	**4:47**	**4:53**	**4:58**	**5:04**	**5:09**
5:15	**5:25**	**5:31**	**5:40**	**5:47**	**5:53**	**5:58**	**6:04**	**6:09**

SLO TRANSIT PASSES CAN BE PURCHASED AT THE FOLLOWING LOCATIONS:
- ALBERTSONS - Foothill
- CHAMBER OF COMMERCE
- CITY HALL

LOS PASES DE SLO TRANSIT SE PUEDEN COMPRAR EN LAS SIGUIENTES UBICACIONES:
- ALBERTSONS
- CÁMARA DE COMMERCIO
- MUNICIPALIDAD

2 South Higuera/Suburban — Weekdays

Downtown Transit Ctr Depart	Higuera/South	Prado Day Center	Higuera/Suburban	Higuera/South	Downtown Transit Ctr Arrive
			6:03	6:10	6:20
6:25	6:33	6:37	6:43	6:50	7:00
7:05	7:13	7:17	7:23	7:30	7:40
7:45	7:53	7:57	8:03	8:10	8:20
8:25	8:33	8:37	8:43	8:50	9:00
9:05	9:13	9:17	9:23	9:30	9:40
9:45	9:53	9:57	10:03	10:10	10:20
10:25	10:33	10:37	10:43	10:50	11:00
11:05	11:13	11:17	11:23	11:30	11:40
11:45	11:53	11:57	**12:03**	**12:10**	**12:20**
12:25	**12:33**	**12:37**	**12:43**	**12:50**	**1:00**
1:05	**1:13**	**1:17**	**1:23**	**1:30**	**1:40**
1:45	**1:53**	**1:57**	**2:03**	**2:10**	**2:20**
2:25	**2:33**	**2:37**	**2:43**	**2:50**	**3:00**
3:05	**3:13**	**3:17**	**3:23**	**3:30**	**3:40**
3:45	**3:53**	**3:57**	**4:03**	**4:10**	**4:20**
4:25	**4:33**	**4:37**	**4:43**	**4:50**	**5:00**
5:05	**5:13**	**5:17**	**5:23**	**5:30**	**5:40**
5:45	**5:53**	**5:57**	**6:03**	**6:10**	**6:20**

2 South Higuera/Suburban — Weekend

Downtown Transit Ctr Depart	Higuera/South	Prado Day Center	Higuera/Suburban	Higuera/South	Downtown Transit Ctr Arrive
			8:03	8:10	8:20
8:25	8:33	8:37	8:43	8:50	9:00
9:05	9:13	9:17	9:23	9:30	9:40
9:45	9:53	9:57	10:03	10:10	10:20
10:25	10:33	10:37	10:43	10:50	11:00
11:05	11:13	11:17	11:23	11:30	11:40
11:45	11:53	11:57	**12:03**	**12:10**	**12:20**
12:25	**12:33**	**12:37**	**12:43**	**12:50**	**1:00**
1:05	**1:13**	**1:17**	**1:23**	**1:30**	**1:40**
1:45	**1:53**	**1:57**	**2:03**	**2:10**	**2:20**
2:25	**2:33**	**2:37**	**2:43**	**2:50**	**3:00**
3:05	**3:13**	**3:17**	**3:23**	**3:30**	**3:40**
3:45	**3:53**	**3:57**	**4:03**	**4:10**	**4:20**
4:25	**4:33**	**4:37**	**4:43**	**4:50**	**5:00**
5:05	**5:13**	**5:17**	**5:23**	**5:30**	**5:40**
5:45	**5:53**	**5:57**	**6:03**		

2 South Higuera/Suburban — Evening

Downtown Transit Ctr Depart	Higuera/South	Prado Day Center	Higuera/Suburban	Higuera/South	Downtown Transit Ctr Arrive
6:50	**6:56**	-	**7:02**	**7:08**	**7:18**
7:50	**7:56**	-	**8:03**	**8:08**	**8:18**
8:50	**8:56**	-	**9:03**	**9:08**	**9:18**
9:50	**9:56**	-	**10:03**	**10:08**	**10:18**

3 Johnson/Broad/Marigold — Weekdays

Downtown Transit Ctr Depart	Johnson/Lizzie	Orcutt/Laurel	Broad/Marigold Center	Broad/Santa Barbara	Downtown Transit Ctr Arrive
			6:04	6:10	6:17
6:25	6:31	6:37	6:44	6:50	6:57
7:05	7:11	7:17	7:24	7:30	7:37
7:45	7:51	7:57	8:04	8:10	8:17
8:25	8:31	8:37	8:44	8:50	8:57
9:05	9:11	9:17	9:24	9:30	9:37
9:45	9:51	9:57	10:04	10:10	10:17
10:25	10:31	10:37	10:44	10:50	10:57
11:05	11:11	11:17	11:24	11:30	11:37
11:45	11:51	11:57	**12:04**	**12:10**	**12:17**
12:25	**12:31**	**12:37**	**12:44**	**12:50**	**12:57**
1:05	**1:11**	**1:17**	**1:24**	**1:30**	**1:37**
1:45	**1:51**	**1:57**	**2:04**	**2:10**	**2:17**
2:25	**2:31**	**2:37**	**2:44**	**2:50**	**2:57**
3:05	**3:11**	**3:17**	**3:24**	**3:30**	**3:37**
3:45	**3:51**	**3:57**	**4:04**	**4:10**	**4:17**
4:25	**4:31**	**4:37**	**4:44**	**4:50**	**4:57**
5:05	**5:11**	**5:17**	**5:24**	**5:30**	**5:37**
5:45	**5:51**	**5:57**	**6:04**	**6:10**	**6:17**

3 Johnson/Broad/Marigold — Weekend

Downtown Transit Ctr Depart	Johnson/Lizzie	Orcutt/Laurel	Broad/Marigold Center	Broad/Santa Barbara	Downtown Transit Ctr Arrive
			8:04	8:10	8:17
8:25	8:31	8:37	8:44	8:50	8:57
9:05	9:11	9:17	9:24	9:30	9:37
9:45	9:51	9:57	10:04	10:12	10:17
10:25	10:31	10:37	10:44	10:50	10:57
11:05	11:11	11:17	11:24	11:30	11:37
11:45	11:51	11:57	**12:04**	**12:10**	**12:17**
12:25	**12:31**	**12:37**	**12:44**	**12:50**	**12:57**
1:05	**1:11**	**1:17**	**1:24**	**1:30**	**1:37**
1:45	**1:51**	**1:57**	**2:04**	**2:10**	**2:17**
2:25	**2:31**	**2:37**	**2:44**	**2:50**	**2:57**
3:05	**3:11**	**3:17**	**3:24**	**3:30**	**3:37**
3:45	**3:51**	**3:57**	**4:04**	**4:10**	**4:17**
4:25	**4:31**	**4:37**	**4:44**	**4:50**	**4:57**
5:05	**5:11**	**5:17**	**5:24**	**5:30**	**5:37**

3 Johnson/Broad/Marigold — Evening

Downtown Transit Ctr Depart	Johnson/Lizzie	Orcutt/Laurel	Broad/Marigold Center	Downtown Transit Ctr Arrive
6:18	**6:22**	**6:28**	**6:34**	**6:45**
7:18	**7:22**	**7:28**	**7:34**	**7:45**
8:18	**8:22**	**8:28**	**8:34**	**8:45**
9:18	**9:22**	**9:28**	**9:34**	**9:45**
10:18	**10:22**	**10:28**	**10:34**	

4 Madonna/Laguna Lake/Cal Poly — Weekdays

Downtown Transit Ctr Depart	South/Parker Greyhound	Promenade	LOVR/Irish Hills	Laguna Village	LOVR/Descanso	Ramona Palomar	Kennedy Library Arrive	Kennedy Library Depart	Downtown Transit Ctr Arrive
				6:30		6:44	6:53	6:58	7:05
6:40	6:47	6:52	6:58	7:04	7:08	7:14	7:23	7:28	7:35
7:10	7:17	7:22	7:28	7:34	-	7:44	7:53	7:58	8:05
7:40	7:47	7:52	7:58	8:04	8:08	8:14	8:23	8:28	8:35
8:10	8:17	8:22	8:28	8:34	-	8:44	8:53	8:58	9:05
8:40	8:47	8:52	8:58	9:04	9:08	9:14	9:23	9:28	9:35
9:10	9:17	9:22	9:28	9:34	-	9:44	9:53	9:58	10:05
9:40	9:47	9:52	9:58	10:04	10:08	10:14	10:23	10:28	10:35
10:10	10:17	10:22	10:28	10:34	-	10:44	10:53	10:58	11:05
10:40	10:47	10:52	10:58	11:04	11:08	11:14	11:23	11:28	11:35
11:10	11:17	11:22	11:28	11:34	-	11:44	11:53	**11:58**	**12:05**
11:40	**11:47**	**11:52**	**11:58**	**12:04**	**12:08**	**12:14**	**12:23**	**12:28**	**12:35**
12:10	**12:17**	**12:22**	**12:28**	**12:34**	-	**12:44**	**12:53**	**12:58**	**1:05**
12:40	**12:47**	**12:52**	**12:58**	**1:04**	**1:08**	**1:14**	**1:23**	**1:28**	**1:35**
1:10	**1:17**	**1:22**	**1:28**	**1:34**	-	**1:44**	**1:53**	**1:58**	**2:05**
1:40	**1:47**	**1:52**	**1:58**	**2:04**	**2:08**	**2:14**	**2:23**	**2:28**	**2:35**
2:10	**2:17**	**2:22**	**2:28**	**2:34**	-	**2:44**	**2:53**	**2:58**	**3:05**
2:40	**2:47**	**2:52**	**2:58**	**3:04**	**3:08**	**3:14**	**3:23**	**3:28**	**3:35**
3:10	**3:17**	**3:22**	**3:28**	**3:34**	-	**3:44**	**3:53**	**3:58**	**4:05**
3:40	**3:47**	**3:52**	**3:58**	**4:04**	**4:08**	**4:14**	**4:23**	**4:28**	**4:35**
4:10	**4:17**	**4:22**	**4:28**	**4:34**	-	**4:44**	**4:53**	**4:58**	**5:05**
4:40	**4:47**	**4:52**	**4:58**	**5:04**	**5:08**	**5:14**	**5:23**	**5:28**	**5:35**
5:10	**5:17**	**5:22**	**5:28**	**5:34**	-	**5:44**	**5:53**	**6:08**	**6:15**
5:40	**5:47**	**5:52**	**5:58**	**6:04**	**6:08**				

4 Madonna/Laguna Lake/Cal Poly — Weekend

Downtown Transit Ctr Depart	South/Parker Greyhound	Promenade	LOVR/Irish Hill	LOVR/Laguna Village	Ramona/Palomar	Kennedy Library Arrive	Kennedy Library Depart	Downtown Transit Ctr Arrive
8:10	8:17	8:22	8:28	8:34	8:44	8:53	8:58	9:05
9:10	9:17	9:22	9:28	9:34	9:44	9:53	9:58	10:05
10:10	10:17	10:22	10:28	10:34	10:44	10:53	10:58	11:05
11:10	11:17	11:22	11:28	11:34	11:44	11:53	**11:58**	**12:05**
12:10	**12:17**	**12:22**	**12:28**	**12:34**	**12:44**	**12:53**	**12:58**	**1:05**
1:10	**1:17**	**1:22**	**1:28**	**1:34**	**1:44**	**1:53**	**1:58**	**2:05**
2:10	**2:17**	**2:22**	**2:28**	**2:34**	**2:44**	**2:53**	**2:58**	**3:05**
3:10	**3:17**	**3:22**	**3:28**	**3:34**	**3:44**	**3:53**	**3:58**	**4:05**
4:10	**4:17**	**4:22**	**4:28**	**4:34**	**4:44**	**4:53**	**4:58**	**5:05**
5:10	**5:17**	**5:22**	**5:28**	**5:34**	**5:44**	**5:53**	**5:58**	**6:05**

4 Madonna/Laguna Lake/Cal Poly — Evening

Downtown Transit Ctr Depart	South/Parker Greyhound	Promenade	LOVR/Irish Hills	LOVR/Laguna Village	LOVR/Descanso	Ramona/Palomar	Kennedy Library Arrive	Kennedy Library Depart	Downtown Transit Ctr Arrive
6:20	**6:27**	**6:32**	**6:38**	**6:44**	-	**6:54**	**7:03**	**7:08**	**7:15**
7:20	**7:27**	**7:32**	**7:38**	**7:44**	-	**7:54**	**8:03**	**8:08**	**8:15**
8:20	**8:27**	**8:32**	**8:38**	**8:44**	-	**8:54**	**9:03**	**9:08**	**9:15**
8:20	**9:27**	**9:32**	**9:38**	**9:44**	-	**9:54**	**10:03**	**10:08**	**10:15**
10:20	**10:27**	**10:32**	**10:38**	**10:44**	-				

5 Cal Poly/Laguna Lake/Madonna — Weekdays

Downtown Transit Ctr Depart	Kennedy Library Arrive	Kennedy Library Depart	Foothill/University Square	Descanso/LOVR	LOVR/Laguna Village	LOVR/Irish Hills	Promenade	South/Parker (Greyhound)	Amtrack	Downtown Transit Ctr Arrive
				6:20	6:22	6:24	6:32	6:36	6:41	6:47
6:20	6:28	6:36	6:41	6:50	6:52	6:54	7:02	7:06	7:11	7:17
6:50	6:58	7:06	7:11	7:20	7:22	7:24	7:32	7:36	7:41	7:47
7:20	7:28	7:36	7:41	7:50	7:52	7:54	8:02	8:06	8:11	8:17
7:50	7:58	8:06	8:11	8:20	8:22	8:24	8:32	8:36	8:41	8:47
8:20	8:28	8:36	8:41	8:50	8:52	8:54	9:02	9:06	9:11	9:17
8:50	8:58	9:06	9:11	9:20	9:22	9:24	9:32	9:36	9:41	9:47
9:20	9:28	9:36	9:41	9:50	9:52	9:54	10:02	10:06	10:11	10:17
9:50	9:58	10:06	10:11	10:20	10:22	10:24	10:32	10:36	10:41	10:47
10:20	10:28	10:36	10:41	10:50	10:52	10:54	11:02	11:06	11:11	11:17
10:50	10:58	11:06	11:11	11:20	11:22	11:24	11:32	11:36	11:41	11:47
11:20	11:28	11:36	11:41	11:50	11:52	11:54	**12:02**	**12:06**	**12:11**	**12:17**
11:50	11:58	**12:06**	**12:11**	**12:20**	**12:22**		**12:32**	**12:36**	**12:41**	**12:47**
12:20	**12:28**	**12:36**	**12:41**	**12:50**	**12:52**	**12:54**	**1:02**	**1:06**	**1:11**	**1:17**
12:50	**12:58**	**1:06**	**1:11**	**1:20**	**1:22**		**1:32**	**1:36**	**1:41**	**1:47**
1:20	**1:28**	**1:36**	**1:41**	**1:50**	**1:52**	**1:54**	**2:02**	**2:06**	**2:11**	**2:17**
1:50	**1:58**	**2:06**	**2:11**	**2:20**	**2:22**		**2:32**	**2:36**	**2:41**	**2:47**
2:20	**2:28**	**2:36**	**2:41**	**2:50**	**2:52**	**2:54**	**3:02**	**3:06**	**3:11**	**3:17**
2:50	**2:58**	**3:06**	**3:11**	**3:20**	**3:22**		**3:32**	**3:36**	**3:41**	**3:47**
3:20	**3:28**	**3:36**	**3:41**	**3:50**	**3:52**	**3:54**	**4:02**	**4:06**	**4:11**	**4:17**
3:50	**3:58**	**4:06**	**4:11**	**4:20**	**4:22**		**4:32**	**4:36**	**4:41**	**4:47**
4:20	**4:28**	**4:36**	**4:41**	**4:50**	**4:52**	**4:54**	**5:02**	**5:06**	**5:11**	**5:17**
4:50	**4:58**	**5:06**	**5:11**	**5:20**	**5:22**		**5:32**	**5:36**	**5:41**	**5:47**
5:20	**5:28**	**5:36**	**5:41**	**5:50**	**5:52**	**5:54**	**6:02**	**6:06**	**6:11**	**6:17**
5:50	**5:58**	**6:06**	**6:11**	**6:20**	**6:22**		**6:32**	**6:36**	**6:41**	**6:47**
6:20	**6:28**	**6:36**	**6:41**	**6:50**	**6:52**	**6:54**	**7:02**	**7:06**	**7:11**	**7:17**
6:50	**6:58**	**7:06**	**7:11**	**7:20**	**7:22**					

5 Cal Poly/Laguna Lake/Madonna — Weekend

Downtown Transit Ctr Depart	Kennedy Library Arrive	Kennedy Library Depart	Foothill/University Square	Descanso/LOVR	LOVR/Laguna Village	LOVR/Irish Hill	Promenade	South/Parker (Greyhound)	Amtrack	Downtown Transit Ctr Arrive
8:20	8:28	8:36	8:41	8:50	8:52	8:54	9:02	9:06	9:11	9:17
9:20	9:28	9:36	9:41	9:50	9:52	9:54	10:02	10:06	10:11	10:17
10:20	10:28	10:36	10:41	10:50	10:52	10:54	11:02	11:06	11:11	11:17
11:20	11:28	11:36	11:41	11:50	11:52	11:54	**12:02**	**12:06**	**12:11**	**12:17**
12:20	**12:28**	**12:36**	**12:41**	**12:50**	**12:52**	**12:54**	**1:02**	**1:06**	**1:11**	**1:17**
1:20	**1:28**	**1:36**	**1:41**	**1:50**	**1:52**	**1:54**	**2:02**	**2:06**	**2:11**	**2:17**
2:20	**2:28**	**2:36**	**2:41**	**2:50**	**2:52**	**2:54**	**3:02**	**3:06**	**3:11**	**3:17**
3:20	**3:28**	**3:36**	**3:41**	**3:50**	**3:52**	**3:54**	**4:02**	**4:06**	**4:11**	**4:17**
4:20	**4:28**	**4:36**	**4:41**	**4:50**	**4:52**	**4:54**	**5:02**	**5:06**	**5:11**	**5:17**
5:20	**5:28**	**5:36**	**5:41**	**5:50**	**5:52**	**5:54**	**6:02**	**6:06**	**6:11**	**6:17**

6a Cal Poly/Highland — Weekdays

Kennedy Library	Patricia/Foothill	Ramona/Palomar	Kennedy Library Arrive
	7:16	7:19	7:29
7:40	7:46	7:49	7:59
8:10	8:16	8:19	8:29
8:40	8:46	8:49	8:59
9:10	9:16	9:19	9:29
9:40	9:46	9:49	9:59
10:10	10:16	10:19	10:29
10:40	10:46	10:49	10:59
11:10	11:16	11:19	11:29
11:40	11:46	11:49	11:59
12:10	**12:16**	**12:19**	**12:29**
12:40	**12:46**	**12:49**	**12:59**
1:10	**1:16**	**1:19**	**1:29**
1:40	**1:46**	**1:49**	**1:59**
2:10	**2:16**	**2:19**	**2:29**
2:40	**2:46**	**2:49**	**2:59**
3:10	**3:16**	**3:19**	**3:29**
3:40	**3:46**	**3:49**	**3:59**
4:10	**4:16**	**4:19**	**4:29**
4:40	**4:46**	**4:49**	**4:59**
5:10	**5:16**	**5:19**	**5:29**
5:40	**5:46**	**5:49**	**5:59**

6a Cal Poly/Highland

Kennedy Library	Patricia/Foothill	Ramona/Palomar	Kennedy Library Arrive
9:10	9:16	9:19	9:29
10:10	10:16	10:19	10:29
11:10	11:16	11:19	11:29
12:10	**12:16**	**12:19**	**12:29**
1:10	**1:16**	**1:19**	**1:29**
2:10	**2:16**	**2:19**	**2:29**
3:10	**3:16**	**3:19**	**3:29**
4:10	**4:16**	**4:19**	**4:29**
5:10	**5:16**	**5:19**	**5:29**

6a Cal Poly/Highland — Evening

Kennedy Library	Patricia/Foothill	Ramona/Palomar	Kennedy Library Arrive
6:15	**6:21**	**6:24**	**6:34**
7:15	**7:21**	**7:24**	**7:34**
8:15	**8:21**	**8:24**	**8:34**
9:15	**9:21**	**9:24**	**9:34**
10:15	**10:21**	**10:24**	

6b Cal Poly/Downtown — Weekdays

Kennedy Library Depart	Downtown Transit Ctr Arrive	Downtown Transit Ctr Depart	California/Taft	Kennedy Library Arrive
7:02	7:09	7:15	7:20	7:26
7:32	7:39	7:45	7:50	7:56
8:02	8:09	8:15	8:20	8:26
8:32	8:39	8:45	8:50	8:56
9:02	9:09	9:15	9:20	9:26
9:32	9:39	9:45	9:50	9:56
10:02	10:09	10:15	10:20	10:26
10:32	10:39	10:45	10:50	10:56
11:02	11:09	11:15	11:20	11:26
11:32	11:39	11:45	11:50	11:56
12:02	**12:09**	**12:15**	**12:20**	**12:26**
12:32	**12:39**	**12:45**	**12:50**	**12:56**
1:02	**1:09**	**1:15**	**1:20**	**1:26**
1:32	**1:39**	**1:45**	**1:50**	**1:56**
2:02	**2:09**	**2:15**	**2:20**	**2:26**
2:32	**2:39**	**2:45**	**2:50**	**2:56**
3:02	**3:09**	**3:15**	**3:20**	**3:26**
3:32	**3:39**	**3:45**	**3:50**	**3:56**
4:02	**4:09**	**4:15**	**4:20**	**4:26**
4:32	**4:39**	**4:45**	**4:50**	**4:56**
5:02	**5:09**	**5:15**	**5:20**	**5:26**
5:32	**5:39**	**5:45**	**5:50**	**5:56**
6:02	**6:10**			

6b Cal Poly/Downtown

Kennedy Library Depart	Downtown Transit Ctr Arrive	Downtown Transit Ctr Depart	California/Taft	Kennedy Library Arrive
		8:45	8:50	8:56
9:32	9:39	9:45	9:50	9:56
10:32	10:39	10:45	10:50	10:56
11:32	11:39	11:45	11:50	11:56
12:32	**12:39**	**12:45**	**12:50**	**12:56**
1:32	**1:39**	**1:45**	**1:50**	**1:56**
2:32	**2:39**	**2:45**	**2:50**	**2:56**
3:32	**3:39**	**3:45**	**3:50**	**3:56**
4:32	**4:39**	**4:45**	**4:50**	**4:56**
5:32	**5:39**	**5:45**	**5:50**	**5:56**

6b Cal Poly/Downtown — Evening

Kennedy Library Depart	Downtown Transit Ctr Arrive	Downtown Transit Ctr Depart	California/Taft	Kennedy Library Arrive
6:38	**6:45**	**6:51**	**6:56**	**7:02**
7:38	**7:45**	**7:51**	**7:56**	**8:02**
8:38	**8:45**	**8:51**	**8:56**	**9:02**
9:38	**9:45**	**9:51**	**9:56**	**10:02**

SLO TRANSIT SERVICES GENERAL INFORMATION

Where to find schedules
Public schedules are available at City Hall, City/County Library, Chamber of Commerce and Cal Poly University Union. Schedules are also available on the buses. Schedules are available for individuals with visual impairments. Please call 541-2877.
Also visit **www.rideshare.org**

SLO Transit Days of Service
Routes

1	Monday - Friday
6a & 6b	Monday - Saturday
2, 3, 4, & 5	Monday - Saturday and modified Sunday

Routes 6a & 6b do not operate on Sundays. For Sunday service refer to Routes 2, 3, 4 and 5.

SLO Transit Routes 2, 3, 4, & 5 operate Sunday service on the following holidays:
- New Year's Eve
- New Year's Day
- Martin Luther King Day
- President's Day
- Memorial Day
- Independence Day
- Labor Day
- Thanksgiving Friday
- Thanksgiving Saturday

Select days during winter break will operate a Sunday Service. Information will be posted in buses in November.
No service operates on Thanksgiving Day and Christmas Day.

The times published in this public schedule do not anticipate service disruptions but are approximations for normal trips.

SLO Transit *operated by First Transit*
919 Palm Street, San Luis Obispo, CA 93401

Bus Stops
SLO Transit and the Downtown Trolley serve designated bus stops only. Passengers are recommended to arrive at their bus stop before the scheduled arrival time.

Bicycle Racks
SLO Transit buses are equipped with bicycle racks. Each rack can hold up to three bicycles. No bicycles are allowed in the busses.

Rules of the Road
- No smoking, no eating
- Radios, cell phones, and other audio devices shall be switched off while on the bus
- No animals, except for certified service animals
- No standing in step wells and in front of the white line
- **Vacate seats for seniors and passengers with disabilities**

For a complete list, please contact customer service at 541-2877.

Passengers with Disabilities
All buses are accessible to passengers with mobility devices. Door-to-Door service is available for persons with disabilities. Call 541-2544. www.SLORTA.org

IMPORTANT PHONE NUMBERS

Schedule Information	541-2877
Lost & Found	541-2877
SLO Transit Manager	781-7121
RTA	541-2228
Runabout	541-2544
Reginal Rideshare	541-2277

www.rideshare.org

INFORMACIÓN GENERAL DE LOS SERVICIOS DE SLO TRANSIT

Dónde encontrar los horarios
Los horarios públicos están disponibles en la Municipalidad, la biblioteca de la ciudad/condado, la Cámara de Comercio y en la Unión Universitaria de Cal Poly así como también en los autobuses. Hay horarios disponibles para las personas con deficiencias visuales. Por favor llame al 541-2877. También visite www.rideshare.org.

Días de Servicio de SLO Transit

Ruta 1	lunes – viernes
Rutas 6a & 6b	lunes – sábado
Rutas 2,3,4, & 5	lunes – sábado y modificados el domingo

Rutas 6a & 6b no están en servicio los domingos. Para servicio de los domingos refiérase a las Rutas 2,3,4 y 5.

Las Rutas 2,3,4, y 5 de SLO Transit están en servicio los domingos en los siguientes días feriados:
- Víspera de Año Nuevo
- Día de Año Nuevo
- Día de Martin Luther King
- Día de Acción de Gracias (viernes)
- Día de los Presidentes
- Día de la Independencia (4 de julio)
- Día del Trabajo
- Día de Acción de Gracias (sábado)
- Día de los Caídos en la Guerra

Habrá servicio los domingos en días selectos durante el receso de invierno. La información se publicará en los autobuses en noviembre.

No se anticipan interrupciones en las horas publicadas en este horario público, sin embargo son aproximaciones de viajes normales.

SLO Transit está operado por First Transit
919 Palm Street, San Luis Obispo, Ca 93401

Paradas de Autobuses
SLO Transit y el Trolley del centro sirven sólo en paradas de autobuses designadas. Se les recomienda a los pasajeros llegar a las paradas antes de la llegada programada.

Portabicicletas
Los autobuses de SLO Transit están equipados con portabicicletas. Cada portabicicletas sostiene tres bicicletas. No se permiten bicicletas en los autobuses.

Las Reglas en los Autobuses
- No fumar, no comer
- Se apagan radios, teléfonos celulares y otros aparatos de audio mientras en el autobús
- No animales, excepto por animales certificados de servicio
- No se permite pararse en los escalones ni en frente de la línea blanca
- Desocupe asientos para personas mayores y pasajeros con discapacidades

Para una lista completa, por favor contacte servicio al cliente al 541-2544

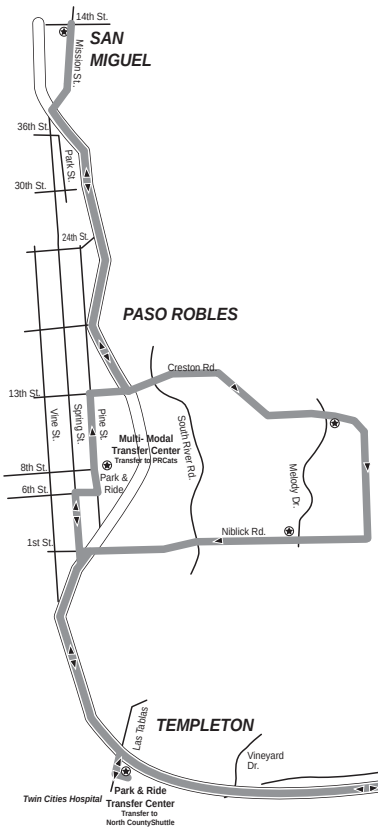
Pasajeros con Discapacidades
Todos los autobuses están disponibles para pasajeros con aparatos de movilidad. Servicio de "puerta a puerta" está disponible para personas con discapacidades. Llame al 541-2544. www.SLORTA.org

NÚMEROS TELEFÓNICOS IMPORTANTES

Información de horarios	541-2877
Dpto. de búsqueda de objetos perdidos	541-2877
Director de SLO Transit	781-7121
RTA	541-2228
Runabout	541-2544

CHILDREN:

Children 5 years of age or younger ride free when traveling with a regular-fare adult. (Limit one child per paying adult. Additional children pay regular fare).



RULES FOR A SAFE RIDE:

To ensure a safe and pleasant ride for all bus riders, please observe the following rules while riding on an **RTA** bus:

NO smoking, food or drinks in the bus;
DO NOT willfully disturb other riders;
NO loud music on the bus;
NO standing or sitting in the stepwells or in front of the white line;
NO animals on the bus (except service animals);
NO items allowed in aisles or wheelchair spaces. Luggage and carry-on items (including folded strollers) must be stored behind any forward facing seat.
Babies must be held by an adult;
Front seats are reserved for seniors and mobility pass passengers;
Shirts and shoes must be worn when traveling on an **RTA** bus.

Buses must be boarded at established bus stops. **Not all bus stops are listed, please call 541-2228 for more information**

Fixed Route Telephone Numbers

RTA Administration 781-4472
RTA..... 541-2228
RTA-SCAT 541-2228
SLO Transit..... 541-BUSS
North County Shuttle 239-8747
SMAT 928-5624
Paso Express 239-TRIP
Avila Beach Trolley 541-2228
Cambria Trolley 541-2228

Dial-A-Ride Telephone Numbers

RTA Runabout 541-2544
Atascadero.....466-RIDE
Morro Bay 772-2744
Paso Robles 239-TRIP
Los Osos/South Bay.....528-RIDE
Nipomo 929-2881

Alternative Transportation Information Call Rideshare at 541-2277

To reduce the cost to ride RTA, passes may be purchased at the following locations:

~ Arroyo Grande City Hall, 214 E. Branch St.
~ Atascadero City Hall, 6907 El Camino Real
~ Cambria Chamber of Commerce, 767 Main St.
~ Grover Beach City Hall, 154 S. 8th St.
~ Morro Bay Dial a Ride, 535 Harbor Blvd.
~ Los Osos Rexall, 989 Los Osos Valley Rd.
~ Paso Robles Train/Greyhound Sta. 800 Pine St.
~ Pismo Beach Chamber, 581 Dolliver St.
~ San Luis Obispo RTA, 1150 Osos St. #206 SLO
~ Allan Hancock Bookstore, 800 S. College
~ Santa Maria Towne Center Mall, Postal Centre, 2nd Floor

FARE AND PASS INFORMATION:

You may pay a daily fare according to the table on the front of this brochure. Fares are based on the origin and destination of your trip. To find your fare, locate your origin on the table, read across until you find the column with your destination. The dollar amount in the intersecting square is your fare.

Regional DAY Pass - Unlimited rides on ***ALL*** RTA, SLO Transit, SCAT, Paso Express and North County Shuttle routes for the ***DATE*** indicated. May be purchased at any pass outlet or from any bus driver.

All Users	**$4.50**

Monthly ONE Pass - Unlimited rides on a ***SINGLE*** RTA route for the calendar ***MONTH*** indicated on the pass. Cal Poly and Cuesta College students may purchase monthly passes on campus at an additional discount.

General Public	**$35.00**
Senior (65-79)/Disabled	**$15.00**
K-12 Student	**$15.00**

Monthly GO Pass - Unlimited rides on ***ALL*** RTA routes for the calendar ***MONTH*** indicated on the pass. Cuesta College students may purchase monthly passes on campus at an additional discount.

General Public	**$40.00**
Senior (65-79)/Disabled	**$20.00**
K-12 Student	**$20.00**

Region ALL Pass - Unlimited rides on ***ALL*** RTA, SLO Transit, RTA SCAT, Paso Express and North County Shuttle routes for the calendar ***MONTH*** indicated.

General Public	**$57.00**
Senior (65-79)/Disabled	**$28.00**
K-12 Student	**$28.00**

VIP Pass - Unlimited free rides for seniors 80 years of age and older on ***ALL*** RTA, SLO Transit, RTA SCAT, Paso Express and North County Shuttle routes. Must obtain photo I.D. pass from RTA. Call 781-4472 for more information.

Seniors (80+)	**Free**

ADA Eligible Passengers

ADA Paratransit customers that present a "Certificate of Eligibility for ADA Paratransit Service" I.D. card may ride all RTA routes for free.

	WEEKDAY																			SATURDAY				SUNDAY		
SAN MIGUEL - SOUTHBOUND	Exp		Exp	Exp																**SAN MIGUEL**						
Mission @ 14 St.	-	-	6:21	-	-	-	-	-	-	12:06	-	-	-	-	-	-	-	-	8:06	11:06	2:06	5:06	8:06	12:06	4:06
PASO ROBLES																				**PASO ROBLES**						
Creston Rd. @ Melody Dr.	-	6:12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Niblick Rd. @ Melody Dr.	-	6:14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pine @ 8th **(Train Station) Connects w/PRCats**	5:50	6:20	6:35	6:50	7:20	8:20	9:20	10:20	11:20	12:20	1:20	2:20	-	3:20	-	4:20	5:20	6:20	8:20	11:20	2:20	5:20	8:20	12:20	4:20
TEMPLETON																				**TEMPLETON**						
Las Tablas PARK & RIDE - **Connects w/NCS**	6:00	6:30	6:45	7:00	7:30	8:30	9:30	10:30	11:30	12:30	1:30	2:30	-	3:30	-	4:30	5:30	6:30	8:30	11:30	2:30	5:30	8:30	12:30	4:30
ATASCADERO																				**ATASCADERO**						
Atascadero City Hall	6:08	6:38	6:53	7:08	7:38	8:38	9:38	10:38	11:38	12:38	1:38	2:38	-	3:38	-	4:38	5:38	6:38	8:38	11:38	2:38	5:38	8:38	12:38	4:38
Viejo Camino @ El Camino	-	6:48	-	-	7:48	8:48	9:48	10:48	11:48	12:48	1:48	2:48	-	3:48	-	4:48	5:48	6:48	8:48	11:48	2:48	5:48	8:48	12:48	4:48
SANTA MARGARITA																				**SANTA MARGARITA**						
El Camino Real @ Encina Ave.	-	7:01	-	-	8:01	9:01	10:01	11:01	12:01	1:01	2:01	3:01	-	4:01	-	5:01	6:01	7:01	9:01	12:01	3:01	6:01	9:01	1:01	5:01
SAN LUIS OBISPO																				**SAN LUIS OBISPO**						
Cal Poly Campus **(Student Union)**	6:33	7:18	7:18	7:33	8:18	9:18	10:18	11:18	12:18	1:18	2:18	3:18	-	4:18	-	5:18	6:18	7:18	9:18	12:18	3:18	6:18	9:18	1:18	5:18
SLO Gvmmnt Cntr - **Connects w/SLO Transit & RTA**	6:42	7:27	7:27	7:42	8:27	9:27	10:27	11:27	12:27	1:27	2:27	3:27	-	4:27	-	5:27	6:27	7:27	9:27	12:27	3:27	6:27	9:27	1:27	5:27
So. Higuera St. @ Margarita Ave.	6:49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tank Farm Rd. @ S. Higuera	6:51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Broad St. @ Tank Farm Rd.	6:54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SAN LUIS OBISPO - NORTHBOUND															Exp					**SAN LUIS OBISPO**						
So. Higuera St. @ Margarita Ave.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5:17	-	-	-	-	-	-	-	-	-
Tank Farm Rd. @ S. Higuera	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5:19	-	-	-	-	-	-	-	-	-
Broad St. @ Tank Farm Rd.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5:22	-	-	-	-	-	-	-	-	-
SLO Gvmmnt Cntr - **Connects w/SLO Transit & RTA**	6:42	-	-	7:42	8:33	9:33	10:33	11:33	12:33	1:33	2:33	3:33	4:15	4:33	5:15	5:33	6:33	8:33	9:33	12:33	3:33	6:33	9:33	1:33	5:33
Cal Poly Campus **(Mott Gym)**	-	-	-	-	8:42	9:42	10:42	11:42	12:42	1:42	2:42	3:42	4:24	4:42	5:24	5:42	6:42	8:42	9:42	12:42	3:42	6:42	9:42	1:42	5:42
SANTA MARGARITA																				**SANTA MARGARITA**						
El Camino Real @ Encina Ave.	6:59	-	-	7:59	8:59	9:59	10:59	11:59	12:59	1:59	2:59	3:59	-	4:59	-	5:59	6:59	8:59	9:59	12:59	3:59	6:59	9:59	1:59	5:59
ATASCADERO																				**ATASCADERO**						
Viejo Camino @ El Camino	7:12	-	-	8:12	9:12	10:12	11:12	12:12	1:12	2:12	3:12	4:12	-	5:12	-	6:12	7:12	9:12	10:12	1:12	4:12	7:12	10:12	2:12	6:12
Atascadero City Hall	7:22	-	-	8:22	9:22	10:22	11:22	12:22	1:22	2:22	3:22	4:22	4:49	5:22	5:49	6:22	7:22	9:22	10:22	1:22	4:22	7:22	10:22	2:22	6:22
TEMPLETON																				**TEMPLETON**						
Las Tablas PARK & RIDE - **Connects w/NCS**	7:30	-	-	8:30	9:30	10:30	11:30	12:30	1:30	2:30	3:30	4:30	4:57	5:30	5:57	6:30	7:30	9:30	10:30	1:30	4:30	7:30	10:30	2:30	6:30
PASO ROBLES																				**PASO ROBLES**						
Pine @ 8th **(Train Station) - Connects w/PRCats**	7:40	-	-	8:40	9:40	10:40	11:40	12:40	1:40	2:40	3:40	4:40	5:07	5:40	6:07	6:40	7:40	9:40	10:40	1:40	4:40	7:40	10:40	2:40	6:40
SAN MIGUEL																				**SAN MIGUEL**						
Mission @ 14 St.	-	-	-	-	-	-	11:54	-	-	-	-	-	-	-	6:21	-	-	-	10:54	1:54	4:54	7:54	10:54	2:54	6:54

BICYCLES:

Bicycle racks are available on all **RTA** buses. First come, first served. Bicycles may be boarded at any established bus stop. The RTA is not responsible for lost, damaged or stolen bicycles.

WHEELCHAIR PASSENGERS:

All **RTA** buses are equipped with wheelchair lifts to accommodate any passenger needing boarding assistance.

REGIONAL TRANSIT TRANSFER POINTS:

Paso Robles Multi-Modal Transit Facility on Pine at 8th
Connects with Paso Express & Dial-A-Ride **(239-8747)**

Las Tablas Park and Ride
Connects with North County Shuttle **(239-8747)**

SLO County Government Center: on Osos St. at Palm:
Connects with RTA Routes 10 and 12 **(541-2228)**
and SLO Transit **(541-BUSS)**

SERVICE DAYS:

Monday through Sunday, except New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

ROUTE 9

Monday - Sunday

Serving: San Miguel - Paso Robles
Templeton - Atascadero - Santa Margarita
Cal Poly - San Luis Obispo

REGIONAL TRANSIT AUTHORITY

Effective: February 1, 2009

FARES/ TARIFAS	San Luis Obispo	Santa Margarita Atascadero	Templeton Paso Robles	San Miguel
San Luis Obispo	$1.25	$1.75	$2.25	$2.75
Santa Margarita Atascadero	$1.75	$1.25	$1.75	$2.25
Templeton Paso Robles	$2.25	$1.75	$1.25	$1.75
San Miguel	$2.75	$2.25	$1.75	$1.25

Senior and Mobility Pass Discount Key

Regular	$1.25	1.75	2.25	2.75
Discount	$.60	.85	1.10	1.35

Please Carry Exact Fare
(Drivers do not make change)

Need to Connect to another bus?
Let the driver know when you board. You will need to pay an additional full fare to ride any subsequent buses or you may purchase a Regional ***DAY*** pass from your driver for only $4.50; good all day on all fixed routes in San Luis Obispo County.

541-2228 or www.slorta.org

Fixed Route Telephone Numbers

RTA Administration 781-4472
RTA Information 541-2228
RTA-SCAT 541-2228
SLO Transit..... 541-BUSS
North County Shuttle 239-TRIP
SMAT 928-5624
Paso Express 239-TRIP
Avila Beach Trolley 541-2228
Cambria Trolley 541-2228

Dial-A-Ride Telephone Numbers

RTA Runabout 541-2544
Atascadero.....466-RIDE
Morro Bay 772-2744
Paso Robles 239-TRIP
Los Osos / South Bay 528-RIDE
Nipomo 929-2881

Transportation Choices Information Call Rideshare at 541-2277

WHEELCHAIR PASSENGERS:

All **RTA** buses are equipped with wheelchair lifts to accommodate any passengers needing boarding assistance.

BICYCLES:

Bicycle racks are available on all **RTA** buses. First come, ªrst served. Bicycles may be boarded at any established bus stop. The RTA is not responsible for lost, damaged or stolen bicycles.

SERVICE DAYS:

Monday through Sunday, except New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

CHILDREN:

Children 5 years of age or younger ride free when traveling with a regular-fare adult. (Limit one child per paying adult. Additional children pay regular fare).

RULES FOR A SAFE RIDE:

To ensure a safe and pleasant ride for all bus passengers, please observe the following rules while riding on an RTA bus:
NO smoking, food or drinks in the bus;
NO loud music on the bus;
NO standing or sitting in the stepwells or in front of the white line;
NO animals on the bus (except service animals);
DO NOT willfully disturb other riders;
NO items allowed in aisles or wheelchair spaces.
Luggage and carry-on items (including folded strollers) must be stored behind any forward facing seat.
Babies must be held by an adult;
Front seats are reserved for seniors and mobility pass passengers;
Shirts and shoes must be worn when traveling on an RTA bus.

FARE AND PASS INFORMATION:

You may pay a daily fare according to the table on the front of this brochure. Fares are based on the origin and destination lcvlroqofm+ Ql ªnd your fare, locate your origin on the table, ob^a ^`olpp rkqfi vlr ªkaqeb `lirjk tfqe vlroabpqfk^qflk+ The dollar amount in the intersecting square is your fare.

To reduce the cost to ride RTA, passes may be purchased at the following locations:

~ Arroyo Grande City Hall, 214 E. Branch St.
~ Atascadero City Hall, 6907 El Camino Real
~ Cambria Chamber of Commerce, 767 Main St.
~ Grover Beach City Hall, 154 S. 8th St.
~ Morro Bay Dial a Ride, 535 Harbor Blvd.
~ Los Osos Rexall, 989 Los Osos Valley Rd.
~ Paso Robles Train/Greyhound Sta. 800 Pine St.
~ Pismo Beach Chamber, 581 Dolliver St.
~ San Luis Obispo RTA, 1150 Osos St. #206 SLO
~ Allan Hancock Bookstore, 800 S. College
~ Santa Maria Towne Center Mall, Postal Centre, 2nd Floor

Regional DAY Pass - Unlimited rides on RTA, SLO Transit, SCAT, Paso Express and North County Shuttle routes for the indicated. May be purchased at any pass outlet or from any bus driver.

All Users	**$4.50**

Monthly ONE Pass - Unlimited rides on a RTA route for the calendar indicated on the pass. Cal Poly and Cuesta College students may purchase monthly passes on campus at an additional discount.

General Public	**$35.00**
Senior (65-79)/Disabled	**$15.00**
K-12 Student	**$15.00**

Monthly GO Pass - Unlimited rides on RTA routes for the calendar indicated on the pass. Cuesta College students may purchase monthly passes on campus at an additional discount.

General Public	**$40.00**
Senior (65-79)/Disabled	**$20.00**
K-12 Student	**$20.00**

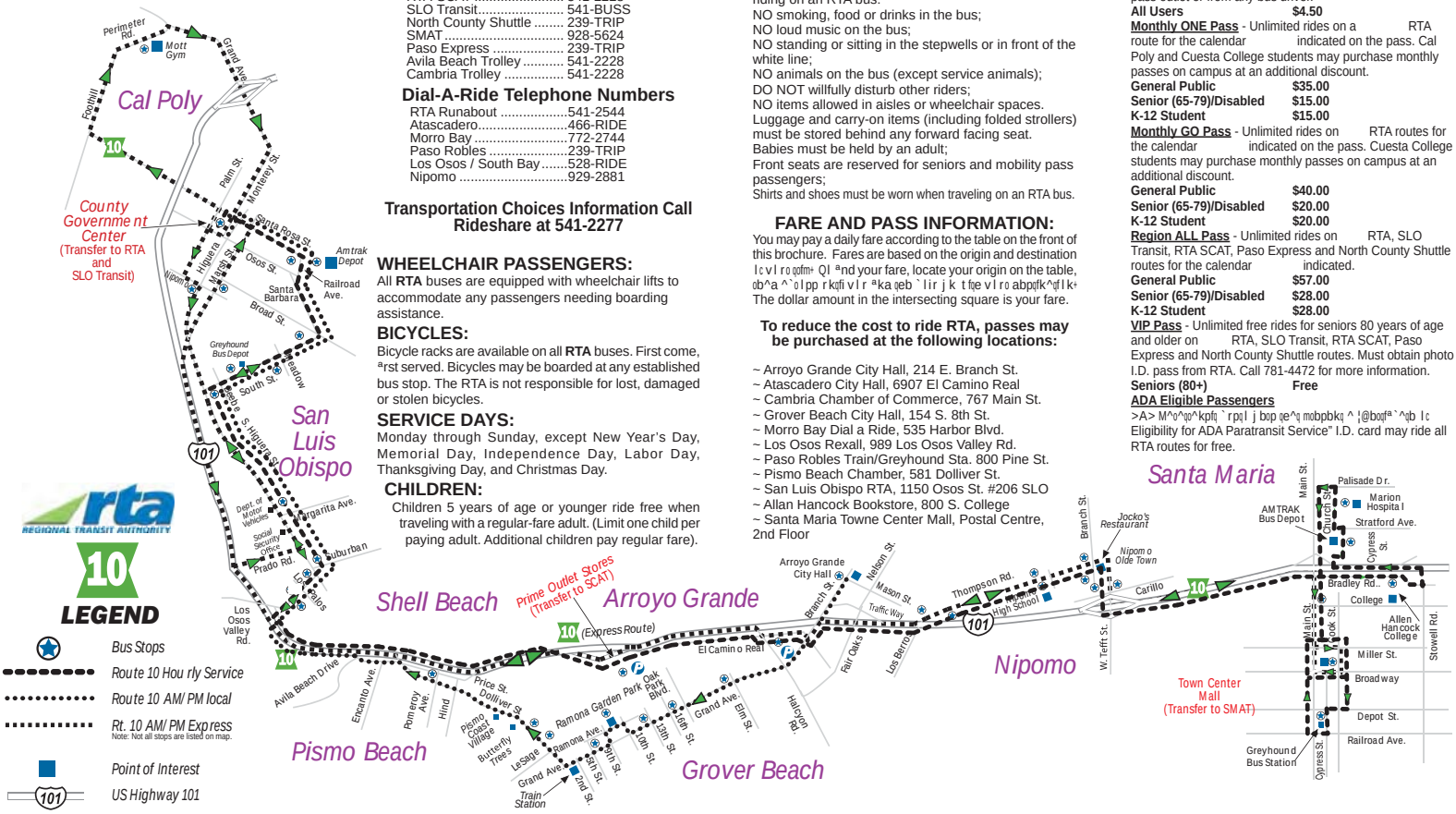
Region ALL Pass - Unlimited rides on RTA, SLO Transit, RTA SCAT, Paso Express and North County Shuttle routes for the calendar indicated.

General Public	**$57.00**
Senior (65-79)/Disabled	**$28.00**
K-12 Student	**$28.00**

VIP Pass - Unlimited free rides for seniors 80 years of age and older on RTA, SLO Transit, RTA SCAT, Paso Express and North County Shuttle routes. Must obtain photo I.D. pass from RTA. Call 781-4472 for more information.

Seniors (80+)	**Free**

ADA Eligible Passengers
>A> M^o^qo^kpfq `rpqlj bopqe^q mobpbkq ^ !@boofª`^qb lc Eligibility for ADA Paratransit Service" I.D. card may ride all RTA routes for free.



SANTA MARIA NORTHBOUND		Express								WEEKDAY								Express			SATURDAY				SUNDAY		
Cypress St. @ Railroad Ave **(GREYHOUND STATION)**	-	-	-	6:08	7:08	8:08	9:08	10:08	11:08	12:08	1:08	2:08	3:08	-	-	4:08	5:08	-	6:08	-	8:08	11:08	2:08	5:08	8:08	12:08	4:08
Town Center Mall Transit Terminal - **Connects with SMAT**	-	6:21	-	6:14	7:14	8:14	9:14	10:14	11:14	12:14	1:14	2:14	3:14	-	-	4:14	5:14	5:21	6:14	-	8:14	11:14	2:14	5:14	8:14	12:14	4:14
Bradley Rd @ Jones St. **(Allan Hancock College)**	-	-	-	6:21	7:21	8:21	9:21	10:21	11:21	12:21	1:21	2:21	3:21	-	-	4:21	5:21	–	6:21	-	8:21	11:21	2:21	5:21	8:21	12:21	4:21
Nicholson St. @ Cypress St. **(AMTRAK BUS)**	-	-	-	6:27	7:27	8:27	9:27	10:27	11:27	12:27	1:27	2:27	3:27	-	-	4:27	5:27	–	6:27	-	8:27	11:27	2:27	5:27	8:27	12:27	4:27
Church St. @ Palisade Dr. **(Marian Medical Center)**	-	-	-	6:29	7:29	8:29	9:29	10:29	11:29	12:29	1:29	2:29	3:29	-	-	4:29	5:29	–	6:29	-	8:29	11:29	2:29	5:29	8:29	12:29	4:29
NIPOMO																											
Tefft St. @ Carillo St.	-	6:36	-	6:40	7:40	8:40	9:40	10:40	11:40	12:40	1:40	2:40	3:40	-	-	4:40	5:40	5:36	6:40	-	8:40	11:40	2:40	5:40	8:40	12:40	4:40
Thompson Ave @ Nipomo High School	-	6:39	-	6:43	7:43	8:43	9:43	10:43	11:43	12:43	1:43	2:43	3:43	-	-	4:43	5:43	5:39	6:43	-	8:43	11:43	2:43	5:43	8:43	12:43	4:43
ARROYO GRANDE																											
El Camino Real @ Halcyon Rd. **(Park & Ride)**	-	6:50	-	6:54	7:54	8:54	9:54	10:54	11:54	12:54	1:54	2:54	3:54	-	-	4:54	5:54	5:50	6:54	-	8:54	11:54	2:54	5:54	8:54	12:54	4:54
Arroyo Grande City Hall	-	-	6:34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GROVER BEACH																											
Ramona St @ 9th St. **(Ramona Garden Park - Connects with SCAT)**	-	-	6:46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PISMO BEACH																											
Dolliver St. @ Pomeroy	-	-	6:55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prime Outlets **(Connects with SCAT)**	-	6:56	-	7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	-	-	5:00	6:00	5:56	7:00	-	9:00	12:00	3:00	6:00	9:00	1:00	5:00
SHELL BEACH																											
Shell Beach Road @ Encanto Ave.	-	-	7:04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AVILA BEACH																											
Ontario Road @ Bob Jones Trail **(FLAG STOP ON * RUNS ONLY)** Call 541-2228	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SAN LUIS OBISPO																											
South Higuera @ Suburban Road	-	-	7:12	7:12	8:12	9:12	10:12	11:12	12:12	1:12	2:12	3:12	4:12	-	-	5:12	6:12	-	7:12	-	9:12	12:12	3:12	6:12	9:12	1:12	5:12
South Higuera St. @ Margarita Ave	-	-	7:15	7:15	8:15	9:15	10:15	11:15	12:15	1:15	2:15	3:15	4:15	-	-	5:15	6:15	6:10	7:15	-	9:15	12:15	3:15	6:15	9:15	1:15	5:15
Marsh St @ Broad St.	-	7:11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6:14	-	-	-	-	-	-	-	-	-
South St. @ Beebee St. (**GREYHOUND STATION)**	-	-	7:18	7:18	8:18	9:18	10:18	11:18	12:18	1:18	2:18	3:18	4:18	-	-	5:18	6:18	-	7:18	-	9:18	12:18	3:18	6:18	9:18	1:18	5:18
Santa Rosa St. @ Railroad Ave (**AMTRAK STATION)**	-	-	7:22	7:22	8:22	9:22	10:22	11:22	12:22	1:22	2:22	3:22	4:22	-	-	5:22	6:22	-	7:22	-	9:22	12:22	3:22	6:22	9:22	1:22	5:22
Osos St. @ Palm St. **(Cty Gov. Ctr - Connects with SLOT & RTA)**	-	7:13	7:26	7:26	8:26	9:26	10:26	11:26	12:26	1:26	2:26	3:26	4:26	-	-	5:26	6:26	6:16	7:26	-	9:26	12:26	3:26	6:26	9:26	1:26	5:26
Cal Poly Campus **(Mott Gym)**	-	7:23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SAN LUIS OBISPO SOUTHBOUND	Express													Express													
Cal Poly Campus **(Mott Gym)**	-	-	-	-	-	-	-	-	-	-	-	-	-	5:15		-	-	-	-	-	-	-	-	-	-	-	-
Osos St. @ Palm St. **(Cty Gov. Ctr - Connects with SLOT & RTA)**	6:33	6:57	-	7:33	8:33	9:33	10:33	11:33	12:33	1:33	2:33	3:33	4:33	5:25	5:15	5:33	6:33	-	-	8:33	9:33	12:33	3:33	6:33	9:33	1:33	5:33
Nipomo St. @ Higuera St	-	6:59	-	-	-	-	-	-	-	-	-	-	-	5:27	-	-	-	-	-	-	-	-	-	-	-	-	-
Santa Rosa St. @ Railroad Ave (**AMTRAK STATION)**	6:38	-	-	7:38	8:38	9:38	10:38	11:38	12:38	1:38	2:38	3:38	4:38	-	5:20	5:38	6:38	-	-	8:38	9:38	12:38	3:38	6:38	9:38	1:38	5:38
South St. @ Beebee St. (**GREYHOUND STATION)**	6:43	-	-	7:43	8:43	9:43	10:43	11:43	12:43	1:43	2:43	3:43	4:43	-	5:25	5:43	6:43	-	-	8:43	9:43	12:43	3:43	6:43	9:43	1:43	5:43
South Higuera St. @ Margarita Ave	6:46	-	-	7:46	8:46	9:46	10:46	11:46	12:46	1:46	2:46	3:46	4:46	-	5:28	5:46	6:46	-	-	8:46	9:46	12:46	3:46	6:46	9:46	1:46	5:46
South Higuera @ Suburban Road	6:48	-	-	7:48	8:48	9:48	10:48	11:48	12:48	1:48	2:48	3:48	4:48	-	5:31	5:48	6:48	-	-	8:48	9:48	12:48	3:48	6:48	9:48	1:48	5:48
AVILA BEACH																											
Ontario Road @ Bob Jones Trail **(FLAG STOP ON * RUNS ONLY)** Call 541-2228	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*	-	-	-	-	-	-	-	-	-	-	-	-
SHELL BEACH																											
Shell Beach Road @ Encanto Ave.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5:38	-	-	-	-	-	-	-	-	-	-	-	-
PISMO BEACH																											
Prime Outlets **(Connects with SCAT)**	7:00	7:14	-	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	5:42		6:00	7:00	-	-	9:00	10:00	1:00	4:00	7:00	10:00	2:00	6:00
Dolliver St. @ Hinds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5:48	-	-	-	-	-	-	-	-	-	-	-	-
GROVER BEACH																											
Ramona St @ 9th St. **(Ramona Garden Park - Connects with SCAT)**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5:56	-	-	-	-	-	-	-	-	-	-	-	-
ARROYO GRANDE																											
El Camino Real @ Halcyon Rd. (Park & Ride)	7:06	7:20	-	8:06	9:06	10:06	11:06	12:06	1:06	2:06	3:06	4:06	5:06	5:48	-	6:06	7:06	-	-	9:06	10:06	1:06	4:06	7:06	10:06	2:06	6:06
Arroyo Grande City Hall	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6:08	-	-	-	-	-	-	-	-	-	-	-	-
NIPOMO																											
Thompson Ave @ Nipomo High School	7:17	7:31	-	8:17	9:17	10:17	11:17	12:17	1:17	2:17	3:17	4:17	5:17	5:59	-	6:17	7:17	-	-	9:17	10:17	1:17	4:17	7:17	10:17	2:17	6:17
Tefft St. @ Carillo St.	7:19	7:33	-	8:19	9:19	10:19	11:19	12:19	1:19	2:19	3:19	4:19	5:19	6:01	-	6:19	7:19	-	-	9:19	10:19	1:19	4:19	7:19	10:19	2:19	6:19
SANTA MARIA																											
Bradley Rd @ Jones St. **(Allan Hancock College)**	7:31	-	-	8:31	9:31	10:31	11:31	12:31	1:31	2:31	3:31	4:31	5:31	-	-	6:31	7:31	-	-	9:31	10:31	1:31	4:31	7:31	10:31	2:31	6:31
Nicholson St. @ Cypress St. **(AMTRAK BUS)**	7:36	-	-	8:36	9:36	10:36	11:36	12:36	1:36	2:36	3:36	4:36	5:36	-	-	6:36	7:36	-	-	9:36	10:36	1:36	4:36	7:36	10:36	2:36	6:36
Church St. @ Palisade Dr. **(Marian Medical Center)**	7:38	-	-	8:38	9:38	10:38	11:38	12:38	1:38	2:38	3:38	4:38	5:38	-	-	6:38	7:38	-	-	9:38	10:38	1:38	4:38	7:38	10:38	2:38	6:38
Town Center Mall Transit Terminal **- Connects with SMAT**	7:43	7:45	-	8:43	9:43	10:43	11:43	12:43	1:43	2:43	3:43	4:43	5:43	6:13	-	6:43	7:43	-	-	9:43	10:43	1:43	4:43	7:43	10:43	2:43	6:43
Cypress St. @ Railroad Ave **(GREYHOUND STATION)**	7:48	-	-	8:48	9:48	10:48	11:48	12:48	1:48	2:48	3:48	4:48	5:48	-	-	6:48	7:48	-	-	9:48	10:48	1:48	4:48	7:48	10:48	2:48	6:48

REGIONAL TRANSIT TRANSFER POINTS

Santa Maria @ Town Center Mall Regional Transit Center:
Connects with Santa Maria Area Transit **(SMAT) 928-5624**
Grover Beach @ The Prime Outlet Center
Connects with South County Area Transit **(RTA-SCAT) 541-2228**

SLO County Government Center on Osos St. & Palm:
Connects with RTA Routes 9 & 12 **(541-2228)** and
SLO Transit **(541-BUSS)**

ROUTE 10

Monday - Sunday

Santa Maria - Allen Hancock College Nipomo -
Arroyo Grande - Pismo Beach
San Luis Obispo - Cal Poly
(Limited service to Grover Beach)
AmTrak Stations: in San Luis Obispo,
Grover Beach and Santa Maria
Greyhound Bus Stations: in San Luis Obispo
and Santa Maria

rta
REGIONAL TRANSIT AUTHORITY

FARES/ TARIFAS	San Luis Obispo	Pismo Arroyo Grover	Nipomo	Santa Maria
San Luis Obispo	$1.25	$1.75	$2.25	$2.75
Pismo Arroyo Grover	$1.75	$1.25	$1.75	$2.25
Nipomo	$2.25	$1.75	$1.25	$1.75
Santa Maria	$2.75	$2.25	$1.75	$1.25

Senior and Mobility Pass Discount Key

Regular	$1.25	1.75	2.25	2.75
Discount	$.60	.85	1.10	1.35

Please Carry Exact Fare
(Drivers do not make change)

Need to Connect to another bus?
Let the driver know when you board. You will need to pay an additional full fare to ride any subsequent buses or you may purchase a Regional pass from your driver for only $4.50; good all day on all ªuba ol rçbp fk P^k I rfp L_fpml @l rkqv
541-2228 or www.slorta.org

Effective MAY 11, 2009

COAST STARLIGHT®

SEATTLE
— and —
LOS ANGELES

Experience a journey.

Call 1-800-USA-RAIL

Visit AMTRAK.COM

OVER 500 DESTINATIONS

SM

SEATTLE - TACOMA
PORTLAND - EUGENE-SPRINGFIELD
SACRAMENTO - SAN FRANCISCO BAY AREA
SANTA BARBARA - LOS ANGELES

And intermediate stations

AMTRAK®

Schedules subject to change without notice. Amtrak is a registered service mark of the National Railroad Passenger Corp.
National Railroad Passenger Corporation Washington Union Station, 60 Massachusetts Ave. N.E., Washington, DC 20002
NRPC Form P11–335M–5/11/09 Stock #02-3649

Seattle • Portland • Los Angeles

11	◀ Train Number ▶					14
Daily	◀ Days of Operation ▶					Daily
R	◀ On Board Service ▶					R
Read Down	Mile			Symbol		Read Up
	Amtrak Thruway Connection—Vancouver, BC/Seattle, WA					
5 30A	0	Dp	Vancouver, BC–Pacific Central Sta. (PT)	◑	Ar	12 35A
R 5 50A	12		Richmond, BC–Vancouver Apt. Conf. Rsrt.			D 12 05A
R 6 20A	29		Surrey, BC–Pacific Inn			D 11 35P
9 15A	144	Ar	Seattle, WA–Amtrak Sta.	● T	Dp	9 15P
9 45A	0	Dp	Seattle, WA (Victoria, BC)	● T	Ar	8 45P
10 31A	39		Tacoma, WA	● T		7 11P
11 21A	75		Olympia-Lacey, WA	○ T		6 22P
11 45A	94		Centralia, WA	●		5 57P
12 29P	137		Kelso-Longview, WA	○ T		5 14P
1 08P	177		Vancouver, WA	● T		4 36P
1 50P	187	Ar	Portland, OR	● T	Dp	4 20P
2 25P		Dp	Pendleton, Boise—see back		Ar	3 40P
3 37P	239		Salem, OR	● T		2 03P
4 10P	267		Albany, OR Corvallis, Newport—see back	● T		1 30P
5 10P	310		Eugene-Springfield, OR Ontario, Coos Bay—see back	● T		12 44P
8 05P	432		Chemult, OR Redmond, Bend, Sunriver—see back	○		9 40A
10 00P	505		Klamath Falls, OR (Crater Lake)	● T		8 25A
12 35A	610		Dunsmuir, CA (Mt. Shasta)	○		5 04A
2 21A	665		Redding, CA	○		3 14A
3 50A	739		Chico, CA	○		1 55A
6 35A	824		Sacramento, CA	● T		11 59P
6 50A	837		Davis, CA	● T		11 33P
7 34A	881		Martinez, CA	● T		10 54P
8 10A	908	Ar	Emeryville, CA	● T	Dp	10 12P
8 20A		Dp	San Francisco—see back		Ar	10 02P
8 35A	913	Ar	Oakland, CA–Jack London Sq.	● T	Dp	9 47P
8 50A		Dp	San Francisco—see back		Ar	9 32P
9 55A	954	Ar	San Jose, CA (Caltrain)	● T 26	Dp	8 39P
10 07A		Dp			Ar	8 27P
11 48A	1021		Salinas, CA Monterey, Carmel—see see back	●		6 36P
1 38P	1119		Paso Robles, CA	○		4 45P
3 20P	1157		San Luis Obispo, CA (Morro Bay)	● T		3 43P
6 17P	1274		Santa Barbara, CA	●		12 48P
D 7 05P	1310		Oxnard, CA	● T		11 55A
D 7 38P	1341	Ar	Simi Valley, CA	○ T		R 11 23A
D 8 05P	1358	Ar	Van Nuys, CA–Amtrak Sta.	●		R 10 47A
9 00P	1377	Ar	Los Angeles, CA	● T ✈	Dp	10 15A
796			Connecting Train Number			763
Daily			◀ Days of Operation ▶			Daily
10 10P	1389	Dp	Los Angeles, CA	● T	Ar	8 50A
10 38P	1415	Ar	Fullerton, CA	● T		8 15A
10 51P	1421		Anaheim, CA (Disneyland®)	◑ T		8 06A
11 00P	1425		Santa Ana, CA	◑ T		7 57A
11 11P	1435		Irvine, CA	◑ T		7 46A
11 25P	1447		San Juan Capistrano, CA	◑ T		7 32A
11 56P	1476		Oceanside, CA	◑ T		7 02A
12 11A	1493		Solana Beach, CA	◑ T		6 46A
12 50A	1518	Ar	San Diego, CA (PT)	◑ T	Dp	6 10A

Guaranteed Bus Connection

Passengers on northbound Train 14 who are connecting with eastbound Train 28 will transfer to Amtrak dedicated bus service between Klamath Falls, OR and Pasco, WA. Bus boards trackside in Klamath Falls at 9:15 a.m., stops to receive additional connecting passengers at Chemult, OR at 10:45 a.m., makes a meal stop at approximately 5:00 p.m. at Biggs Junction, OR and arrives in Pasco at 8:15 p.m. Passengers on westbound Train 7 who are connecting southbound with Train 11 will transfer in Portland.

Services on the Coast Starlight®

R **Coaches:** Enhanced coach service, with at-seat meal service if requested and larger pillows. Reservations required.
Arcade Coach car: Lower level of designated coach with high-tech games installed for use by both Coach and Sleeping car passengers.

Sleeping cars: Enhanced Superliner sleeping accommodations.
- Sleeping car amenities include newly refurbished Pacific Parlour Car with coffee and bar service and afternoon and evening alternative meal service, wine tasting, night time sweet and onboard theater.
- Amtrak's Metropolitan Lounge available in Portland for Sleeping car service passengers. TRAXX Club available at Los Angeles for passengers of Train 4 only.

Dining: Complete meals.

Sightseer Lounge: Sandwiches, snacks and beverages.
Note—Checked baggage for San Francisco passengers: Oversize items subject to delay.

Smoking is prohibited.

Scenic Highlights

- Puget Sound
- Willamette Valley
- Cascade Mountains
- California Coast
- Mission Santa Barbara
- Los Angeles—historic Olvera Street

Symbols and Reference Marks

A Time Symbol for A.M.
D Stops only to discharge passengers; train may leave before time shown.
P Time Symbol for P.M.
PT Pacific Time
R Stops only to receive passengers.
T Quik-Trak self-serve ticketing kiosk available for credit/debit card sales.
Checked Baggage Service available at stations indicated.
Thruway Motorcoach Connection. Coordinated train/motorcoach service with connections at the Amtrak station (in most cases), as well as through fares/ticketing. Passengers traveling on Amtrak Thruway connections must be ticketed before boarding coaches in order to obtain through fares. See Symbol column for wheelchair accessibility.
● Ticket office open for all train departures.
◑ Ticket office/checked baggage not open for all departures.
○ Tickets can not be purchased at this location.
All station facilities are fully accessible to persons who use wheelchairs.
Barrier-free access between street or parking lot, station platform and trains; however, not all facilities within the station are fully accessible.
Connecting Ferry Service.
✈ Convenient FlyAway Bus Service to Los Angeles International Airport. Visit www.lawa.org/lax.
26 Caltrain rail commuter service available between San Jose and San Francisco, San Mateo, Redwood City, Palo Alto, Gilroy and other Peninsula points. Separate ticket required.
78 Bus will discharge passengers on request at Monterey Airport rental car offices.
99 Bus 8711 arrives at the Shuttle's Waiting Room in Klamath Falls at 5:45 p.m. The Shuttle will take passengers and their baggage to the Amtrak station at 8:25 p.m. Passengers may eat in Klamath Falls during the layover.
Reserved long-distance train.
Connecting train.
Thruway and connecting services.

Experience THE COAST STARLIGHT®

Take a spectacular West Coast journey on the Coast Starlight.® Experience beautiful scenery and dedicated service. And Sleeping Car passengers can enjoy the Pacific Parlour Car. This unique "living room on rails" features an onboard theater, specialty coffee bar and daily wine tastings.

AMTRAK.COM · 1-800-USA-RAIL

AMTRAK

Thruway Motorcoach Connections

Medford • Klamath Falls *(The Shuttle)*

8711			Thruway Number			8714
Daily	Mile	▼	Days of Operation	Symbol	▲	Daily
3 30P	0	Dp	Medford, OR–RVTA (PT)	♿	Ar	1 00P
3 45P	15		Medford, OR–Greyhound Sta.	♿		12 45P
4 10P	20		White City, OR–Cascade Bingo	♿		12 20P
99 5 45P	72	Ar	Klamath Falls, OR–Amtrak Sta. (PT)	● ♿	Dp	10 30A
11			Connecting Train Number			14

Ontario • Bend • Eugene • Coos Bay *(Porter Stage)*

11			Connecting Train Number			14	11
8310			Thruway Number			8309	8311
Daily	Mile	▼	Days of Operation	Symbol	▲	Daily	Mo-Fr
9 15A	0	Dp	Ontario, OR (MT) –Greyhound Station	♿	Ar	7 55P	
9 30A	17		Vale, OR–Fletcher Chevron (MT)	♿		7 40P	
11 00A	131		Burns, OR–Figaro's Italian Kitchen (PT)	♿	Ar	4 15P	
1 30P	261	Ar	Bend, OR–Bus Station	♿	Dp	1 45P	
2 00P		Dp			Ar	1 30P	6 00P
4 38P	388	Ar	Eugene-		Dp	10 12A	
4 40P		Dp	Springfield, OR	● ♿	Ar	10 10A	3 00P
6 30P	449		Florence, OR –2nd & U.S. 101			8 50A	1 35P
7 00P	469		Reedsport, OR –Sentosa Store			8 30A	1 05P
7 30P	496	Ar	Coos Bay, OR –Bus Station (PT)		Dp	8 00A	12 35P

Redmond • Bend • Chemult *(TAC Transportation-Oregon DOT)*

11	14			Connecting Train Number			11	14
6111	6114			Thruway Number			6211	6214
Daily	Daily	Mile	▼	Days of Operation	Symbol	▲	Daily	Daily
5 35P	7 15A	0	Dp	Redmond Airport, OR (PT)	♿	Ar	10 15P	11 35A
6 05P	7 40A	16		Bend, OR –Riverhouse Resort	♿		D 9 45P	11 15A
6 35P	8 15A	31		Sunriver, OR–Lodge	♿		D 9 15P	10 45A
7 00P	8 40A	49		La Pine, OR–Shell Sta.	♿		D 8 50P	10 25A
7 40P	9 20A	84	Ar	Chemult, OR–Amtrak Sta.(PT)	○ ♿	Dp	8 10P	9 45A

NOTE: Redmond Airport pickup requires that a reservation be made with Amtrak at least 2 hours prior to departing the airport, or by calling TAC Transportation at (547) 382-4193.

Emeryville • Oakland • San Francisco *(Amtrak Thruway)*

5011	Mile	▼	Thruway Number	Symbol	▲	5014
8 25A	0	Dp	Emeryville, CA–Amtrak Sta. (PT)	● 🧳 ♿	Ar	9 50P
			San Francisco, CA 🚌			
D 8 55A	9	Ar	–Ferry Bldg., Amtrak Sta.	● 🧳 ♿	Dp	9 25P
D 9 05A	10		–Fisherman's Wharf, Pier 39			9 10P
D 9 20A	11	Ar	–S.F. Shopping Ctr., 835 Market St.		Dp	9 00P
9 30A	11	Ar	–Caltrain Sta.-4th & King Sts.		Dp	8 50P
6011	**Mile**	**▼**	**Thruway Number**	**Symbol**	**▲**	**6014**
7 00A	0	Dp	–Caltrain Sta.-4th & King Sts.			
7 10A	0		–S.F. Shopping Ctr., 835 Market St.		Ar	10 40P
7 25A	1		–Fisherman's Wharf, Pier 39			D10 25P
7 55A	2	Dp	–Ferry Bldg., Amtrak Sta.	● 🧳 ♿	Ar	D10 10P
	2		–Financial District, Hyatt Regency			D10 05P
8 25A	11	Ar	Oakland, CA–Jack London Sq. (PT)	● 🧳 ♿	Dp	9 45P

Salinas • Monterey • Carmel *(MV Transportation, Inc.)*

11	14			Connecting Train Number			11	14
5211	5214	Mile	▼	Thruway Number	Symbol	▲	5111	5114
11 50A	6 40P	0	Dp	Salinas, CA –Amtrak Sta. (PT)	● ♿	Ar	11 30A	6 15P
78	78			Monterey, CA				
D12 25P	D 7 15P	18		–Hyatt Regency	♿		R10 55A	R 5 30P
D12 30P	D 7 20P	19		–Marriott	♿		R10 30A	R 5 00P
D12 33P	D 7 23P	19		–Travelodge	♿		R10 15A	R 4 45P
D12 35P	D 7 30P	19		–Transit Plaza	♿		R10 40A	R 5 20P
D12 45P	D 7 35P	20		–Monterey Bay Aquar.	♿		R10 25A	R 4 55P
1 10P	7 45P	22	Ar	Carmel, CA (PT)	♿	Dp	10 00A	4 30P

Connecting Local Services

Seattle-Victoria, BC Boat Thruway Service

Clipper Navigation operates the high-speed catamaran Victoria Clipper year-round between Pier 69 in Seattle (one mile from Amtrak King Street Station) and Victoria's Inner Harbour. Reservations are required. Call Amtrak for schedules, fares and ticketing information for travel more than three days ahead. For travel less than three days in advance, contact Victoria Clipper at (206) 448-5000 or (800) 888-2535 or visit www.victoriaclipper.com.

CALIFORNIA COASTAL SERVICES-Southbound

Roseville • Sacramento • Oakland • San Luis Obispo • Santa Barbara • Los Angeles • San Diego

Service/Train Name ▶	Mile	Symbol		Capitol Corridor/ Pacific Surfliner	Capitol Corridor/ Pacific Surfliner	Pacific Surfliner	Capitol Corridor/ Pacific Surfliner	Capitol Corridor/ Pacific Surfliner	Coast Starlight/ Pacific Surfliner	Capitol Corridor/ Pacific Surfliner	Capitol Corridor/ Pacific Surfliner	Capitol Corridor
Train Number ▶				551/768	749/768	784	523/798/ 592	723/792/ 592	11/796	527/796	727/796	537/737
Normal Days of Operation ▶				Mo-Fr	SaSuHol	Daily	Mo-Fr	SaSuHol	Daily	Mo-Fr	SaSuHol	Daily
On Board Service ▶				B	B	B	B	B	R	B	B	
Amtrak Thruway Connection												
Roseville, CA (PT)	0		Dp	5 40P			4 45A				6 45A	11 00A
Sacramento, CA	18			7 40P	7 10P		5 30A	5 40A	6 35A	7 00A	7 40A	12 10P
Davis, CA	31			7 55P	7 25P		5 45A	5 55A	6 50A	7 15A	7 55A	12 25P
Suisun-Fairfield, CA	58			8 19P	7 49P		6 09A	6 19A		7 39A	8 19A	12 49P
Martinez, CA	75			8 40P	8 10P		6 30A	6 40A	7 34A	8 00A	8 40A	1 10P
Richmond, CA	94			9 05P	8 35P		6 55A	7 05A		8 25A	9 05A	1 35P
Berkeley, CA	100			9 12P	8 42P		7 02A	7 12A		8 32A	9 12A	1 42P
Emeryville, CA	102			9 20P	8 50P	R 5 35A	7 10A	7 20A	8 20A	8 40A	9 20A	1 50P
Oakland, CA–Jack London Sq.	107		Ar	9 38P	9 08P	R 5 25A	7 21A	7 31A	8 35A	8 51A	9 31A	2 01P
			Dp	10 00P	10 00P		7 23A	7 33A	8 50A	9 20A	9 33A	2 03P
Oakland Coliseum, CA.	112						7 32A	7 42A		9 02A	9 42A	2 12P
San Francisco, CA–Ferry Bldg.				10 45P	10 45P	R 6 05A	R 8 20A	R 8 20A		R10 05A	R10 05A	
Hayward, CA	120						7 43A	7 53A		9 13A	9 53A	2 23P
Fremont-Centerville, CA	132						7 59A	8 09A		9 29A	10 09A	2 39P
Santa Clara-Great America, CA	143						L 8 16A	8 26A		9 46A	10 26A	2 56P
San Jose, CA	150		Ar	11 55P	11 55P	7 20A	8 35A	8 45A	9 55A	10 10A	10 45A	3 15P
			Dp	11 59P	11 59P	7 25A	9 35A	9 35A	10 07A	11 25A	11 25A	3 25P
Salinas, CA	221			1 20A	1 20A	8 45A	10 55A	10 55A	11 48A	12 45P	12 45P	4 40P
King City, CA–McDonald's				M 2 15A	M 2 15A	M 9 40A	M11 50A	M11 50A		M 1 40P	M 1 40P	MD 5 35P
Paso Robles, CA	318			3 15A	3 15A	10 40A	12 50P	12 50P	1 38P	2 40P	2 40P	D 6 20P
Atascadero, CA–Denny's	328									3 00P	3 00P	
San Luis Obispo, CA–Cal Poly	352			D 3 50A	D 3 50A	R10 10A	1 25P	1 25P		3 25P	3 25P	D 6 55P
San Luis Obispo, CA	353		Ar	3 55A	3 55A	10 30A	1 45P	1 45P	3 20P	3 45P	3 45P	7 00P
			Dp	4 00A	4 00A	10 35A	2 00P	2 00P		3 50P	3 50P	7 10P
Grover Beach, CA	366					11 00A	2 20P	2 20P		4 15P	4 15P	D 7 30P
Santa Maria, CA–IHOP	378			4 35A	4 35A	R11 25A				4 40P	4 40P	D 7 55P
Guadalupe-Santa Maria, CA	379						2 36P	2 36P				
Lompoc-Surf Sta., CA	406						3 10P	3 10P				
Lompoc, CA–Visitors Center	422					R12 10P						
Buellton, CA–Burger King				5 05A	5 05A	R12 30P				5 10P	5 10P	D 8 30P
Solvang, CA–Solvang Park	454			5 15A	5 15A	R12 40P				5 20P	5 20P	D 8 40P
Goleta, CA	465			6 30A	6 30A	1 45P	4 16P	4 16P		6 45P	6 45P	
Santa Barbara, CA	474		Ar	6 30A	6 30A	1 45P	4 05P	4 05P	6 10P	6 40P	6 40P	9 30P
			Dp	6 46A	6 46A	2 00P	4 31P	4 31P	6 17P	6 59P	6 59P	
Carpinteria, CA	484			7 01A	7 01A	2 16P	4 46P	4 46P		7 15P	7 15P	
Ventura, CA	500			7 23A	7 23A	2 41P	5 08P	5 08P		7 37P	7 37P	
Oxnard, CA	510			7 37A	7 37A	2 58P	5 22P	5 22P	D 7 05P	7 51P	7 51P	
Camarillo, CA	520			7 48A	7 48A	3 09P				8 02P	8 02P	
Moorpark, CA	530			8 06A	8 06A	3 21P	6 15P	5 50P				
Simi Valley, CA	541			8 22A	8 22A	3 37P	6 31P	6 06P	D 7 38P	8 35P	8 35P	
Chatsworth, CA	549			8 35A	8 35A	3 50P	6 44P	6 19P		8 47P	8 47P	
Van Nuys, CA–Amtrak Sta.	558			8 50A	8 50A	4 16P	6 57P	6 32P	D 8 05P	9 04P	9 04P	
Burbank Airport, CA ✈	564			8 58A	8 58A	4 25P	7 05P	6 40P		9 12P	9 12P	
Glendale, CA	571			9 14A	9 14A	4 38P	7 18P	6 53P		9 25P	9 25P	
Los Angeles, CA ✈	577		Ar	9 25A	9 25A	4 55P	7 40P	7 15P	9 00P	9 45P	9 45P	
			Dp	9 40A	9 40A	5 10P	8 30P	8 30P	10 10P	10 10P	10 10P	
Fullerton, CA	603			10 10A	10 10A	5 40P	9 02P	9 02P	10 40P	10 40P	10 40P	
Anaheim, CA (Disneyland)	608			10 21A	10 21A	5 49P	9 11P	9 11P	10 49P	10 49P	10 49P	
Santa Ana, CA	613			10 30A	10 30A	5 58P	9 20P	9 20P	10 58P	10 58P	10 58P	
Irvine, CA	623			10 41A	10 41A	6 11P	9 31P	9 31P	11 09P	11 09P	11 09P	
San Juan Capistrano, CA	635			11 00A	11 00A	6 25P	9 48P	9 48P	11 23P	11 23P	11 23P	
San Clemente Pier, CA	643			11 11A	11 11A							
Oceanside, CA (LEGOLAND)	664			11 33A	11 33A	6 57P	10 19P	10 19P	11 55P	11 55P	11 55P	
Solana Beach, CA	680			11 49A	11 49A	7 13P	10 35P	10 35P	12 11A	12 11A	12 11A	
San Diego-Old Town, CA	702			42 12 18P	42 12 18P				12 40A	12 40A	12 40A	
San Diego, CA (Tijuana) (PT)	705		Ar	12 25P	12 25P	7 50P	11 15P	11 15P	12 50A	12 50A	12 50A	

Airport Connections

Los Angeles International Airport

FlyAway frequent bus service is available between Los Angeles International Airport, Van Nuys and Los Angeles Union Station. FlyAway Information: (818) 994-5554 or (310) 646-5252

Burbank-Bob Hope Airport

The Burbank-Bob Hope Airport bus stop/ train station is one short block from the terminal building and shuttle service is available for those with baggage. MTA buses stop at the station.

AMTRAK®

Visit Amtrak.com • Call 1-800-USA-RAIL

CALIFORNIA COASTAL SERVICES-Northbound

San Diego • Los Angeles • Santa Barbara • San Luis Obispo • Oakland • Sacramento • Roseville

Service/Train Name ▶ 85 86 88				Capitol Corridor	Capitol Corridor	Pacific Surfliner/ Capitol Corridor	Pacific Surfliner/ Capitol Corridor	Pacific Surfliner/ Capitol Corridor	Pacific Surfliner/ Coast Starlight	Pacific Surfliner	Pacific Surfliner	Pacific Surfliner/ Capitol Corridor	Pacific Surfliner/ Capitol Corridor
Train Number ▶				532	734	799/544/ 744	763/546	763/748	763/14	769	775	785/522	785/720
Normal Days of Operation ▶				Mo-Fr	SaSuHol	Daily	Mo-Fr	SaSuHol	Daily	Daily	Daily	Mo-Fr	SaSu
On Board Service ▶				☕	☕	B ☕	B ☕	B ☕	R 🖉 ✕ ☕	B ☕	B ☕	B ☕ 💼	B ☕ 💼
	Mile	Symbol											
🚌 Amtrak Thruway Connection				🚌	🚌	🚌	🚌	🚌		🚌	🚌	🚌	🚌
San Diego, CA (Tijuana 🚌) (PT)	0	◑ ♿	Dp				💼 6 10 A	💼 6 10 A	💼 6 10A	💼 9 30A	💼12 00N	💼 4 00P	💼 4 00P
San Diego-Old Town, CA	3	○ ♿	↓									42 4 06P	42 4 06P
Solana Beach, CA	26	◑ ♿	↓				6 45A	6 45A	6 45A	10 04A	12 34P	4 35P	4 35P
Oceanside, CA (LEGOLAND)	41	◑ ♿	↓				💼 7 01A	💼 7 01A	💼 7 01A	💼 10 18A	💼12 49P	💼 4 52P	💼 4 52P
San Clemente Pier, CA	63	○	↓									5 15P	5 15P
San Juan Capistrano, CA	70	◑ ♿	↓				7 31A	7 31A	7 31A	10 49A	1 21P	5 26P	5 26P
Irvine, CA	83	◑ ♿	↓				7 46A	7 46A	7 46A	11 05A	1 36P	5 41P	5 41P
Santa Ana, CA	92	◑ ♿	↓			5 30A	💼 7 57A	💼 7 57A	💼 7 57A	11 17A	💼 1 49P	5 52P	5 52P
Anaheim, CA (Disneyland)	97	● ♿	↓				💼 8 06A	💼 8 06A	💼 8 06A	11 26A	💼 1 58P	6 01P	6 01P
Fullerton, CA	103	● ♿	↓			5 50A	💼 8 15A	💼 8 15A	💼 8 15A	💼 11 36A	💼 2 08P	💼 6 10P	💼 6 10P
Los Angeles, CA ✈ 88	128	● ♿	Ar			7 15A	💼 8 50A	💼 8 50A	💼 8 50A	12 15P	2 40P	6 45P	6 45P
			Dp			💼 7 30A	💼 9 05A	💼 9 05A	💼 10 15A	💼 12 30P	💼 2 55P	💼 7 00P	💼 7 00P
Glendale, CA	134	○ ♿	↓			7 43A	9 18A	9 18A		12 43P	3 08P	7 13P	7 13P
Burbank Airport, CA ✈	142	○	↓			7 58A	9 30A	9 30A		12 55P	3 20P	7 25P	7 25P
Van Nuys, CA–Amtrak Sta.	147	◑ ♿	↓			💼 8 08A	💼 9 40A	💼 9 40A	💼R10 47A	💼 1 05P	💼 3 30P	💼 7 35P	💼 7 35P
Chatsworth, CA	157	○ ♿	↓			8 24A	9 53A	9 53A		1 18P	3 43P	7 48P	7 48P
Simi Valley, CA	164	○ ♿	↓			8 45A	10 05A	10 05A	R11 23A	1 30P	3 59P	8 00P	8 00P
Moorpark, CA	175	○ ♿	↓			8 57A				1 43P			
Camarillo, CA	186	○	↓			9 10A	10 27A	10 27A		1 56P	4 22P	8 27P	8 27P
Oxnard, CA	195	● ♿	↓			💼 9 21A	💼 10 40A	💼 10 40A	💼 11 55A	💼 2 07P	💼 4 35P	💼 8 38P	💼 8 38P
Ventura, CA	205	○	↓			9 35A	10 54A	10 54A		2 21P	4 49P	8 57P	8 57P
Carpinteria, CA	221	○	↓			9 57A	11 16A	11 16A		2 45P	5 11P	9 19P	9 19P
Santa Barbara, CA	231	◑ ♿	Ar			💼 10 12A	💼D11 34A	💼D11 34A		💼D 3 03P		D 9 37P	D 9 37P
			Dp	6 00A	6 00A	10 15A	💼 11 40A	💼 11 40A	💼 12 48P	💼 3 10P	💼 5 33P	9 45P	9 45P
Goleta, CA	241	○	↓			10 27A	11 55A	11 55A		3 20P	5 45P	9 55P	9 55P
Solvang, CA–Solvang Park	279	○	↓				12 30P	12 30P		D 4 00P		10 35P	10 35P
Buellton, CA–Burger King		○	↓				12 25P	12 25P		D 3 55P		10 30P	10 30P
Lompoc, CA–Visitors Center	288	○	↓							D 4 30P			
Lompoc-Surf Sta., CA	300	○	↓			11 33A					7 00P		
Guadalupe-Santa Maria, CA	326	○	↓			12 09P				D 5 05P	7 38P		
Santa Maria, CA–IHOP	327	○	↓	7 05A	7 05A		1 10P	1 10P		D 4 35P		11 15P	D11 15P
Grover Beach, CA	338	○ ♿	↓	7 25A	7 25A	12 26P	1 35P	1 35P		D 5 30P	7 55P	11 40P	D11 40P
San Luis Obispo, CA	350	◑ ♿	Ar	7 45A	7 45A	💼 12 45P	💼 2 00P	💼 2 00P	3 30P	💼 5 15P	💼 8 30P	12 05A	12 05A
			Dp	7 55A	7 55A	💼 12 50P	💼 2 05P	💼 2 05P	💼 3 43P	💼 5 20P	8 31P	12 10A	12 10A
San Luis Obispo, CA–Cal Poly	351	○	↓	8 00A	8 00A	1 00P	2 15P	2 15P		5 30P	D 8 40P	12 20A	12 20A
Atascadero, CA–Denny's	375	○	↓				2 30P	2 30P			D 9 00P		
Paso Robles, CA 86	385	○ ♿	↓	8 30A	8 30A	💼 1 25P	2 45P	2 45P	4 45P	5 55P	9 20P	12 45A	12 45A
King City, CA–McDonald's		○	↓	9 35A	9 35A	M 2 35P	M 3 55P	M 3 55P		M 6 55P		1 55A	1 55A
Salinas, CA	483	● ♿	↓	10 40A	10 40A	💼 3 35P	💼 4 55P	💼 4 55P	💼 6 36P	7 55P		2 55A	2 55A
San Jose, CA	554	● ♿	Ar	12 10P	12 10P	💼 4 50P	💼 6 10P	💼 6 10P	8 27P	💼 9 10P		4 10A	4 10A
			Dp	12 20P	12 50P	5 50P	7 15P	7 50P	💼 8 39P			4 10A	4 10A
Santa Clara-Great America, CA	561	○ ♿	↓	12 32P	1 02P	6 02P	7 27P	8 02P					
Fremont-Centerville, CA	573	○ ♿	↓	12 49P	1 19P	6 19P	7 43P	8 19P					
Hayward, CA	585	○ ♿	↓	1 04P	1 34P	6 34P	7 59P	8 34P					
San Francisco, CA–Ferry Bldg.		● ♿ T	↓	R12 55P	R 1 25P	💼D 6 05P	💼D 7 15P	💼D 7 20P	💼D10 10P	💼D10 25P		D 5 25A	D 5 25A
Oakland Coliseum, CA	593	○	↓	1 14P	1 44P	6 44P	8 10P	8 44P					
Oakland, CA–Jack London Sq.	598	● ♿ T	Ar	1 23P	1 53P	💼67 6 53P	💼 7 55P	💼 8 00P	9 32P	D10 55P		5 55A	5 55A
			Dp	1 25P	1 55P	6 55P	8 20P	8 55P	💼 9 47P			6 30A	7 20A
Emeryville, CA	603	● ♿ T	↓	1 35P	2 05P	7 05P	8 30P	9 05P	💼 10 12P	D10 45P		6 40A	7 30A
Berkeley, CA	604	○ ♿ T	↓	1 39P	2 09P	7 09P	8 34P	9 09P				6 44A	7 34A
Richmond, CA	610	○ ♿ T	↓	1 47P	2 17P	7 17P	8 42P	9 17P				6 52A	7 42A
Martinez, CA	630	● ♿ T	↓	2 14P	2 44P	7 44P	9 09P	9 44P	💼 10 54P			7 19A	8 09A
Suisun-Fairfield, CA	647	○ ♿ T	↓	2 33P	3 03P	8 03P	9 27P	10 03P				7 38A	8 28A
Davis, CA	674	● ♿ T	↓	2 57P	3 27P	8 27P	9 52P	10 27P	💼 11 33P			8 02A	8 52A
Sacramento, CA	687	● ♿ T	↓	3 25P	3 55P	8 55P	10 25P	10 55P	💼 11 59P			8 28A	9 18A
Roseville, CA 85 (PT)	705	○ ♿	Ar	D 4 30P	D 4 30P							10 40A	10 40A

Airport Connections

Los Angeles International Airport

FlyAway frequent bus service is available between Los Angeles International Airport, Van Nuys and Los Angeles Union Station. FlyAway Information: (818) 994-5554 or (310) 646-5252

Burbank-Bob Hope Airport

The Burbank-Bob Hope Airport bus stop/ train station is one short block from the terminal building and shuttle service is available for those with baggage. MTA buses stop at the station.

Services on Pacific Surfliner® Trains

Coaches: Unreserved.
R Reserved.
B **Pacific Business class Service:** Reserved seat service with complimentary beverages, light snacks and newspaper.
☕ **Café:** Sandwiches, snacks and beverages.

Smoking is prohibited.

Bicycles on trains with checked baggage service: Passengers may transport unboxed bicycles in baggage cars on board those trains and between stations where checked baggage service is available (as noted by baggage symbols). Service charge applies. Passenger must arrive at station at least 30 minutes before departure and assist with loading and unloading at baggage car. Unboxed bicycles may be put in the bin under connecting Thruway motorcoaches. Amtrak disclaims liability for loss or damage.

Services on California Coastal Routes

85 For detailed service information for the Capitol Corridor between Roseville and San Jose, please refer to this route's corresponding wallet timetable product (W34).
86 For detailed service information for the Pacific Surfliner between Paso Robles and San Diego, see at left.
88 For detailed service information for the Coast Starlight between Seattle and Los Angeles, please refer to this route's corresponding wallet timetable product (P11).

Smoking is prohibited.

Symbols and Reference Marks

A Time Symbol for A.M.
D Stops only to discharge passengers; train may leave before time shown.
L Stops to receive and discharge passengers; train may leave before time shown.
M Meal stop.
N Time Symbol for Noon
P Time Symbol for P.M.
PT Pacific Time
R Stops only to receive passengers.
T Quik-Trak self-serve ticketing kiosk available for credit/debit card sales.
💼 Checked Baggage service available at select locations; size restriction for carryon luggage is 28" x 22" x 11".
🚌 Connecting Thruway bus.
● Ticket office open for all train departures.
◑ Ticket office/checked baggage not open for all departures.
○ Tickets can not be purchased at this location.
♿ All station facilities are fully accessible to persons using wheelchairs.
♿ Barrier-free access between street or parking lot, station platform and train; however, not all facilities within the station are fully accessible.
✈ - Walking distance of main terminal Burbank-Bob Hope Airport. Free shuttle also available. Visit bobhopeairport.com.
- Convenient FlyAway Bus Service Los Angeles Union Station - Los Angeles International Airport. Visit www.lawa.org/lax.
37 Connection between Thruway motorcoach and train at Los Angeles.
42 Will stop at Old Town on Saturdays and Sundays and 5/25 and 9/7/09.
43 Connection between Thruway motorcoach and train at Santa Barbara.
44 Metrolink commuter train connection available. Separate ticket required. Call Metrolink at (800) 371-LINK for exact departure times.
53 Connection between train and Thruway motorcoach at San Luis Obispo station.
54 Disneyland® is located 2 1/2 miles from Anaheim station.
55 LEGOLAND is located 8 miles from Oceanside station. Transfers may be made by taxi at passenger's expense.
56 Will stop at Old Town on Saturdays and Sundays and 5/25 and 9/7/09.
64 Connecting Bus service to/from Oakland - San Luis Obispo - Santa Barbara.
67 Bus 4799 arrives Oakland at 6:00 p.m.
68 Bus 4784 operates express service to Santa Barbara via San Luis Opispo.
90 Thru bus to Oakland.
● Reserved long-distance train.
○ Unreserved service.
● Thruway and connecting services.

For reservations and information, visit Amtrak.com.

Upgrade your next trip to **Business class on the Pacific Surfliner®** *for as little as $10.*

Enjoy reserved seating with reclinging seats, extra legroom and outlets for laptops at every seat. Plus complimentary snacks, beverages and newspapers are available, making Pacific Business class the most comfortable way to travel.

Fares subject to change without notice.

PACIFIC SURFLINER-Southbound

Paso Robles • San Luis Obispo • Santa Barbara • Los Angeles • Orange County • San Diego

Train Number ▶				562	564	566	768	572	774	578	580	582	784	590	792	798	592	796
Normal Days of Operation ▶				Mo-Fr	Daily	Daily	Daily	Daily	Daily	Daily	SaSu	Daily	Daily	FrSaSu	SaSu	MoFr	Daily	Daily
Will Also Operate ▶											5/25,9/7			5/25,9/7	5/25,9/7			
Will Not Operate ▶				5/25,9/7												5/25,9/7		
On Board Service ▶				B 🪑	B 🪑	B 🪑 🧳	B 🪑 🧳	B 🪑 🧳	B 🪑 🧳	B 🪑 🧳	B 🪑	B 🪑	B 🪑 🧳	B 🪑	B 🪑	B 🪑	B 🪑 🧳	B 🪑 🧳
	Mile	Symbol																
Paso Robles, CA (PT)	0	○	Dp				🚌 64 R 3 15A						🚌 66 R *10 40A		64 R 12 50P	64 R 12 50P		64 R 2 40P
Atascadero, CA–Denny's	10	○	↓															3 00P
San Luis-Cal Poly, CA	34	○	↓				R D 3 50A						R *10 10A		1 25P	1 25P		3 25P
San Luis Obispo, CA	0	◑ ♿ T	↓				4 00A		🧳 6 45A				🧳 R 10 35A		53 🧳 2 00P	53 🧳 2 00P		🧳 3 50P
Grover Beach, CA	12	○ ♿	↓						7 05A				11 00A		2 20P	2 20P		4 15P
Santa Maria, CA–IHOP	24	○	↓				4 35A						R 11 25A					4 40P
Guadalupe-Santa Maria, CA	25	○	↓						7 21A						2 36P	2 36P		
Lompoc-Surf Sta., CA 🚌	51	○	↓						7 55A						3 10P	3 10P		
Lompoc, CA–Visitors Center	67	○	↓										R 12 10P					
Buellton, CA–Burger King		○	↓				5 05A						R 12 30P					5 10P
Solvang, CA	98	○	↓				5 15A						R 12 40P					5 20P
Goleta, CA	110	○	↓				6 30A		9 03A				1 45P		4 16P	4 16P		6 45P
Santa Barbara, CA	119	● ♿ T	Ar				43 6 30A						43 1 45P					43 🧳 6 40P
Santa Barbara, CA	119	● ♿ T	Dp				🧳 6 46A		🧳 9 20A			🚌 R 12 30P	🧳 2 00P		🧳 4 31P	🧳 4 31P		🧳 6 59P
Carpinteria, CA	129	○	↓				7 01A		9 35A				2 16P		4 46P	4 46P		7 15P
Ventura, CA	145	○	↓				7 23A		9 57A				2 41P		5 08P	5 08P		7 37P
Oxnard, CA	155	● ♿ T	↓			44	🧳 7 37A		🧳 10 11A			1 15P	🧳 2 58P		🧳 5 22P	🧳 5 22P		🧳 7 51P
Camarillo, CA	165	○	↓			44	7 48A		10 22A				3 09P					8 02P
Moorpark, CA	175	○ ♿	↓		44	44	8 06A						3 21P		5 50P	6 15P		
Simi Valley, CA	186	○ ♿	↓		44	44	8 22A		10 51A				3 37P		6 06P	6 31P		8 35P
Chatsworth, CA	194	○ ♿	↓		44	44	8 35A		11 04A				3 50P		6 19P	6 44P		8 47P
Van Nuys, CA–Amtrak Sta.	203	◑ ♿ T	↓		44	44	🧳 8 50A		🧳 11 18A			2 35P	🧳 4 16P		🧳 6 32P	🧳 6 57P		🧳 9 04P
Burbank Airport, CA ✈	209	○	↓		44	44	8 58A		11 26A				4 25P		6 40P	7 05P		9 12P
Glendale, CA	216	○ ♿	↓		44	44	9 14A		11 39A				4 38P		6 53P	7 18P		9 25P
Los Angeles, CA ✈	222	● ♿ T	Ar				9 25A		12 10P			37 3 35P	4 55P		🧳 7 15P	🧳 7 40P		🧳 9 45P
Los Angeles, CA	222	● ♿ T	Dp	6 05A	7 20A	8 30A	🧳 9 40A	🧳 11 10A	🧳 12 25P	2 00P	3 00P	4 10P	🧳 5 10P	7 15P	➡	➡	🧳 8 30P	🧳 10 10P
Fullerton, CA	248	● ♿ T	↓	6 35A	7 50A	9 00A	🧳 10 10A	🧳 11 40A	🧳 12 55P	2 30P	3 30P	4 40P	🧳 5 40P	7 45P			9 02P	🧳 10 40P
Anaheim, CA (Disneyland®) 54	253	● ♿ T	↓	6 44A	7 59A	9 09A	🧳 10 21A	🧳 11 49A	🧳 1 04P	2 39P	3 39P	4 49P	5 49P	7 54P			9 11P	🧳 10 49P
Orange, CA -Metrolink Station	255	○ ♿	↓			9 13A				2 43P								
Santa Ana, CA	258	◑ ♿ T	↓	6 53A	8 08A	9 20A	🧳 10 30A	🧳 11 58A	🧳 1 13P	2 50P	3 48P	4 58P	5 58P	8 03P			9 20P	🧳 10 58P
Irvine, CA	268	◑ ♿ T	↓	7 04A	8 22A	9 31A	10 41A	12 11P	1 24P	3 01P	4 02P	5 09P	6 11P	8 17P			9 31P	11 09P
Laguna Niguel/Mission Viejo, CA	277	○ ♿	↓			9 41A				3 11P								
San Juan Capistrano, CA	280	◑ ♿ T	↓	7 18A	8 40A	9 48A	11 00A	12 25P	1 38P	3 18P	4 16P	5 23P	6 25P	8 31P			9 48P	11 23P
San Clemente Pier, CA	288	○	↓			10 00A	11 11A											
Oceanside, CA (LEGOLAND) 55	309	◑ ♿ T	↓	7 56A	9 13A	10 23A	🧳 11 33A	🧳 12 59P	🧳 2 12P	3 48P	4 52P	5 55P	🧳 6 57P	9 03P			10 19P	🧳 11 55P
Solana Beach, CA	325	◑ ♿ T	↓	8 15A	9 29A	10 39A	11 49A	1 19P	2 28P	4 08P	5 10P	6 13P	7 13P	9 19P			10 35P	12 11A
San Diego, CA -Old Town	347	◑ ♿ T	↓		56 9 58A	56 11 08A	56 12 18P											12 40A
San Diego, CA (Tijuana 🚌) (PT)	350	◑ ♿ T	Ar	8 55A	10 10A	11 20A	🧳 12 25P	🧳 1 55P	🧳 3 10P	4 50P	5 45P	7 00P	🧳 7 50P	9 55P			🧳 11 15P	🧳 12 50A

Thruway Motorcoach Connections

Los Angeles • San Diego

Additional late night/early morning Thruway motorcoach service serving Pacific Surfliner route cities. Travel on these buses is reserved and must be part of an itinerary involving a train trip. Advance purchase is required since most stations are unstaffed at the hours the buses operate. Reserved, ticketed customers have priority seating. Passengers traveling north of Los Angeles with valid reservation numbers will be carried; unreserved, ticketed passengers are carried on a space-available basis. Tickets available at Los Angeles, San Diego, Solana Beach and Oceanside 30 minutes before the departure of the buses marked with an asterisk (*) below.

Daily	Daily	Mile			Symbol		Daily	Daily
		0		Glendale, CA (PT)	○ R	Ar		1 45A
		6		Los Angeles, CA	● R	Dp		1 25A
* 2 50A	* 1 05A	6	Dp	Los Angeles, CA	● R	Ar	* 7 15A	* 1 15A
D 3 25A	D 1 40A	32		Fullerton, CA	◑ R		* 5 50A	12 30A
D 3 40A	1 55A	42	Ar	Santa Ana, CA	◑ R		* 5 30A	12 10A
D 4 15A		64		San Juan Capistrano, CA	○ R			11 35P
D 4 50A		93		Oceanside, CA	◑ R			*11 00P
D 5 10A		110		Solana Beach, CA	◑ R			*10 30P
5 35A		135	Ar	San Diego, CA (PT)	● R	Dp		*10 00P

Connecting Local Services in Southern California

Metrolink provides commuter rail service radiating from Los Angeles Union Station including Lancaster, the Antelope Valley, downtown Burbank, Oxnard, Riverside, San Bernardino, and supplements Pacific Surfliner service between Oxnard and Oceanside (through Los Angeles). (800) 371-5465; metrolinktrains.com

Los Angeles County Metropolitan Transit Authority provides bus, subway, and light rail services in the Los Angeles area; MTA's Red and Gold lines originate at Union Station. Rail connections available to Los Angeles International Airport. (800) 266-6883; mta.net

North County Transit District operates the Coaster commuter rail service which supplements the Pacific Surfliners between San Diego and Oceanside including additional stops at Encinitas and Carlsbad. The Breeze also provides bus service at many Pacific Surfliner stations.
(760) 966-6500; www.gonctd.com

San Diego Metropolitan Transit System operates bus and the San Diego Trolley light rail service. Direct service to San Diego's Amtrak station. Cross-platform transfer at San Diego-Old Town station for San Diego Chargers home games at Qualcomm Stadium and at San Diego Amtrak Station for San Diego Padres games at Petco Park.
(619) 233-3004; sdcommute.com

Services on Pacific Surfliner® Trains

Coaches: Unreserved.
R Reserved.
B **Pacific Business class service:** Reserved seat service with complimentary beverages, light snacks and newspaper.
🪑 **Café:** Sandwiches, snacks and beverages.

Smoking is prohibited.

Bicycles on trains with checked baggage service: Passengers may transport unboxed bicycles in baggage cars on board those trains and between stations where checked baggage service is available (as noted by baggage symbols). Service charge applies. Passenger must arrive at station at least 30 minutes before departure and assist with loading and unloading at baggage car. Unboxed bicycles may be put in the bin under connecting Thruway motorcoaches. Amtrak disclaims liability for loss or damage.

The Pacific Surfliner is primarily financed through funds made available by the California State Department of Transportation.

Services on California Coastal Routes

85 For detailed service information for the Capitol Corridor between Roseville and San Jose, please refer to this route's corresponding wallet timetable product (W34).
86 For detailed service information for the Pacific Surfliner between Paso Robles and San Diego, see at left.
88 For detailed service information for the Coast Starlight between Seattle and Los Angeles, please refer to this route's corresponding wallet timetable product (P11).

Smoking is prohibited.

● Reserved long-distance train.
○ Unreserved service.
Thruway and connecting services.

See other side for Symbols and Reference Marks

For reservations and information, visit Amtrak.com.

Schedules subject to change without notice.
Amtrak is a registered service mark of the National Railroad Passenger Corp.
National Railroad Passenger Corporation
Washington Union Station, 60 Massachusetts Ave. N.E., Washington, DC 20002
NRPC Form W31–300M–5/11/09 Stock #02-3310

PACIFIC SURFLINER-Northbound

San Diego • Orange County • Los Angeles • Santa Barbara • San Luis Obispo • Paso Robles

Train Number ▶				799	763	565	567	769	571	573	775	577	579	583	785	587	589	591	595	597
Normal Days of Operation ▶				Daily	Daily	Daily	Mo-Fr	Daily	SaSu	Mo-Fr	Daily	SaSu	Mo-Fr	Daily	Daily	SaSu	Mo-Fr	SaSu	Daily	FrSaSu
Will Also Operate ▶									5/25,9/7			5/25,9/7				5/25,9/7		5/25,9/7		5/25,9/7
Will Not Operate ▶							5/25,9/7			5/25,9/7			5/25,9/7				5/25,9/7			
On Board Service ▶				B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	Mile	Symbol																		
San Diego, CA (Tijuana) (PT)	0		Dp		6 10A	7 05A	8 10A	9 30A	10 35A	10 50A	12 00N	12 55P	1 25P	3 00P	4 00P	5 20P	5 55P	6 20P	8 20P	9 15P
San Diego, CA -Old Town	3														56 4 06P	56 5 27P		56 6 27P		
Solana Beach, CA	26				6 45A	7 39A	8 44A	10 04A	11 09A	11 24A	12 34P	1 29P	1 59P	3 34P	4 35P	5 56P	6 29P	6 56P	8 54P	9 49P
Oceanside, CA (LEGOLAND) 55	41				7 01A	7 55A	8 58A	10 18A	11 25A	11 39A	12 49P	1 44P	2 14P	3 50P	4 52P	6 10P	6 44P	7 10P	9 09P	10 04P
San Clemente Pier, CA	63													4 11P	5 15P					
San Juan Capistrano, CA	70				7 31A	8 28A	9 29A	10 49A	11 55A	12 10P	1 21P	2 14P	2 47P	4 22P	5 26P	6 40P	7 25P	7 40P	9 41P	10 38P
Laguna Niguel/Mission Viejo, CA	74					8 35A	9 36A													
Irvine, CA	83				7 46A	8 46A	9 47A	11 05A	12 10P	12 28P	1 36P	2 29P	3 03P	4 37P	5 41P	6 55P	7 44P	7 55P	9 56P	10 53P
Santa Ana, CA	92			R 5 30A	7 57A	8 57A	9 58A	11 17A	12 21P	12 39P	1 49P	2 40P	3 14P	4 48P	5 52P	7 09P	8 00P	8 09P	10 09P	11 06P
Orange, CA -Metrolink Station	94					9 02A	10 03A													
Anaheim, CA (Disneyland®) 54	97				8 06A	9 08A	10 09A	11 26A	12 30P	12 48P	1 58P	2 49P	3 23P	4 57P	6 01P	7 18P	8 09P	8 18P	10 18P	11 15P
Fullerton, CA	103			5 50A	8 15A	9 17A	10 18A	11 36A	12 39P	12 58P	2 08P	2 58P	3 34P	5 08P	6 10P	7 29P	8 20P	8 29P	10 29P	11 26P
Los Angeles, CA ✈	128		Ar	37 7 15A	8 50A	9 50A	10 50A	12 15P	1 15P	1 35P	2 40P	3 35P	4 05P	5 45P	6 45P	8 05P	8 55P	9 05P	11 05P	11 59P
Los Angeles, CA	128		Dp	7 30A	9 05A			12 30P			2 55P				7 00P		37 R 9 10P	37 R 9 20P		
Glendale, CA	134			7 43A	9 18A			12 43P			3 08P				7 13P		9 25P	9 40P		
Burbank Airport, CA ✈	142			7 58A	9 30A			12 55P			3 20P				7 25P					
Van Nuys, CA–Amtrak Sta.	147			8 08A	9 40A			1 05P			3 30P				7 35P		9 45P	10 00P		
Chatsworth, CA	157			8 24A	9 53A			1 18P			3 43P				7 48P		D 10 05P	D 10 20P		
Simi Valley, CA	164			8 45A	10 05A			1 30P			3 59P				8 00P		D 10 25P	D 10 40P		
Moorpark, CA	175			8 57A				1 43P									D 10 40P	D 10 55P		
Camarillo, CA	186			9 10A	10 27A			1 56P			4 22P				8 27P		D 10 50P	D 11 05P		
Oxnard, CA	195			9 21A	10 40A			2 07P			4 35P				8 38P		D 11 00P	D 11 15P		
Ventura, CA	205			9 35A	10 54A			2 21P			4 49P				8 57P		D 11 15P	D 11 30P		
Carpinteria, CA	221		Ar	9 57A	11 16A			2 45P			5 11P				9 19P		D 11 30P	D 11 45P		
Santa Barbara, CA	231		Dp	10 12A	D 11 34A			D 3 03P			5 30P				D 9 37P		11 50P	12 05A		
Santa Barbara, CA	231			10 15A	43 R 11 40A			43 R 3 10P			5 33P				43 R 9 45P					
Goleta, CA	241			10 27A	11 55A			3 20P			5 45P				9 55P					
Solvang, CA	253				12 30P			D 4 00P							D 10 35P					
Buellton, CA–Burger King					12 25P			D 3 55P							D 10 30P					
Lompoc, CA–Visitors Center	284							D 4 30P												
Lompoc-Surf Sta., CA	300			11 33A							7 00P									
Guadalupe-Santa Maria, CA	326			12 09P				D 5 05P			7 38P									
Santa Maria, CA–IHOP	327				1 10P			4 35P							D 11 15P					
Grover Beach, CA	338			12 26P	1 35P			D 5 30P			7 55P				11 40P					
San Luis Obispo, CA	350			12 45P	2 00P			5 20P			8 30P				12 10A					
San Luis-Cal Poly, CA	1			53 R 1 00P	2 15P			5 30P			53 R 8 40P				12 20A					
Atascadero, CA–Denny's	25				2 30P						D 9 00P									
Paso Robles, CA (PT)	35		Ar	90 1 25P	90 2 45P			90 5 55P			9 20P				64 12 45A					

The Pacific Surfliner is primarily financed through funds made available by the California State Department of Transportation.

Pacific Surfliner Thruway Motorcoach Connections

Los Angeles • Long Beach • San Pedro

571/573/774	577/579	785/784	589/591/796/11	595/597		Connecting Train Number		5818	566/799	572/769	578	580/582/775
5702	5712	5714	5716	5804		Thruway Number		5711	5713	5715	5717	5703
Daily	Daily	Daily	Daily	Daily		Days of Operation		Daily	Daily	Daily	Daily	Daily
2 50P	4 30P	7 00P	10 10P	1 05A	Dp	Los Angeles, CA–Amtrak Station (PT)	Ar	1 15A	7 05A	10 25A	12 55P	2 55P
D 3 45P	D 5 25P	D 7 55P	D 11 05P	2 30A		Long Beach, CA–Denny's		R 12 30A	R 5 55A	R 9 30A	R 12 01P	R 2 00P
D 4 00P	D 5 40P	D 8 10P	D 11 20P			Long Beach, CA–Queen Mary					R 11 45A	R 1 45P
D 4 15P	D 5 55P	D 8 25P	D 11 35P			San Pedro, CA–Catalina Terminal		R 12 05A	R 5 30A	R 9 05A	R 11 25A	R 1 25P
4 25P	6 05P	8 35P	11 45P		Ar	San Pedro, CA–Library (PT)	Dp	11 50P	5 15A	8 50A	11 10A	1 10P

The ART of Getting from Here to There

Anaheim Resort Transit – the carefree way to enjoy the Anaheim Resort. Express service from Anaheim station to Disneyland® and select area hotels.

Call 1-888-364-ARTS or visit www.RideArt.org for more details.

Anaheim RESORT TRANSIT
ANAHEIM TRANSPORTATION NETWORK
We CAN get you there from here.

APPENDIX D

DELAY WORKSHEETS

EXISTING

TRAFFIC CONDITIONS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	171	293	345	98	8	286	230	412	11	389	24
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	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1681	1714		3433	3539	1583	1770	3508	
Flt Permitted	0.95	1.00	1.00	0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1681	1714		3433	3539	1583	1770	3508	
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.91	0.91	0.91	0.94	0.94	0.94
Adj. Flow (vph)	43	184	315	375	107	9	314	253	453	12	414	26
RTOR Reduction (vph)	0	0	67	0	2	0	0	0	276	0	5	0
Lane Group Flow (vph)	43	184	248	244	245	0	314	253	177	12	435	0
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	2	2	3	6	6		3	8		7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	11.9	11.9	23.1	14.3	14.3		11.2	27.6	27.6	0.8	17.2	
Effective Green, g (s)	11.9	11.9	23.1	14.3	14.3		11.2	27.6	27.6	0.8	17.2	
Actuated g/C Ratio	0.17	0.17	0.33	0.20	0.20		0.16	0.39	0.39	0.01	0.24	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	298	314	518	340	347		545	1384	619	20	855	
v/s Ratio Prot	0.02	c0.10	0.08	c0.15	0.14		c0.09	0.07		0.01	c0.12	
v/s Ratio Perm			0.08						0.11			
v/c Ratio	0.14	0.59	0.48	0.72	0.71		0.58	0.18	0.29	0.60	0.51	
Uniform Delay, d1	25.0	27.1	18.9	26.3	26.2		27.5	14.1	14.7	34.7	23.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	2.8	0.7	7.1	6.5		1.5	0.1	0.3	40.2	0.5	
Delay (s)	25.2	29.9	19.6	33.3	32.7		29.0	14.2	15.0	74.9	23.5	
Level of Service	C	C	B	C	C		C	B	B	E	C	
Approach Delay (s)		23.6			33.0			19.1			24.9	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	23.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.4%	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 (vph)	530	1016	0	0	421	108	94	0	184	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9			4.6		6.0	6.0				
Lane Util. Factor	0.97	0.95			0.95		1.00	1.00				
Frt	1.00	1.00			0.97		1.00	0.85				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			3431		1770	1583				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			3431		1770	1583				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	576	1104	0	0	458	117	102	0	200	0	0	0
RTOR Reduction (vph)	0	0	0	0	18	0	0	95	0	0	0	0
Lane Group Flow (vph)	576	1104	0	0	557	0	102	105	0	0	0	0
Turn Type	Prot	NA			NA		Split	NA				
Protected Phases	5	2			6		8	8				
Permitted Phases												
Actuated Green, G (s)	21.1	70.2			45.4		11.9	11.9				
Effective Green, g (s)	21.1	70.2			45.4		11.9	11.9				
Actuated g/C Ratio	0.23	0.75			0.49		0.13	0.13				
Clearance Time (s)	4.0	4.9			4.6		6.0	6.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	779	2671			1675		226	203				
v/s Ratio Prot	c0.17	c0.31			0.16		0.06	c0.07				
v/s Ratio Perm												
v/c Ratio	0.74	0.41			0.33		0.45	0.52				
Uniform Delay, d1	33.4	4.1			14.5		37.5	37.9				
Progression Factor	1.00	1.70			1.00		1.00	1.00				
Incremental Delay, d2	3.4	0.4			0.1		1.4	2.2				
Delay (s)	36.8	7.3			14.7		39.0	40.1				
Level of Service	D	A			B		D	D				
Approach Delay (s)		17.4			14.7			39.7			0.0	
Approach LOS		B			B			D			A	

Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	53.8%	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 (vph)	21	1040	50	85	408	16	687	9	207	8	4	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.6		3.5	4.6		4.0	4.0	3.5	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91		0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00	0.95	0.98	1.00
Satd. Flow (prot)	1770	5051		1770	5057		1681	1687	1583	1681	1732	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.75	0.73	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	5051		1770	5057		1332	1286	1583	1770	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	1130	54	92	443	17	747	10	225	9	4	7
RTOR Reduction (vph)	0	5	0	0	4	0	0	0	74	0	0	7
Lane Group Flow (vph)	23	1179	0	92	456	0	381	376	151	6	7	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	2.6	33.6		9.9	40.9		31.4	31.4	41.3	2.0	2.0	2.0
Effective Green, g (s)	2.6	33.6		9.9	40.9		31.4	31.4	41.3	2.0	2.0	2.0
Actuated g/C Ratio	0.03	0.36		0.11	0.44		0.34	0.34	0.44	0.02	0.02	0.02
Clearance Time (s)	3.5	4.6		3.5	4.6		4.0	4.0	3.5	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	49	1825		188	2224		450	434	703	38	38	34
v/s Ratio Prot	0.01	c0.23		c0.05	0.09				0.02			
v/s Ratio Perm							0.29	c0.29	0.07	0.00	c0.00	0.00
v/c Ratio	0.47	0.65		0.49	0.21		0.85	0.87	0.21	0.16	0.18	0.00
Uniform Delay, d1	44.5	24.7		39.2	16.0		28.6	28.8	15.9	44.7	44.7	44.5
Progression Factor	1.00	1.00		1.31	0.84		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.9	1.8		1.9	0.2		13.7	16.4	0.2	1.9	2.3	0.1
Delay (s)	51.5	26.5		53.2	13.6		42.3	45.2	16.0	46.6	47.0	44.6
Level of Service	D	C		D	B		D	D	B	D	D	D
Approach Delay (s)		27.0			20.2			37.4			46.1	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	29.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	62.3%	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												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	229	6	0	15	230	38	0	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	249	7	0	16	250	41	0	13

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	255	266	41	13
Volume Left (vph)	0	0	41	0
Volume Right (vph)	7	250	0	13
Hadj (s)	0.02	-0.53	0.53	-0.67
Departure Headway (s)	4.6	4.2	5.9	4.7
Degree Utilization, x	0.33	0.31	0.07	0.02
Capacity (veh/h)	732	815	569	708
Control Delay (s)	9.9	9.1	8.2	6.6
Approach Delay (s)	9.9	9.1	7.8	
Approach LOS	A	A	A	

Intersection Summary			
Delay	9.3		
HCM Level of Service	A		
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	78	93	84	18	21	25	161	228	22	138	587	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0		5.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3493		1770	3494	
Flt Permitted	0.74	1.00	1.00	0.68	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1379	1863	1583	1275	1863	1583	1770	3493		1770	3494	
Peak-hour factor, PHF	0.82	0.82	0.82	0.80	0.80	0.80	0.90	0.90	0.90	0.88	0.88	0.88
Adj. Flow (vph)	95	113	102	22	26	31	179	253	24	157	667	62
RTOR Reduction (vph)	0	0	83	0	0	26	0	7	0	0	7	0
Lane Group Flow (vph)	95	113	19	22	26	5	179	270	0	157	722	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)	11.2	11.2	11.2	10.2	10.2	10.2	12.4	20.3		11.6	19.5	
Effective Green, g (s)	11.2	11.2	11.2	10.2	10.2	10.2	12.4	20.3		11.6	19.5	
Actuated g/C Ratio	0.19	0.19	0.19	0.17	0.17	0.17	0.21	0.34		0.20	0.33	
Clearance Time (s)	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0		5.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	261	353	300	220	322	273	371	1200		347	1153	
v/s Ratio Prot		0.06			0.01		c0.10	0.08		0.09	c0.21	
v/s Ratio Perm	c0.07		0.01	0.02		0.00						
v/c Ratio	0.36	0.32	0.06	0.10	0.08	0.02	0.48	0.22		0.45	0.63	
Uniform Delay, d1	20.8	20.7	19.7	20.6	20.5	20.3	20.5	13.8		20.9	16.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.5	0.1	0.2	0.1	0.0	1.0	0.1		0.9	1.1	
Delay (s)	21.7	21.2	19.7	20.8	20.6	20.3	21.5	13.9		21.9	17.8	
Level of Service	C	C	B	C	C	C	C	B		C	B	
Approach Delay (s)		20.9			20.6			16.9			18.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	59.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.2%	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 (vph)	0	0	0	344	0	167	36	787	0	0	655	292
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.5	3.5		3.5	5.0			5.0	5.0
Lane Util. Factor				1.00	1.00		1.00	0.95			1.00	1.00
Frt				1.00	0.85		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1770	1583		1770	3539			1863	1583
Flt Permitted				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)				1770	1583		1770	3539			1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	374	0	182	39	855	0	0	712	317
RTOR Reduction (vph)	0	0	0	0	125	0	0	0	0	0	0	176
Lane Group Flow (vph)	0	0	0	374	57	0	39	855	0	0	712	141
Turn Type				Perm	NA		Prot	NA			NA	Perm
Protected Phases					8		1	6			2	
Permitted Phases				8								2
Actuated Green, G (s)				28.4	28.4		9.5	53.1			40.1	40.1
Effective Green, g (s)				28.4	28.4		9.5	53.1			40.1	40.1
Actuated g/C Ratio				0.32	0.32		0.11	0.59			0.45	0.45
Clearance Time (s)				3.5	3.5		3.5	5.0			5.0	5.0
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				559	500		187	2088			830	705
v/s Ratio Prot					0.04		0.02	c0.24			c0.38	
v/s Ratio Perm				c0.21								0.09
v/c Ratio				0.67	0.11		0.21	0.41			0.86	0.20
Uniform Delay, d1				26.7	21.9		36.8	10.0			22.4	15.2
Progression Factor				1.00	1.00		1.00	1.00			0.84	1.34
Incremental Delay, d2				6.2	0.5		2.5	0.6			10.8	0.6
Delay (s)				33.0	22.3		39.3	10.6			29.5	21.0
Level of Service				C	C		D	B			C	C
Approach Delay (s)		0.0			29.5			11.8			26.9	
Approach LOS		A			C			B			C	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	61.0%	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 (vph)	18	11	18	278	7	176	12	286	505	218	346	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1806	1583	1681	1689	1583	1770	3539	1583	1770	3532	
Flt Permitted		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1806	1583	1681	1689	1583	1770	3539	1583	1770	3532	
Peak-hour factor, PHF	0.73	0.73	0.73	0.83	0.83	0.83	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	15	25	335	8	212	13	301	532	229	364	5
RTOR Reduction (vph)	0	0	23	0	0	166	0	0	299	0	1	0
Lane Group Flow (vph)	0	40	2	171	172	46	13	301	233	229	368	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8		5	2	8	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)		5.9	5.9	17.5	17.5	17.5	1.1	17.6	35.1	16.1	32.6	
Effective Green, g (s)		5.9	5.9	17.5	17.5	17.5	1.1	17.6	35.1	16.1	32.6	
Actuated g/C Ratio		0.07	0.07	0.22	0.22	0.22	0.01	0.22	0.44	0.20	0.41	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		133	117	367	369	346	24	778	694	356	1437	
v/s Ratio Prot		c0.02		0.10	c0.10		0.01	c0.09	0.07	c0.13	0.10	
v/s Ratio Perm			0.00			0.03			0.07			
v/c Ratio		0.30	0.02	0.47	0.47	0.13	0.54	0.39	0.34	0.64	0.26	
Uniform Delay, d1		35.1	34.4	27.2	27.2	25.2	39.2	26.6	14.8	29.4	15.7	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.3	0.1	0.9	0.9	0.2	22.7	0.3	0.3	4.0	0.1	
Delay (s)		36.4	34.5	28.2	28.2	25.4	61.9	27.0	15.1	33.3	15.8	
Level of Service		D	C	C	C	C	E	C	B	C	B	
Approach Delay (s)		35.7			27.1			20.0			22.5	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	80.1	Sum of lost time (s)	23.0
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	94	62	932	188	55	494
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	102	67	1013	204	60	537
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		3				
Median type			None			None
Median storage veh)						
Upstream signal (ft)			487			332
pX, platoon unblocked						
vC, conflicting volume	1503	609			1217	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1503	609			1217	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	85			89	
cM capacity (veh/h)	100	438			569	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	170	675	542	60	268	268
Volume Left	102	0	0	60	0	0
Volume Right	67	0	204	0	0	0
cSH	156	1700	1700	569	1700	1700
Volume to Capacity	1.09	0.40	0.32	0.11	0.16	0.16
Queue Length 95th (ft)	222	0	0	9	0	0
Control Delay (s)	156.4	0.0	0.0	12.1	0.0	0.0
Lane LOS	F			B		
Approach Delay (s)	156.4	0.0		1.2		
Approach LOS	F					

Intersection Summary			
Average Delay	13.7		
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	387	148	85	388	798	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.12	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	223	1863	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.86	0.86	0.91	0.91
Adj. Flow (vph)	430	164	99	451	877	146
RTOR Reduction (vph)	0	120	0	0	0	55
Lane Group Flow (vph)	430	44	99	451	877	91
Turn Type	NA	Perm	pm+pt	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases		3	6			2
Actuated Green, G (s)	13.8	13.8	46.7	46.7	38.7	38.7
Effective Green, g (s)	13.8	13.8	46.7	46.7	38.7	38.7
Actuated g/C Ratio	0.20	0.20	0.67	0.67	0.55	0.55
Clearance Time (s)	3.5	3.5	3.5	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	677	312	248	1243	1030	875
v/s Ratio Prot	c0.13		0.03	c0.24	c0.47	
v/s Ratio Perm		0.03	0.24			0.06
v/c Ratio	0.64	0.14	0.40	0.36	0.85	0.10
Uniform Delay, d1	25.8	23.2	10.4	5.1	13.2	7.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.2	1.1	0.8	8.8	0.2
Delay (s)	27.7	23.4	11.5	5.9	22.1	7.7
Level of Service	C	C	B	A	C	A
Approach Delay (s)	26.6			6.9	20.0	
Approach LOS	C			A	C	

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	907	37	30	254	189	486
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.44	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	827	1863	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.91	0.91	0.92	0.92
Adj. Flow (vph)	945	39	33	279	205	528
RTOR Reduction (vph)	0	23	0	0	0	0
Lane Group Flow (vph)	945	16	33	279	205	528
Turn Type	NA	Perm	pm+pt	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4	2			6
Actuated Green, G (s)	23.1	23.1	21.9	21.9	14.4	37.5
Effective Green, g (s)	23.1	23.1	21.9	21.9	14.4	37.5
Actuated g/C Ratio	0.41	0.41	0.38	0.38	0.25	0.66
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1391	642	343	716	471	1208
v/s Ratio Prot	c0.28		0.00	c0.15	0.11	c0.18
v/s Ratio Perm		0.01	0.03			0.16
v/c Ratio	0.68	0.02	0.10	0.39	0.44	0.44
Uniform Delay, d1	13.9	10.2	11.3	12.7	17.9	4.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.0	0.1	0.4	0.6	0.3
Delay (s)	15.2	10.2	11.5	13.1	18.5	4.9
Level of Service	B	B	B	B	B	A
Approach Delay (s)	15.0			12.9	8.7	
Approach LOS	B			B	A	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	57.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	54.2%	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 (vph)	3	1	7	209	3	248	8	631	276	276	739	8
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	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1791	1583	1681	1687	1583	1770	3539	1583	3433	3534	
Flt Permitted		0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1791	1583	1681	1687	1583	1770	3539	1583	3433	3534	
Peak-hour factor, PHF	0.69	0.69	0.69	0.91	0.91	0.91	0.85	0.85	0.85	0.88	0.88	0.88
Adj. Flow (vph)	4	1	10	230	3	273	9	742	325	314	840	9
RTOR Reduction (vph)	0	0	10	0	0	227	0	0	0	0	0	0
Lane Group Flow (vph)	0	5	0	117	116	46	9	742	325	314	849	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Prot	Prot	NA	
Protected Phases	4	4		8	8		5	2	2	1	6	
Permitted Phases			4			8						
Actuated Green, G (s)		1.0	1.0	9.9	9.9	9.9	0.6	25.8	25.8	6.1	31.3	
Effective Green, g (s)		1.0	1.0	9.9	9.9	9.9	0.6	25.8	25.8	6.1	31.3	
Actuated g/C Ratio		0.02	0.02	0.17	0.17	0.17	0.01	0.44	0.44	0.10	0.53	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		30	27	283	284	267	18	1553	695	356	1881	
v/s Ratio Prot		c0.00		c0.07	0.07		0.01	0.21	0.21	c0.09	c0.24	
v/s Ratio Perm			0.00			0.03						
v/c Ratio		0.17	0.01	0.41	0.41	0.17	0.50	0.48	0.47	0.88	0.45	
Uniform Delay, d1		28.5	28.4	21.9	21.8	20.9	29.0	11.7	11.7	26.0	8.5	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.6	0.1	1.0	1.0	0.3	20.2	1.1	2.3	21.7	0.8	
Delay (s)		31.1	28.5	22.8	22.8	21.2	49.1	12.8	13.9	47.7	9.2	
Level of Service		C	C	C	C	C	D	B	B	D	A	
Approach Delay (s)		29.4			22.0			13.4			19.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	58.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.9%	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 (vph)	1	0	2	53	0	34	6	944	94	36	751	3
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	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1770	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		1.00	1.00		0.82	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1863	1583		1521	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.38	0.38	0.38	0.95	0.95	0.95	0.85	0.85	0.85	0.94	0.94	0.94
Adj. Flow (vph)	3	0	5	56	0	36	7	1111	111	38	799	3
RTOR Reduction (vph)	0	0	5	0	0	33	0	0	40	0	0	1
Lane Group Flow (vph)	0	3	0	0	56	3	7	1111	71	38	799	2
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Actuated Green, G (s)		1.2	1.2		4.9	4.9	0.6	37.5	37.5	1.4	38.3	38.3
Effective Green, g (s)		1.2	1.2		4.9	4.9	0.6	37.5	37.5	1.4	38.3	38.3
Actuated g/C Ratio		0.02	0.02		0.08	0.08	0.01	0.61	0.61	0.02	0.63	0.63
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		37	31		122	127	17	2176	973	41	2222	994
v/s Ratio Prot							0.00	c0.31		c0.02	0.23	
v/s Ratio Perm		c0.00	0.00		c0.04	0.00			0.04			0.00
v/c Ratio		0.08	0.00		0.46	0.02	0.41	0.51	0.07	0.93	0.36	0.00
Uniform Delay, d1		29.4	29.3		26.8	25.8	30.0	6.6	4.7	29.7	5.5	4.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.9	0.0		2.7	0.1	15.4	0.9	0.1	111.0	0.5	0.0
Delay (s)		30.3	29.4		29.5	25.9	45.4	7.5	4.9	140.7	5.9	4.2
Level of Service		C	C		C	C	D	A	A	F	A	A
Approach Delay (s)		29.7			28.1			7.4			12.0	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	61.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.2%	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	592	37	81	565	0	11	0	42	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	643	40	88	614	0	12	0	46	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)					1298							
pX, platoon unblocked												
vC, conflicting volume	614			684			1434	1434	643	1457	1474	614
vC1, stage 1 conf vol							643	643		790	790	
vC2, stage 2 conf vol							790	790		666	684	
vCu, unblocked vol	614			684			1434	1434	643	1457	1474	614
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			90			96	100	90	100	100	100
cM capacity (veh/h)	965			909			287	302	473	244	273	492

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	643	40	88	614	58	0	0
Volume Left	0	0	88	0	12	0	0
Volume Right	0	40	0	0	46	0	0
cSH	965	1700	909	1700	597	1700	1700
Volume to Capacity	0.00	0.02	0.10	0.36	0.10	0.00	0.00
Queue Length 95th (ft)	0	0	8	0	8	0	0
Control Delay (s)	0.0	0.0	9.4	0.0	14.4	0.0	0.0
Lane LOS			A		B	A	A
Approach Delay (s)	0.0		1.2		14.4	0.0	
Approach LOS					B	A	

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	254	145	204	139	227	126	180	642	124	66	445	293
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	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3453		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	3453		1770	3539	1583
Peak-hour factor, PHF	0.89	0.89	0.89	0.80	0.80	0.80	0.83	0.83	0.83	0.94	0.94	0.94
Adj. Flow (vph)	285	163	229	174	284	158	217	773	149	70	473	312
RTOR Reduction (vph)	0	0	181	0	0	127	0	20	0	0	0	215
Lane Group Flow (vph)	285	163	48	174	284	31	217	902	0	70	473	97
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	11.0	15.2	15.2	10.1	14.3	14.3	9.0	27.9		3.9	22.8	22.8
Effective Green, g (s)	11.0	15.2	15.2	10.1	14.3	14.3	9.0	27.9		3.9	22.8	22.8
Actuated g/C Ratio	0.15	0.21	0.21	0.14	0.20	0.20	0.12	0.38		0.05	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	266	387	329	245	364	310	218	1318		94	1104	494
v/s Ratio Prot	c0.16	0.09		0.10	c0.15		c0.12	c0.26		0.04	0.13	
v/s Ratio Perm			0.03			0.02						0.06
v/c Ratio	1.07	0.42	0.14	0.71	0.78	0.10	1.00	0.68		0.74	0.43	0.20
Uniform Delay, d1	31.0	25.1	23.6	30.1	27.9	24.1	32.0	18.9		34.1	20.0	18.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	75.4	0.7	0.2	9.3	10.4	0.1	59.3	2.9		27.0	1.2	0.9
Delay (s)	106.5	25.9	23.8	39.4	38.3	24.3	91.3	21.8		61.1	21.2	19.3
Level of Service	F	C	C	D	D	C	F	C		E	C	B
Approach Delay (s)		59.1			35.0			35.1			23.8	
Approach LOS		E			C			D			C	

Intersection Summary			
HCM Average Control Delay	37.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	73.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.7%	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 (vph)	18	0	4	3	0	13	9	968	6	30	696	31
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	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1770	1583		1770	1583	1770	3536		1770	3517	
Flt Permitted		0.95	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1770	1583		1863	1583	1770	3536		1770	3517	
Peak-hour factor, PHF	0.69	0.69	0.69	0.50	0.50	0.50	0.81	0.81	0.81	0.91	0.91	0.91
Adj. Flow (vph)	26	0	6	6	0	26	11	1195	7	33	765	34
RTOR Reduction (vph)	0	0	6	0	0	25	0	0	0	0	2	0
Lane Group Flow (vph)	0	26	0	0	6	1	11	1202	0	33	797	0
Turn Type	Split	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases			4	8		8						
Actuated Green, G (s)		2.5	2.5		2.3	2.3	0.7	39.4		1.4	40.1	
Effective Green, g (s)		2.5	2.5		2.3	2.3	0.7	39.4		1.4	40.1	
Actuated g/C Ratio		0.04	0.04		0.04	0.04	0.01	0.64		0.02	0.65	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		72	64		70	59	20	2262		40	2289	
v/s Ratio Prot		c0.01					0.01	c0.34		c0.02	0.23	
v/s Ratio Perm			0.00		c0.00	0.00						
v/c Ratio		0.36	0.00		0.09	0.02	0.55	0.53		0.82	0.35	
Uniform Delay, d1		28.8	28.4		28.6	28.6	30.3	6.1		30.0	4.9	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.1	0.0		0.5	0.1	28.9	0.9		76.6	0.4	
Delay (s)		31.8	28.4		29.2	28.7	59.2	7.0		106.6	5.3	
Level of Service		C	C		C	C	E	A		F	A	
Approach Delay (s)		31.2			28.8			7.4			9.3	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	61.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	172	174	13	2	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	187	189	14	2	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						3
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	203				383	196
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	203				383	196
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1368				619	845

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	187	203	3
Volume Left	0	0	2
Volume Right	0	14	1
cSH	1368	1700	929
Volume to Capacity	0.00	0.12	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	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		0.1	
Intersection Capacity Utilization		19.9%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	2	99	2	1	1	142	1040	1	2	402	32
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	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.97		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1781	1583		1756		1770	1862		1770	1863	1583
Flt Permitted		0.83	1.00		0.94		0.47	1.00		0.09	1.00	1.00
Satd. Flow (perm)		1551	1583		1691		872	1862		162	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	2	108	2	1	1	154	1130	1	2	437	35
RTOR Reduction (vph)	0	0	83	0	1	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	24	25	0	3	0	154	1131	0	2	437	23
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)		16.0	16.0		16.0		46.0	46.0		46.0	46.0	46.0
Effective Green, g (s)		16.0	16.0		16.0		46.0	46.0		46.0	46.0	46.0
Actuated g/C Ratio		0.23	0.23		0.23		0.66	0.66		0.66	0.66	0.66
Clearance Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)		355	362		387		573	1224		106	1224	1040
v/s Ratio Prot								c0.61			0.23	
v/s Ratio Perm		0.02	c0.02		0.00		0.18			0.01		0.01
v/c Ratio		0.07	0.07		0.01		0.27	0.92		0.02	0.36	0.02
Uniform Delay, d1		21.2	21.2		20.9		5.0	10.5		4.2	5.4	4.2
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.4	0.4		0.0		1.2	13.0		0.3	0.8	0.0
Delay (s)		21.5	21.5		20.9		6.1	23.4		4.5	6.2	4.2
Level of Service		C	C		C		A	C		A	A	A
Approach Delay (s)		21.5			20.9			21.4			6.0	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.5%	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)	81	167	347	378	137	10	363	475	327	9	479	73
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	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1681	1722		3433	3539	1583	1770	3469	
Flt Permitted	0.95	1.00	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1681	1722		3433	3539	1583	1770	3469	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.94	0.94	0.94	0.96	0.96	0.96
Adj. Flow (vph)	92	190	394	430	156	11	386	505	348	9	499	76
RTOR Reduction (vph)	0	0	40	0	2	0	0	0	204	0	14	0
Lane Group Flow (vph)	92	190	354	297	298	0	386	505	144	9	561	0
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	2	2	3	6	6		3	8		7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	12.3	12.3	25.0	15.4	15.4		12.7	31.4	31.4	0.7	19.4	
Effective Green, g (s)	12.3	12.3	25.0	15.4	15.4		12.7	31.4	31.4	0.7	19.4	
Actuated g/C Ratio	0.16	0.16	0.33	0.20	0.20		0.17	0.41	0.41	0.01	0.26	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	287	302	522	342	350		575	1466	656	16	888	
v/s Ratio Prot	0.05	0.10	c0.11	c0.18	0.17		0.11	0.14		0.01	c0.16	
v/s Ratio Perm			0.11						0.09			
v/c Ratio	0.32	0.63	0.68	0.87	0.85		0.67	0.34	0.22	0.56	0.63	
Uniform Delay, d1	28.1	29.6	21.9	29.2	29.1		29.6	15.2	14.3	37.4	25.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	4.1	3.5	20.1	17.8		3.1	0.1	0.2	38.3	1.5	
Delay (s)	28.7	33.7	25.4	49.3	46.9		32.7	15.3	14.5	75.7	26.5	
Level of Service	C	C	C	D	D		C	B	B	E	C	
Approach Delay (s)		28.2			48.1			20.5			27.3	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	28.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	75.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.4%	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 (vph)	536	742	0	0	926	177	184	1	108	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9			4.6		6.0	6.0				
Lane Util. Factor	0.97	0.95			0.95		1.00	1.00				
Frt	1.00	1.00			0.98		1.00	0.85				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			3454		1770	1586				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			3454		1770	1586				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	583	807	0	0	1007	192	200	1	117	0	0	0
RTOR Reduction (vph)	0	0	0	0	15	0	0	98	0	0	0	0
Lane Group Flow (vph)	583	807	0	0	1184	0	200	20	0	0	0	0
Turn Type	Prot	NA			NA		Split	NA				
Protected Phases	5	2			6		8	8				
Permitted Phases												
Actuated Green, G (s)	19.4	66.9			43.8		15.2	15.2				
Effective Green, g (s)	19.4	66.9			43.8		15.2	15.2				
Actuated g/C Ratio	0.21	0.72			0.47		0.16	0.16				
Clearance Time (s)	4.0	4.9			4.6		6.0	6.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	716	2546			1627		289	259				
v/s Ratio Prot	c0.17	0.23			c0.34		c0.11	0.01				
v/s Ratio Perm												
v/c Ratio	0.81	0.32			0.73		0.69	0.08				
Uniform Delay, d1	35.1	4.7			19.8		36.7	33.0				
Progression Factor	1.49	0.35			1.00		1.00	1.00				
Incremental Delay, d2	5.2	0.2			1.7		7.0	0.1				
Delay (s)	57.4	1.9			21.5		43.7	33.1				
Level of Service	E	A			C		D	C				
Approach Delay (s)		25.2			21.5			39.7			0.0	
Approach LOS		C			C			D			A	

Intersection Summary			
HCM Average Control Delay	25.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	14.6
Intersection Capacity Utilization	68.9%	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 (vph)	33	1055	239	163	924	12	687	9	207	15	10	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.6		3.5	4.6		4.0	4.0	3.5	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91		0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	0.97		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00	0.95	0.99	1.00
Satd. Flow (prot)	1770	4944		1770	5076		1681	1687	1583	1681	1751	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.75	0.72	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	4944		1770	5076		1323	1276	1583	1770	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	1147	260	177	1004	13	747	10	225	16	11	14
RTOR Reduction (vph)	0	38	0	0	2	0	0	0	32	0	0	14
Lane Group Flow (vph)	36	1369	0	177	1015	0	381	376	193	13	14	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	2.7	31.6		13.7	42.6		29.8	29.8	43.5	1.8	1.8	1.8
Effective Green, g (s)	2.7	31.6		13.7	42.6		29.8	29.8	43.5	1.8	1.8	1.8
Actuated g/C Ratio	0.03	0.34		0.15	0.46		0.32	0.32	0.47	0.02	0.02	0.02
Clearance Time (s)	3.5	4.6		3.5	4.6		4.0	4.0	3.5	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	51	1680		261	2325		424	409	740	34	34	31
v/s Ratio Prot	0.02	c0.28		c0.10	0.20				0.04			
v/s Ratio Perm							0.29	c0.29	0.08	0.01	c0.01	0.00
v/c Ratio	0.71	0.81		0.68	0.44		0.90	0.92	0.26	0.38	0.41	0.01
Uniform Delay, d1	44.8	28.0		37.6	17.1		30.2	30.4	15.0	45.1	45.1	44.7
Progression Factor	1.00	1.00		0.72	1.87		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	36.0	4.5		4.8	0.4		21.2	25.3	0.2	7.0	7.9	0.1
Delay (s)	80.7	32.5		31.9	32.4		51.3	55.7	15.2	52.1	53.0	44.8
Level of Service	F	C		C	C		D	E	B	D	D	D
Approach Delay (s)		33.7			32.3			44.7			49.9	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	36.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	71.2%	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												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	598	11	4	12	71	31	0	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	650	12	4	13	77	34	0	20

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	662	95	34	20
Volume Left (vph)	0	4	34	0
Volume Right (vph)	12	77	0	20
Hadj (s)	0.02	-0.45	0.53	-0.67
Departure Headway (s)	4.3	5.2	6.8	5.5
Degree Utilization, x	0.80	0.14	0.06	0.03
Capacity (veh/h)	814	641	495	599
Control Delay (s)	22.1	9.1	9.0	7.5
Approach Delay (s)	22.1	9.1	8.5	
Approach LOS	C	A	A	

Intersection Summary			
Delay	19.7		
HCM Level of Service	C		
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	17	88	71	115	78	379	421	21	61	571	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0		5.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3514		1770	3509	
Flt Permitted	0.61	1.00	1.00	0.75	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1141	1863	1583	1389	1863	1583	1770	3514		1770	3509	
Peak-hour factor, PHF	0.92	0.92	0.92	0.67	0.67	0.67	0.91	0.91	0.91	0.95	0.95	0.95
Adj. Flow (vph)	58	18	96	106	172	116	416	463	23	64	601	36
RTOR Reduction (vph)	0	0	78	0	0	96	0	2	0	0	4	0
Lane Group Flow (vph)	58	18	18	106	172	20	416	484	0	64	633	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)	14.3	14.3	14.3	13.3	13.3	13.3	25.4	40.4		6.9	21.9	
Effective Green, g (s)	14.3	14.3	14.3	13.3	13.3	13.3	25.4	40.4		6.9	21.9	
Actuated g/C Ratio	0.18	0.18	0.18	0.17	0.17	0.17	0.33	0.52		0.09	0.28	
Clearance Time (s)	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0		5.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	210	343	292	238	319	271	579	1829		157	990	
v/s Ratio Prot		0.01			c0.09		c0.24	0.14		0.04	c0.18	
v/s Ratio Perm	0.05		0.01	0.08		0.01						
v/c Ratio	0.28	0.05	0.06	0.45	0.54	0.07	0.72	0.26		0.41	0.64	
Uniform Delay, d1	27.2	26.1	26.1	28.8	29.4	27.0	23.0	10.3		33.4	24.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.1	0.1	1.3	1.8	0.1	4.3	0.1		1.7	1.4	
Delay (s)	27.9	26.1	26.2	30.2	31.1	27.1	27.2	10.4		35.1	25.8	
Level of Service	C	C	C	C	C	C	C	B		D	C	
Approach Delay (s)		26.8			29.7			18.2			26.6	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	77.6	Sum of lost time (s)	17.0
Intersection Capacity Utilization	62.6%	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 (vph)	0	0	0	239	0	268	72	1238	0	0	665	576
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.5	3.5		3.5	5.0			5.0	5.0
Lane Util. Factor				1.00	1.00		1.00	0.95			1.00	1.00
Frt				1.00	0.85		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1770	1583		1770	3539			1863	1583
Flt Permitted				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)				1770	1583		1770	3539			1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	260	0	291	78	1346	0	0	723	626
RTOR Reduction (vph)	0	0	0	0	45	0	0	0	0	0	0	339
Lane Group Flow (vph)	0	0	0	260	246	0	78	1346	0	0	723	287
Turn Type				Perm	NA		Prot	NA			NA	Perm
Protected Phases					8		1	6			2	
Permitted Phases				8								2
Actuated Green, G (s)				27.3	27.3		9.5	54.2			41.2	41.2
Effective Green, g (s)				27.3	27.3		9.5	54.2			41.2	41.2
Actuated g/C Ratio				0.30	0.30		0.11	0.60			0.46	0.46
Clearance Time (s)				3.5	3.5		3.5	5.0			5.0	5.0
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				537	480		187	2131			853	725
v/s Ratio Prot					c0.16		0.04	c0.38			c0.39	
v/s Ratio Perm				0.15								0.18
v/c Ratio				0.48	0.51		0.42	0.63			0.85	0.40
Uniform Delay, d1				25.6	25.9		37.7	11.5			21.6	16.2
Progression Factor				1.00	1.00		1.13	0.82			0.86	1.84
Incremental Delay, d2				3.1	3.9		4.8	1.0			9.5	1.5
Delay (s)				28.7	29.8		47.3	10.5			28.1	31.3
Level of Service				C	C		D	B			C	C
Approach Delay (s)		0.0			29.3			12.5			29.6	
Approach LOS		A			C			B			C	

Intersection Summary			
HCM Average Control Delay	22.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	67.1%	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)	15	9	16	531	19	288	32	416	442	245	604	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1806	1583	1681	1691	1583	1770	3539	1583	1770	3522	
Flt Permitted		0.97	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1806	1583	1681	1691	1583	1770	3539	1583	1770	3522	
Peak-hour factor, PHF	0.98	0.98	0.98	0.94	0.94	0.94	0.91	0.91	0.91	0.80	0.80	0.80
Adj. Flow (vph)	15	9	16	565	20	306	35	457	486	306	755	26
RTOR Reduction (vph)	0	0	15	0	0	226	0	0	256	0	2	0
Lane Group Flow (vph)	0	24	1	294	291	80	35	457	230	306	779	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8		5	2	8	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)		4.0	4.0	24.7	24.7	24.7	2.6	19.9	44.6	22.9	40.2	
Effective Green, g (s)		4.0	4.0	24.7	24.7	24.7	2.6	19.9	44.6	22.9	40.2	
Actuated g/C Ratio		0.04	0.04	0.26	0.26	0.26	0.03	0.21	0.47	0.24	0.43	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		76	67	439	442	414	49	745	747	429	1498	
v/s Ratio Prot		c0.01		c0.17	0.17		0.02	c0.13	0.08	c0.17	0.22	
v/s Ratio Perm			0.00			0.05			0.06			
v/c Ratio		0.32	0.01	0.67	0.66	0.19	0.71	0.61	0.31	0.71	0.52	
Uniform Delay, d1		43.9	43.4	31.2	31.1	27.1	45.6	33.8	15.4	32.8	20.0	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.4	0.1	3.9	3.5	0.2	39.0	1.5	0.2	5.5	0.3	
Delay (s)		46.3	43.4	35.1	34.7	27.4	84.6	35.3	15.7	38.3	20.4	
Level of Service		D	D	D	C	C	F	D	B	D	C	
Approach Delay (s)		45.2			32.3			27.3			25.4	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	94.5	Sum of lost time (s)	23.0
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	118	93	781	141	88	1252
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	128	101	849	153	96	1361
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		3				
Median type			None			None
Median storage veh)						
Upstream signal (ft)			539			279
pX, platoon unblocked	0.75					
vC, conflicting volume	1797	501			1002	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1391	501			1002	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	80			86	
cM capacity (veh/h)	86	515			687	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	229	566	436	96	680	680
Volume Left	128	0	0	96	0	0
Volume Right	101	0	153	0	0	0
cSH	139	1700	1700	687	1700	1700
Volume to Capacity	1.65	0.33	0.26	0.14	0.40	0.40
Queue Length 95th (ft)	412	0	0	12	0	0
Control Delay (s)	377.3	0.0	0.0	11.1	0.0	0.0
Lane LOS	F			B		
Approach Delay (s)	377.3	0.0		0.7		
Approach LOS	F					

Intersection Summary			
Average Delay	32.6		
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	488	114	153	800	624	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.23	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	430	1863	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.86	0.86	0.91	0.91
Adj. Flow (vph)	542	127	178	930	686	319
RTOR Reduction (vph)	0	57	0	0	0	108
Lane Group Flow (vph)	542	70	178	930	686	211
Turn Type	NA	Perm	pm+pt	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases		3	6			2
Actuated Green, G (s)	19.2	19.2	61.3	61.3	49.2	49.2
Effective Green, g (s)	19.2	19.2	61.3	61.3	49.2	49.2
Actuated g/C Ratio	0.21	0.21	0.68	0.68	0.55	0.55
Clearance Time (s)	3.5	3.5	3.5	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	732	338	421	1269	1018	865
v/s Ratio Prot	c0.16		0.04	c0.50	0.37	
v/s Ratio Perm		0.04	0.25			0.13
v/c Ratio	0.74	0.21	0.42	0.73	0.67	0.24
Uniform Delay, d1	33.1	29.1	8.8	9.1	14.6	10.7
Progression Factor	1.00	1.00	1.00	1.00	0.65	0.65
Incremental Delay, d2	4.0	0.3	0.7	3.8	2.5	0.5
Delay (s)	37.1	29.4	9.5	12.9	12.1	7.4
Level of Service	D	C	A	B	B	A
Approach Delay (s)	35.7			12.4	10.6	
Approach LOS	D			B	B	

Intersection Summary			
HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	620	20	40	196	491	910
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.19	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	355	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	674	22	43	213	534	989
RTOR Reduction (vph)	0	15	0	0	0	0
Lane Group Flow (vph)	674	7	43	213	534	989
Turn Type	NA	Perm	pm+pt	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4	2			6
Actuated Green, G (s)	20.3	20.3	30.8	30.8	22.8	43.1
Effective Green, g (s)	20.3	20.3	30.8	30.8	22.8	43.1
Actuated g/C Ratio	0.32	0.32	0.49	0.49	0.36	0.68
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1104	509	218	909	673	1232
v/s Ratio Prot	0.20		0.01	c0.11	0.29	c0.26
v/s Ratio Perm		0.00	0.09			0.37
v/c Ratio	0.61	0.01	0.20	0.23	0.79	0.80
Uniform Delay, d1	18.1	14.6	10.9	9.3	18.0	7.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.0	0.4	0.1	6.4	3.9
Delay (s)	19.1	14.6	11.3	9.5	24.4	10.9
Level of Service	B	B	B	A	C	B
Approach Delay (s)	18.9			9.8	15.6	
Approach LOS	B			A	B	

Intersection Summary			
HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	63.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.7%	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 (vph)	30	17	33	403	3	329	45	790	312	309	880	28
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	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1805	1583	1681	1686	1583	1770	3539	1583	3433	3523	
Flt Permitted		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1805	1583	1681	1686	1583	1770	3539	1583	3433	3523	
Peak-hour factor, PHF	0.71	0.71	0.71	0.87	0.87	0.87	0.89	0.89	0.89	0.85	0.85	0.85
Adj. Flow (vph)	42	24	46	463	3	378	51	888	351	364	1035	33
RTOR Reduction (vph)	0	0	42	0	0	293	0	0	0	0	2	0
Lane Group Flow (vph)	0	66	4	231	235	85	51	888	351	364	1066	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Prot	Prot	NA	
Protected Phases	4	4		8	8		5	2	2	1	6	
Permitted Phases			4			8						
Actuated Green, G (s)		6.9	6.9	18.2	18.2	18.2	3.0	29.7	29.7	10.2	36.9	
Effective Green, g (s)		6.9	6.9	18.2	18.2	18.2	3.0	29.7	29.7	10.2	36.9	
Actuated g/C Ratio		0.09	0.09	0.22	0.22	0.22	0.04	0.37	0.37	0.13	0.46	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		154	135	378	379	356	66	1298	580	432	1605	
v/s Ratio Prot		c0.04		0.14	c0.14		0.03	0.25	0.22	c0.11	c0.30	
v/s Ratio Perm			0.00			0.05						
v/c Ratio		0.43	0.03	0.61	0.62	0.24	0.77	0.68	0.61	0.84	0.66	
Uniform Delay, d1		35.2	34.0	28.2	28.3	25.7	38.7	21.7	20.9	34.6	17.2	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.9	0.1	2.9	3.1	0.3	42.0	2.9	4.6	13.9	2.2	
Delay (s)		37.1	34.1	31.1	31.4	26.1	80.6	24.6	25.5	48.5	19.4	
Level of Service		D	C	C	C	C	F	C	C	D	B	
Approach Delay (s)		35.8			28.9			27.1			26.8	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	81.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.6%	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 (vph)	3	6	3	141	3	135	1	945	66	68	1170	5
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	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1832	1583		1776	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.95	1.00		0.72	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1774	1583		1340	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.60	0.60	0.60	0.91	0.91	0.91	0.87	0.87	0.87	0.89	0.89	0.89
Adj. Flow (vph)	5	10	5	155	3	148	1	1086	76	76	1315	6
RTOR Reduction (vph)	0	0	5	0	0	122	0	0	38	0	0	3
Lane Group Flow (vph)	0	15	0	0	158	26	1	1086	38	76	1315	3
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Actuated Green, G (s)		2.8	2.8		12.0	12.0	0.7	33.4	33.4	4.1	36.8	36.8
Effective Green, g (s)		2.8	2.8		12.0	12.0	0.7	33.4	33.4	4.1	36.8	36.8
Actuated g/C Ratio		0.04	0.04		0.18	0.18	0.01	0.49	0.49	0.06	0.54	0.54
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		73	65		235	278	18	1731	774	106	1907	853
v/s Ratio Prot							0.00	0.31		c0.04	c0.37	
v/s Ratio Perm		c0.01	0.00		c0.12	0.02			0.02			0.00
v/c Ratio		0.21	0.00		0.67	0.09	0.06	0.63	0.05	0.72	0.69	0.00
Uniform Delay, d1		31.7	31.4		26.3	23.6	33.5	12.9	9.1	31.5	11.6	7.3
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.4	0.0		7.4	0.1	1.3	1.7	0.1	20.5	2.1	0.0
Delay (s)		33.1	31.4		33.7	23.7	34.8	14.6	9.3	52.1	13.6	7.3
Level of Service		C	C		C	C	C	B	A	D	B	A
Approach Delay (s)		32.7			28.9			14.3			15.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	16.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	68.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	60.3%	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	769	12	48	869	0	41	0	106	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	836	13	52	945	0	45	0	115	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					1298							
pX, platoon unblocked												
vC, conflicting volume	945			849			1885	1885	836	1942	1898	945
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	945			849			1885	1885	836	1942	1898	945
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
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			93			13	100	69	100	100	100
cM capacity (veh/h)	726			789			51	66	367	32	65	318

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	836	13	52	945	160	0	0
Volume Left	0	0	52	0	45	0	0
Volume Right	0	13	0	0	115	0	0
cSH	726	1700	789	1700	159	1700	1700
Volume to Capacity	0.00	0.01	0.07	0.56	1.00	0.00	0.00
Queue Length 95th (ft)	0	0	5	0	195	0	0
Control Delay (s)	0.0	0.0	9.9	0.0	129.7	0.0	0.0
Lane LOS			A		F	A	A
Approach Delay (s)	0.0		0.5		129.7	0.0	
Approach LOS					F	A	

Intersection Summary			
Average Delay	10.6		
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	379	307	347	213	185	119	282	522	200	205	675	395
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	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3392		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	3392		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.98	0.98	0.98	0.95	0.95	0.95	0.93	0.93	0.93
Adj. Flow (vph)	421	341	386	217	189	121	297	549	211	220	726	425
RTOR Reduction (vph)	0	0	290	0	0	103	0	42	0	0	0	320
Lane Group Flow (vph)	421	341	96	217	189	18	297	718	0	220	726	105
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	22.0	22.2	22.2	13.3	13.5	13.5	16.0	24.2		13.9	22.1	22.1
Effective Green, g (s)	22.0	22.2	22.2	13.3	13.5	13.5	16.0	24.2		13.9	22.1	22.1
Actuated g/C Ratio	0.25	0.25	0.25	0.15	0.15	0.15	0.18	0.27		0.16	0.25	0.25
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	435	462	392	263	281	239	316	916		275	873	390
v/s Ratio Prot	c0.24	c0.18		0.12	0.10		c0.17	c0.21		0.12	0.21	
v/s Ratio Perm			0.06			0.01						0.07
v/c Ratio	0.97	0.74	0.24	0.83	0.67	0.08	0.94	0.78		0.80	0.83	0.27
Uniform Delay, d1	33.4	31.0	27.0	37.0	36.0	32.7	36.3	30.3		36.5	32.0	27.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	34.5	6.1	0.3	18.6	6.2	0.1	34.7	6.7		15.2	9.1	1.7
Delay (s)	67.9	37.1	27.3	55.6	42.2	32.8	71.0	36.9		51.7	41.1	28.9
Level of Service	E	D	C	E	D	C	E	D		D	D	C
Approach Delay (s)		45.1			45.6			46.5			39.0	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	43.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	89.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.3%	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)	63	0	14	21	0	28	8	862	4	5	1159	36
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	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1770	1583		1770	1583	1770	3537		1770	3523	
Flt Permitted		0.95	1.00		0.70	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1770	1583		1297	1583	1770	3537		1770	3523	
Peak-hour factor, PHF	0.67	0.67	0.67	0.47	0.47	0.47	0.95	0.95	0.95	0.92	0.92	0.92
Adj. Flow (vph)	94	0	21	45	0	60	8	907	4	5	1260	39
RTOR Reduction (vph)	0	0	19	0	0	54	0	0	0	0	2	0
Lane Group Flow (vph)	0	94	2	0	45	6	8	911	0	5	1297	0
Turn Type	Split	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases			4	8		8						
Actuated Green, G (s)		7.1	7.1		6.2	6.2	0.7	33.0		0.7	33.0	
Effective Green, g (s)		7.1	7.1		6.2	6.2	0.7	33.0		0.7	33.0	
Actuated g/C Ratio		0.11	0.11		0.10	0.10	0.01	0.52		0.01	0.52	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		199	178		128	156	20	1853		20	1845	
v/s Ratio Prot		c0.05					c0.00	0.26		0.00	c0.37	
v/s Ratio Perm			0.00		c0.03	0.00						
v/c Ratio		0.47	0.01		0.35	0.04	0.40	0.49		0.25	0.70	
Uniform Delay, d1		26.2	24.8		26.5	25.7	30.9	9.6		30.9	11.3	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.8	0.0		1.7	0.1	12.6	0.9		6.5	2.3	
Delay (s)		28.0	24.9		28.2	25.8	43.6	10.6		37.4	13.6	
Level of Service		C	C		C	C	D	B		D	B	
Approach Delay (s)		27.4			26.8			10.8			13.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	236	132	4	22	8
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	257	143	4	24	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						3
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	148				404	146
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	148				404	146
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	99
cM capacity (veh/h)	1434				602	901

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	258	148	33
Volume Left	1	0	24
Volume Right	0	4	9
cSH	1434	1700	821
Volume to Capacity	0.00	0.09	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	0.0	10.6
Lane LOS	A		B
Approach Delay (s)	0.0	0.0	10.6
Approach LOS			B

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	1	209	4	0	7	68	421	1	4	992	36
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	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.91		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1776	1583		1667		1770	1862		1770	1863	1583
Flt Permitted		0.76	1.00		0.93		0.12	1.00		0.47	1.00	1.00
Satd. Flow (perm)		1411	1583		1579		225	1862		879	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1	227	4	0	8	74	458	1	4	1078	39
RTOR Reduction (vph)	0	0	94	0	7	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	40	133	0	5	0	74	459	0	4	1078	27
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)		10.0	10.0		10.0		40.3	40.3		40.3	40.3	40.3
Effective Green, g (s)		10.0	10.0		10.0		40.3	40.3		40.3	40.3	40.3
Actuated g/C Ratio		0.17	0.17		0.17		0.69	0.69		0.69	0.69	0.69
Clearance Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		242	272		271		156	1287		608	1288	1094
v/s Ratio Prot								0.25			c0.58	
v/s Ratio Perm		0.03	c0.08		0.00		0.33			0.00		0.02
v/c Ratio		0.17	0.49		0.02		0.47	0.36		0.01	0.84	0.02
Uniform Delay, d1		20.6	21.8		20.1		4.1	3.7		2.8	6.6	2.8
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.3	1.4		0.0		2.3	0.2		0.0	4.9	0.0
Delay (s)		20.9	23.2		20.1		6.4	3.9		2.8	11.5	2.8
Level of Service		C	C		C		A	A		A	B	A
Approach Delay (s)		22.9			20.1			4.2			11.2	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	58.3	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			

EXISTING + PROJECT

TRAFFIC CONDITIONS

Chevron Existing + Project AM
1: Broad & South/Santa Barbara

6/1/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	171	293	388	98	8	286	239	421	11	432	24
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	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1681	1712		3433	3539	1583	1770	3511	
Flt Permitted	0.95	1.00	1.00	0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1681	1712		3433	3539	1583	1770	3511	
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.91	0.91	0.91	0.94	0.94	0.94
Adj. Flow (vph)	43	184	315	422	107	9	314	263	463	12	460	26
RTOR Reduction (vph)	0	0	50	0	2	0	0	0	280	0	5	0
Lane Group Flow (vph)	43	184	265	266	270	0	314	263	183	12	481	0
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	2	2	3	6	6		3	8		7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	12.0	12.0	23.3	14.8	14.8		11.3	28.6	28.6	0.9	18.2	
Effective Green, g (s)	12.0	12.0	23.3	14.8	14.8		11.3	28.6	28.6	0.9	18.2	
Actuated g/C Ratio	0.17	0.17	0.32	0.20	0.20		0.16	0.40	0.40	0.01	0.25	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	294	309	510	344	350		537	1400	626	22	884	
v/s Ratio Prot	0.02	c0.10	0.08	c0.16	0.16		c0.09	0.07		0.01	c0.14	
v/s Ratio Perm			0.09						0.12			
v/c Ratio	0.15	0.60	0.52	0.77	0.77		0.58	0.19	0.29	0.55	0.54	
Uniform Delay, d1	25.8	27.9	19.9	27.2	27.2		28.3	14.3	14.9	35.5	23.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	3.1	0.9	10.3	10.1		1.6	0.1	0.3	24.9	0.7	
Delay (s)	26.0	31.0	20.8	37.5	37.3		29.9	14.3	15.2	60.4	24.1	
Level of Service	C	C	C	D	D		C	B	B	E	C	
Approach Delay (s)		24.7			37.4			19.4			25.0	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM Average Control Delay	25.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	72.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	56.8%	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 (vph)	530	1145	0	0	430	117	94	0	184	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9			4.6		6.0	6.0				
Lane Util. Factor	0.97	0.95			0.95		1.00	1.00				
Frt	1.00	1.00			0.97		1.00	0.85				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			3426		1770	1583				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			3426		1770	1583				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	576	1245	0	0	467	127	102	0	200	0	0	0
RTOR Reduction (vph)	0	0	0	0	20	0	0	69	0	0	0	0
Lane Group Flow (vph)	576	1245	0	0	574	0	102	131	0	0	0	0
Turn Type	Prot	NA			NA		Split	NA				
Protected Phases	5	2			6		8	8				
Permitted Phases												
Actuated Green, G (s)	21.1	69.1			44.3		13.0	13.0				
Effective Green, g (s)	21.1	69.1			44.3		13.0	13.0				
Actuated g/C Ratio	0.23	0.74			0.48		0.14	0.14				
Clearance Time (s)	4.0	4.9			4.6		6.0	6.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	779	2630			1632		247	221				
v/s Ratio Prot	c0.17	c0.35			0.17		0.06	c0.08				
v/s Ratio Perm												
v/c Ratio	0.74	0.47			0.35		0.41	0.59				
Uniform Delay, d1	33.4	4.7			15.3		36.5	37.5				
Progression Factor	0.99	1.63			1.00		1.00	1.00				
Incremental Delay, d2	3.3	0.6			0.1		1.1	4.2				
Delay (s)	36.5	8.3			15.4		37.6	41.8				
Level of Service	D	A			B		D	D				
Approach Delay (s)		17.2			15.4			40.4			0.0	
Approach LOS		B			B			D			A	

Intersection Summary			
HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	54.3%	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 (vph)	21	1083	50	85	417	16	687	9	293	8	4	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.6		3.5	4.6		4.0	4.0	3.5	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91		0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00	0.95	0.98	1.00
Satd. Flow (prot)	1770	5052		1770	5058		1681	1687	1583	1681	1732	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.75	0.73	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	5052		1770	5058		1332	1286	1583	1770	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	1177	54	92	453	17	747	10	318	9	4	7
RTOR Reduction (vph)	0	5	0	0	4	0	0	0	73	0	0	7
Lane Group Flow (vph)	23	1226	0	92	466	0	381	376	245	6	7	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	2.6	33.6		9.9	40.9		31.4	31.4	41.3	2.0	2.0	2.0
Effective Green, g (s)	2.6	33.6		9.9	40.9		31.4	31.4	41.3	2.0	2.0	2.0
Actuated g/C Ratio	0.03	0.36		0.11	0.44		0.34	0.34	0.44	0.02	0.02	0.02
Clearance Time (s)	3.5	4.6		3.5	4.6		4.0	4.0	3.5	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	49	1825		188	2224		450	434	703	38	38	34
v/s Ratio Prot	0.01	c0.24		c0.05	0.09				0.04			
v/s Ratio Perm							0.29	c0.29	0.12	0.00	c0.00	0.00
v/c Ratio	0.47	0.67		0.49	0.21		0.85	0.87	0.35	0.16	0.18	0.00
Uniform Delay, d1	44.5	25.0		39.2	16.1		28.6	28.8	17.0	44.7	44.7	44.5
Progression Factor	1.00	1.00		1.29	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.9	2.0		1.9	0.2		13.7	16.4	0.3	1.9	2.3	0.1
Delay (s)	51.5	27.0		52.4	14.8		42.3	45.2	17.3	46.6	47.0	44.6
Level of Service	D	C		D	B		D	D	B	D	D	D
Approach Delay (s)		27.5			20.9			35.9			46.1	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	29.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	63.2%	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												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	229	15	0	15	273	38	0	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	249	16	0	16	297	41	0	13

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	265	313	41	13
Volume Left (vph)	0	0	41	0
Volume Right (vph)	16	297	0	13
Hadj (s)	0.00	-0.53	0.53	-0.67
Departure Headway (s)	4.7	4.2	6.0	4.8
Degree Utilization, x	0.35	0.37	0.07	0.02
Capacity (veh/h)	717	811	559	692
Control Delay (s)	10.2	9.7	8.3	6.7
Approach Delay (s)	10.2	9.7	7.9	
Approach LOS	B	A	A	

Intersection Summary			
Delay	9.7		
HCM Level of Service	A		
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	78	93	127	18	21	25	170	263	22	138	802	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0		5.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3499		1770	3505	
Flt Permitted	0.74	1.00	1.00	0.68	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1379	1863	1583	1275	1863	1583	1770	3499		1770	3505	
Peak-hour factor, PHF	0.82	0.82	0.82	0.80	0.80	0.80	0.90	0.90	0.90	0.88	0.88	0.88
Adj. Flow (vph)	95	113	155	22	26	31	189	292	24	157	911	62
RTOR Reduction (vph)	0	0	128	0	0	26	0	5	0	0	4	0
Lane Group Flow (vph)	95	113	27	22	26	5	189	311	0	157	969	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)	11.9	11.9	11.9	10.9	10.9	10.9	14.0	29.1		12.6	27.7	
Effective Green, g (s)	11.9	11.9	11.9	10.9	10.9	10.9	14.0	29.1		12.6	27.7	
Actuated g/C Ratio	0.17	0.17	0.17	0.16	0.16	0.16	0.20	0.42		0.18	0.40	
Clearance Time (s)	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0		5.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	236	319	271	200	292	248	356	1463		320	1395	
v/s Ratio Prot		0.06			0.01		c0.11	0.09		0.09	c0.28	
v/s Ratio Perm	c0.07		0.02	0.02		0.00						
v/c Ratio	0.40	0.35	0.10	0.11	0.09	0.02	0.53	0.21		0.49	0.69	
Uniform Delay, d1	25.7	25.5	24.3	25.2	25.1	24.8	24.9	12.9		25.6	17.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	0.7	0.2	0.2	0.1	0.0	1.5	0.1		1.2	1.5	
Delay (s)	26.8	26.1	24.5	25.4	25.2	24.9	26.4	13.0		26.8	18.9	
Level of Service	C	C	C	C	C	C	C	B		C	B	
Approach Delay (s)		25.6			25.1			18.0			20.0	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	69.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.7%	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 (vph)	0	0	0	387	0	167	63	796	0	0	698	292
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.5	3.5		3.5	5.0			5.0	5.0
Lane Util. Factor				1.00	1.00		1.00	0.95			1.00	1.00
Frt				1.00	0.85		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1770	1583		1770	3539			1863	1583
Flt Permitted				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)				1770	1583		1770	3539			1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	421	0	182	68	865	0	0	759	317
RTOR Reduction (vph)	0	0	0	0	127	0	0	0	0	0	0	171
Lane Group Flow (vph)	0	0	0	421	55	0	68	865	0	0	759	146
Turn Type				Perm	NA		Prot	NA			NA	Perm
Protected Phases					8		1	6			2	
Permitted Phases				8								2
Actuated Green, G (s)				27.0	27.0		9.5	54.5			41.5	41.5
Effective Green, g (s)				27.0	27.0		9.5	54.5			41.5	41.5
Actuated g/C Ratio				0.30	0.30		0.11	0.61			0.46	0.46
Clearance Time (s)				3.5	3.5		3.5	5.0			5.0	5.0
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				531	475		187	2143			859	730
v/s Ratio Prot					0.03		0.04	c0.24			c0.41	
v/s Ratio Perm				c0.24								0.09
v/c Ratio				0.79	0.11		0.36	0.40			0.88	0.20
Uniform Delay, d1				28.9	22.8		37.4	9.3			22.1	14.4
Progression Factor				1.00	1.00		1.00	1.00			0.85	1.25
Incremental Delay, d2				11.5	0.5		5.4	0.6			12.4	0.6
Delay (s)				40.5	23.3		42.8	9.8			31.1	18.7
Level of Service				D	C		D	A			C	B
Approach Delay (s)		0.0			35.3			12.2			27.4	
Approach LOS		A			D			B			C	

Intersection Summary			
HCM Average Control Delay	23.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	72.5%	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)	18	11	18	340	7	220	12	286	764	477	346	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1806	1583	1681	1688	1583	1770	3539	1583	1770	3532	
Flt Permitted		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1806	1583	1681	1688	1583	1770	3539	1583	1770	3532	
Peak-hour factor, PHF	0.73	0.73	0.73	0.83	0.83	0.83	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	15	25	410	8	265	13	301	804	502	364	5
RTOR Reduction (vph)	0	0	23	0	0	200	0	0	368	0	1	0
Lane Group Flow (vph)	0	40	2	209	209	65	13	301	436	502	368	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8		5	2	8	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)		6.0	6.0	22.3	22.3	22.3	0.8	17.3	39.6	22.8	39.3	
Effective Green, g (s)		6.0	6.0	22.3	22.3	22.3	0.8	17.3	39.6	22.8	39.3	
Actuated g/C Ratio		0.07	0.07	0.24	0.24	0.24	0.01	0.19	0.43	0.25	0.43	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		119	104	410	412	386	15	670	686	442	1519	
v/s Ratio Prot		c0.02		0.12	0.12		0.01	0.09	c0.16	c0.28	0.10	
v/s Ratio Perm			0.00			0.04			0.12			
v/c Ratio		0.34	0.02	0.51	0.51	0.17	0.87	0.45	0.64	1.14	0.24	
Uniform Delay, d1		40.8	39.9	29.8	29.8	27.2	45.2	32.8	20.3	34.3	16.6	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.7	0.1	1.0	1.0	0.2	162.9	0.5	1.9	85.4	0.1	
Delay (s)		42.5	40.0	30.8	30.8	27.4	208.2	33.3	22.2	119.7	16.7	
Level of Service		D	D	C	C	C	F	C	C	F	B	
Approach Delay (s)		41.5			29.5			27.4			76.1	
Approach LOS		D			C			C			E	

Intersection Summary			
HCM Average Control Delay	43.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	91.4	Sum of lost time (s)	23.0
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	94	62	1191	188	55	556
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	102	67	1295	204	60	604
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		3				
Median type			None			None
Median storage veh)						
Upstream signal (ft)			487			332
pX, platoon unblocked	0.98					
vC, conflicting volume	1818	749			1499	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1792	749			1499	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	81			87	
cM capacity (veh/h)	61	354			443	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	170	863	636	60	302	302
Volume Left	102	0	0	60	0	0
Volume Right	67	0	204	0	0	0
cSH	93	1700	1700	443	1700	1700
Volume to Capacity	1.83	0.51	0.37	0.13	0.18	0.18
Queue Length 95th (ft)	352	0	0	12	0	0
Control Delay (s)	487.0	0.0	0.0	14.4	0.0	0.0
Lane LOS	F			B		
Approach Delay (s)	487.0	0.0		1.3		
Approach LOS	F					

Intersection Summary			
Average Delay	35.8		
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	387	234	94	423	884	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.09	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	177	1863	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.86	0.86	0.91	0.91
Adj. Flow (vph)	430	260	109	492	971	146
RTOR Reduction (vph)	0	160	0	0	0	50
Lane Group Flow (vph)	430	100	109	492	971	96
Turn Type	NA	Perm	pm+pt	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases		3	6			2
Actuated Green, G (s)	13.9	13.9	46.6	46.6	38.7	38.7
Effective Green, g (s)	13.9	13.9	46.6	46.6	38.7	38.7
Actuated g/C Ratio	0.20	0.20	0.67	0.67	0.55	0.55
Clearance Time (s)	3.5	3.5	3.5	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	682	314	218	1240	1030	875
v/s Ratio Prot	c0.13		c0.03	0.26	c0.52	
v/s Ratio Perm		0.06	0.30			0.06
v/c Ratio	0.63	0.32	0.50	0.40	0.94	0.11
Uniform Delay, d1	25.7	24.0	13.6	5.3	14.6	7.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.6	1.8	1.0	17.2	0.3
Delay (s)	27.6	24.6	15.4	6.3	31.9	7.7
Level of Service	C	C	B	A	C	A
Approach Delay (s)	26.5			7.9	28.7	
Approach LOS	C			A	C	

Intersection Summary			
HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1079	37	30	340	207	530
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.43	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	810	1863	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.91	0.91	0.92	0.92
Adj. Flow (vph)	1124	39	33	374	225	576
RTOR Reduction (vph)	0	19	0	0	0	0
Lane Group Flow (vph)	1124	20	33	374	225	576
Turn Type	NA	Perm	pm+pt	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4	2			6
Actuated Green, G (s)	26.9	26.9	24.0	24.0	16.4	43.3
Effective Green, g (s)	26.9	26.9	24.0	24.0	16.4	43.3
Actuated g/C Ratio	0.43	0.43	0.38	0.38	0.26	0.69
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1468	677	333	711	486	1241
v/s Ratio Prot	c0.33		0.00	c0.20	0.12	0.20
v/s Ratio Perm		0.01	0.04			0.17
v/c Ratio	0.77	0.03	0.10	0.53	0.46	0.46
Uniform Delay, d1	15.3	10.4	12.6	15.0	19.5	4.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	0.0	0.1	0.7	0.7	0.3
Delay (s)	17.8	10.5	12.7	15.8	20.2	4.8
Level of Service	B	B	B	B	C	A
Approach Delay (s)	17.5			15.5	9.1	
Approach LOS	B			B	A	

Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	62.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.0%	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 (vph)	3	1	7	295	3	248	8	649	294	276	825	8
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	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1791	1583	1681	1687	1583	1770	3539	1583	3433	3534	
Flt Permitted		0.96	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1791	1583	1681	1687	1583	1770	3539	1583	3433	3534	
Peak-hour factor, PHF	0.69	0.69	0.69	0.91	0.91	0.91	0.85	0.85	0.85	0.88	0.88	0.88
Adj. Flow (vph)	4	1	10	324	3	273	9	764	346	314	938	9
RTOR Reduction (vph)	0	0	10	0	0	211	0	0	0	0	1	0
Lane Group Flow (vph)	0	5	0	162	165	62	9	764	346	314	946	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	pt+ov	Prot	NA	
Protected Phases	4	4		8	8		5	2	2 8	1	6	
Permitted Phases			4			8						
Actuated Green, G (s)		1.0	1.0	14.6	14.6	14.6	0.6	26.1	40.7	6.2	31.7	
Effective Green, g (s)		1.0	1.0	14.6	14.6	14.6	0.6	26.1	40.7	6.2	31.7	
Actuated g/C Ratio		0.02	0.02	0.23	0.23	0.23	0.01	0.41	0.64	0.10	0.50	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		28	25	384	385	362	17	1446	1008	333	1753	
v/s Ratio Prot		c0.00		0.10	c0.10		0.01	0.22	0.22	c0.09	c0.27	
v/s Ratio Perm			0.00			0.04						
v/c Ratio		0.18	0.01	0.42	0.43	0.17	0.53	0.53	0.34	0.94	0.54	
Uniform Delay, d1		31.0	31.0	21.0	21.1	19.8	31.5	14.3	5.4	28.7	11.1	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		3.0	0.1	0.8	0.8	0.2	26.7	1.4	0.2	34.5	1.2	
Delay (s)		34.1	31.1	21.8	21.9	20.0	58.2	15.6	5.6	63.1	12.3	
Level of Service		C	C	C	C	C	E	B	A	E	B	
Approach Delay (s)		32.1			21.0			12.9			24.9	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	63.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.3%	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 (vph)	1	0	2	70	0	34	6	979	98	36	923	3
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	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1770	1583		1770	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		1.00	1.00		0.76	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1863	1583		1408	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.38	0.38	0.38	0.95	0.95	0.95	0.85	0.85	0.85	0.94	0.94	0.94
Adj. Flow (vph)	3	0	5	74	0	36	7	1152	115	38	982	3
RTOR Reduction (vph)	0	0	5	0	0	32	0	0	43	0	0	1
Lane Group Flow (vph)	0	3	0	0	74	4	7	1152	72	38	982	2
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Actuated Green, G (s)		1.3	1.3		7.1	7.1	0.6	36.8	36.8	1.5	37.7	37.7
Effective Green, g (s)		1.3	1.3		7.1	7.1	0.6	36.8	36.8	1.5	37.7	37.7
Actuated g/C Ratio		0.02	0.02		0.11	0.11	0.01	0.59	0.59	0.02	0.60	0.60
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		39	33		159	179	17	2077	929	42	2128	952
v/s Ratio Prot							0.00	c0.33		c0.02	0.28	
v/s Ratio Perm		c0.00	0.00		c0.05	0.00			0.05			0.00
v/c Ratio		0.08	0.00		0.47	0.02	0.41	0.55	0.08	0.90	0.46	0.00
Uniform Delay, d1		30.1	30.1		26.0	24.7	30.9	7.9	5.6	30.5	6.9	5.0
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.8	0.0		2.1	0.1	15.4	1.1	0.2	101.5	0.7	0.0
Delay (s)		31.0	30.1		28.2	24.8	46.3	9.0	5.8	132.0	7.6	5.0
Level of Service		C	C		C	C	D	A	A	F	A	A
Approach Delay (s)		30.4			27.1			8.9			12.2	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	62.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	47.1%	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 (vph)	431	592	37	81	806	86	11	17	42	62	0	18
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		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	0.99		1.00	0.89		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3508		1770	3488		1770	3158		1770	3008	
Flt Permitted	0.95	1.00		0.95	1.00		0.80	1.00		0.80	1.00	
Satd. Flow (perm)	1770	3508		1770	3488		1490	3158		1490	3008	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	468	643	40	88	876	93	12	18	46	67	0	20
RTOR Reduction (vph)	0	4	0	0	10	0	0	42	0	0	18	0
Lane Group Flow (vph)	468	679	0	88	959	0	12	22	0	67	2	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	14.6	31.9		4.5	21.8		5.0	5.0		5.0	5.0	
Effective Green, g (s)	14.6	31.9		4.5	21.8		5.0	5.0		5.0	5.0	
Actuated g/C Ratio	0.27	0.60		0.08	0.41		0.09	0.09		0.09	0.09	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	484	2096		149	1424		140	296		140	282	
v/s Ratio Prot	c0.26	0.19		0.05	c0.27			0.01			0.00	
v/s Ratio Perm							0.01			c0.04		
v/c Ratio	0.97	0.32		0.59	0.67		0.09	0.08		0.48	0.01	
Uniform Delay, d1	19.2	5.4		23.6	12.9		22.1	22.1		23.0	21.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	32.2	0.1		6.1	1.3		0.3	0.1		2.6	0.0	
Delay (s)	51.3	5.5		29.7	14.2		22.4	22.2		25.5	22.0	
Level of Service	D	A		C	B		C	C		C	C	
Approach Delay (s)		24.1			15.5			22.2			24.7	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	53.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.0%	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)	293	159	213	139	296	126	249	642	124	66	445	483
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	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3453		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	3453		1770	3539	1583
Peak-hour factor, PHF	0.89	0.89	0.89	0.80	0.80	0.80	0.83	0.83	0.83	0.94	0.94	0.94
Adj. Flow (vph)	329	179	239	174	370	158	300	773	149	70	473	514
RTOR Reduction (vph)	0	0	186	0	0	125	0	21	0	0	0	310
Lane Group Flow (vph)	329	179	53	174	370	33	300	901	0	70	473	204
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	11.0	16.5	16.5	10.2	15.7	15.7	9.0	27.8		4.0	22.8	22.8
Effective Green, g (s)	11.0	16.5	16.5	10.2	15.7	15.7	9.0	27.8		4.0	22.8	22.8
Actuated g/C Ratio	0.15	0.22	0.22	0.14	0.21	0.21	0.12	0.37		0.05	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	261	413	351	242	393	334	214	1289		95	1083	484
v/s Ratio Prot	c0.19	0.10		0.10	c0.20		c0.17	c0.26		0.04	0.13	
v/s Ratio Perm			0.03			0.02						0.13
v/c Ratio	1.26	0.43	0.15	0.72	0.94	0.10	1.40	0.70		0.74	0.44	0.42
Uniform Delay, d1	31.8	25.0	23.4	30.8	28.9	23.7	32.8	19.8		34.7	20.7	20.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	144.3	0.7	0.2	9.8	30.7	0.1	206.5	3.2		25.4	1.3	2.7
Delay (s)	176.1	25.7	23.6	40.6	59.7	23.8	239.3	23.0		60.2	22.0	23.3
Level of Service	F	C	C	D	E	C	F	C		E	C	C
Approach Delay (s)		91.3			46.9			76.1			25.1	
Approach LOS		F			D			E			C	

Intersection Summary			
HCM Average Control Delay	59.2	HCM Level of Service	E
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	74.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.2%	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 (vph)	18	0	4	3	0	13	9	1037	6	30	705	31
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	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1770	1583		1770	1583	1770	3536		1770	3517	
Flt Permitted		0.95	1.00		1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1770	1583		1863	1583	1770	3536		1770	3517	
Peak-hour factor, PHF	0.69	0.69	0.69	0.50	0.50	0.50	0.81	0.81	0.81	0.91	0.91	0.91
Adj. Flow (vph)	26	0	6	6	0	26	11	1280	7	33	775	34
RTOR Reduction (vph)	0	0	6	0	0	25	0	0	0	0	2	0
Lane Group Flow (vph)	0	26	0	0	6	1	11	1287	0	33	807	0
Turn Type	Split	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases			4	8		8						
Actuated Green, G (s)		2.5	2.5		2.3	2.3	0.7	39.4		1.4	40.1	
Effective Green, g (s)		2.5	2.5		2.3	2.3	0.7	39.4		1.4	40.1	
Actuated g/C Ratio		0.04	0.04		0.04	0.04	0.01	0.64		0.02	0.65	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		72	64		70	59	20	2262		40	2289	
v/s Ratio Prot		c0.01					0.01	c0.36		c0.02	0.23	
v/s Ratio Perm			0.00		c0.00	0.00						
v/c Ratio		0.36	0.00		0.09	0.02	0.55	0.57		0.82	0.35	
Uniform Delay, d1		28.8	28.4		28.6	28.6	30.3	6.3		30.0	4.9	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.1	0.0		0.5	0.1	28.9	1.0		76.6	0.4	
Delay (s)		31.8	28.4		29.2	28.7	59.2	7.3		106.6	5.3	
Level of Service		C	C		C	C	E	A		F	A	
Approach Delay (s)		31.2			28.8			7.8			9.3	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	61.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	172	174	30	11	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	187	189	33	12	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						3
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	222				392	205
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	222				392	205
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1347				612	835

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	187	222	13
Volume Left	0	0	12
Volume Right	0	33	1
cSH	1347	1700	668
Volume to Capacity	0.00	0.13	0.02
Queue Length 95th (ft)	0	0	1
Control Delay (s)	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		0.3	
Intersection Capacity Utilization		21.0%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	2	108	2	1	1	159	1109	1	2	411	32
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	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.97		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.96	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1781	1583		1756		1770	1863		1770	1863	1583
Flt Permitted		0.83	1.00		0.94		0.46	1.00		0.09	1.00	1.00
Satd. Flow (perm)		1551	1583		1691		859	1863		162	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	2	117	2	1	1	173	1205	1	2	447	35
RTOR Reduction (vph)	0	0	90	0	1	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	24	27	0	3	0	173	1206	0	2	447	23
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)		16.0	16.0		16.0		46.0	46.0		46.0	46.0	46.0
Effective Green, g (s)		16.0	16.0		16.0		46.0	46.0		46.0	46.0	46.0
Actuated g/C Ratio		0.23	0.23		0.23		0.66	0.66		0.66	0.66	0.66
Clearance Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)		355	362		387		564	1224		106	1224	1040
v/s Ratio Prot								c0.65			0.24	
v/s Ratio Perm		0.02	c0.02		0.00		0.20			0.01		0.01
v/c Ratio		0.07	0.07		0.01		0.31	0.99		0.02	0.37	0.02
Uniform Delay, d1		21.2	21.2		20.9		5.2	11.7		4.2	5.4	4.2
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.4	0.4		0.0		1.4	22.4		0.3	0.8	0.0
Delay (s)		21.5	21.6		20.9		6.6	34.1		4.5	6.3	4.2
Level of Service		C	C		C		A	C		A	A	A
Approach Delay (s)		21.6			20.9			30.7			6.1	
Approach LOS		C			C			C			A	

Intersection Summary			
HCM Average Control Delay	24.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.1%	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)	81	167	347	392	137	10	363	514	366	9	493	73
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	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1681	1721		3433	3539	1583	1770	3471	
Flt Permitted	0.95	1.00	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1681	1721		3433	3539	1583	1770	3471	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.94	0.94	0.94	0.96	0.96	0.96
Adj. Flow (vph)	92	190	394	445	156	11	386	547	389	9	514	76
RTOR Reduction (vph)	0	0	36	0	2	0	0	0	228	0	14	0
Lane Group Flow (vph)	92	190	358	303	307	0	386	547	161	9	576	0
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	2	2	3	6	6		3	8		7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	12.4	12.4	25.1	15.6	15.6		12.7	31.5	31.5	0.7	19.5	
Effective Green, g (s)	12.4	12.4	25.1	15.6	15.6		12.7	31.5	31.5	0.7	19.5	
Actuated g/C Ratio	0.16	0.16	0.33	0.20	0.20		0.17	0.41	0.41	0.01	0.26	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	288	303	521	344	352		572	1463	654	16	888	
v/s Ratio Prot	0.05	0.10	c0.11	c0.18	0.18		0.11	0.15		0.01	c0.17	
v/s Ratio Perm			0.11						0.10			
v/c Ratio	0.32	0.63	0.69	0.88	0.87		0.67	0.37	0.25	0.56	0.65	
Uniform Delay, d1	28.2	29.7	22.2	29.4	29.3		29.8	15.5	14.6	37.6	25.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	4.0	3.8	22.1	20.5		3.1	0.2	0.2	38.3	1.6	
Delay (s)	28.8	33.8	25.9	51.5	49.9		33.0	15.7	14.8	75.9	26.9	
Level of Service	C	C	C	D	D		C	B	B	E	C	
Approach Delay (s)		28.5			50.7			20.5			27.7	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	29.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	76.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.2%	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 (vph)	536	785	0	0	965	216	184	1	108	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9			4.9		6.0	6.0				
Lane Util. Factor	0.97	0.95			0.95		1.00	1.00				
Frt	1.00	1.00			0.97		1.00	0.85				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			3442		1770	1586				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			3442		1770	1586				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	583	853	0	0	1049	235	200	1	117	0	0	0
RTOR Reduction (vph)	0	0	0	0	19	0	0	98	0	0	0	0
Lane Group Flow (vph)	583	853	0	0	1265	0	200	20	0	0	0	0
Turn Type	Prot	NA			NA		Split	NA				
Protected Phases	5	2			6		8	8				
Permitted Phases												
Actuated Green, G (s)	19.4	66.9			43.5		15.2	15.2				
Effective Green, g (s)	19.4	66.9			43.5		15.2	15.2				
Actuated g/C Ratio	0.21	0.72			0.47		0.16	0.16				
Clearance Time (s)	4.0	4.9			4.9		6.0	6.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	716	2546			1610		289	259				
v/s Ratio Prot	c0.17	0.24			c0.37		c0.11	0.01				
v/s Ratio Perm												
v/c Ratio	0.81	0.34			0.79		0.69	0.08				
Uniform Delay, d1	35.1	4.8			20.8		36.7	33.0				
Progression Factor	1.45	0.37			1.00		1.00	1.00				
Incremental Delay, d2	5.1	0.3			2.6		7.0	0.1				
Delay (s)	55.9	2.1			23.4		43.7	33.1				
Level of Service	E	A			C		D	C				
Approach Delay (s)		23.9			23.4			39.7			0.0	
Approach LOS		C			C			D			A	

Intersection Summary			
HCM Average Control Delay	25.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	14.9
Intersection Capacity Utilization	71.5%	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)	33	1069	239	163	963	12	687	9	236	15	10	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.6		3.5	4.6		4.0	4.0	3.5	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91		0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	0.97		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00	0.95	0.99	1.00
Satd. Flow (prot)	1770	4946		1770	5076		1681	1687	1583	1681	1751	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.75	0.72	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	4946		1770	5076		1323	1276	1583	1770	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	1162	260	177	1047	13	747	10	257	16	11	14
RTOR Reduction (vph)	0	37	0	0	1	0	0	0	32	0	0	14
Lane Group Flow (vph)	36	1385	0	177	1059	0	381	376	225	13	14	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	2.7	31.6		13.7	42.6		29.8	29.8	43.5	1.8	1.8	1.8
Effective Green, g (s)	2.7	31.6		13.7	42.6		29.8	29.8	43.5	1.8	1.8	1.8
Actuated g/C Ratio	0.03	0.34		0.15	0.46		0.32	0.32	0.47	0.02	0.02	0.02
Clearance Time (s)	3.5	4.6		3.5	4.6		4.0	4.0	3.5	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	51	1681		261	2325		424	409	740	34	34	31
v/s Ratio Prot	0.02	c0.28		c0.10	0.21				0.04			
v/s Ratio Perm							0.29	c0.29	0.10	0.01	c0.01	0.00
v/c Ratio	0.71	0.82		0.68	0.46		0.90	0.92	0.30	0.38	0.41	0.01
Uniform Delay, d1	44.8	28.1		37.6	17.3		30.2	30.4	15.4	45.1	45.1	44.7
Progression Factor	1.00	1.00		0.72	1.89		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	36.0	4.7		4.4	0.4		21.2	25.3	0.2	7.0	7.9	0.1
Delay (s)	80.7	32.9		31.6	33.0		51.3	55.7	15.6	52.1	53.0	44.8
Level of Service	F	C		C	C		D	E	B	D	D	D
Approach Delay (s)		34.1			32.8			43.9			49.9	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	36.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	71.4%	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												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	0	0	0	598	50	4	12	85	31	0	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	650	54	4	13	92	34	0	20

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	704	110	34	20
Volume Left (vph)	0	4	34	0
Volume Right (vph)	54	92	0	20
Hadj (s)	-0.01	-0.46	0.53	-0.67
Departure Headway (s)	4.4	5.3	6.9	5.7
Degree Utilization, x	0.85	0.16	0.06	0.03
Capacity (veh/h)	813	643	494	596
Control Delay (s)	26.7	9.4	9.2	7.7
Approach Delay (s)	26.7	9.4	8.6	
Approach LOS	D	A	A	

Intersection Summary			
Delay	23.4		
HCM Level of Service	C		
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	17	102	71	115	78	418	577	21	61	643	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0		5.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3521		1770	3512	
Flt Permitted	0.58	1.00	1.00	0.75	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1086	1863	1583	1389	1863	1583	1770	3521		1770	3512	
Peak-hour factor, PHF	0.92	0.92	0.92	0.67	0.67	0.67	0.91	0.91	0.91	0.95	0.95	0.95
Adj. Flow (vph)	58	18	111	106	172	116	459	634	23	64	677	36
RTOR Reduction (vph)	0	0	92	0	0	97	0	2	0	0	4	0
Lane Group Flow (vph)	58	18	19	106	172	19	459	655	0	64	709	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8						
Actuated Green, G (s)	14.6	14.6	14.6	13.6	13.6	13.6	29.4	46.6		7.2	24.4	
Effective Green, g (s)	14.6	14.6	14.6	13.6	13.6	13.6	29.4	46.6		7.2	24.4	
Actuated g/C Ratio	0.17	0.17	0.17	0.16	0.16	0.16	0.35	0.55		0.09	0.29	
Clearance Time (s)	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0		5.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	188	322	274	224	300	255	617	1944		151	1015	
v/s Ratio Prot		0.01			c0.09		c0.26	0.19		0.04	c0.20	
v/s Ratio Perm	0.05		0.01	0.08		0.01						
v/c Ratio	0.31	0.06	0.07	0.47	0.57	0.07	0.74	0.34		0.42	0.70	
Uniform Delay, d1	30.5	29.1	29.2	32.1	32.7	30.1	24.2	10.4		36.6	26.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.1	0.1	1.6	2.6	0.1	4.8	0.1		1.9	2.1	
Delay (s)	31.4	29.2	29.3	33.7	35.4	30.2	29.0	10.5		38.5	28.9	
Level of Service	C	C	C	C	D	C	C	B		D	C	
Approach Delay (s)		30.0			33.4			18.1			29.7	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	84.4	Sum of lost time (s)	17.0
Intersection Capacity Utilization	66.8%	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 (vph)	0	0	0	253	0	268	189	1277	0	0	679	576
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				3.5	3.5		3.5	5.0			5.0	5.0
Lane Util. Factor				1.00	1.00		1.00	0.95			1.00	1.00
Frt				1.00	0.85		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1770	1583		1770	3539			1863	1583
Flt Permitted				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)				1770	1583		1770	3539			1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	275	0	291	205	1388	0	0	738	626
RTOR Reduction (vph)	0	0	0	0	41	0	0	0	0	0	0	337
Lane Group Flow (vph)	0	0	0	275	250	0	205	1388	0	0	738	289
Turn Type				Perm	NA		Prot	NA			NA	Perm
Protected Phases					8		1	6			2	
Permitted Phases				8								2
Actuated Green, G (s)				27.0	27.0		9.5	54.5			41.5	41.5
Effective Green, g (s)				27.0	27.0		9.5	54.5			41.5	41.5
Actuated g/C Ratio				0.30	0.30		0.11	0.61			0.46	0.46
Clearance Time (s)				3.5	3.5		3.5	5.0			5.0	5.0
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				531	475		187	2143			859	730
v/s Ratio Prot					c0.16		c0.12	0.39			c0.40	
v/s Ratio Perm				0.16								0.18
v/c Ratio				0.52	0.53		1.10	0.65			0.86	0.40
Uniform Delay, d1				26.1	26.2		40.2	11.5			21.6	16.0
Progression Factor				1.00	1.00		1.08	0.91			0.86	1.81
Incremental Delay, d2				3.6	4.1		78.3	0.9			10.2	1.5
Delay (s)				29.7	30.3		121.7	11.4			28.9	30.4
Level of Service				C	C		F	B			C	C
Approach Delay (s)		0.0			30.0			25.6			29.6	
Approach LOS		A			C			C			C	

Intersection Summary			
HCM Average Control Delay	27.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
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 (vph)	15	9	16	804	19	483	32	416	529	332	604	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1806	1583	1681	1689	1583	1770	3539	1583	1770	3522	
Flt Permitted		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1806	1583	1681	1689	1583	1770	3539	1583	1770	3522	
Peak-hour factor, PHF	0.98	0.98	0.98	0.94	0.94	0.94	0.91	0.91	0.91	0.80	0.80	0.80
Adj. Flow (vph)	15	9	16	855	20	514	35	457	581	415	755	26
RTOR Reduction (vph)	0	0	15	0	0	326	0	0	287	0	2	0
Lane Group Flow (vph)	0	24	1	436	439	188	35	457	294	415	779	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8		5	2	8	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)		4.3	4.3	30.4	30.4	30.4	2.8	19.9	50.3	22.3	39.4	
Effective Green, g (s)		4.3	4.3	30.4	30.4	30.4	2.8	19.9	50.3	22.3	39.4	
Actuated g/C Ratio		0.04	0.04	0.30	0.30	0.30	0.03	0.20	0.50	0.22	0.39	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		78	68	512	514	482	50	705	797	395	1389	
v/s Ratio Prot		c0.01		0.26	c0.26		0.02	c0.13	0.11	c0.23	0.22	
v/s Ratio Perm			0.00			0.12			0.07			
v/c Ratio		0.31	0.01	0.85	0.85	0.39	0.70	0.65	0.37	1.05	0.56	
Uniform Delay, d1		46.4	45.8	32.6	32.7	27.4	48.1	36.8	15.1	38.8	23.5	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.2	0.1	12.9	13.0	0.5	35.0	2.1	0.3	59.2	0.5	
Delay (s)		48.6	45.8	45.5	45.7	28.0	83.1	38.8	15.4	98.0	24.0	
Level of Service		D	D	D	D	C	F	D	B	F	C	
Approach Delay (s)		47.5			39.1			27.6			49.7	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM Average Control Delay	39.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	99.9	Sum of lost time (s)	23.0
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	118	93	868	141	88	1525
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	128	101	943	153	96	1658
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		3				
Median type			None			None
Median storage veh)						
Upstream signal (ft)			539			279
pX, platoon unblocked	0.74					
vC, conflicting volume	2040	548			1097	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1704	548			1097	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	79			85	
cM capacity (veh/h)	52	480			632	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	229	629	468	96	829	829
Volume Left	128	0	0	96	0	0
Volume Right	101	0	153	0	0	0
cSH	86	1700	1700	632	1700	1700
Volume to Capacity	2.66	0.37	0.28	0.15	0.49	0.49
Queue Length 95th (ft)	546	0	0	13	0	0
Control Delay (s)	857.1	0.0	0.0	11.7	0.0	0.0
Lane LOS	F			B		
Approach Delay (s)	857.1	0.0		0.6		
Approach LOS	F					

Intersection Summary			
Average Delay	64.2		
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	488	143	192	956	653	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.20	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	369	1863	1863	1583
Peak-hour factor, PHF	0.90	0.90	0.86	0.86	0.91	0.91
Adj. Flow (vph)	542	159	223	1112	718	319
RTOR Reduction (vph)	0	72	0	0	0	107
Lane Group Flow (vph)	542	87	223	1112	718	212
Turn Type	NA	Perm	pm+pt	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases		3	6			2
Actuated Green, G (s)	19.2	19.2	61.3	61.3	47.9	47.9
Effective Green, g (s)	19.2	19.2	61.3	61.3	47.9	47.9
Actuated g/C Ratio	0.21	0.21	0.68	0.68	0.53	0.53
Clearance Time (s)	3.5	3.5	3.5	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	732	338	405	1269	992	843
v/s Ratio Prot	c0.16		0.06	c0.60	0.39	
v/s Ratio Perm		0.06	0.31			0.13
v/c Ratio	0.74	0.26	0.55	0.88	0.72	0.25
Uniform Delay, d1	33.1	29.5	10.4	11.4	16.0	11.4
Progression Factor	1.00	1.00	1.00	1.00	0.68	0.64
Incremental Delay, d2	4.0	0.4	1.6	8.7	3.2	0.5
Delay (s)	37.1	29.9	12.0	20.0	14.1	7.7
Level of Service	D	C	B	C	B	A
Approach Delay (s)	35.5			18.7	12.2	
Approach LOS	D			B	B	

Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	678	20	40	225	569	1105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.13	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	238	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	737	22	43	245	618	1201
RTOR Reduction (vph)	0	15	0	0	0	0
Lane Group Flow (vph)	737	7	43	245	618	1201
Turn Type	NA	Perm	pm+pt	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4	2			6
Actuated Green, G (s)	22.7	22.7	33.9	33.9	25.8	48.5
Effective Green, g (s)	22.7	22.7	33.9	33.9	25.8	48.5
Actuated g/C Ratio	0.33	0.33	0.49	0.49	0.38	0.71
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1136	524	165	921	701	1258
v/s Ratio Prot	0.21		0.01	c0.13	0.33	c0.32
v/s Ratio Perm		0.00	0.12			0.44
v/c Ratio	0.65	0.01	0.26	0.27	0.88	0.95
Uniform Delay, d1	19.6	15.4	12.9	10.1	20.0	9.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.0	0.8	0.2	12.5	15.7
Delay (s)	20.8	15.4	13.7	10.3	32.5	24.7
Level of Service	C	B	B	B	C	C
Approach Delay (s)	20.7			10.8	27.4	
Approach LOS	C			B	C	

Intersection Summary			
HCM Average Control Delay	23.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	68.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.8%	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 (vph)	30	17	33	432	3	329	45	868	390	309	909	28
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	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1805	1583	1681	1686	1583	1770	3539	1583	3433	3523	
Flt Permitted		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1805	1583	1681	1686	1583	1770	3539	1583	3433	3523	
Peak-hour factor, PHF	0.71	0.71	0.71	0.87	0.87	0.87	0.89	0.89	0.89	0.85	0.85	0.85
Adj. Flow (vph)	42	24	46	497	3	378	51	975	438	364	1069	33
RTOR Reduction (vph)	0	0	42	0	0	281	0	0	0	0	2	0
Lane Group Flow (vph)	0	66	4	248	252	97	51	975	438	364	1100	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	pt+ov	Prot	NA	
Protected Phases	4	4		8	8		5	2	2 8	1	6	
Permitted Phases			4			8						
Actuated Green, G (s)		7.0	7.0	21.8	21.8	21.8	3.0	29.6	51.4	10.2	36.8	
Effective Green, g (s)		7.0	7.0	21.8	21.8	21.8	3.0	29.6	51.4	10.2	36.8	
Actuated g/C Ratio		0.08	0.08	0.26	0.26	0.26	0.04	0.35	0.61	0.12	0.43	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		149	131	433	434	408	63	1238	962	414	1532	
v/s Ratio Prot		c0.04		0.15	c0.15		0.03	c0.28	0.28	c0.11	0.31	
v/s Ratio Perm			0.00			0.06						
v/c Ratio		0.44	0.03	0.57	0.58	0.24	0.81	0.79	0.46	0.88	0.72	
Uniform Delay, d1		36.9	35.7	27.3	27.4	24.8	40.5	24.7	9.0	36.6	19.6	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.1	0.1	1.8	2.0	0.3	51.6	5.1	0.3	18.7	2.9	
Delay (s)		39.0	35.8	29.2	29.4	25.1	92.1	29.8	9.3	55.3	22.6	
Level of Service		D	D	C	C	C	F	C	A	E	C	
Approach Delay (s)		37.7			27.5			25.8			30.7	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	28.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	84.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	61.5%	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 (vph)	3	6	3	147	3	135	1	1101	82	68	1228	5
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	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1832	1583		1776	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.95	1.00		0.72	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1774	1583		1340	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.60	0.60	0.60	0.91	0.91	0.91	0.87	0.87	0.87	0.89	0.89	0.89
Adj. Flow (vph)	5	10	5	162	3	148	1	1266	94	76	1380	6
RTOR Reduction (vph)	0	0	5	0	0	121	0	0	40	0	0	3
Lane Group Flow (vph)	0	15	0	0	165	27	1	1266	54	76	1380	3
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Actuated Green, G (s)		2.8	2.8		12.3	12.3	0.7	33.1	33.1	4.1	36.5	36.5
Effective Green, g (s)		2.8	2.8		12.3	12.3	0.7	33.1	33.1	4.1	36.5	36.5
Actuated g/C Ratio		0.04	0.04		0.18	0.18	0.01	0.48	0.48	0.06	0.53	0.53
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		73	65		241	285	18	1715	767	106	1891	846
v/s Ratio Prot							0.00	0.36		c0.04	c0.39	
v/s Ratio Perm		c0.01	0.00		c0.12	0.02			0.03			0.00
v/c Ratio		0.21	0.00		0.68	0.09	0.06	0.74	0.07	0.72	0.73	0.00
Uniform Delay, d1		31.7	31.4		26.2	23.4	33.5	14.1	9.4	31.5	12.1	7.4
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.4	0.0		7.8	0.1	1.3	2.9	0.2	20.5	2.5	0.0
Delay (s)		33.1	31.4		34.0	23.5	34.8	17.0	9.6	52.1	14.7	7.4
Level of Service		C	C		C	C	C	B	A	D	B	A
Approach Delay (s)		32.7			29.0			16.5			16.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	68.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	62.2%	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 (vph)	144	769	12	48	950	29	41	6	106	273	0	78
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		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00		1.00	1.00		1.00	0.86		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3531		1770	3523		1770	3039		1770	3008	
Flt Permitted	0.95	1.00		0.95	1.00		0.70	1.00		0.67	1.00	
Satd. Flow (perm)	1770	3531		1770	3523		1302	3039		1257	3008	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	157	836	13	52	1033	32	45	7	115	297	0	85
RTOR Reduction (vph)	0	1	0	0	2	0	0	81	0	0	60	0
Lane Group Flow (vph)	157	848	0	52	1063	0	45	41	0	297	25	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	10.0	35.2		3.2	28.4		21.2	21.2		21.2	21.2	
Effective Green, g (s)	10.0	35.2		3.2	28.4		21.2	21.2		21.2	21.2	
Actuated g/C Ratio	0.14	0.49		0.04	0.40		0.30	0.30		0.30	0.30	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	247	1736		79	1397		386	900		372	891	
v/s Ratio Prot	c0.09	0.24		0.03	c0.30			0.01			0.01	
v/s Ratio Perm							0.03			c0.24		
v/c Ratio	0.64	0.49		0.66	0.76		0.12	0.05		0.80	0.03	
Uniform Delay, d1	29.1	12.2		33.7	18.7		18.4	18.0		23.2	17.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.3	0.2		18.1	2.5		0.1	0.0		11.3	0.0	
Delay (s)	34.4	12.4		51.7	21.2		18.5	18.0		34.6	17.9	
Level of Service	C	B		D	C		B	B		C	B	
Approach Delay (s)		15.8			22.6			18.1			30.9	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	71.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.0%	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)	551	369	386	213	208	119	305	522	200	205	675	458
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	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3392		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	3392		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.98	0.98	0.98	0.95	0.95	0.95	0.93	0.93	0.93
Adj. Flow (vph)	612	410	429	217	212	121	321	549	211	220	726	492
RTOR Reduction (vph)	0	0	289	0	0	101	0	43	0	0	0	373
Lane Group Flow (vph)	612	410	140	217	212	20	321	717	0	220	726	119
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	22.0	23.4	23.4	13.3	14.7	14.7	16.0	24.0		14.0	22.0	22.0
Effective Green, g (s)	22.0	23.4	23.4	13.3	14.7	14.7	16.0	24.0		14.0	22.0	22.0
Actuated g/C Ratio	0.24	0.26	0.26	0.15	0.16	0.16	0.18	0.26		0.15	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	429	481	408	260	302	257	312	898		273	858	384
v/s Ratio Prot	c0.35	c0.22		0.12	0.11		c0.18	c0.21		0.12	0.21	
v/s Ratio Perm			0.09			0.01						0.08
v/c Ratio	1.43	0.85	0.34	0.83	0.70	0.08	1.03	0.80		0.81	0.85	0.31
Uniform Delay, d1	34.4	32.0	27.4	37.6	35.9	32.2	37.4	31.1		37.0	32.7	28.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	205.1	13.6	0.5	20.0	7.2	0.1	58.6	7.4		15.8	10.1	2.1
Delay (s)	239.4	45.6	27.9	57.7	43.1	32.4	95.9	38.5		52.8	42.8	30.2
Level of Service	F	D	C	E	D	C	F	D		D	D	C
Approach Delay (s)		122.1			46.5			55.5			40.0	
Approach LOS		F			D			E			D	

Intersection Summary			
HCM Average Control Delay	70.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	90.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	90.4%	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 (vph)	63	0	14	21	0	28	8	885	4	5	1198	36
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	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1770	1583		1770	1583	1770	3537		1770	3524	
Flt Permitted		0.95	1.00		0.70	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1770	1583		1297	1583	1770	3537		1770	3524	
Peak-hour factor, PHF	0.67	0.67	0.67	0.47	0.47	0.47	0.95	0.95	0.95	0.92	0.92	0.92
Adj. Flow (vph)	94	0	21	45	0	60	8	932	4	5	1302	39
RTOR Reduction (vph)	0	0	19	0	0	54	0	0	0	0	2	0
Lane Group Flow (vph)	0	94	2	0	45	6	8	936	0	5	1339	0
Turn Type	Split	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases			4	8		8						
Actuated Green, G (s)		7.1	7.1		6.2	6.2	0.7	33.0		0.7	33.0	
Effective Green, g (s)		7.1	7.1		6.2	6.2	0.7	33.0		0.7	33.0	
Actuated g/C Ratio		0.11	0.11		0.10	0.10	0.01	0.52		0.01	0.52	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		199	178		128	156	20	1853		20	1846	
v/s Ratio Prot		c0.05					c0.00	0.26		0.00	c0.38	
v/s Ratio Perm			0.00		c0.03	0.00						
v/c Ratio		0.47	0.01		0.35	0.04	0.40	0.50		0.25	0.73	
Uniform Delay, d1		26.2	24.8		26.5	25.7	30.9	9.7		30.9	11.5	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.8	0.0		1.7	0.1	12.6	1.0		6.5	2.5	
Delay (s)		28.0	24.9		28.2	25.8	43.6	10.7		37.4	14.0	
Level of Service		C	C		C	C	D	B		D	B	
Approach Delay (s)		27.4			26.8			11.0			14.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	63.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	236	132	10	61	8
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	257	143	11	66	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						3
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	154				408	149
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	154				408	149
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				89	99
cM capacity (veh/h)	1426				599	898

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	258	154	75
Volume Left	1	0	66
Volume Right	0	11	9
cSH	1426	1700	678
Volume to Capacity	0.00	0.09	0.11
Queue Length 95th (ft)	0	0	9
Control Delay (s)	0.0	0.0	11.4
Lane LOS	A		B
Approach Delay (s)	0.0	0.0	11.4
Approach LOS			B

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	23.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	1	248	4	0	7	74	444	1	4	1031	36
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	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.91		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1776	1583		1667		1770	1862		1770	1863	1583
Flt Permitted		0.77	1.00		0.94		0.10	1.00		0.45	1.00	1.00
Satd. Flow (perm)		1433	1583		1589		178	1862		839	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	1	270	4	0	8	80	483	1	4	1121	39
RTOR Reduction (vph)	0	0	84	0	6	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	40	186	0	6	0	80	484	0	4	1121	27
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		6
Actuated Green, G (s)		11.5	11.5		11.5		41.8	41.8		41.8	41.8	41.8
Effective Green, g (s)		11.5	11.5		11.5		41.8	41.8		41.8	41.8	41.8
Actuated g/C Ratio		0.19	0.19		0.19		0.68	0.68		0.68	0.68	0.68
Clearance Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		269	297		298		121	1270		572	1270	1079
v/s Ratio Prot								0.26			c0.60	
v/s Ratio Perm		0.03	c0.12		0.00		0.45			0.00		0.02
v/c Ratio		0.15	0.62		0.02		0.66	0.38		0.01	0.88	0.02
Uniform Delay, d1		20.8	22.9		20.3		5.6	4.2		3.1	7.8	3.2
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.3	4.1		0.0		12.8	0.2		0.0	7.5	0.0
Delay (s)		21.1	27.0		20.3		18.4	4.4		3.1	15.3	3.2
Level of Service		C	C		C		B	A		A	B	A
Approach Delay (s)		26.2			20.3			6.4			14.9	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	61.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

EXISTING + PROJECT+ MITIGATION

TRAFFIC CONDITIONS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	1083	50	85	417	16	687	9	293	8	4	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.6		3.5	4.6		4.0	4.0	3.5	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91		0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00	0.95	0.98	1.00
Satd. Flow (prot)	1770	5052		1770	5058		1681	1687	1583	1681	1732	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.75	0.73	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	5052		1770	5058		1332	1286	1583	1770	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	1177	54	92	453	17	747	10	318	9	4	7
RTOR Reduction (vph)	0	5	0	0	4	0	0	0	73	0	0	7
Lane Group Flow (vph)	23	1226	0	92	466	0	381	376	245	6	7	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	2.6	33.6		9.9	40.9		31.4	31.4	41.3	2.0	2.0	2.0
Effective Green, g (s)	2.6	33.6		9.9	40.9		31.4	31.4	41.3	2.0	2.0	2.0
Actuated g/C Ratio	0.03	0.36		0.11	0.44		0.34	0.34	0.44	0.02	0.02	0.02
Clearance Time (s)	3.5	4.6		3.5	4.6		4.0	4.0	3.5	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	49	1825		188	2224		450	434	703	38	38	34
v/s Ratio Prot	0.01	c0.24		c0.05	0.09				0.04			
v/s Ratio Perm							0.29	c0.29	0.12	0.00	c0.00	0.00
v/c Ratio	0.47	0.67		0.49	0.21		0.85	0.87	0.35	0.16	0.18	0.00
Uniform Delay, d1	44.5	25.0		39.2	16.1		28.6	28.8	17.0	44.7	44.7	44.5
Progression Factor	1.00	1.00		1.29	0.91		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.9	2.0		1.9	0.2		13.7	16.4	0.3	1.9	2.3	0.1
Delay (s)	51.5	27.0		52.4	14.8		42.3	45.2	17.3	46.6	47.0	44.6
Level of Service	D	C		D	B		D	D	B	D	D	D
Approach Delay (s)		27.5			20.9			35.9			46.1	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	29.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	63.2%	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 (vph)	293	159	213	139	296	126	249	642	124	66	445	483
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	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1770	3453		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	1770	1863	1583	1770	3453		1770	3539	1583
Peak-hour factor, PHF	0.89	0.89	0.89	0.80	0.80	0.80	0.83	0.83	0.83	0.94	0.94	0.94
Adj. Flow (vph)	329	179	239	174	370	158	300	773	149	70	473	514
RTOR Reduction (vph)	0	0	188	0	0	124	0	21	0	0	0	309
Lane Group Flow (vph)	329	179	51	174	370	34	300	901	0	70	473	205
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	10.4	15.9	15.9	10.2	15.7	15.7	9.0	27.9		4.0	22.9	22.9
Effective Green, g (s)	10.4	15.9	15.9	10.2	15.7	15.7	9.0	27.9		4.0	22.9	22.9
Actuated g/C Ratio	0.14	0.21	0.21	0.14	0.21	0.21	0.12	0.38		0.05	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	482	400	340	244	395	336	215	1302		96	1095	490
v/s Ratio Prot	0.10	0.10		c0.10	c0.20		c0.17	c0.26		0.04	0.13	
v/s Ratio Perm			0.03			0.02						0.13
v/c Ratio	0.68	0.45	0.15	0.71	0.94	0.10	1.40	0.69		0.73	0.43	0.42
Uniform Delay, d1	30.2	25.2	23.6	30.5	28.7	23.5	32.5	19.4		34.5	20.4	20.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.0	0.8	0.2	9.5	29.4	0.1	203.7	3.0		24.0	1.2	2.6
Delay (s)	34.2	26.0	23.8	40.0	58.1	23.6	236.2	22.5		58.4	21.6	22.9
Level of Service	C	C	C	D	E	C	F	C		E	C	C
Approach Delay (s)		28.9			45.8			74.9			24.7	
Approach LOS		C			D			E			C	

Intersection Summary			
HCM Average Control Delay	46.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	74.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.3%	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)	33	1069	239	163	963	12	687	9	236	15	10	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.6	4.6	3.5	4.6		4.0	4.0	3.5	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91		0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00	0.95	0.99	1.00
Satd. Flow (prot)	1770	5085	1583	1770	5076		1681	1687	1583	1681	1751	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.75	0.72	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1770	5085	1583	1770	5076		1323	1276	1583	1770	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	1162	260	177	1047	13	747	10	257	16	11	14
RTOR Reduction (vph)	0	0	114	0	1	0	0	0	32	0	0	14
Lane Group Flow (vph)	36	1162	146	177	1059	0	381	376	225	13	14	0
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases			2				8		8	4		4
Actuated Green, G (s)	2.7	31.6	31.6	13.7	42.6		29.8	29.8	43.5	1.8	1.8	1.8
Effective Green, g (s)	2.7	31.6	31.6	13.7	42.6		29.8	29.8	43.5	1.8	1.8	1.8
Actuated g/C Ratio	0.03	0.34	0.34	0.15	0.46		0.32	0.32	0.47	0.02	0.02	0.02
Clearance Time (s)	3.5	4.6	4.6	3.5	4.6		4.0	4.0	3.5	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	51	1728	538	261	2325		424	409	740	34	34	31
v/s Ratio Prot	0.02	c0.23		c0.10	0.21				0.04			
v/s Ratio Perm			0.09				0.29	c0.29	0.10	0.01	c0.01	0.00
v/c Ratio	0.71	0.67	0.27	0.68	0.46		0.90	0.92	0.30	0.38	0.41	0.01
Uniform Delay, d1	44.8	26.3	22.3	37.6	17.3		30.2	30.4	15.4	45.1	45.1	44.7
Progression Factor	1.00	1.00	1.00	0.72	1.89		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	36.0	2.1	1.2	4.4	0.4		21.2	25.3	0.2	7.0	7.9	0.1
Delay (s)	80.7	28.4	23.6	31.6	33.0		51.3	55.7	15.6	52.1	53.0	44.8
Level of Service	F	C	C	C	C		D	E	B	D	D	D
Approach Delay (s)		28.8			32.8			43.9			49.9	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	34.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	66.1%	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)	551	369	386	213	208	119	305	522	200	205	675	458
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	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1770	3392		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1863	1583	1770	1863	1583	1770	3392		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.98	0.98	0.98	0.95	0.95	0.95	0.93	0.93	0.93
Adj. Flow (vph)	612	410	429	217	212	121	321	549	211	220	726	492
RTOR Reduction (vph)	0	0	291	0	0	99	0	42	0	0	0	372
Lane Group Flow (vph)	612	410	138	217	212	22	321	718	0	220	726	120
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	20.0	22.7	22.7	13.3	16.0	16.0	16.0	24.1		13.9	22.0	22.0
Effective Green, g (s)	20.0	22.7	22.7	13.3	16.0	16.0	16.0	24.1		13.9	22.0	22.0
Actuated g/C Ratio	0.22	0.25	0.25	0.15	0.18	0.18	0.18	0.27		0.15	0.24	0.24
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	763	470	399	262	331	281	315	908		273	865	387
v/s Ratio Prot	c0.18	c0.22		0.12	0.11		c0.18	c0.21		0.12	0.21	
v/s Ratio Perm			0.09			0.01						0.08
v/c Ratio	0.80	0.87	0.35	0.83	0.64	0.08	1.02	0.79		0.81	0.84	0.31
Uniform Delay, d1	33.1	32.3	27.6	37.2	34.3	30.8	37.0	30.6		36.7	32.3	27.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.1	16.2	0.5	18.9	4.2	0.1	55.7	7.0		15.8	9.6	2.1
Delay (s)	39.2	48.4	28.1	56.2	38.5	31.0	92.7	37.6		52.5	41.9	29.9
Level of Service	D	D	C	E	D	C	F	D		D	D	C
Approach Delay (s)		38.5			43.8			53.9			39.4	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	43.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

FUTTURE WITHOUT PROJECT

TRAFFIC CONDITIONS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	110	110	480	120	20	200	260	520	40	880	50
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	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1681	1705		3433	3539	1583	1770	3511	
Flt Permitted	0.95	1.00	1.00	0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1681	1705		3433	3539	1583	1770	3511	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.94	0.94	0.94	0.96	0.96	0.96
Adj. Flow (vph)	23	125	125	545	136	23	213	277	553	42	917	52
RTOR Reduction (vph)	0	0	15	0	2	0	0	0	340	0	4	0
Lane Group Flow (vph)	23	125	110	349	353	0	213	277	213	42	965	0
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	2	2	3	6	6		3	8		7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	12.8	12.8	19.8	21.1	21.1		7.0	33.0	33.0	2.9	28.9	
Effective Green, g (s)	12.8	12.8	19.8	21.1	21.1		7.0	33.0	33.0	2.9	28.9	
Actuated g/C Ratio	0.15	0.15	0.23	0.25	0.25		0.08	0.38	0.38	0.03	0.34	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	264	278	365	413	419		280	1361	609	60	1183	
v/s Ratio Prot	0.01	c0.07	0.02	c0.21	0.21		c0.06	0.08		0.02	c0.27	
v/s Ratio Perm			0.04						0.13			
v/c Ratio	0.09	0.45	0.30	0.85	0.84		0.76	0.20	0.35	0.70	0.82	
Uniform Delay, d1	31.5	33.3	27.3	30.8	30.8		38.6	17.6	18.8	41.0	26.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	1.2	0.5	14.6	14.2		11.5	0.1	0.3	30.0	4.4	
Delay (s)	31.6	34.4	27.7	45.4	44.9		50.1	17.7	19.1	71.0	30.5	
Level of Service	C	C	C	D	D		D	B	B	E	C	
Approach Delay (s)		31.1			45.2			25.1			32.2	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	32.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	85.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.3%	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)	530	1020	0	0	570	210	40	10	140	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9			4.6		6.0	6.0				
Lane Util. Factor	0.97	0.95			0.95		1.00	1.00				
Frt	1.00	1.00			0.96		1.00	0.86				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			3396		1770	1602				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			3396		1770	1602				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	576	1109	0	0	620	228	43	11	152	0	0	0
RTOR Reduction (vph)	0	0	0	0	31	0	0	114	0	0	0	0
Lane Group Flow (vph)	576	1109	0	0	817	0	43	49	0	0	0	0
Turn Type	Prot	NA			NA		Split	NA				
Protected Phases	5	2			6		8	8				
Permitted Phases												
Actuated Green, G (s)	20.9	73.3			48.7		8.8	8.8				
Effective Green, g (s)	20.9	73.3			48.7		8.8	8.8				
Actuated g/C Ratio	0.22	0.79			0.52		0.09	0.09				
Clearance Time (s)	4.0	4.9			4.6		6.0	6.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	772	2789			1778		167	152				
v/s Ratio Prot	c0.17	0.31			c0.24		0.02	c0.03				
v/s Ratio Perm												
v/c Ratio	0.75	0.40			0.46		0.26	0.32				
Uniform Delay, d1	33.6	3.0			13.9		39.1	39.3				
Progression Factor	0.92	2.18			1.00		1.00	1.00				
Incremental Delay, d2	3.4	0.4			0.2		0.8	1.2				
Delay (s)	34.3	7.0			14.1		39.9	40.5				
Level of Service	C	A			B		D	D				
Approach Delay (s)		16.3			14.1			40.4			0.0	
Approach LOS		B			B			D			A	

Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	14.6
Intersection Capacity Utilization	58.9%	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 (vph)	60	1110	40	100	500	20	450	10	370	10	10	10
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		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91		0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5059		1770	5056		1681	1689	1583	1681	1762	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.75	0.73	1.00	1.00	0.60	1.00
Satd. Flow (perm)	1770	5059		1770	5056		1326	1286	1583	1770	1065	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1207	43	109	543	22	489	11	402	11	11	11
RTOR Reduction (vph)	0	4	0	0	3	0	0	0	109	0	0	11
Lane Group Flow (vph)	65	1246	0	109	562	0	249	251	293	10	12	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	7.7	37.3		11.8	41.4		24.3	24.3	36.1	3.6	3.6	3.6
Effective Green, g (s)	7.7	37.3		11.8	41.4		24.3	24.3	36.1	3.6	3.6	3.6
Actuated g/C Ratio	0.08	0.40		0.13	0.45		0.26	0.26	0.39	0.04	0.04	0.04
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	147	2029		225	2251		346	336	683	69	41	61
v/s Ratio Prot	0.04	c0.25		c0.06	0.11				c0.05			
v/s Ratio Perm							0.19	c0.20	0.13	0.01	c0.01	0.00
v/c Ratio	0.44	0.61		0.48	0.25		0.72	0.75	0.43	0.14	0.29	0.01
Uniform Delay, d1	40.6	22.1		37.8	16.1		31.3	31.5	20.9	43.2	43.5	43.0
Progression Factor	1.00	1.00		1.40	0.71		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	1.4		1.5	0.2		7.0	8.8	0.4	1.0	3.9	0.0
Delay (s)	42.7	23.5		54.5	11.7		38.3	40.3	21.3	44.2	47.4	43.0
Level of Service	D	C		D	B		D	D	C	D	D	D
Approach Delay (s)		24.5			18.6			31.3			45.0	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM Average Control Delay	25.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.6%	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 (vph)	60	1500	0	0	600	370	120	30	250	0	0	0
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	4.0	4.0				
Lane Util. Factor	0.97	0.95			0.95	1.00	1.00	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.87				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	3433	3539			3539	1583	1770	1614				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	3433	3539			3539	1583	1770	1614				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1630	0	0	652	402	130	33	272	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	201	0	10	0	0	0	0
Lane Group Flow (vph)	65	1630	0	0	652	201	130	295	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	5	2			6			8				
Permitted Phases						6	8					
Actuated Green, G (s)	2.2	36.9			30.7	30.7	16.5	16.5				
Effective Green, g (s)	2.2	36.9			30.7	30.7	16.5	16.5				
Actuated g/C Ratio	0.04	0.60			0.50	0.50	0.27	0.27				
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0				
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)	123	2127			1770	792	476	434				
v/s Ratio Prot	0.02	c0.46			0.18			c0.18				
v/s Ratio Perm						0.13	0.07					
v/c Ratio	0.53	0.77			0.37	0.25	0.27	0.68				
Uniform Delay, d1	29.1	9.1			9.4	8.8	17.7	20.1				
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00				
Incremental Delay, d2	4.1	1.7			0.1	0.2	0.3	4.2				
Delay (s)	33.1	10.8			9.5	9.0	18.0	24.3				
Level of Service	C	B			A	A	B	C				
Approach Delay (s)		11.6			9.3			22.4			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	61.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.1%	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)	70	1170	510	170	660	120	110	260	130	360	540	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0		5.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3362		1770	3503	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3362		1770	3503	
Peak-hour factor, PHF	0.92	0.92	0.92	0.67	0.67	0.67	0.91	0.91	0.91	0.95	0.95	0.95
Adj. Flow (vph)	76	1272	554	254	985	179	121	286	143	379	568	42
RTOR Reduction (vph)	0	0	169	0	0	87	0	53	0	0	5	0
Lane Group Flow (vph)	76	1272	385	254	985	92	121	376	0	379	605	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	7.6	39.1	39.1	15.0	46.5	46.5	12.4	17.7		23.0	28.3	
Effective Green, g (s)	7.6	39.1	39.1	15.0	46.5	46.5	12.4	17.7		23.0	28.3	
Actuated g/C Ratio	0.07	0.33	0.33	0.13	0.40	0.40	0.11	0.15		0.20	0.24	
Clearance Time (s)	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0		5.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	115	1185	530	227	1409	630	188	509		349	849	
v/s Ratio Prot	0.04	c0.36		c0.14	0.28		0.07	0.11		c0.21	c0.17	
v/s Ratio Perm			0.24			0.06						
v/c Ratio	0.66	1.07	0.73	1.12	0.70	0.15	0.64	0.74		1.09	0.71	
Uniform Delay, d1	53.3	38.8	34.1	50.9	29.3	22.5	50.1	47.3		46.9	40.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	13.4	48.2	4.9	95.4	1.5	0.1	7.3	5.5		73.1	2.9	
Delay (s)	66.7	87.1	39.1	146.3	30.9	22.6	57.4	52.9		120.0	43.4	
Level of Service	E	F	D	F	C	C	E	D		F	D	
Approach Delay (s)		72.3			50.5			53.9			72.8	
Approach LOS		E			D			D			E	

Intersection Summary			
HCM Average Control Delay	63.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	116.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
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)	350	80	510	10	70	10	290	580	20	20	880	400
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	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1827		1770	3539	1583	1770	3373	
Flt Permitted	0.70	1.00	1.00	0.70	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1305	1863	1583	1305	1827		1770	3539	1583	1770	3373	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	380	87	554	11	76	11	315	630	22	22	957	435
RTOR Reduction (vph)	0	0	215	0	6	0	0	0	10	0	58	0
Lane Group Flow (vph)	380	87	339	11	81	0	315	630	12	22	1334	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4					6			
Actuated Green, G (s)	28.3	28.3	28.3	28.3	28.3		16.7	47.7	47.7	2.0	33.0	
Effective Green, g (s)	28.3	28.3	28.3	28.3	28.3		16.7	47.7	47.7	2.0	33.0	
Actuated g/C Ratio	0.31	0.31	0.31	0.31	0.31		0.19	0.53	0.53	0.02	0.37	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	410	586	498	410	574		328	1876	839	39	1237	
v/s Ratio Prot		0.05			0.04		c0.18	0.18		0.01	c0.40	
v/s Ratio Perm	c0.29		0.21	0.01					0.01			
v/c Ratio	0.93	0.15	0.68	0.03	0.14		0.96	0.34	0.01	0.56	1.08	
Uniform Delay, d1	29.8	22.2	26.9	21.3	22.1		36.3	12.1	10.0	43.6	28.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.80	0.95	0.54	1.00	1.00	
Incremental Delay, d2	26.8	0.1	3.8	0.0	0.1		36.6	0.4	0.0	17.3	49.5	
Delay (s)	56.6	22.3	30.7	21.4	22.2		65.5	12.0	5.4	60.9	78.0	
Level of Service	E	C	C	C	C		E	B	A	E	E	
Approach Delay (s)		39.6			22.1			29.3			77.7	
Approach LOS		D			C			C			E	

Intersection Summary			
HCM Average Control Delay	51.7	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.2%	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 (vph)	30	10	20	240	10	120	10	620	750	520	730	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.96	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1795	1583	1681	1692	1583	1770	3539	1583	1770	3532	
Flt Permitted		0.96	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1795	1583	1681	1692	1583	1770	3539	1583	1770	3532	
Peak-hour factor, PHF	0.98	0.98	0.98	0.94	0.94	0.94	0.91	0.91	0.91	0.80	0.80	0.80
Adj. Flow (vph)	31	10	20	255	11	128	11	681	824	650	912	12
RTOR Reduction (vph)	0	0	19	0	0	106	0	0	315	0	0	0
Lane Group Flow (vph)	0	41	1	133	133	22	11	681	509	650	924	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8		5	2	8	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)		6.1	6.1	16.6	16.6	16.6	0.9	27.0	43.6	21.8	47.9	
Effective Green, g (s)		6.1	6.1	16.6	16.6	16.6	0.9	27.0	43.6	21.8	47.9	
Actuated g/C Ratio		0.06	0.06	0.18	0.18	0.18	0.01	0.29	0.46	0.23	0.51	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		116	102	295	297	278	17	1011	730	408	1790	
v/s Ratio Prot		c0.02		0.08	0.08		0.01	0.19	c0.12	c0.37	0.26	
v/s Ratio Perm			0.00			0.01			0.20			
v/c Ratio		0.35	0.01	0.45	0.45	0.08	0.65	0.67	0.70	1.59	0.52	
Uniform Delay, d1		42.3	41.4	34.9	34.8	32.6	46.6	29.9	20.2	36.4	15.6	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.9	0.0	1.1	1.1	0.1	62.0	1.8	2.9	278.3	0.3	
Delay (s)		44.2	41.4	36.0	35.9	32.7	108.6	31.6	23.1	314.6	15.8	
Level of Service		D	D	D	D	C	F	C	C	F	B	
Approach Delay (s)		43.3			34.9			27.6			139.2	
Approach LOS		D			C			C			F	

Intersection Summary			
HCM Average Control Delay	78.2	HCM Level of Service	E
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	94.5	Sum of lost time (s)	23.0
Intersection Capacity Utilization	93.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	130	80	1440	330	80	780
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	141	87	1565	359	87	848
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			475			343
pX, platoon unblocked						
vC, conflicting volume	2342	962			1924	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2342	962			1924	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	66			71	
cM capacity (veh/h)	22	256			303	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	141	87	1043	880	87	424	424
Volume Left	141	0	0	0	87	0	0
Volume Right	0	87	0	359	0	0	0
cSH	22	256	1700	1700	303	1700	1700
Volume to Capacity	6.51	0.34	0.61	0.52	0.29	0.25	0.25
Queue Length 95th (ft)	Err	36	0	0	29	0	0
Control Delay (s)	Err	26.1	0.0	0.0	21.6	0.0	0.0
Lane LOS	F	D			C		
Approach Delay (s)	6199.8		0.0		2.0		
Approach LOS	F						

Intersection Summary			
Average Delay	459.0		
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	480	200	50	400	1440	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.08	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	153	3539	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.86	0.86	0.91	0.91
Adj. Flow (vph)	533	222	58	465	1582	121
RTOR Reduction (vph)	0	99	0	0	0	38
Lane Group Flow (vph)	533	123	58	465	1582	83
Turn Type	NA	Perm	pm+pt	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases		3	6			2
Actuated Green, G (s)	18.1	18.1	62.4	62.4	54.4	54.4
Effective Green, g (s)	18.1	18.1	62.4	62.4	54.4	54.4
Actuated g/C Ratio	0.20	0.20	0.69	0.69	0.60	0.60
Clearance Time (s)	3.5	3.5	3.5	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	690	318	187	2454	2139	957
v/s Ratio Prot	c0.16		c0.02	0.13	c0.45	
v/s Ratio Perm		0.08	0.20			0.05
v/c Ratio	0.77	0.39	0.31	0.19	0.74	0.09
Uniform Delay, d1	34.0	31.1	9.8	4.9	12.7	7.4
Progression Factor	1.00	1.00	1.00	1.00	1.65	2.84
Incremental Delay, d2	5.4	0.8	0.9	0.2	1.2	0.1
Delay (s)	39.4	31.9	10.8	5.0	22.2	21.2
Level of Service	D	C	B	A	C	C
Approach Delay (s)	37.2			5.7	22.1	
Approach LOS	D			A	C	

Intersection Summary			
HCM Average Control Delay	23.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1360	80	70	440	420	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.16	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	301	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1478	87	76	478	457	533
RTOR Reduction (vph)	0	31	0	0	0	0
Lane Group Flow (vph)	1478	56	76	478	457	533
Turn Type	NA	Perm	pm+pt	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4	2			6
Actuated Green, G (s)	39.2	39.2	33.3	33.3	24.3	63.5
Effective Green, g (s)	39.2	39.2	33.3	33.3	24.3	63.5
Actuated g/C Ratio	0.46	0.46	0.39	0.39	0.29	0.75
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1593	734	171	734	536	1302
v/s Ratio Prot	c0.43		0.02	c0.26	c0.25	0.19
v/s Ratio Perm		0.04	0.16			0.15
v/c Ratio	0.93	0.08	0.44	0.65	0.85	0.41
Uniform Delay, d1	21.3	12.6	18.9	20.9	28.4	3.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.7	0.0	1.8	2.1	12.4	0.2
Delay (s)	31.1	12.6	20.8	22.9	40.8	4.0
Level of Service	C	B	C	C	D	A
Approach Delay (s)	30.0			22.6	21.0	
Approach LOS	C			C	C	

Intersection Summary			
HCM Average Control Delay	25.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	84.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	79.8%	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 (vph)	10	10	10	670	10	580	20	780	240	530	1140	10
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	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1817	1583	1681	1688	1583	1770	3539	1583	3433	3535	
Flt Permitted		0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1817	1583	1681	1688	1583	1770	3539	1583	3433	3535	
Peak-hour factor, PHF	0.71	0.71	0.71	0.87	0.87	0.87	0.89	0.89	0.89	0.85	0.85	0.85
Adj. Flow (vph)	14	14	14	770	11	667	22	876	270	624	1341	12
RTOR Reduction (vph)	0	0	14	0	0	54	0	0	0	0	0	0
Lane Group Flow (vph)	0	28	0	393	388	613	22	876	270	624	1353	0
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	4	4		8	8	1	5	2	2 8	1	6	
Permitted Phases			4			8						
Actuated Green, G (s)		2.2	2.2	25.7	25.7	45.8	1.5	27.7	53.4	20.1	46.3	
Effective Green, g (s)		2.2	2.2	25.7	25.7	45.8	1.5	27.7	53.4	20.1	46.3	
Actuated g/C Ratio		0.02	0.02	0.28	0.28	0.50	0.02	0.30	0.58	0.22	0.50	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		43	37	471	473	859	28	1069	921	752	1784	
v/s Ratio Prot		c0.02		c0.23	0.23	c0.16	0.01	0.25	0.17	c0.18	c0.38	
v/s Ratio Perm			0.00			0.23						
v/c Ratio		0.65	0.01	0.83	0.82	0.71	0.79	0.82	0.29	0.83	0.76	
Uniform Delay, d1		44.4	43.7	31.0	30.8	17.9	44.9	29.7	9.6	34.2	18.2	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		30.2	0.1	12.1	10.9	2.8	82.7	5.0	0.2	7.6	1.9	
Delay (s)		74.5	43.8	43.1	41.7	20.7	127.7	34.7	9.8	41.7	20.1	
Level of Service		E	D	D	D	C	F	C	A	D	C	
Approach Delay (s)		64.3			32.4			30.7			26.9	
Approach LOS		E			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	91.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.2%	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 (vph)	10	10	10	30	10	50	10	1080	100	150	1660	10
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	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1817	1583		1795	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.98	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1817	1583		1795	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.60	0.60	0.60	0.91	0.91	0.91	0.87	0.87	0.87	0.89	0.89	0.89
Adj. Flow (vph)	17	17	17	33	11	55	11	1241	115	169	1865	11
RTOR Reduction (vph)	0	0	16	0	0	51	0	0	27	0	0	3
Lane Group Flow (vph)	0	34	1	0	44	4	11	1241	88	169	1865	8
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		4.3	4.3		6.1	6.1	0.7	45.8	45.8	7.0	52.1	52.1
Effective Green, g (s)		4.3	4.3		6.1	6.1	0.7	45.8	45.8	7.0	52.1	52.1
Actuated g/C Ratio		0.05	0.05		0.08	0.08	0.01	0.58	0.58	0.09	0.66	0.66
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		99	86		138	122	16	2047	915	156	2328	1041
v/s Ratio Prot		c0.02			c0.02		0.01	0.35		c0.10	c0.53	
v/s Ratio Perm			0.00			0.00			0.06			0.00
v/c Ratio		0.34	0.01		0.32	0.03	0.69	0.61	0.10	1.08	0.80	0.01
Uniform Delay, d1		36.1	35.4		34.6	33.8	39.1	10.8	7.5	36.1	9.8	4.7
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		2.1	0.0		1.3	0.1	80.1	0.5	0.0	96.1	2.1	0.0
Delay (s)		38.2	35.5		35.9	33.9	119.2	11.4	7.5	132.2	11.9	4.7
Level of Service		D	D		D	C	F	B	A	F	B	A
Approach Delay (s)		37.3			34.8			11.9			21.8	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	79.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.1%	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
Right Turn Channelized												
Volume (veh/h)	10	1040	40	40	660	10	10	0	20	10	10	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	1130	43	43	717	11	11	0	22	11	11	11
Approach Volume (veh/h)		1185			772			33			33	
Crossing Volume (veh/h)		65			22			1152			772	
High Capacity (veh/h)		1316			1361			549			750	
High v/c (veh/h)		0.90			0.57			0.06			0.04	
Low Capacity (veh/h)		1099			1140			420			593	
Low v/c (veh/h)		1.08			0.68			0.08			0.05	

Intersection Summary				
Maximum v/c High	0.90			
Maximum v/c Low	1.08			
Intersection Capacity Utilization	60.1%	ICU Level of Service	B	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	140	220	340	510	170	290	580	130	80	790	730
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	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	1863	1583	3433	3442		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	1863	1583	3433	3442		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.98	0.98	0.98	0.95	0.95	0.95	0.93	0.93	0.93
Adj. Flow (vph)	189	156	244	347	520	173	305	611	137	86	849	785
RTOR Reduction (vph)	0	0	179	0	0	62	0	15	0	0	0	161
Lane Group Flow (vph)	189	156	65	347	520	111	305	733	0	86	849	624
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	8.9	21.5	21.5	23.0	35.6	35.6	11.0	48.3		8.6	45.9	45.9
Effective Green, g (s)	8.9	21.5	21.5	23.0	35.6	35.6	11.0	48.3		8.6	45.9	45.9
Actuated g/C Ratio	0.08	0.18	0.18	0.20	0.30	0.30	0.09	0.41		0.07	0.39	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	260	648	289	346	564	480	321	1416		129	1383	618
v/s Ratio Prot	0.06	0.04		c0.20	c0.28		c0.09	0.21		0.05	0.24	
v/s Ratio Perm			0.04			0.07						c0.39
v/c Ratio	0.73	0.24	0.23	1.00	0.92	0.23	0.95	0.52		0.67	0.61	1.01
Uniform Delay, d1	53.1	41.0	40.9	47.2	39.6	30.6	52.9	25.8		53.0	28.6	35.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	9.7	0.2	0.4	49.1	20.7	0.2	37.1	0.3		12.3	0.8	38.5
Delay (s)	62.8	41.2	41.3	96.3	60.2	30.9	90.0	26.2		65.3	29.5	74.2
Level of Service	E	D	D	F	E	C	F	C		E	C	E
Approach Delay (s)		48.1			67.4			44.7			51.7	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	53.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	117.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.3%	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 (vph)	20	0	50	10	0	10	10	1220	10	20	1180	30
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	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1770	1583		1770	1583	1770	3535		1770	3526	
Flt Permitted		0.95	1.00		0.89	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1770	1583		1656	1583	1770	3535		1770	3526	
Peak-hour factor, PHF	0.67	0.67	0.67	0.47	0.47	0.47	0.95	0.95	0.95	0.92	0.92	0.92
Adj. Flow (vph)	30	0	75	21	0	21	11	1284	11	22	1283	33
RTOR Reduction (vph)	0	0	71	0	0	20	0	0	0	0	1	0
Lane Group Flow (vph)	0	30	4	0	21	1	11	1295	0	22	1315	0
Turn Type	Split	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases			4	8		8						
Actuated Green, G (s)		5.2	5.2		4.5	4.5	0.7	65.0		1.9	66.2	
Effective Green, g (s)		5.2	5.2		4.5	4.5	0.7	65.0		1.9	66.2	
Actuated g/C Ratio		0.06	0.06		0.05	0.05	0.01	0.70		0.02	0.71	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		99	89		80	77	13	2481		36	2521	
v/s Ratio Prot		c0.02					0.01	0.37		c0.01	c0.37	
v/s Ratio Perm			0.00		c0.01	0.00						
v/c Ratio		0.30	0.05		0.26	0.01	0.85	0.52		0.61	0.52	
Uniform Delay, d1		42.0	41.4		42.5	41.9	45.9	6.5		45.0	6.0	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.7	0.2		1.8	0.1	166.4	0.8		27.0	0.8	
Delay (s)		43.7	41.6		44.2	42.0	212.3	7.3		71.9	6.8	
Level of Service		D	D		D	D	F	A		E	A	
Approach Delay (s)		42.2			43.1			9.0			7.8	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	92.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	10	270	350	10	10	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	293	380	11	11	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	391				701	386
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	391				701	386
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				97	98
cM capacity (veh/h)	1167				401	662

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	304	391	22
Volume Left	11	0	11
Volume Right	0	11	11
cSH	1167	1700	802
Volume to Capacity	0.01	0.23	0.03
Queue Length 95th (ft)	1	0	2
Control Delay (s)	0.4	0.0	12.4
Lane LOS	A		B
Approach Delay (s)	0.4	0.0	12.4
Approach LOS			B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	150	10	10	10	350	1320	10	10	620	40
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	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.98	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1817	1583		1750		1770	1861		1770	1863	1583
Flt Permitted		0.98	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1817	1583		1750		1770	1861		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	11	163	11	11	11	380	1435	11	11	674	43
RTOR Reduction (vph)	0	0	118	0	11	0	0	0	0	0	0	18
Lane Group Flow (vph)	0	22	45	0	22	0	380	1446	0	11	674	25
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)		4.4	34.3		2.2		29.9	101.2		1.4	72.7	72.7
Effective Green, g (s)		4.4	34.3		2.2		29.9	101.2		1.4	72.7	72.7
Actuated g/C Ratio		0.04	0.27		0.02		0.24	0.81		0.01	0.58	0.58
Clearance Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		63	433		30		422	1504		19	1081	919
v/s Ratio Prot		c0.01	0.02		c0.01		c0.21	c0.78		0.01	0.36	
v/s Ratio Perm			0.00									0.02
v/c Ratio		0.35	0.10		0.74		0.90	0.96		0.58	0.62	0.03
Uniform Delay, d1		59.0	34.0		61.2		46.2	10.3		61.6	17.3	11.2
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		3.3	0.1		64.1		21.8	15.0		36.3	1.1	0.0
Delay (s)		62.3	34.1		125.4		68.0	25.3		97.9	18.4	11.2
Level of Service		E	C		F		E	C		F	B	B
Approach Delay (s)		37.4			125.4			34.2			19.2	
Approach LOS		D			F			C			B	

Intersection Summary			
HCM 2000 Control Delay	31.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	125.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
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)	450	10	250	10	10	10	490	750	0	0	1300	390
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		4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95			0.95	1.00
Frt	1.00	1.00	0.85		0.95		1.00	1.00			1.00	0.85
Flt Protected	0.95	0.95	1.00		0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1681	1689	1583		1750		1770	3539			3539	1583
Flt Permitted	0.95	0.95	1.00		1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)	1681	1689	1583		1779		1770	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	489	11	272	11	11	11	533	815	0	0	1413	424
RTOR Reduction (vph)	0	0	35	0	11	0	0	0	0	0	0	70
Lane Group Flow (vph)	249	251	237	0	22	0	533	815	0	0	1413	354
Turn Type	Split	NA	pm+ov	Perm	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5		8		5	2		1	6	4
Permitted Phases			4	8								6
Actuated Green, G (s)	20.7	20.7	53.8		2.3		33.1	82.2			45.1	65.8
Effective Green, g (s)	20.7	20.7	53.8		2.3		33.1	82.2			45.1	65.8
Actuated g/C Ratio	0.18	0.18	0.46		0.02		0.28	0.70			0.38	0.56
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	297	298	727		35		500	2482			1362	943
v/s Ratio Prot	0.15	c0.15	0.09				c0.30	0.23			c0.40	0.07
v/s Ratio Perm			0.06		c0.01							0.16
v/c Ratio	0.84	0.84	0.33		0.63		1.07	0.33			1.04	0.38
Uniform Delay, d1	46.6	46.7	20.2		57.0		42.0	6.8			36.1	14.3
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	18.3	18.9	0.3		32.0		59.0	0.1			34.7	0.3
Delay (s)	64.9	65.6	20.4		89.0		101.0	6.9			70.7	14.5
Level of Service	E	E	C		F		F	A			E	B
Approach Delay (s)		49.5			89.0			44.1			57.7	
Approach LOS		D			F			D			E	

Intersection Summary			
HCM Average Control Delay	51.8	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	117.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
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)	80	160	180	480	110	20	220	800	570	30	810	80
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	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1681	1703		3433	3539	1583	1770	3492	
Flt Permitted	0.95	1.00	1.00	0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1681	1703		3433	3539	1583	1770	3492	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.94	0.94	0.94	0.96	0.96	0.96
Adj. Flow (vph)	91	182	205	545	125	23	234	851	606	31	844	83
RTOR Reduction (vph)	0	0	16	0	2	0	0	0	214	0	7	0
Lane Group Flow (vph)	91	182	189	343	348	0	234	851	392	31	920	0
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	2	2	3	6	6		3	8		7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	14.8	14.8	21.8	21.0	21.0		7.0	32.6	32.6	2.3	27.9	
Effective Green, g (s)	14.8	14.8	21.8	21.0	21.0		7.0	32.6	32.6	2.3	27.9	
Actuated g/C Ratio	0.17	0.17	0.25	0.24	0.24		0.08	0.38	0.38	0.03	0.32	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	302	318	398	407	412		277	1331	595	47	1124	
v/s Ratio Prot	0.05	c0.10	0.04	0.20	c0.20		c0.07	0.24		0.02	c0.26	
v/s Ratio Perm			0.08						0.25			
v/c Ratio	0.30	0.57	0.47	0.84	0.84		0.84	0.64	0.66	0.66	0.82	
Uniform Delay, d1	31.4	33.0	27.6	31.3	31.3		39.3	22.2	22.4	41.8	27.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	2.5	0.9	14.6	14.6		20.4	1.0	2.6	28.7	4.8	
Delay (s)	32.0	35.5	28.5	45.9	45.9		59.7	23.2	25.1	70.6	31.8	
Level of Service	C	D	C	D	D		E	C	C	E	C	
Approach Delay (s)		31.8			45.9			28.9			33.1	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	33.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	86.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.8%	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 (vph)	600	690	0	0	930	170	190	10	50	0	0	0
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	4.0				
Lane Util. Factor	0.97	0.95			0.95		1.00	1.00				
Frt	1.00	1.00			0.98		1.00	0.88				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			3457		1770	1631				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			3457		1770	1631				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	652	750	0	0	1011	185	207	11	54	0	0	0
RTOR Reduction (vph)	0	0	0	0	15	0	0	45	0	0	0	0
Lane Group Flow (vph)	652	750	0	0	1181	0	207	20	0	0	0	0
Turn Type	Prot	NA			NA		Split	NA				
Protected Phases	5	2			6		8	8				
Permitted Phases												
Actuated Green, G (s)	21.6	69.6			44.0		15.4	15.4				
Effective Green, g (s)	21.6	69.6			44.0		15.4	15.4				
Actuated g/C Ratio	0.23	0.75			0.47		0.17	0.17				
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	797	2649			1636		293	270				
v/s Ratio Prot	c0.19	0.21			c0.34		c0.12	0.01				
v/s Ratio Perm												
v/c Ratio	0.82	0.28			0.72		0.71	0.07				
Uniform Delay, d1	33.8	3.7			19.6		36.7	32.8				
Progression Factor	0.94	2.63			1.00		1.00	1.00				
Incremental Delay, d2	5.0	0.2			1.6		7.6	0.1				
Delay (s)	36.7	10.0			21.2		44.2	32.9				
Level of Service	D	B			C		D	C				
Approach Delay (s)		22.4			21.2			41.5			0.0	
Approach LOS		C			C			D			A	

Intersection Summary			
HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.8%	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 (vph)	40	1110	110	160	900	90	510	10	230	20	10	20
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		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91		0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00	0.95	0.98	1.00
Satd. Flow (prot)	1770	5016		1770	5016		1681	1688	1583	1681	1739	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.75	0.72	1.00	1.00	0.75	1.00
Satd. Flow (perm)	1770	5016		1770	5016		1320	1277	1583	1770	1330	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	1207	120	174	978	98	554	11	250	22	11	22
RTOR Reduction (vph)	0	12	0	0	10	0	0	0	74	0	0	21
Lane Group Flow (vph)	43	1315	0	174	1066	0	283	282	176	16	17	1
Turn Type	Prot	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	4.5	31.5		15.1	42.1		26.8	26.8	41.9	3.6	3.6	3.6
Effective Green, g (s)	4.5	31.5		15.1	42.1		26.8	26.8	41.9	3.6	3.6	3.6
Actuated g/C Ratio	0.05	0.34		0.16	0.45		0.29	0.29	0.45	0.04	0.04	0.04
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	86	1699		287	2271		380	368	781	69	51	61
v/s Ratio Prot	0.02	c0.26		c0.10	0.21				0.04			
v/s Ratio Perm							0.21	c0.22	0.07	0.01	c0.01	0.00
v/c Ratio	0.50	0.77		0.61	0.47		0.74	0.77	0.23	0.23	0.33	0.01
Uniform Delay, d1	43.2	27.6		36.2	17.7		30.0	30.2	15.6	43.4	43.5	43.0
Progression Factor	1.00	1.00		1.29	0.99		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.5	3.5		2.6	0.5		7.7	9.2	0.1	1.7	3.8	0.1
Delay (s)	47.7	31.1		49.3	17.9		37.7	39.4	15.8	45.1	47.4	43.1
Level of Service	D	C		D	B		D	D	B	D	D	D
Approach Delay (s)		31.6			22.3			31.6			45.0	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.8%	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 (vph)	500	760	0	0	1110	257	140	0	20	0	0	0
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	4.0	4.0				
Lane Util. Factor	0.97	0.95			0.95	1.00	1.00	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.85				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	3433	3539			3539	1583	1770	1583				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	3433	3539			3539	1583	1770	1583				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	543	826	0	0	1207	279	152	0	22	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	156	0	18	0	0	0	0
Lane Group Flow (vph)	543	826	0	0	1207	123	152	4	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	5	2			6			8				
Permitted Phases						6	8					
Actuated Green, G (s)	13.1	45.4			28.3	28.3	10.8	10.8				
Effective Green, g (s)	13.1	45.4			28.3	28.3	10.8	10.8				
Actuated g/C Ratio	0.20	0.71			0.44	0.44	0.17	0.17				
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0				
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)	701	2503			1560	698	298	266				
v/s Ratio Prot	c0.16	0.23			c0.34			0.00				
v/s Ratio Perm						0.08	c0.09					
v/c Ratio	0.77	0.33			0.77	0.18	0.51	0.01				
Uniform Delay, d1	24.2	3.6			15.2	10.9	24.3	22.3				
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00				
Incremental Delay, d2	5.3	0.1			2.5	0.1	1.5	0.0				
Delay (s)	29.5	3.7			17.7	11.0	25.8	22.3				
Level of Service	C	A			B	B	C	C				
Approach Delay (s)		13.9			16.4			25.3			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	64.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.7%	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 (vph)	50	460	310	240	1010	270	530	650	170	190	450	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	4.0	6.0	6.0	5.0	6.0		5.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3429		1770	3496	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3429		1770	3496	
Peak-hour factor, PHF	0.92	0.92	0.92	0.67	0.67	0.67	0.91	0.91	0.91	0.95	0.95	0.95
Adj. Flow (vph)	54	500	337	358	1507	403	582	714	187	200	474	42
RTOR Reduction (vph)	0	0	268	0	0	136	0	20	0	0	6	0
Lane Group Flow (vph)	54	500	69	358	1507	267	582	881	0	200	510	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	4.0	23.0	23.0	25.0	42.0	42.0	30.0	36.6		14.0	20.6	
Effective Green, g (s)	4.0	23.0	23.0	25.0	42.0	42.0	30.0	36.6		14.0	20.6	
Actuated g/C Ratio	0.03	0.19	0.19	0.21	0.35	0.35	0.25	0.31		0.12	0.17	
Clearance Time (s)	5.0	5.0	5.0	4.0	6.0	6.0	5.0	6.0		5.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	60	686	307	373	1253	561	448	1058		209	607	
v/s Ratio Prot	0.03	0.14		c0.20	c0.43		c0.33	c0.26		0.11	0.15	
v/s Ratio Perm			0.04			0.17						
v/c Ratio	0.90	0.73	0.22	0.96	1.20	0.48	1.30	0.83		0.96	0.84	
Uniform Delay, d1	57.1	44.9	40.3	46.3	38.3	29.7	44.3	38.2		52.0	47.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	81.0	3.9	0.4	35.7	99.1	0.6	150.2	5.7		49.5	10.2	
Delay (s)	138.1	48.8	40.6	82.0	137.4	30.4	194.5	43.9		101.5	57.6	
Level of Service	F	D	D	F	F	C	F	D		F	E	
Approach Delay (s)		51.1			109.6			103.0			69.9	
Approach LOS		D			F			F			E	

Intersection Summary			
HCM Average Control Delay	92.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	118.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
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)	390	40	250	20	160	50	190	1450	120	50	680	550
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	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1797		1770	3539	1583	1770	3302	
Flt Permitted	0.52	1.00	1.00	0.73	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	977	1863	1583	1358	1797		1770	3539	1583	1770	3302	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	424	43	272	22	174	54	207	1576	130	54	739	598
RTOR Reduction (vph)	0	0	199	0	18	0	0	0	66	0	241	0
Lane Group Flow (vph)	424	43	73	22	210	0	207	1576	64	54	1096	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4					6			
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0		9.6	29.6	29.6	2.4	22.4	
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0		9.6	29.6	29.6	2.4	22.4	
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27		0.16	0.49	0.49	0.04	0.37	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	261	497	422	362	479		283	1746	781	71	1233	
v/s Ratio Prot		0.02			0.12		c0.12	c0.45		0.03	0.33	
v/s Ratio Perm	c0.43		0.05	0.02					0.04			
v/c Ratio	1.62	0.09	0.17	0.06	0.44		0.73	0.90	0.08	0.76	0.89	
Uniform Delay, d1	22.0	16.5	16.9	16.4	18.3		24.0	13.9	8.0	28.5	17.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.05	1.02	1.86	1.00	1.00	
Incremental Delay, d2	298.0	0.1	0.2	0.1	0.6		6.9	6.0	0.1	37.3	9.8	
Delay (s)	320.0	16.6	17.1	16.5	18.9		32.0	20.2	15.1	65.8	27.4	
Level of Service	F	B	B	B	B		C	C	B	E	C	
Approach Delay (s)		190.8			18.7			21.1			28.9	
Approach LOS		F			B			C			C	

Intersection Summary			
HCM Average Control Delay	52.7	HCM Level of Service	D
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
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)	20	10	30	890	10	750	30	980	540	350	1150	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1803	1583	1681	1687	1583	1770	3539	1583	1770	3526	
Flt Permitted		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1803	1583	1681	1687	1583	1770	3539	1583	1770	3526	
Peak-hour factor, PHF	0.98	0.98	0.98	0.94	0.94	0.94	0.91	0.91	0.91	0.80	0.80	0.80
Adj. Flow (vph)	20	10	31	947	11	798	33	1077	593	438	1438	38
RTOR Reduction (vph)	0	0	29	0	0	395	0	0	124	0	1	0
Lane Group Flow (vph)	0	30	2	483	475	403	33	1077	469	438	1475	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8		5	2	8	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)		5.9	5.9	26.1	26.1	26.1	2.3	33.2	59.3	13.0	43.9	
Effective Green, g (s)		5.9	5.9	26.1	26.1	26.1	2.3	33.2	59.3	13.0	43.9	
Actuated g/C Ratio		0.06	0.06	0.26	0.26	0.26	0.02	0.33	0.59	0.13	0.43	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		105	92	434	435	408	40	1161	928	227	1530	
v/s Ratio Prot		c0.02		c0.29	0.28		0.02	0.30	0.13	c0.25	c0.42	
v/s Ratio Perm			0.00			0.25			0.17			
v/c Ratio		0.29	0.02	1.11	1.09	0.99	0.82	0.93	0.51	1.93	0.96	
Uniform Delay, d1		45.6	44.9	37.5	37.5	37.4	49.2	32.8	12.3	44.1	27.9	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.5	0.1	77.6	70.3	41.0	76.6	12.5	0.4	434.1	15.2	
Delay (s)		47.1	45.0	115.1	107.9	78.4	125.8	45.4	12.8	478.2	43.1	
Level of Service		D	D	F	F	E	F	D	B	F	D	
Approach Delay (s)		46.1			96.5			35.6			142.7	
Approach LOS		D			F			D			F	

Intersection Summary			
HCM Average Control Delay	93.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	101.2	Sum of lost time (s)	17.0
Intersection Capacity Utilization	92.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	250	190	780	200	220	2060
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	272	207	848	217	239	2239
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			475			343
pX, platoon unblocked	0.75					
vC, conflicting volume	2554	533			1065	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2405	533			1065	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	58			63	
cM capacity (veh/h)	13	492			650	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	272	207	565	500	239	1120	1120
Volume Left	272	0	0	0	239	0	0
Volume Right	0	207	0	217	0	0	0
cSH	13	492	1700	1700	650	1700	1700
Volume to Capacity	20.84	0.42	0.33	0.29	0.37	0.66	0.66
Queue Length 95th (ft)	Err	51	0	0	42	0	0
Control Delay (s)	Err	17.5	0.0	0.0	13.7	0.0	0.0
Lane LOS	F	C			B		
Approach Delay (s)	5688.8		0.0		1.3		
Approach LOS	F						

Intersection Summary			
Average Delay	677.3		
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	450	160	250	1360	750	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.23	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	420	3539	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.86	0.86	0.91	0.91
Adj. Flow (vph)	500	178	291	1581	824	275
RTOR Reduction (vph)	0	131	0	0	0	168
Lane Group Flow (vph)	500	47	291	1581	824	107
Turn Type	NA	Perm	pm+pt	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases		3	6			2
Actuated Green, G (s)	13.9	13.9	36.6	36.6	23.4	23.4
Effective Green, g (s)	13.9	13.9	36.6	36.6	23.4	23.4
Actuated g/C Ratio	0.23	0.23	0.61	0.61	0.39	0.39
Clearance Time (s)	3.5	3.5	3.5	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	795	367	474	2159	1380	617
v/s Ratio Prot	c0.15		0.10	c0.45	0.23	
v/s Ratio Perm		0.03	0.27			0.07
v/c Ratio	0.63	0.13	0.61	0.73	0.60	0.17
Uniform Delay, d1	20.7	18.2	6.7	8.2	14.6	12.0
Progression Factor	1.00	1.00	1.00	1.00	1.41	3.18
Incremental Delay, d2	1.6	0.2	2.4	2.2	1.3	0.4
Delay (s)	22.3	18.4	9.1	10.5	21.8	38.5
Level of Service	C	B	A	B	C	D
Approach Delay (s)	21.3			10.3	25.9	
Approach LOS	C			B	C	

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	850	410	450	170	960	1200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.07	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	122	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	924	446	489	185	1043	1304
RTOR Reduction (vph)	0	197	0	0	0	0
Lane Group Flow (vph)	924	249	489	185	1043	1304
Turn Type	NA	Perm	pm+pt	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4	2			6
Actuated Green, G (s)	28.0	28.0	80.0	80.0	55.0	83.0
Effective Green, g (s)	28.0	28.0	80.0	80.0	55.0	83.0
Actuated g/C Ratio	0.23	0.23	0.67	0.67	0.46	0.69
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	801	369	342	1242	854	1174
v/s Ratio Prot	0.27		c0.23	0.10	0.56	c0.26
v/s Ratio Perm		0.16	c0.73			0.56
v/c Ratio	1.15	0.67	1.43	0.15	1.22	1.11
Uniform Delay, d1	46.0	41.9	41.1	7.4	32.5	18.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	83.1	4.8	209.6	0.1	110.1	62.2
Delay (s)	129.1	46.7	250.7	7.5	142.6	80.7
Level of Service	F	D	F	A	F	F
Approach Delay (s)	102.3			184.0	108.2	
Approach LOS	F			F	F	

Intersection Summary			
HCM Average Control Delay	118.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	114.7%	ICU Level of Service	H
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)	20	10	20	650	10	470	20	1390	670	440	1130	20
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	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1803	1583	1681	1688	1583	1770	3539	1583	3433	3530	
Flt Permitted		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1803	1583	1681	1688	1583	1770	3539	1583	3433	3530	
Peak-hour factor, PHF	0.71	0.71	0.71	0.87	0.87	0.87	0.89	0.89	0.89	0.85	0.85	0.85
Adj. Flow (vph)	28	14	28	747	11	540	22	1562	753	518	1329	24
RTOR Reduction (vph)	0	0	27	0	0	29	0	0	0	0	1	0
Lane Group Flow (vph)	0	42	1	381	377	511	22	1562	753	518	1352	0
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	4	4		8	8	1	5	2	2 8	1	6	
Permitted Phases			4			8						
Actuated Green, G (s)		3.2	3.2	26.0	26.0	44.0	3.0	57.7	83.7	18.0	72.7	
Effective Green, g (s)		3.2	3.2	26.0	26.0	44.0	3.0	57.7	83.7	18.0	72.7	
Actuated g/C Ratio		0.03	0.03	0.22	0.22	0.36	0.02	0.48	0.69	0.15	0.60	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		47	41	361	363	628	43	1689	1095	511	2122	
v/s Ratio Prot		c0.02		c0.23	0.22	c0.12	0.01	c0.44	0.48	c0.15	0.38	
v/s Ratio Perm			0.00			0.20						
v/c Ratio		0.89	0.02	1.06	1.04	0.81	0.51	0.92	0.69	1.01	0.64	
Uniform Delay, d1		58.7	57.3	47.5	47.5	34.8	58.2	29.6	10.9	51.5	15.6	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		91.2	0.2	62.7	57.6	8.0	9.9	9.0	1.8	43.3	0.6	
Delay (s)		149.9	57.5	110.1	105.0	42.7	68.1	38.6	12.7	94.7	16.2	
Level of Service		F	E	F	F	D	E	D	B	F	B	
Approach Delay (s)		112.9			80.6			30.5			38.0	
Approach LOS		F			F			C			D	

Intersection Summary			
HCM 2000 Control Delay	45.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	120.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.9%	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 (vph)	20	10	40	160	10	150	50	1670	120	120	1390	30
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	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1803	1583		1779	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.97	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1803	1583		1779	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.60	0.60	0.60	0.91	0.91	0.91	0.87	0.87	0.87	0.89	0.89	0.89
Adj. Flow (vph)	33	17	67	176	11	165	57	1920	138	135	1562	34
RTOR Reduction (vph)	0	0	63	0	0	143	0	0	29	0	0	13
Lane Group Flow (vph)	0	50	4	0	187	22	57	1920	109	135	1562	21
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		7.2	7.2		14.7	14.7	4.6	64.2	64.2	9.0	68.6	68.6
Effective Green, g (s)		7.2	7.2		14.7	14.7	4.6	64.2	64.2	9.0	68.6	68.6
Actuated g/C Ratio		0.06	0.06		0.13	0.13	0.04	0.58	0.58	0.08	0.62	0.62
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		117	103		235	209	73	2045	915	143	2185	977
v/s Ratio Prot		c0.03			c0.11		0.03	c0.54		c0.08	0.44	
v/s Ratio Perm			0.00			0.01			0.07			0.01
v/c Ratio		0.43	0.04		0.80	0.10	0.78	0.94	0.12	0.94	0.71	0.02
Uniform Delay, d1		50.0	48.7		46.7	42.4	52.8	21.6	10.6	50.8	14.6	8.2
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		2.5	0.2		16.8	0.2	40.6	9.0	0.1	58.1	1.1	0.0
Delay (s)		52.5	48.9		63.5	42.6	93.3	30.7	10.7	108.9	15.7	8.2
Level of Service		D	D		E	D	F	C	B	F	B	A
Approach Delay (s)		50.4			53.7			31.1			22.8	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	30.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	111.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.9%	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
Right Turn Channelized												
Volume (veh/h)	10	1140	10	90	1070	70	10	20	100	90	10	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	1239	11	98	1163	76	11	22	109	98	11	11
Approach Volume (veh/h)		1261			1337			141			120	
Crossing Volume (veh/h)		207			43			1348#			1272#	
High Capacity (veh/h)		1178			1339			467			497	
High v/c (veh/h)		1.07			1.00			0.30			0.24	
Low Capacity (veh/h)		974			1119			351			376	
Low v/c (veh/h)		1.30			1.19			0.40			0.32	

Intersection Summary			
Maximum v/c High	1.07		
Maximum v/c Low	1.30		
Intersection Capacity Utilization	89.5%	ICU Level of Service	E

Crossing flow exceeds 1200, method is not applicable

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	510	620	280	220	250	150	480	920	320	180	750	550
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	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	1863	1583	3433	3402		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	1863	1583	3433	3402		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.98	0.98	0.98	0.95	0.95	0.95	0.93	0.93	0.93
Adj. Flow (vph)	567	689	311	224	255	153	505	968	337	194	806	591
RTOR Reduction (vph)	0	0	130	0	0	110	0	29	0	0	0	304
Lane Group Flow (vph)	567	689	181	224	255	43	505	1276	0	194	806	287
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	19.0	26.9	26.9	17.6	25.5	25.5	20.1	44.1		13.0	37.0	37.0
Effective Green, g (s)	19.0	26.9	26.9	17.6	25.5	25.5	20.1	44.1		13.0	37.0	37.0
Actuated g/C Ratio	0.16	0.23	0.23	0.15	0.22	0.22	0.17	0.38		0.11	0.31	0.31
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	554	809	362	264	403	343	586	1275		195	1113	498
v/s Ratio Prot	c0.17	c0.19		0.13	0.14		c0.15	c0.38		c0.11	0.23	
v/s Ratio Perm			0.11			0.03						0.18
v/c Ratio	1.02	0.85	0.50	0.85	0.63	0.12	0.86	1.00		0.99	0.72	0.58
Uniform Delay, d1	49.3	43.4	39.5	48.7	41.8	37.1	47.4	36.7		52.3	35.8	33.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	44.3	8.6	1.1	21.6	3.2	0.2	12.4	25.4		62.6	2.4	1.6
Delay (s)	93.6	52.0	40.6	70.3	45.0	37.2	59.8	62.2		114.9	38.1	35.3
Level of Service	F	D	D	E	D	D	E	E		F	D	D
Approach Delay (s)		64.8			52.1			61.5			46.5	
Approach LOS		E			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	57.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	117.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	88.3%	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 (vph)	180	0	100	20	0	30	10	1160	2	10	1510	90
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	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1770	1583		1770	1583	1770	3538		1770	3509	
Flt Permitted		0.95	1.00		0.59	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1770	1583		1106	1583	1770	3538		1770	3509	
Peak-hour factor, PHF	0.67	0.67	0.67	0.47	0.47	0.47	0.95	0.95	0.95	0.92	0.92	0.92
Adj. Flow (vph)	269	0	149	43	0	64	11	1221	2	11	1641	98
RTOR Reduction (vph)	0	0	64	0	0	59	0	0	0	0	3	0
Lane Group Flow (vph)	0	269	85	0	43	5	11	1223	0	11	1736	0
Turn Type	Split	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases			4	8		8						
Actuated Green, G (s)		18.1	18.1		7.9	7.9	0.7	56.5		0.7	56.5	
Effective Green, g (s)		18.1	18.1		7.9	7.9	0.7	56.5		0.7	56.5	
Actuated g/C Ratio		0.18	0.18		0.08	0.08	0.01	0.57		0.01	0.57	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		323	289		88	126	12	2015		12	1999	
v/s Ratio Prot		c0.15					c0.01	0.35		0.01	c0.49	
v/s Ratio Perm			0.05		c0.04	0.00						
v/c Ratio		0.83	0.29		0.49	0.04	0.92	0.61		0.92	0.87	
Uniform Delay, d1		39.1	35.0		43.7	42.2	49.2	14.0		49.2	18.2	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		16.6	0.6		4.2	0.1	212.2	1.4		212.2	5.4	
Delay (s)		55.7	35.6		47.9	42.3	261.4	15.4		261.4	23.6	
Level of Service		E	D		D	D	F	B		F	C	
Approach Delay (s)		48.5			44.6			17.6			25.1	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	99.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	10	610	350	40	30	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	663	380	43	33	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	424				1087	402
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	424				1087	402
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				86	98
cM capacity (veh/h)	1135				237	648

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	674	424	43
Volume Left	11	0	33
Volume Right	0	43	11
cSH	1135	1700	316
Volume to Capacity	0.01	0.25	0.14
Queue Length 95th (ft)	1	0	12
Control Delay (s)	0.3	0.0	19.6
Lane LOS	A		C
Approach Delay (s)	0.3	0.0	19.6
Approach LOS			C

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	10	710	10	10	10	230	780	10	10	1450	10
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	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1803	1583		1750		1770	1859		1770	1863	1583
Flt Permitted		0.97	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1803	1583		1750		1770	1859		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	11	772	11	11	11	250	848	11	11	1576	11
RTOR Reduction (vph)	0	0	51	0	11	0	0	0	0	0	0	4
Lane Group Flow (vph)	0	33	721	0	22	0	250	859	0	11	1576	7
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)		4.7	17.8		2.2		13.1	81.4		0.7	69.0	69.0
Effective Green, g (s)		4.7	17.8		2.2		13.1	81.4		0.7	69.0	69.0
Actuated g/C Ratio		0.04	0.17		0.02		0.12	0.78		0.01	0.66	0.66
Clearance Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		80	268		36		220	1441		11	1224	1040
v/s Ratio Prot		0.02	c0.34		c0.01		0.14	0.46		0.01	c0.85	
v/s Ratio Perm			0.12									0.00
v/c Ratio		0.41	2.69		0.62		1.14	0.60		1.00	1.29	0.01
Uniform Delay, d1		48.8	43.6		51.0		46.0	4.9		52.1	18.0	6.2
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		3.4	771.7		27.6		102.3	0.7		271.4	135.7	0.0
Delay (s)		52.2	815.3		78.5		148.2	5.6		323.5	153.7	6.2
Level of Service		D	F		E		F	A		F	F	A
Approach Delay (s)		784.1			78.5			37.7			153.8	
Approach LOS		F			E			D			F	

Intersection Summary			
HCM 2000 Control Delay	259.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.55		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	133.6%	ICU Level of Service	H
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)	390	10	320	10	10	10	400	1320	0	0	1100	400
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		4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95			0.95	1.00
Frt	1.00	1.00	0.85		0.95		1.00	1.00			1.00	0.85
Flt Protected	0.95	0.95	1.00		0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1681	1689	1583		1750		1770	3539			3539	1583
Flt Permitted	0.95	0.95	1.00		1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)	1681	1689	1583		1779		1770	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	424	11	348	11	11	11	435	1435	0	0	1196	435
RTOR Reduction (vph)	0	0	49	0	11	0	0	0	0	0	0	94
Lane Group Flow (vph)	216	219	299	0	22	0	435	1435	0	0	1196	341
Turn Type	Split	NA	pm+ov	Perm	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5		8		5	2		1	6	4
Permitted Phases			4	8								6
Actuated Green, G (s)	18.0	18.0	42.2		2.2		24.2	62.5			34.3	52.3
Effective Green, g (s)	18.0	18.0	42.2		2.2		24.2	62.5			34.3	52.3
Actuated g/C Ratio	0.19	0.19	0.45		0.02		0.26	0.66			0.36	0.55
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	320	321	705		41		452	2336			1282	941
v/s Ratio Prot	0.13	c0.13	0.11				c0.25	0.41			c0.34	0.07
v/s Ratio Perm			0.08		c0.01							0.15
v/c Ratio	0.68	0.68	0.42		0.54		0.96	0.61			0.93	0.36
Uniform Delay, d1	35.6	35.7	17.9		45.8		34.8	9.2			29.1	11.9
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	5.5	5.9	0.4		13.9		32.6	0.5			12.3	0.2
Delay (s)	41.2	41.6	18.4		59.6		67.4	9.7			41.4	12.1
Level of Service	D	D	B		E		E	A			D	B
Approach Delay (s)		31.1			59.6			23.1			33.6	
Approach LOS		C			E			C			C	

Intersection Summary			
HCM Average Control Delay	28.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	94.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

FUTTURE WITH PROJECT

TRAFFIC CONDITIONS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	110	110	523	120	20	200	269	529	40	923	50
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	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1681	1704		3433	3539	1583	1770	3512	
Flt Permitted	0.95	1.00	1.00	0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1681	1704		3433	3539	1583	1770	3512	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.94	0.94	0.94	0.96	0.96	0.96
Adj. Flow (vph)	23	125	125	594	136	23	213	286	563	42	961	52
RTOR Reduction (vph)	0	0	12	0	2	0	0	0	346	0	3	0
Lane Group Flow (vph)	23	125	113	374	377	0	213	286	217	42	1010	0
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	2	2	3	6	6		3	8		7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	12.8	12.8	19.8	21.1	21.1		7.0	33.0	33.0	2.9	28.9	
Effective Green, g (s)	12.8	12.8	19.8	21.1	21.1		7.0	33.0	33.0	2.9	28.9	
Actuated g/C Ratio	0.15	0.15	0.23	0.25	0.25		0.08	0.38	0.38	0.03	0.34	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	264	278	365	413	419		280	1361	609	60	1183	
v/s Ratio Prot	0.01	c0.07	0.03	c0.22	0.22		c0.06	0.08		0.02	c0.29	
v/s Ratio Perm			0.05						0.14			
v/c Ratio	0.09	0.45	0.31	0.91	0.90		0.76	0.21	0.36	0.70	0.85	
Uniform Delay, d1	31.5	33.3	27.3	31.4	31.3		38.6	17.7	18.8	41.0	26.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	1.2	0.5	22.8	21.4		11.5	0.1	0.4	30.0	6.2	
Delay (s)	31.6	34.4	27.8	54.2	52.8		50.1	17.8	19.2	71.0	32.6	
Level of Service	C	C	C	D	D		D	B	B	E	C	
Approach Delay (s)		31.2			53.5			25.0			34.2	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	35.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	85.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	67.7%	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 (vph)	530	1149	0	0	579	219	40	10	140	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.9			4.6		6.0	6.0				
Lane Util. Factor	0.97	0.95			0.95		1.00	1.00				
Frt	1.00	1.00			0.96		1.00	0.86				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			3393		1770	1602				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			3393		1770	1602				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	576	1249	0	0	629	238	43	11	152	0	0	0
RTOR Reduction (vph)	0	0	0	0	33	0	0	85	0	0	0	0
Lane Group Flow (vph)	576	1249	0	0	834	0	43	78	0	0	0	0
Turn Type	Prot	NA			NA		Split	NA				
Protected Phases	5	2			6		8	8				
Permitted Phases												
Actuated Green, G (s)	20.9	72.1			47.5		10.0	10.0				
Effective Green, g (s)	20.9	72.1			47.5		10.0	10.0				
Actuated g/C Ratio	0.22	0.78			0.51		0.11	0.11				
Clearance Time (s)	4.0	4.9			4.6		6.0	6.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	772	2744			1733		190	172				
v/s Ratio Prot	c0.17	0.35			c0.25		0.02	c0.05				
v/s Ratio Perm												
v/c Ratio	0.75	0.46			0.48		0.23	0.45				
Uniform Delay, d1	33.6	3.6			14.8		38.0	38.9				
Progression Factor	0.95	1.99			1.00		1.00	1.00				
Incremental Delay, d2	3.2	0.4			0.2		0.6	1.9				
Delay (s)	35.2	7.7			15.0		38.6	40.8				
Level of Service	D	A			B		D	D				
Approach Delay (s)		16.4			15.0			40.4			0.0	
Approach LOS		B			B			D			A	

Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	14.6
Intersection Capacity Utilization	59.5%	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 (vph)	60	1153	40	100	509	20	450	10	456	10	10	10
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		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91		0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	1.00		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5060		1770	5056		1681	1689	1583	1681	1762	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.75	0.73	1.00	1.00	0.60	1.00
Satd. Flow (perm)	1770	5060		1770	5056		1326	1286	1583	1770	1065	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1253	43	109	553	22	489	11	496	11	11	11
RTOR Reduction (vph)	0	3	0	0	3	0	0	0	109	0	0	11
Lane Group Flow (vph)	65	1293	0	109	572	0	249	251	387	10	12	0
Turn Type	Prot	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	7.7	37.3		11.8	41.4		24.3	24.3	36.1	3.6	3.6	3.6
Effective Green, g (s)	7.7	37.3		11.8	41.4		24.3	24.3	36.1	3.6	3.6	3.6
Actuated g/C Ratio	0.08	0.40		0.13	0.45		0.26	0.26	0.39	0.04	0.04	0.04
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	147	2029		225	2251		346	336	683	69	41	61
v/s Ratio Prot	0.04	c0.26		0.06	0.11				c0.07			
v/s Ratio Perm							0.19	c0.20	0.17	0.01	c0.01	0.00
v/c Ratio	0.44	0.64		0.48	0.25		0.72	0.75	0.57	0.14	0.29	0.01
Uniform Delay, d1	40.6	22.4		37.8	16.1		31.3	31.5	22.3	43.2	43.5	43.0
Progression Factor	1.00	1.00		1.38	0.77		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	1.5		1.5	0.2		7.0	8.8	1.1	1.0	3.9	0.0
Delay (s)	42.7	24.0		53.5	12.7		38.3	40.3	23.4	44.2	47.4	43.0
Level of Service	D	C		D	B		D	D	C	D	D	D
Approach Delay (s)		24.8			19.2			31.4			45.0	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.7%	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 (vph)	60	1500	0	0	600	397	120	30	293	0	0	0
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	4.0	4.0				
Lane Util. Factor	0.97	0.95			0.95	1.00	1.00	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.86				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	3433	3539			3539	1583	1770	1610				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	3433	3539			3539	1583	1770	1610				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	1630	0	0	652	432	130	33	318	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	223	0	10	0	0	0	0
Lane Group Flow (vph)	65	1630	0	0	652	209	130	341	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	5	2			6			8				
Permitted Phases						6	8					
Actuated Green, G (s)	2.2	36.5			30.3	30.3	18.2	18.2				
Effective Green, g (s)	2.2	36.5			30.3	30.3	18.2	18.2				
Actuated g/C Ratio	0.04	0.58			0.48	0.48	0.29	0.29				
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0				
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)	120	2060			1710	765	514	467				
v/s Ratio Prot	0.02	c0.46			0.18			c0.21				
v/s Ratio Perm						0.13	0.07					
v/c Ratio	0.54	0.79			0.38	0.27	0.25	0.73				
Uniform Delay, d1	29.8	10.1			10.3	9.6	17.0	20.0				
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00				
Incremental Delay, d2	4.9	2.2			0.1	0.2	0.3	5.8				
Delay (s)	34.7	12.3			10.4	9.8	17.3	25.8				
Level of Service	C	B			B	A	B	C				
Approach Delay (s)		13.2			10.2			23.5			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	62.7	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 (vph)	70	1213	510	179	678	147	119	269	130	532	583	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0		5.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3366		1770	3505	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3366		1770	3505	
Peak-hour factor, PHF	0.92	0.92	0.92	0.67	0.67	0.67	0.91	0.91	0.91	0.95	0.95	0.95
Adj. Flow (vph)	76	1318	554	267	1012	219	131	296	143	560	614	42
RTOR Reduction (vph)	0	0	163	0	0	104	0	51	0	0	5	0
Lane Group Flow (vph)	76	1318	391	267	1012	115	131	388	0	560	651	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	7.6	39.1	39.1	15.0	46.5	46.5	12.8	18.3		23.0	28.5	
Effective Green, g (s)	7.6	39.1	39.1	15.0	46.5	46.5	12.8	18.3		23.0	28.5	
Actuated g/C Ratio	0.06	0.33	0.33	0.13	0.40	0.40	0.11	0.16		0.20	0.24	
Clearance Time (s)	5.0	5.0	5.0	6.0	6.0	6.0	5.0	6.0		5.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	115	1179	527	226	1402	627	193	525		347	851	
v/s Ratio Prot	0.04	c0.37		c0.15	0.29		0.07	0.12		c0.32	c0.19	
v/s Ratio Perm			0.25			0.07						
v/c Ratio	0.66	1.12	0.74	1.18	0.72	0.18	0.68	0.74		1.61	0.77	
Uniform Delay, d1	53.6	39.2	34.7	51.2	30.0	23.1	50.3	47.3		47.2	41.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	13.4	64.9	5.6	117.6	1.9	0.1	9.1	5.4		289.2	4.1	
Delay (s)	67.0	104.0	40.2	168.8	31.8	23.2	59.4	52.7		336.4	45.5	
Level of Service	E	F	D	F	C	C	E	D		F	D	
Approach Delay (s)		84.4			55.0			54.2			179.5	
Approach LOS		F			E			D			F	

Intersection Summary			
HCM Average Control Delay	94.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	117.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	102.9%	ICU Level of Service	G
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)	350	80	510	53	70	10	317	589	20	20	923	400
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	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1827		1770	3539	1583	1770	3379	
Flt Permitted	0.70	1.00	1.00	0.70	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1305	1863	1583	1305	1827		1770	3539	1583	1770	3379	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	380	87	554	58	76	11	345	640	22	22	1003	435
RTOR Reduction (vph)	0	0	213	0	6	0	0	0	10	0	54	0
Lane Group Flow (vph)	380	87	341	58	81	0	345	640	12	22	1384	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4					6			
Actuated Green, G (s)	28.3	28.3	28.3	28.3	28.3		16.7	47.7	47.7	2.0	33.0	
Effective Green, g (s)	28.3	28.3	28.3	28.3	28.3		16.7	47.7	47.7	2.0	33.0	
Actuated g/C Ratio	0.31	0.31	0.31	0.31	0.31		0.19	0.53	0.53	0.02	0.37	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	410	586	498	410	574		328	1876	839	39	1239	
v/s Ratio Prot		0.05			0.04		c0.19	0.18		0.01	c0.41	
v/s Ratio Perm	c0.29		0.22	0.04					0.01			
v/c Ratio	0.93	0.15	0.68	0.14	0.14		1.05	0.34	0.01	0.56	1.12	
Uniform Delay, d1	29.8	22.2	26.9	22.1	22.1		36.6	12.1	10.0	43.6	28.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.84	0.89	0.53	1.00	1.00	
Incremental Delay, d2	26.8	0.1	3.9	0.2	0.1		61.4	0.4	0.0	17.3	64.1	
Delay (s)	56.6	22.3	30.8	22.3	22.2		92.2	11.3	5.3	60.9	92.6	
Level of Service	E	C	C	C	C		F	B	A	E	F	
Approach Delay (s)		39.7			22.3			38.9			92.1	
Approach LOS		D			C			D			F	

Intersection Summary			
HCM Average Control Delay	59.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.9%	ICU Level of Service	F
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)	30	10	20	284	10	138	10	620	1009	563	739	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.96	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1795	1583	1681	1691	1583	1770	3539	1583	1770	3532	
Flt Permitted		0.96	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1795	1583	1681	1691	1583	1770	3539	1583	1770	3532	
Peak-hour factor, PHF	0.98	0.98	0.98	0.94	0.94	0.94	0.91	0.91	0.91	0.80	0.80	0.80
Adj. Flow (vph)	31	10	20	302	11	147	11	681	1109	704	924	12
RTOR Reduction (vph)	0	0	19	0	0	114	0	0	327	0	1	0
Lane Group Flow (vph)	0	41	1	157	156	33	11	681	782	704	935	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8		5	2	8	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)		6.3	6.3	22.3	22.3	22.3	0.9	27.6	49.9	21.3	48.0	
Effective Green, g (s)		6.3	6.3	22.3	22.3	22.3	0.9	27.6	49.9	21.3	48.0	
Actuated g/C Ratio		0.06	0.06	0.22	0.22	0.22	0.01	0.27	0.50	0.21	0.48	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		113	99	373	375	351	16	972	786	375	1687	
v/s Ratio Prot		c0.02		0.09	0.09		0.01	0.19	c0.22	c0.40	0.26	
v/s Ratio Perm			0.00			0.02			0.27			
v/c Ratio		0.36	0.01	0.42	0.42	0.09	0.69	0.70	1.00	1.88	0.55	
Uniform Delay, d1		45.2	44.2	33.6	33.5	31.1	49.7	32.7	25.2	39.6	18.7	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.0	0.1	0.8	0.8	0.1	80.1	2.3	30.7	404.8	0.4	
Delay (s)		47.2	44.2	34.3	34.3	31.2	129.8	35.0	55.9	444.4	19.1	
Level of Service		D	D	C	C	C	F	D	E	F	B	
Approach Delay (s)		46.2			33.3			48.5			201.6	
Approach LOS		D			C			D			F	

Intersection Summary			
HCM Average Control Delay	110.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	100.5	Sum of lost time (s)	23.0
Intersection Capacity Utilization	112.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	130	80	1699	330	80	833
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	141	87	1847	359	87	905
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			475			343
pX, platoon unblocked	0.87					
vC, conflicting volume	2653	1103			2205	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2599	1103			2205	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	58			63	
cM capacity (veh/h)	11	206			235	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	141	87	1231	974	87	453	453
Volume Left	141	0	0	0	87	0	0
Volume Right	0	87	0	359	0	0	0
cSH	11	206	1700	1700	235	1700	1700
Volume to Capacity	12.81	0.42	0.72	0.57	0.37	0.27	0.27
Queue Length 95th (ft)	Err	48	0	0	41	0	0
Control Delay (s)	Err	34.6	0.0	0.0	29.1	0.0	0.0
Lane LOS	F	D			D		
Approach Delay (s)	6203.0		0.0		2.5		
Approach LOS	F						

Intersection Summary			
Average Delay	414.0		
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	480	286	50	435	1526	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.07	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	129	3539	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.86	0.86	0.91	0.91
Adj. Flow (vph)	533	318	58	506	1677	121
RTOR Reduction (vph)	0	98	0	0	0	36
Lane Group Flow (vph)	533	220	58	506	1677	85
Turn Type	NA	Perm	pm+pt	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases		3	6			2
Actuated Green, G (s)	18.1	18.1	62.4	62.4	54.4	54.4
Effective Green, g (s)	18.1	18.1	62.4	62.4	54.4	54.4
Actuated g/C Ratio	0.20	0.20	0.69	0.69	0.60	0.60
Clearance Time (s)	3.5	3.5	3.5	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	690	318	171	2454	2139	957
v/s Ratio Prot	c0.16		c0.02	0.14	c0.47	
v/s Ratio Perm		0.14	0.22			0.05
v/c Ratio	0.77	0.69	0.34	0.21	0.78	0.09
Uniform Delay, d1	34.0	33.4	11.4	4.9	13.4	7.4
Progression Factor	1.00	1.00	1.00	1.00	1.60	2.68
Incremental Delay, d2	5.4	6.3	1.2	0.2	1.4	0.1
Delay (s)	39.4	39.7	12.6	5.1	22.9	20.1
Level of Service	D	D	B	A	C	C
Approach Delay (s)	39.5			5.9	22.7	
Approach LOS	D			A	C	

Intersection Summary			
HCM Average Control Delay	24.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1532	80	70	526	438	525
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.15	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	272	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1665	87	76	572	476	571
RTOR Reduction (vph)	0	27	0	0	0	0
Lane Group Flow (vph)	1665	60	76	572	476	571
Turn Type	NA	Perm	pm+pt	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4	2			6
Actuated Green, G (s)	40.3	40.3	34.5	34.5	25.4	65.7
Effective Green, g (s)	40.3	40.3	34.5	34.5	25.4	65.7
Actuated g/C Ratio	0.46	0.46	0.40	0.40	0.29	0.76
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1594	735	162	740	545	1308
v/s Ratio Prot	c0.48		0.02	c0.31	c0.26	0.20
v/s Ratio Perm		0.04	0.17			0.16
v/c Ratio	1.04	0.08	0.47	0.77	0.87	0.44
Uniform Delay, d1	23.2	12.9	19.5	22.7	29.2	3.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	35.1	0.0	2.1	5.0	14.4	0.2
Delay (s)	58.4	13.0	21.7	27.8	43.6	4.1
Level of Service	E	B	C	C	D	A
Approach Delay (s)	56.1			27.1	22.0	
Approach LOS	E			C	C	

Intersection Summary			
HCM Average Control Delay	40.3	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	86.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	85.6%	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 (vph)	10	10	10	756	10	580	20	798	258	530	1226	10
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	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1817	1583	1681	1687	1583	1770	3539	1583	3433	3535	
Flt Permitted		0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1817	1583	1681	1687	1583	1770	3539	1583	3433	3535	
Peak-hour factor, PHF	0.71	0.71	0.71	0.87	0.87	0.87	0.89	0.89	0.89	0.85	0.85	0.85
Adj. Flow (vph)	14	14	14	869	11	667	22	897	290	624	1442	12
RTOR Reduction (vph)	0	0	14	0	0	52	0	0	0	0	1	0
Lane Group Flow (vph)	0	28	0	443	437	615	22	897	290	624	1453	0
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	4	4		8	8	1	5	2	2 8	1	6	
Permitted Phases			4			8						
Actuated Green, G (s)		2.2	2.2	27.9	27.9	48.1	1.5	27.8	55.7	20.2	46.5	
Effective Green, g (s)		2.2	2.2	27.9	27.9	48.1	1.5	27.8	55.7	20.2	46.5	
Actuated g/C Ratio		0.02	0.02	0.30	0.30	0.51	0.02	0.30	0.59	0.21	0.49	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		42	37	498	500	876	28	1045	937	736	1746	
v/s Ratio Prot		c0.02		c0.26	0.26	c0.15	0.01	0.25	0.18	c0.18	c0.41	
v/s Ratio Perm			0.00			0.24						
v/c Ratio		0.67	0.01	0.89	0.87	0.70	0.79	0.86	0.31	0.85	0.83	
Uniform Delay, d1		45.6	44.9	31.6	31.4	17.5	46.1	31.3	9.6	35.5	20.5	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		33.4	0.1	17.4	15.5	2.6	82.7	7.1	0.2	9.0	3.6	
Delay (s)		79.0	45.0	49.0	47.0	20.1	128.9	38.4	9.8	44.4	24.0	
Level of Service		E	D	D	D	C	F	D	A	D	C	
Approach Delay (s)		67.6			36.0			33.2			30.1	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	94.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.4%	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)	10	10	10	47	10	50	10	1098	104	150	1746	10
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	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.98	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1817	1583		1789	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.98	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1817	1583		1789	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.60	0.60	0.60	0.91	0.91	0.91	0.87	0.87	0.87	0.89	0.89	0.89
Adj. Flow (vph)	17	17	17	52	11	55	11	1262	120	169	1962	11
RTOR Reduction (vph)	0	0	16	0	0	50	0	0	27	0	0	3
Lane Group Flow (vph)	0	34	1	0	63	5	11	1262	93	169	1962	8
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		4.3	4.3		6.8	6.8	0.7	45.7	45.7	7.1	52.1	52.1
Effective Green, g (s)		4.3	4.3		6.8	6.8	0.7	45.7	45.7	7.1	52.1	52.1
Actuated g/C Ratio		0.05	0.05		0.09	0.09	0.01	0.57	0.57	0.09	0.65	0.65
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		98	85		152	135	16	2024	905	157	2308	1032
v/s Ratio Prot		c0.02			c0.04		0.01	0.36		c0.10	c0.55	
v/s Ratio Perm			0.00			0.00			0.06			0.00
v/c Ratio		0.35	0.01		0.41	0.03	0.69	0.62	0.10	1.08	0.85	0.01
Uniform Delay, d1		36.4	35.8		34.7	33.5	39.5	11.4	7.8	36.4	10.9	4.9
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		2.1	0.1		1.8	0.1	80.1	0.6	0.0	93.7	3.2	0.0
Delay (s)		38.6	35.8		36.5	33.6	119.6	12.0	7.8	130.1	14.1	4.9
Level of Service		D	D		D	C	F	B	A	F	B	A
Approach Delay (s)		37.7			35.2			12.5			23.2	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	19.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	79.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.4%	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 (vph)	97	1058	66	57	764	131	10	26	29	46	53	10
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		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.92		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3502		1770	3454		1763	3228		1770	3446	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3502		1770	3454		1763	3228		1770	3446	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	1150	72	62	830	142	11	28	32	50	58	11
RTOR Reduction (vph)	0	7	0	0	21	0	0	27	0	0	9	0
Lane Group Flow (vph)	105	1215	0	62	951	0	11	33	0	50	60	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	3.0	18.2		2.2	17.4		0.7	6.9		1.4	7.6	
Effective Green, g (s)	3.0	18.2		2.2	17.4		0.7	6.9		1.4	7.6	
Actuated g/C Ratio	0.07	0.41		0.05	0.39		0.02	0.15		0.03	0.17	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	119	1426		87	1345		28	498		55	586	
v/s Ratio Prot	c0.06	c0.35		0.04	0.28		0.01	0.01		c0.03	c0.02	
v/s Ratio Perm												
v/c Ratio	0.88	0.85		0.71	0.71		0.39	0.07		0.91	0.10	
Uniform Delay, d1	20.7	12.0		20.9	11.5		21.8	16.1		21.6	15.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	48.1	5.1		24.0	1.7		8.9	0.1		87.5	0.1	
Delay (s)	68.7	17.2		44.9	13.2		30.7	16.2		109.1	15.7	
Level of Service	E	B		D	B		C	B		F	B	
Approach Delay (s)		21.3			15.1			18.4			55.0	
Approach LOS		C			B			B			D	

Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	44.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.6%	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 (vph)	191	154	229	340	579	170	359	580	130	80	790	833
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	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	1863	1583	3433	3442		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	1863	1583	3433	3442		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.98	0.98	0.98	0.95	0.95	0.95	0.93	0.93	0.93
Adj. Flow (vph)	212	171	254	347	591	173	378	611	137	86	849	896
RTOR Reduction (vph)	0	0	173	0	0	57	0	15	0	0	0	121
Lane Group Flow (vph)	212	171	81	347	591	116	378	733	0	86	849	775
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	7.0	25.0	25.0	19.0	37.0	37.0	11.0	51.9		8.9	49.8	49.8
Effective Green, g (s)	7.0	25.0	25.0	19.0	37.0	37.0	11.0	51.9		8.9	49.8	49.8
Actuated g/C Ratio	0.06	0.21	0.21	0.16	0.31	0.31	0.09	0.43		0.07	0.41	0.41
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	198	732	327	278	570	484	312	1478		130	1458	652
v/s Ratio Prot	0.06	0.05		c0.20	c0.32		c0.11	0.21		0.05	0.24	
v/s Ratio Perm			0.05			0.07						c0.49
v/c Ratio	1.07	0.23	0.25	1.25	1.04	0.24	1.21	0.50		0.66	0.58	1.19
Uniform Delay, d1	56.9	39.9	40.0	50.9	41.9	31.4	54.9	25.0		54.5	27.5	35.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	84.0	0.2	0.4	138.0	47.6	0.3	121.2	0.3		11.9	0.6	99.7
Delay (s)	140.9	40.1	40.4	188.9	89.5	31.6	176.1	25.2		66.4	28.1	135.2
Level of Service	F	D	D	F	F	C	F	C		E	C	F
Approach Delay (s)		73.8			111.5			75.9			82.3	
Approach LOS		E			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	86.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	120.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	102.3%	ICU Level of Service	G
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)	20	0	50	10	0	10	10	1289	10	20	1189	30
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	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1770	1583		1770	1583	1770	3535		1770	3526	
Flt Permitted		0.95	1.00		0.89	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1770	1583		1656	1583	1770	3535		1770	3526	
Peak-hour factor, PHF	0.67	0.67	0.67	0.47	0.47	0.47	0.95	0.95	0.95	0.92	0.92	0.92
Adj. Flow (vph)	30	0	75	21	0	21	11	1357	11	22	1292	33
RTOR Reduction (vph)	0	0	71	0	0	20	0	0	0	0	1	0
Lane Group Flow (vph)	0	30	4	0	21	1	11	1368	0	22	1324	0
Turn Type	Split	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases			4	8		8						
Actuated Green, G (s)		5.2	5.2		4.5	4.5	0.7	65.0		1.9	66.2	
Effective Green, g (s)		5.2	5.2		4.5	4.5	0.7	65.0		1.9	66.2	
Actuated g/C Ratio		0.06	0.06		0.05	0.05	0.01	0.70		0.02	0.71	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		99	89		80	77	13	2481		36	2521	
v/s Ratio Prot		c0.02					0.01	c0.39		c0.01	0.38	
v/s Ratio Perm			0.00		c0.01	0.00						
v/c Ratio		0.30	0.05		0.26	0.01	0.85	0.55		0.61	0.53	
Uniform Delay, d1		42.0	41.4		42.5	41.9	45.9	6.7		45.0	6.0	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.7	0.2		1.8	0.1	166.4	0.9		27.0	0.8	
Delay (s)		43.7	41.6		44.2	42.0	212.3	7.6		71.9	6.8	
Level of Service		D	D		D	D	F	A		E	A	
Approach Delay (s)		42.2			43.1			9.2			7.9	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	92.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	10	270	350	27	19	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	293	380	29	21	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	410				710	395
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	410				710	395
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				95	98
cM capacity (veh/h)	1149				396	654

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	304	410	32
Volume Left	11	0	21
Volume Right	0	29	11
cSH	1149	1700	605
Volume to Capacity	0.01	0.24	0.05
Queue Length 95th (ft)	1	0	4
Control Delay (s)	0.4	0.0	13.2
Lane LOS	A		B
Approach Delay (s)	0.4	0.0	13.2
Approach LOS			B

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	32.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	159	10	10	10	367	1389	10	10	629	40
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	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.98	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1817	1583		1750		1770	1861		1770	1863	1583
Flt Permitted		0.98	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1817	1583		1750		1770	1861		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	11	173	11	11	11	399	1510	11	11	684	43
RTOR Reduction (vph)	0	0	118	0	11	0	0	0	0	0	0	21
Lane Group Flow (vph)	0	22	55	0	22	0	399	1521	0	11	684	22
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)		2.7	29.0		2.2		26.3	76.8		0.7	51.2	51.2
Effective Green, g (s)		2.7	29.0		2.2		26.3	76.8		0.7	51.2	51.2
Actuated g/C Ratio		0.03	0.29		0.02		0.27	0.78		0.01	0.52	0.52
Clearance Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		49	466		39		473	1452		12	969	823
v/s Ratio Prot		c0.01	0.03		c0.01		c0.23	c0.82		0.01	0.37	
v/s Ratio Perm			0.00									0.01
v/c Ratio		0.45	0.12		0.57		0.84	1.05		0.92	0.71	0.03
Uniform Delay, d1		47.1	25.3		47.6		34.1	10.8		48.8	17.9	11.5
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		6.4	0.1		18.6		12.9	37.1		212.2	2.4	0.0
Delay (s)		53.5	25.5		66.2		47.0	47.9		261.0	20.3	11.5
Level of Service		D	C		E		D	D		F	C	B
Approach Delay (s)		28.6			66.2			47.7			23.3	
Approach LOS		C			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	40.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	98.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
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)	468	10	250	10	10	10	490	768	0	0	1386	476
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		4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95			0.95	1.00
Frt	1.00	1.00	0.85		0.95		1.00	1.00			1.00	0.85
Flt Protected	0.95	0.95	1.00		0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1681	1689	1583		1750		1770	3539			3539	1583
Flt Permitted	0.95	0.95	1.00		1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)	1681	1689	1583		1779		1770	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	509	11	272	11	11	11	533	835	0	0	1507	517
RTOR Reduction (vph)	0	0	33	0	11	0	0	0	0	0	0	69
Lane Group Flow (vph)	260	260	239	0	22	0	533	835	0	0	1507	448
Turn Type	Split	NA	pm+ov	Perm	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5		8		5	2		1	6	4
Permitted Phases			4	8								6
Actuated Green, G (s)	21.2	21.2	54.3		2.3		33.1	82.2			45.1	66.3
Effective Green, g (s)	21.2	21.2	54.3		2.3		33.1	82.2			45.1	66.3
Actuated g/C Ratio	0.18	0.18	0.46		0.02		0.28	0.70			0.38	0.56
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	303	304	730		35		498	2472			1356	945
v/s Ratio Prot	c0.15	0.15	0.09				c0.30	0.24			c0.43	0.09
v/s Ratio Perm			0.06		c0.01							0.20
v/c Ratio	0.86	0.86	0.33		0.63		1.07	0.34			1.11	0.47
Uniform Delay, d1	46.8	46.8	20.1		57.3		42.3	7.0			36.3	15.3
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	20.6	20.3	0.3		32.0		60.4	0.1			61.0	0.4
Delay (s)	67.4	67.0	20.4		89.3		102.7	7.1			97.3	15.7
Level of Service	E	E	C		F		F	A			F	B
Approach Delay (s)		51.1			89.3			44.4			76.4	
Approach LOS		D			F			D			E	

Intersection Summary			
HCM Average Control Delay	61.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	117.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	0	14	69	17	9	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	15	75	18	10	0

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	0	15	81	12	5	5
Volume Left (vph)	0	0	75	0	0	0
Volume Right (vph)	0	15	0	0	0	0
Hadj (s)	0.00	-0.67	0.50	0.03	0.03	0.03
Departure Headway (s)	4.8	4.1	5.0	4.6	4.6	4.6
Degree Utilization, x	0.00	0.02	0.11	0.02	0.01	0.01
Capacity (veh/h)	753	849	703	772	769	761
Control Delay (s)	6.6	6.0	7.5	6.4	6.5	6.5
Approach Delay (s)	6.0		7.3		6.5	
Approach LOS	A		A		A	

Intersection Summary			
Delay	7.1		
HCM Level of Service	A		
Intersection Capacity Utilization	13.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	434	18	243	0	71
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	472	20	264	0	77
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			834			
pX, platoon unblocked						
vC, conflicting volume	284				255	10
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	284				255	10
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	93
cM capacity (veh/h)	1276				711	1069

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	236	236	10	10	264	77
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	264	77
cSH	1700	1700	1700	1700	1700	1069
Volume to Capacity	0.14	0.14	0.01	0.01	0.16	0.07
Queue Length 95th (ft)	0	0	0	0	0	6
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	8.6
Lane LOS						A
Approach Delay (s)	0.0		0.0			8.6
Approach LOS						A

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	18.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	160	180	494	110	20	220	839	609	30	824	80
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	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1681	1703		3433	3539	1583	1770	3492	
Flt Permitted	0.95	1.00	1.00	0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	1863	1583	1681	1703		3433	3539	1583	1770	3492	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.94	0.94	0.94	0.96	0.96	0.96
Adj. Flow (vph)	91	182	205	561	125	23	234	893	648	31	858	83
RTOR Reduction (vph)	0	0	15	0	2	0	0	0	219	0	7	0
Lane Group Flow (vph)	91	182	190	353	354	0	234	893	429	31	934	0
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	2	2	3	6	6		3	8		7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	14.8	14.8	21.8	21.1	21.1		7.0	32.6	32.6	2.3	27.9	
Effective Green, g (s)	14.8	14.8	21.8	21.1	21.1		7.0	32.6	32.6	2.3	27.9	
Actuated g/C Ratio	0.17	0.17	0.25	0.24	0.24		0.08	0.38	0.38	0.03	0.32	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	302	318	398	409	414		277	1329	595	47	1122	
v/s Ratio Prot	0.05	c0.10	0.04	c0.21	0.21		c0.07	0.25		0.02	c0.27	
v/s Ratio Perm			0.08						0.27			
v/c Ratio	0.30	0.57	0.48	0.86	0.85		0.84	0.67	0.72	0.66	0.83	
Uniform Delay, d1	31.5	33.1	27.7	31.5	31.4		39.4	22.6	23.2	41.9	27.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	2.5	0.9	16.9	15.7		20.4	1.4	4.3	28.7	5.4	
Delay (s)	32.0	35.6	28.6	48.4	47.0		59.7	24.0	27.5	70.6	32.7	
Level of Service	C	D	C	D	D		E	C	C	E	C	
Approach Delay (s)		31.9			47.7			30.0			33.9	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	34.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	86.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.5%	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)	600	733	0	0	969	209	190	10	50	0	0	0
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	4.0				
Lane Util. Factor	0.97	0.95			0.95		1.00	1.00				
Frt	1.00	1.00			0.97		1.00	0.88				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	3433	3539			3445		1770	1631				
Flt Permitted	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	3433	3539			3445		1770	1631				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	652	797	0	0	1053	227	207	11	54	0	0	0
RTOR Reduction (vph)	0	0	0	0	18	0	0	45	0	0	0	0
Lane Group Flow (vph)	652	797	0	0	1262	0	207	20	0	0	0	0
Turn Type	Prot	NA			NA		Split	NA				
Protected Phases	5	2			6		8	8				
Permitted Phases												
Actuated Green, G (s)	21.6	69.6			44.0		15.4	15.4				
Effective Green, g (s)	21.6	69.6			44.0		15.4	15.4				
Actuated g/C Ratio	0.23	0.75			0.47		0.17	0.17				
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0				
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)	797	2649			1630		293	270				
v/s Ratio Prot	c0.19	0.23			c0.37		c0.12	0.01				
v/s Ratio Perm												
v/c Ratio	0.82	0.30			0.77		0.71	0.07				
Uniform Delay, d1	33.8	3.8			20.4		36.7	32.8				
Progression Factor	0.93	2.57			1.00		1.00	1.00				
Incremental Delay, d2	5.0	0.2			2.4		7.6	0.1				
Delay (s)	36.4	10.0			22.7		44.2	32.9				
Level of Service	D	A			C		D	C				
Approach Delay (s)		21.9			22.7			41.5			0.0	
Approach LOS		C			C			D			A	

Intersection Summary			
HCM Average Control Delay	24.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.1%	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)	40	1124	110	160	939	90	510	10	259	20	10	20
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		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91		1.00	0.91		0.95	0.95	1.00	0.95	0.95	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.95	1.00	0.95	0.98	1.00
Satd. Flow (prot)	1770	5017		1770	5018		1681	1688	1583	1681	1739	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.75	0.72	1.00	1.00	0.75	1.00
Satd. Flow (perm)	1770	5017		1770	5018		1320	1277	1583	1770	1330	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	1222	120	174	1021	98	554	11	282	22	11	22
RTOR Reduction (vph)	0	11	0	0	9	0	0	0	74	0	0	21
Lane Group Flow (vph)	43	1331	0	174	1110	0	283	282	208	16	17	1
Turn Type	Prot	NA		Prot	NA		Perm	NA	pm+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases							8		8	4		4
Actuated Green, G (s)	4.5	31.5		15.1	42.1		26.8	26.8	41.9	3.6	3.6	3.6
Effective Green, g (s)	4.5	31.5		15.1	42.1		26.8	26.8	41.9	3.6	3.6	3.6
Actuated g/C Ratio	0.05	0.34		0.16	0.45		0.29	0.29	0.45	0.04	0.04	0.04
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	86	1699		287	2272		380	368	781	69	51	61
v/s Ratio Prot	0.02	c0.27		c0.10	0.22				0.04			
v/s Ratio Perm							0.21	c0.22	0.09	0.01	c0.01	0.00
v/c Ratio	0.50	0.78		0.61	0.49		0.74	0.77	0.27	0.23	0.33	0.01
Uniform Delay, d1	43.2	27.7		36.2	17.9		30.0	30.2	16.0	43.4	43.5	43.0
Progression Factor	1.00	1.00		1.28	1.02		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.5	3.7		2.4	0.5		7.7	9.2	0.2	1.7	3.8	0.1
Delay (s)	47.7	31.4		48.7	18.8		37.7	39.4	16.1	45.1	47.4	43.1
Level of Service	D	C		D	B		D	D	B	D	D	D
Approach Delay (s)		31.9			22.8			31.1			45.0	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM Average Control Delay	28.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.1%	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)	500	760	0	0	1110	374	140	0	34	0	0	0
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	4.0	4.0				
Lane Util. Factor	0.97	0.95			0.95	1.00	1.00	1.00				
Frt	1.00	1.00			1.00	0.85	1.00	0.85				
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (prot)	3433	3539			3539	1583	1770	1583				
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00				
Satd. Flow (perm)	3433	3539			3539	1583	1770	1583				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	543	826	0	0	1207	407	152	0	37	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	226	0	31	0	0	0	0
Lane Group Flow (vph)	543	826	0	0	1207	181	152	6	0	0	0	0
Turn Type	Prot	NA			NA	Perm	Perm	NA				
Protected Phases	5	2			6			8				
Permitted Phases						6	8					
Actuated Green, G (s)	13.0	45.6			28.6	28.6	10.8	10.8				
Effective Green, g (s)	13.0	45.6			28.6	28.6	10.8	10.8				
Actuated g/C Ratio	0.20	0.71			0.44	0.44	0.17	0.17				
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0				
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)	693	2506			1572	703	297	265				
v/s Ratio Prot	c0.16	0.23			c0.34			0.00				
v/s Ratio Perm						0.11	c0.09					
v/c Ratio	0.78	0.33			0.77	0.26	0.51	0.02				
Uniform Delay, d1	24.4	3.6			15.1	11.2	24.4	22.4				
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00				
Incremental Delay, d2	5.8	0.1			2.3	0.2	1.5	0.0				
Delay (s)	30.2	3.7			17.4	11.4	25.9	22.4				
Level of Service	C	A			B	B	C	C				
Approach Delay (s)		14.2			15.9			25.2			0.0	
Approach LOS		B			B			C			A	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	64.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.7%	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 (vph)	50	474	310	279	1088	387	569	689	170	248	464	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	4.0	6.0	6.0	5.0	6.0		5.0	6.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3434		1770	3497	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	3434		1770	3497	
Peak-hour factor, PHF	0.92	0.92	0.92	0.67	0.67	0.67	0.91	0.91	0.91	0.95	0.95	0.95
Adj. Flow (vph)	54	515	337	416	1624	578	625	757	187	261	488	42
RTOR Reduction (vph)	0	0	261	0	0	182	0	18	0	0	6	0
Lane Group Flow (vph)	54	515	76	416	1624	396	625	926	0	261	524	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						
Actuated Green, G (s)	4.0	23.0	23.0	25.0	42.0	42.0	30.0	36.9		14.0	20.9	
Effective Green, g (s)	4.0	23.0	23.0	25.0	42.0	42.0	30.0	36.9		14.0	20.9	
Actuated g/C Ratio	0.03	0.19	0.19	0.21	0.35	0.35	0.25	0.31		0.12	0.18	
Clearance Time (s)	5.0	5.0	5.0	4.0	6.0	6.0	5.0	6.0		5.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	60	685	306	372	1250	559	447	1066		208	615	
v/s Ratio Prot	0.03	0.15		c0.24	c0.46		c0.35	c0.27		0.15	0.15	
v/s Ratio Perm			0.05			0.25						
v/c Ratio	0.90	0.75	0.25	1.12	1.30	0.71	1.40	0.87		1.25	0.85	
Uniform Delay, d1	57.3	45.3	40.6	47.0	38.5	33.2	44.5	38.7		52.5	47.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	81.0	4.7	0.4	82.7	140.6	4.1	192.4	7.7		147.7	11.0	
Delay (s)	138.3	49.9	41.1	129.6	179.1	37.3	236.8	46.4		200.2	58.5	
Level of Service	F	D	D	F	F	D	F	D		F	E	
Approach Delay (s)		51.9			139.9			122.2			105.3	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM Average Control Delay	117.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	118.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	97.4%	ICU Level of Service	F
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)	390	40	250	34	160	50	307	1489	120	50	694	550
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	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1797		1770	3539	1583	1770	3304	
Flt Permitted	0.52	1.00	1.00	0.73	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	977	1863	1583	1358	1797		1770	3539	1583	1770	3304	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	424	43	272	37	174	54	334	1618	130	54	754	598
RTOR Reduction (vph)	0	0	199	0	18	0	0	0	66	0	231	0
Lane Group Flow (vph)	424	43	73	37	210	0	334	1618	64	54	1121	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4					6			
Actuated Green, G (s)	16.0	16.0	16.0	16.0	16.0		10.0	29.6	29.6	2.4	22.0	
Effective Green, g (s)	16.0	16.0	16.0	16.0	16.0		10.0	29.6	29.6	2.4	22.0	
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27		0.17	0.49	0.49	0.04	0.37	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	261	497	422	362	479		295	1746	781	71	1211	
v/s Ratio Prot		0.02			0.12		c0.19	c0.46		0.03	0.34	
v/s Ratio Perm	c0.43		0.05	0.03					0.04			
v/c Ratio	1.62	0.09	0.17	0.10	0.44		1.13	0.93	0.08	0.76	0.93	
Uniform Delay, d1	22.0	16.5	16.9	16.6	18.3		25.0	14.2	8.0	28.5	18.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.03	1.09	2.01	1.00	1.00	
Incremental Delay, d2	298.0	0.1	0.2	0.1	0.6		83.2	6.9	0.1	37.3	13.3	
Delay (s)	320.0	16.6	17.1	16.7	18.9		108.9	22.3	16.3	65.8	31.5	
Level of Service	F	B	B	B	B		F	C	B	E	C	
Approach Delay (s)		190.8			18.6			35.8			32.8	
Approach LOS		F			B			D			C	

Intersection Summary			
HCM Average Control Delay	59.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	100.2%	ICU Level of Service	G
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)	20	10	30	1085	10	828	30	980	627	364	1189	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1803	1583	1681	1687	1583	1770	3539	1583	1770	3526	
Flt Permitted		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1803	1583	1681	1687	1583	1770	3539	1583	1770	3526	
Peak-hour factor, PHF	0.98	0.98	0.98	0.94	0.94	0.94	0.91	0.91	0.91	0.80	0.80	0.80
Adj. Flow (vph)	20	10	31	1154	11	881	33	1077	689	455	1486	38
RTOR Reduction (vph)	0	0	29	0	0	395	0	0	144	0	1	0
Lane Group Flow (vph)	0	30	2	577	588	486	33	1077	545	455	1523	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8		5	2	8	1	6	
Permitted Phases			4			8			2			
Actuated Green, G (s)		5.9	5.9	26.1	26.1	26.1	2.3	33.2	59.3	13.0	43.9	
Effective Green, g (s)		5.9	5.9	26.1	26.1	26.1	2.3	33.2	59.3	13.0	43.9	
Actuated g/C Ratio		0.06	0.06	0.26	0.26	0.26	0.02	0.33	0.59	0.13	0.43	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		105	92	434	435	408	40	1161	928	227	1530	
v/s Ratio Prot		c0.02		0.34	c0.35		0.02	0.30	0.15	c0.26	c0.43	
v/s Ratio Perm			0.00			0.31			0.19			
v/c Ratio		0.29	0.02	1.33	1.35	1.19	0.82	0.93	0.59	2.00	1.00	
Uniform Delay, d1		45.6	44.9	37.5	37.5	37.5	49.2	32.8	13.2	44.1	28.5	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.5	0.1	163.5	172.8	108.1	76.6	12.5	1.0	467.3	21.7	
Delay (s)		47.1	45.0	201.0	210.4	145.7	125.8	45.4	14.2	511.4	50.3	
Level of Service		D	D	F	F	F	F	D	B	F	D	
Approach Delay (s)		46.1			179.9			34.9			156.3	
Approach LOS		D			F			C			F	

Intersection Summary			
HCM Average Control Delay	126.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	101.2	Sum of lost time (s)	17.0
Intersection Capacity Utilization	98.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	250	190	867	200	220	2294
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	272	207	942	217	239	2493
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			475			343
pX, platoon unblocked	0.75					
vC, conflicting volume	2776	580			1160	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2700	580			1160	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	55			60	
cM capacity (veh/h)	8	458			598	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	272	207	628	532	239	1247	1247
Volume Left	272	0	0	0	239	0	0
Volume Right	0	207	0	217	0	0	0
cSH	8	458	1700	1700	598	1700	1700
Volume to Capacity	35.25	0.45	0.37	0.31	0.40	0.73	0.73
Queue Length 95th (ft)	Err	57	0	0	48	0	0
Control Delay (s)	Err	19.2	0.0	0.0	15.0	0.0	0.0
Lane LOS	F	C			B		
Approach Delay (s)	5689.5		0.0		1.3		
Approach LOS	F						

Intersection Summary			
Average Delay	623.4		
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	450	189	250	1516	779	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	3.5	3.5	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.21	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	390	3539	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.86	0.86	0.91	0.91
Adj. Flow (vph)	500	210	291	1763	856	275
RTOR Reduction (vph)	0	155	0	0	0	169
Lane Group Flow (vph)	500	55	291	1763	856	106
Turn Type	NA	Perm	pm+pt	NA	NA	Perm
Protected Phases	3		1	6	2	
Permitted Phases		3	6			2
Actuated Green, G (s)	14.0	14.0	36.5	36.5	23.2	23.2
Effective Green, g (s)	14.0	14.0	36.5	36.5	23.2	23.2
Actuated g/C Ratio	0.23	0.23	0.61	0.61	0.39	0.39
Clearance Time (s)	3.5	3.5	3.5	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	801	369	463	2153	1368	612
v/s Ratio Prot	c0.15		0.10	c0.50	0.24	
v/s Ratio Perm		0.03	0.28			0.07
v/c Ratio	0.62	0.15	0.63	0.82	0.63	0.17
Uniform Delay, d1	20.6	18.3	7.0	9.2	14.9	12.1
Progression Factor	1.00	1.00	1.00	1.00	1.40	3.18
Incremental Delay, d2	1.5	0.2	2.7	3.6	1.4	0.4
Delay (s)	22.2	18.5	9.7	12.8	22.3	38.8
Level of Service	C	B	A	B	C	D
Approach Delay (s)	21.1			12.3	26.3	
Approach LOS	C			B	C	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.5
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	908	410	450	199	1038	1356
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.07	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	122	1863	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	987	446	489	216	1128	1474
RTOR Reduction (vph)	0	184	0	0	0	0
Lane Group Flow (vph)	987	262	489	216	1128	1474
Turn Type	NA	Perm	pm+pt	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4	2			6
Actuated Green, G (s)	28.0	28.0	80.0	80.0	55.0	83.0
Effective Green, g (s)	28.0	28.0	80.0	80.0	55.0	83.0
Actuated g/C Ratio	0.23	0.23	0.67	0.67	0.46	0.69
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	801	369	342	1242	854	1174
v/s Ratio Prot	0.29		c0.23	0.12	0.61	c0.29
v/s Ratio Perm		0.17	c0.73			0.64
v/c Ratio	1.23	0.71	1.43	0.17	1.32	1.26
Uniform Delay, d1	46.0	42.3	41.1	7.5	32.5	18.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	115.3	6.3	209.6	0.1	152.6	122.1
Delay (s)	161.3	48.6	250.7	7.6	185.1	140.6
Level of Service	F	D	F	A	F	F
Approach Delay (s)	126.2			176.2	159.9	
Approach LOS	F			F	F	

Intersection Summary			
HCM Average Control Delay	152.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	120.5%	ICU Level of Service	H
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)	20	10	20	679	10	470	20	1468	748	440	1159	20
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	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1803	1583	1681	1688	1583	1770	3539	1583	3433	3530	
Flt Permitted		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1803	1583	1681	1688	1583	1770	3539	1583	3433	3530	
Peak-hour factor, PHF	0.71	0.71	0.71	0.87	0.87	0.87	0.89	0.89	0.89	0.85	0.85	0.85
Adj. Flow (vph)	28	14	28	780	11	540	22	1649	840	518	1364	24
RTOR Reduction (vph)	0	0	27	0	0	29	0	0	0	0	1	0
Lane Group Flow (vph)	0	42	1	398	393	511	22	1649	840	518	1387	0
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	4	4		8	8	1	5	2	2 8	1	6	
Permitted Phases			4			8						
Actuated Green, G (s)		3.2	3.2	26.0	26.0	44.0	3.0	57.7	83.7	18.0	72.7	
Effective Green, g (s)		3.2	3.2	26.0	26.0	44.0	3.0	57.7	83.7	18.0	72.7	
Actuated g/C Ratio		0.03	0.03	0.22	0.22	0.36	0.02	0.48	0.69	0.15	0.60	
Clearance Time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		47	41	361	363	628	43	1689	1095	511	2122	
v/s Ratio Prot		c0.02		c0.24	0.23	c0.12	0.01	c0.47	0.53	c0.15	0.39	
v/s Ratio Perm			0.00			0.20						
v/c Ratio		0.89	0.02	1.10	1.08	0.81	0.51	0.98	0.77	1.01	0.65	
Uniform Delay, d1		58.7	57.3	47.5	47.5	34.8	58.2	30.9	12.2	51.5	15.8	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		91.2	0.2	77.9	71.1	8.0	9.9	16.4	3.3	43.3	0.7	
Delay (s)		149.9	57.5	125.3	118.6	42.7	68.1	47.4	15.5	94.7	16.6	
Level of Service		F	E	F	F	D	E	D	B	F	B	
Approach Delay (s)		112.9			89.8			36.9			37.8	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	50.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	88.9%	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 (vph)	20	10	40	166	10	150	50	1748	136	120	1419	30
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	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1803	1583		1779	1583	1770	3539	1583	1770	3539	1583
Flt Permitted		0.97	1.00		0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1803	1583		1779	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.60	0.60	0.60	0.91	0.91	0.91	0.87	0.87	0.87	0.89	0.89	0.89
Adj. Flow (vph)	33	17	67	182	11	165	57	2009	156	135	1594	34
RTOR Reduction (vph)	0	0	63	0	0	143	0	0	32	0	0	13
Lane Group Flow (vph)	0	50	4	0	193	22	57	2009	124	135	1594	21
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)		7.2	7.2		15.0	15.0	4.7	64.3	64.3	9.0	68.6	68.6
Effective Green, g (s)		7.2	7.2		15.0	15.0	4.7	64.3	64.3	9.0	68.6	68.6
Actuated g/C Ratio		0.06	0.06		0.13	0.13	0.04	0.58	0.58	0.08	0.62	0.62
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		116	102		239	213	75	2041	913	143	2177	974
v/s Ratio Prot		c0.03			c0.11		0.03	c0.57		c0.08	0.45	
v/s Ratio Perm			0.00			0.01			0.08			0.01
v/c Ratio		0.43	0.04		0.81	0.10	0.76	0.98	0.14	0.94	0.73	0.02
Uniform Delay, d1		50.2	48.9		46.8	42.4	52.8	23.1	10.8	51.0	15.0	8.4
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		2.6	0.2		17.8	0.2	35.7	16.2	0.1	58.1	1.3	0.0
Delay (s)		52.7	49.1		64.7	42.6	88.5	39.3	10.9	109.1	16.3	8.4
Level of Service		D	D		E	D	F	D	B	F	B	A
Approach Delay (s)		50.6			54.5			38.6			23.3	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM Average Control Delay	34.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	111.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.4%	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)	40	1219	19	96	1105	111	10	65	139	247	25	10
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		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.90		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3529		1770	3485		1762	3142		1770	3369	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3529		1770	3485		1762	3142		1770	3369	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	1325	21	104	1201	121	11	71	151	268	27	11
RTOR Reduction (vph)	0	2	0	0	12	0	0	121	0	0	8	0
Lane Group Flow (vph)	43	1344	0	104	1310	0	11	101	0	268	30	0
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	1.5	17.7		3.1	19.3		0.7	10.0		4.0	13.3	
Effective Green, g (s)	1.5	17.7		3.1	19.3		0.7	10.0		4.0	13.3	
Actuated g/C Ratio	0.03	0.35		0.06	0.38		0.01	0.20		0.08	0.26	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	52	1230		108	1324		24	619		139	882	
v/s Ratio Prot	0.02	c0.38		c0.06	0.38		0.01	c0.03		c0.15	c0.01	
v/s Ratio Perm												
v/c Ratio	0.83	1.09		0.96	0.99		0.46	0.16		1.93	0.03	
Uniform Delay, d1	24.5	16.5		23.8	15.7		24.9	16.9		23.4	14.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	64.4	54.8		74.3	22.0		13.2	0.1		443.0	0.0	
Delay (s)	89.0	71.4		98.1	37.6		38.1	17.1		466.4	14.0	
Level of Service	F	E		F	D		D	B		F	B	
Approach Delay (s)		71.9			42.0			18.0			410.2	
Approach LOS		E			D			B			F	

Intersection Summary			
HCM Average Control Delay	86.3	HCM Level of Service	F
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	50.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	74.3%	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)	604	682	319	220	273	150	503	920	320	180	750	585
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	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	1.00	0.97	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	1863	1583	3433	3402		1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	1863	1583	3433	3402		1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.98	0.98	0.98	0.95	0.95	0.95	0.93	0.93	0.93
Adj. Flow (vph)	671	758	354	224	279	153	529	968	337	194	806	629
RTOR Reduction (vph)	0	0	134	0	0	101	0	28	0	0	0	307
Lane Group Flow (vph)	671	758	220	224	279	52	529	1277	0	194	806	322
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	22.0	29.8	29.8	17.6	25.4	25.4	19.7	42.1		12.0	34.4	34.4
Effective Green, g (s)	22.0	29.8	29.8	17.6	25.4	25.4	19.7	42.1		12.0	34.4	34.4
Actuated g/C Ratio	0.19	0.25	0.25	0.15	0.22	0.22	0.17	0.36		0.10	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	642	897	401	265	402	342	575	1218		180	1036	463
v/s Ratio Prot	c0.20	c0.21		0.13	0.15		c0.15	c0.38		c0.11	0.23	
v/s Ratio Perm			0.14			0.03						0.20
v/c Ratio	1.05	0.85	0.55	0.85	0.69	0.15	0.92	1.05		1.08	0.78	0.70
Uniform Delay, d1	47.8	41.7	38.0	48.6	42.5	37.3	48.1	37.7		52.8	38.1	36.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	47.9	7.4	1.5	21.2	5.1	0.2	20.1	39.4		89.3	3.7	4.5
Delay (s)	95.6	49.0	39.6	69.8	47.6	37.5	68.3	77.1		142.1	41.8	41.4
Level of Service	F	D	D	E	D	D	E	E		F	D	D
Approach Delay (s)		64.7			52.8			74.6			53.6	
Approach LOS		E			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	63.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	117.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.6%	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 (vph)	180	0	100	20	0	30	10	1183	2	10	1549	90
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	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1770	1583		1770	1583	1770	3538		1770	3510	
Flt Permitted		0.95	1.00		0.59	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1770	1583		1106	1583	1770	3538		1770	3510	
Peak-hour factor, PHF	0.67	0.67	0.67	0.47	0.47	0.47	0.95	0.95	0.95	0.92	0.92	0.92
Adj. Flow (vph)	269	0	149	43	0	64	11	1245	2	11	1684	98
RTOR Reduction (vph)	0	0	64	0	0	59	0	0	0	0	3	0
Lane Group Flow (vph)	0	269	85	0	43	5	11	1247	0	11	1779	0
Turn Type	Split	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases			4	8		8						
Actuated Green, G (s)		18.1	18.1		7.9	7.9	0.7	56.5		0.7	56.5	
Effective Green, g (s)		18.1	18.1		7.9	7.9	0.7	56.5		0.7	56.5	
Actuated g/C Ratio		0.18	0.18		0.08	0.08	0.01	0.57		0.01	0.57	
Clearance Time (s)		4.0	4.0		4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		323	289		88	126	12	2015		12	1999	
v/s Ratio Prot		c0.15					c0.01	0.35		0.01	c0.51	
v/s Ratio Perm			0.05		c0.04	0.00						
v/c Ratio		0.83	0.29		0.49	0.04	0.92	0.62		0.92	0.89	
Uniform Delay, d1		39.1	35.0		43.7	42.2	49.2	14.2		49.2	18.6	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		16.6	0.6		4.2	0.1	212.2	1.4		212.2	6.4	
Delay (s)		55.7	35.6		47.9	42.3	261.4	15.6		261.4	25.1	
Level of Service		E	D		D	D	F	B		F	C	
Approach Delay (s)		48.5			44.6			17.8			26.5	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM Average Control Delay	26.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	99.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	10	610	350	46	69	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	663	380	50	75	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	430				1090	405
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	430				1090	405
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				68	98
cM capacity (veh/h)	1129				236	645

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	674	430	86
Volume Left	11	0	75
Volume Right	0	50	11
cSH	1129	1700	270
Volume to Capacity	0.01	0.25	0.32
Queue Length 95th (ft)	1	0	33
Control Delay (s)	0.3	0.0	25.1
Lane LOS	A		D
Approach Delay (s)	0.3	0.0	25.1
Approach LOS			D

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	10	749	10	10	10	236	803	10	10	1489	10
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	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Frt		1.00	0.85		0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1803	1583		1750		1770	1859		1770	1863	1583
Flt Permitted		0.97	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1803	1583		1750		1770	1859		1770	1863	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	11	814	11	11	11	257	873	11	11	1618	11
RTOR Reduction (vph)	0	0	49	0	11	0	0	0	0	0	0	4
Lane Group Flow (vph)	0	33	765	0	22	0	257	884	0	11	1618	7
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4									6
Actuated Green, G (s)		4.7	17.8		2.2		13.1	81.4		0.7	69.0	69.0
Effective Green, g (s)		4.7	17.8		2.2		13.1	81.4		0.7	69.0	69.0
Actuated g/C Ratio		0.04	0.17		0.02		0.12	0.78		0.01	0.66	0.66
Clearance Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		80	268		36		220	1441		11	1224	1040
v/s Ratio Prot		0.02	c0.36		c0.01		0.15	0.48		0.01	c0.87	
v/s Ratio Perm			0.13									0.00
v/c Ratio		0.41	2.85		0.62		1.17	0.61		1.00	1.32	0.01
Uniform Delay, d1		48.8	43.6		51.0		46.0	5.1		52.1	18.0	6.2
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		3.4	844.7		27.6		113.6	0.8		271.4	150.7	0.0
Delay (s)		52.2	888.3		78.5		159.5	5.8		323.5	168.7	6.2
Level of Service		D	F		E		F	A		F	F	A
Approach Delay (s)		855.8			78.5			40.5			168.6	
Approach LOS		F			E			D			F	

Intersection Summary			
HCM 2000 Control Delay	286.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.61		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	138.1%	ICU Level of Service	H
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)	468	10	320	10	10	10	400	1398	0	0	1129	429
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		4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95			0.95	1.00
Frt	1.00	1.00	0.85		0.95		1.00	1.00			1.00	0.85
Flt Protected	0.95	0.95	1.00		0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1681	1689	1583		1750		1770	3539			3539	1583
Flt Permitted	0.95	0.95	1.00		1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)	1681	1689	1583		1779		1770	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	509	11	348	11	11	11	435	1520	0	0	1227	466
RTOR Reduction (vph)	0	0	48	0	11	0	0	0	0	0	0	93
Lane Group Flow (vph)	260	260	300	0	22	0	435	1520	0	0	1227	373
Turn Type	Split	NA	pm+ov	Perm	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5		8		5	2		1	6	4
Permitted Phases			4	8								6
Actuated Green, G (s)	19.5	19.5	43.6		2.3		24.1	62.4			34.3	53.8
Effective Green, g (s)	19.5	19.5	43.6		2.3		24.1	62.4			34.3	53.8
Actuated g/C Ratio	0.20	0.20	0.45		0.02		0.25	0.65			0.36	0.56
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	341	342	717		43		443	2296			1262	951
v/s Ratio Prot	c0.15	0.15	0.10				c0.25	0.43			c0.35	0.08
v/s Ratio Perm			0.08		c0.01							0.16
v/c Ratio	0.76	0.76	0.42		0.52		0.98	0.66			0.97	0.39
Uniform Delay, d1	36.2	36.1	17.8		46.4		35.8	10.4			30.5	12.0
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	9.7	9.6	0.4		10.1		37.8	0.7			18.9	0.3
Delay (s)	45.9	45.7	18.1		56.5		73.7	11.1			49.4	12.2
Level of Service	D	D	B		E		E	B			D	B
Approach Delay (s)		34.7			56.5			25.0			39.2	
Approach LOS		C			E			C			D	

Intersection Summary			
HCM Average Control Delay	32.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	96.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	0	63	24	6	39	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	68	26	7	42	0

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	0	68	28	4	21	21
Volume Left (vph)	0	0	26	0	0	0
Volume Right (vph)	0	68	0	0	0	0
Hadj (s)	0.00	-0.67	0.50	0.03	0.03	0.03
Departure Headway (s)	4.7	4.0	5.2	4.7	4.7	4.7
Degree Utilization, x	0.00	0.08	0.04	0.01	0.03	0.03
Capacity (veh/h)	768	870	677	741	750	742
Control Delay (s)	6.5	6.1	7.2	6.5	6.6	6.6
Approach Delay (s)	6.1		7.1		6.6	
Approach LOS	A		A		A	

Intersection Summary			
Delay	6.5		
HCM Level of Service	A		
Intersection Capacity Utilization	13.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	148	79	83	0	315
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	161	86	90	0	342
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			834			
pX, platoon unblocked						
vC, conflicting volume	176				166	43
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	176				166	43
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	66
cM capacity (veh/h)	1398				808	1018

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	SB 1
Volume Total	80	80	43	43	90	342
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	90	342
cSH	1700	1700	1700	1700	1700	1018
Volume to Capacity	0.05	0.05	0.03	0.03	0.05	0.34
Queue Length 95th (ft)	0	0	0	0	0	37
Control Delay (s)	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	5.2		
Intersection Capacity Utilization	29.5%	ICU Level of Service	A
Analysis Period (min)	15		

FUTTURE WITH PROJECT + MITIGATION

TRAFFIC CONDITIONS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1213	510	179	678	147	119	269	130	532	583	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	6.0	6.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.67	0.67	0.67	0.91	0.91	0.91	0.95	0.95	0.95
Adj. Flow (vph)	76	1318	554	267	1012	219	131	296	143	560	614	42
RTOR Reduction (vph)	0	0	65	0	0	76	0	0	123	0	0	32
Lane Group Flow (vph)	76	1318	489	267	1012	143	131	296	20	560	614	10
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	6.5	39.4	49.7	13.0	45.9	67.4	10.3	15.2	15.2	21.5	26.4	26.4
Effective Green, g (s)	6.5	39.4	49.7	13.0	45.9	67.4	10.3	15.2	15.2	21.5	26.4	26.4
Actuated g/C Ratio	0.06	0.35	0.45	0.12	0.41	0.61	0.09	0.14	0.14	0.19	0.24	0.24
Clearance Time (s)	5.0	5.0	5.0	6.0	6.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	200	1255	779	401	1462	960	318	484	216	664	840	376
v/s Ratio Prot	0.02	c0.37	0.06	c0.08	c0.29	0.03	0.04	0.08		c0.16	c0.17	
v/s Ratio Perm			0.25			0.06			0.01			0.01
v/c Ratio	0.38	1.05	0.63	0.67	0.69	0.15	0.41	0.61	0.09	0.84	0.73	0.03
Uniform Delay, d1	50.4	35.8	23.6	47.0	26.8	9.4	47.5	45.2	41.9	43.2	39.1	32.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	39.7	1.6	4.1	1.4	0.1	0.9	2.3	0.2	9.6	3.3	0.0
Delay (s)	51.6	75.5	25.2	51.1	28.2	9.5	48.4	47.5	42.1	52.7	42.4	32.5
Level of Service	D	E	C	D	C	A	D	D	D	D	D	C
Approach Delay (s)		60.3			29.6			46.3			46.8	
Approach LOS		E			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	46.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	111.1	Sum of lost time (s)	22.0
Intersection Capacity Utilization	79.6%	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 (vph)	350	80	510	53	70	10	317	589	20	20	923	400
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	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1827		3433	3539	1583	1770	3379	
Flt Permitted	0.70	1.00	1.00	0.70	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1305	1863	1583	1305	1827		3433	3539	1583	1770	3379	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	380	87	554	58	76	11	345	640	22	22	1003	435
RTOR Reduction (vph)	0	0	129	0	6	0	0	0	10	0	53	0
Lane Group Flow (vph)	380	87	425	58	81	0	345	640	12	22	1385	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4					6			
Actuated Green, G (s)	28.3	28.3	28.3	28.3	28.3		10.3	47.7	47.7	2.0	39.4	
Effective Green, g (s)	28.3	28.3	28.3	28.3	28.3		10.3	47.7	47.7	2.0	39.4	
Actuated g/C Ratio	0.31	0.31	0.31	0.31	0.31		0.11	0.53	0.53	0.02	0.44	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	410	585	497	410	574		392	1875	838	39	1479	
v/s Ratio Prot		0.05			0.04		c0.10	0.18		0.01	c0.41	
v/s Ratio Perm	c0.29		0.27	0.04					0.01			
v/c Ratio	0.93	0.15	0.86	0.14	0.14		0.88	0.34	0.01	0.56	0.94	
Uniform Delay, d1	29.8	22.2	28.9	22.1	22.1		39.2	12.1	10.0	43.6	24.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.80	0.89	1.00	1.00	1.00	
Incremental Delay, d2	26.8	0.1	13.5	0.2	0.1		18.3	0.4	0.0	17.3	12.5	
Delay (s)	56.6	22.3	42.4	22.3	22.2		49.7	11.3	10.0	60.9	36.6	
Level of Service	E	C	D	C	C		D	B	B	E	D	
Approach Delay (s)		46.0			22.3			24.4			36.9	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	35.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.4%	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 (vph)	30	10	20	284	10	138	10	620	1009	563	739	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	0.88	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.96	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1795	1583	1681	1691	2787	1770	3539	1583	3433	3532	
Flt Permitted		0.96	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1795	1583	1681	1691	2787	1770	3539	1583	3433	3532	
Peak-hour factor, PHF	0.98	0.98	0.98	0.94	0.94	0.94	0.91	0.91	0.91	0.80	0.80	0.80
Adj. Flow (vph)	31	10	20	302	11	147	11	681	1109	704	924	12
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	308	0	0	0
Lane Group Flow (vph)	0	41	1	157	156	147	11	681	801	704	936	0
Turn Type	Split	NA	Perm	Split	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	4	4		8	8	8 1	5	2	2 8	1	6	
Permitted Phases			4									
Actuated Green, G (s)		6.5	6.5	22.1	22.1	47.2	1.0	36.2	58.3	19.1	54.3	
Effective Green, g (s)		6.5	6.5	22.1	22.1	47.2	1.0	36.2	58.3	19.1	54.3	
Actuated g/C Ratio		0.06	0.06	0.21	0.21	0.44	0.01	0.34	0.55	0.18	0.51	
Clearance Time (s)		6.0	6.0	6.0	6.0		5.0	6.0		5.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		109	96	347	349	1230	16	1198	863	613	1794	
v/s Ratio Prot		c0.02		0.09	0.09	0.05	0.01	0.19	c0.51	c0.21	0.26	
v/s Ratio Perm			0.00									
v/c Ratio		0.38	0.01	0.45	0.45	0.12	0.69	0.57	0.93	1.15	0.52	
Uniform Delay, d1		48.3	47.2	37.1	37.1	17.6	52.8	29.0	22.4	43.9	17.6	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.2	0.1	0.9	0.9	0.0	80.1	0.6	15.8	84.7	0.3	
Delay (s)		50.4	47.2	38.0	38.0	17.6	132.9	29.6	38.1	128.6	17.9	
Level of Service		D	D	D	D	B	F	C	D	F	B	
Approach Delay (s)		49.4			31.5			35.5			65.4	
Approach LOS		D			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	47.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	106.9	Sum of lost time (s)	23.0
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	80	1699	330	80	833
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	87	1847	359	87	905
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			475			343
pX, platoon unblocked	0.87					
vC, conflicting volume	2653	1103			2205	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2599	1103			2205	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	58			63	
cM capacity (veh/h)	11	206			235	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	87	1231	974	87	453	453
Volume Left	0	0	0	87	0	0
Volume Right	87	0	359	0	0	0
cSH	206	1700	1700	235	1700	1700
Volume to Capacity	0.42	0.72	0.57	0.37	0.27	0.27
Queue Length 95th (ft)	48	0	0	41	0	0
Control Delay (s)	34.6	0.0	0.0	29.1	0.0	0.0
Lane LOS	D			D		
Approach Delay (s)	34.6	0.0		2.5		
Approach LOS	D					

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	1532	80	70	526	438	525
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	3539	2787
Flt Permitted	0.95	1.00	0.31	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	579	1863	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1665	87	76	572	476	571
RTOR Reduction (vph)	0	31	0	0	0	0
Lane Group Flow (vph)	1665	56	76	572	476	571
Turn Type	NA	pm+ov	pm+pt	NA	NA	pt+ov
Protected Phases	4	5	5	2	6	6 4
Permitted Phases		4	2			
Actuated Green, G (s)	40.3	43.4	31.3	31.3	22.2	68.5
Effective Green, g (s)	40.3	43.4	31.3	31.3	22.2	68.5
Actuated g/C Ratio	0.48	0.52	0.37	0.37	0.27	0.82
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1654	935	260	697	939	2283
v/s Ratio Prot	c0.48	0.00	0.01	c0.31	0.13	0.20
v/s Ratio Perm		0.03	0.10			
v/c Ratio	1.01	0.06	0.29	0.82	0.51	0.25
Uniform Delay, d1	21.6	10.0	17.7	23.6	26.1	1.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.7	0.0	0.6	7.7	0.4	0.1
Delay (s)	45.4	10.0	18.4	31.3	26.5	1.8
Level of Service	D	B	B	C	C	A
Approach Delay (s)	43.6			29.8	13.0	
Approach LOS	D			C	B	

Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	83.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	81.4%	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
Right Turn Channelized												
Volume (veh/h)	97	1058	66	57	764	131	10	26	29	46	53	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	105	1150	72	62	830	142	11	28	32	50	58	11
Approach Volume (veh/h)		1327			1035			71			118	
Crossing Volume (veh/h)		170			145			1305#			903	
High Capacity (veh/h)		1213			1237			484			674	
High v/c (veh/h)		1.09			0.84			0.15			0.18	
Low Capacity (veh/h)		1005			1027			365			527	
Low v/c (veh/h)		1.32			1.01			0.19			0.22	

Intersection Summary			
Maximum v/c High	1.09		
Maximum v/c Low	1.32		
Intersection Capacity Utilization	81.1%	ICU Level of Service	D

Crossing flow exceeds 1200, method is not applicable

Intersection	
Intersection Delay (sec/veh)	12.5
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	2	2	2	2
Adjusted Approach Flow (vph)	1327	1034	71	119
Demand Flow Rate (pc/h)	1353	1055	73	121
Vehicles Circulating (pc/h)	173	147	1331	921
Vehicles Exiting (pc/h)	869	1257	195	281
Follow-Up Headway (s)	3.186	3.186	3.186	3.186
Ped Vol. Crossing Leg (#/hr)	5	5	5	5
Ped Capacity Adjustment	0.995	0.995	1.000	1.000
Approach Delay (sec/veh)	14.8	10.2	9.7	8.8
Approach LOS	B	B	A	A

Lane	Left	Right	Left	Right	Left	Right	Left	Right
Designated moves	LT	TR	LT	TR	LT	TR	LT	R
Assumed Moves	LT	TR	LT	TR	LT	TR	LT	R
Right Turn Channelized								
Lane Utilization	0.470	0.530	0.470	0.530	0.466	0.534	0.909	0.091
Critical Headway (s)	4.293	4.113	4.293	4.113	4.293	4.113	4.293	4.113
Entry Flow Rate (pc/h)	636	717	496	559	34	39	110	11
Capacity, Entry Lane (pc/h)	992	1001	1012	1019	416	445	566	593
Entry HV Adjustment Factor	0.981	0.981	0.980	0.981	0.987	0.971	0.980	1.000
Flow Rate, Entry (vph)	624	703	486	548	34	38	108	11
Capacity, Entry (vph)	968	977	987	995	411	432	555	593
Volume to Capacity Ratio	0.644	0.720	0.493	0.551	0.082	0.088	0.194	0.019
Control Delay (sec/veh)	13.4	16.1	9.6	10.7	9.9	9.6	9.0	6.3
Level of Service	B	C	A	B	A	A	A	A
95th-Percentile Queue (veh)	5	6	3	3	0	0	1	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	191	154	229	340	579	170	359	580	130	80	790	833
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	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3419		3433	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3419		3433	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.98	0.98	0.98	0.95	0.95	0.95	0.93	0.93	0.93
Adj. Flow (vph)	212	171	254	347	591	173	378	611	137	86	849	896
RTOR Reduction (vph)	0	0	175	0	22	0	0	0	88	0	0	45
Lane Group Flow (vph)	212	171	79	347	742	0	378	611	49	86	849	851
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4						2			6
Actuated Green, G (s)	12.2	19.2	19.2	20.3	27.3		11.2	35.7	35.7	8.1	32.6	44.8
Effective Green, g (s)	12.2	19.2	19.2	20.3	27.3		11.2	35.7	35.7	8.1	32.6	44.8
Actuated g/C Ratio	0.12	0.19	0.19	0.20	0.27		0.11	0.36	0.36	0.08	0.33	0.45
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	421	684	306	361	939		387	1272	569	144	1161	777
v/s Ratio Prot	0.06	0.05		c0.20	c0.22		c0.11	c0.17		0.05	0.24	c0.13
v/s Ratio Perm			0.05						0.03			0.40
v/c Ratio	0.50	0.25	0.26	0.96	0.79		0.98	0.48	0.09	0.60	0.73	1.10
Uniform Delay, d1	40.7	33.9	34.0	39.1	33.3		43.9	24.6	21.0	44.0	29.5	27.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.2	0.4	37.0	4.5		39.2	0.3	0.1	6.5	2.4	61.4
Delay (s)	41.7	34.1	34.5	76.2	37.8		83.1	24.9	21.1	50.5	31.9	88.7
Level of Service	D	C	C	E	D		F	C	C	D	C	F
Approach Delay (s)		36.8			49.8			44.0			60.6	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	50.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	99.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
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)	10	10	159	10	10	10	367	1389	10	10	629	40
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	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.98	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1817	1583		1750		1770	3535		1770	3539	1583
Flt Permitted		1.00	1.00		1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1863	1583		1779		1770	3535		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	11	173	11	11	11	399	1510	11	11	684	43
RTOR Reduction (vph)	0	0	96	0	11	0	0	0	0	0	0	27
Lane Group Flow (vph)	0	22	77	0	22	0	399	1521	0	11	684	16
Turn Type	Perm	NA	pm+ov	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)		2.5	26.8		2.5		24.3	47.0		0.6	23.3	23.3
Effective Green, g (s)		2.5	26.8		2.5		24.3	47.0		0.6	23.3	23.3
Actuated g/C Ratio		0.04	0.43		0.04		0.39	0.76		0.01	0.38	0.38
Clearance Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		75	785		71		692	2675		17	1327	593
v/s Ratio Prot			0.04				c0.23	c0.43		0.01	0.19	
v/s Ratio Perm		0.01	0.01		c0.01							0.01
v/c Ratio		0.29	0.10		0.32		0.58	0.57		0.65	0.52	0.03
Uniform Delay, d1		28.9	10.5		29.0		14.9	3.2		30.6	15.0	12.2
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		2.2	0.1		2.6		1.2	0.3		62.0	0.3	0.0
Delay (s)		31.1	10.5		31.5		16.0	3.5		92.6	15.4	12.3
Level of Service		C	B		C		B	A		F	B	B
Approach Delay (s)		12.9			31.5			6.1			16.3	
Approach LOS		B			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	62.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.4%	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 (vph)	468	10	250	10	10	10	490	768	0	0	1386	476
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		4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	0.95	1.00		1.00		0.97	0.95			0.95	1.00
Frt	1.00	1.00	0.85		0.95		1.00	1.00			1.00	0.85
Flt Protected	0.95	0.95	1.00		0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1681	1689	1583		1750		3433	3539			3539	1583
Flt Permitted	0.95	0.95	1.00		0.98		0.95	1.00			1.00	1.00
Satd. Flow (perm)	1681	1689	1583		1750		3433	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	509	11	272	11	11	11	533	835	0	0	1507	517
RTOR Reduction (vph)	0	0	38	0	11	0	0	0	0	0	0	51
Lane Group Flow (vph)	260	260	234	0	22	0	533	835	0	0	1507	466
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5	8	8		5	2		1	6	4
Permitted Phases			4									6
Actuated Green, G (s)	21.7	21.7	41.9		2.2		20.2	77.7			53.5	75.2
Effective Green, g (s)	21.7	21.7	41.9		2.2		20.2	77.7			53.5	75.2
Actuated g/C Ratio	0.19	0.19	0.37		0.02		0.18	0.68			0.47	0.66
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	321	322	583		33		610	2420			1666	1103
v/s Ratio Prot	c0.15	0.15	0.07		c0.01		c0.16	0.24			c0.43	0.08
v/s Ratio Perm			0.08									0.21
v/c Ratio	0.81	0.81	0.40		0.67		0.87	0.35			0.90	0.42
Uniform Delay, d1	44.0	44.0	26.6		55.3		45.5	7.4			27.7	9.0
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	14.0	13.8	0.5		42.8		13.1	0.1			7.3	0.3
Delay (s)	57.9	57.7	27.0		98.1		58.6	7.5			35.0	9.3
Level of Service	E	E	C		F		E	A			D	A
Approach Delay (s)		47.2			98.1			27.4			28.5	
Approach LOS		D			F			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	113.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.2%	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 (vph)	50	474	310	279	1088	387	569	689	170	248	464	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	4.0	6.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.67	0.67	0.67	0.91	0.91	0.91	0.95	0.95	0.95
Adj. Flow (vph)	54	515	337	416	1624	578	625	757	187	261	488	42
RTOR Reduction (vph)	0	0	45	0	0	46	0	0	112	0	0	35
Lane Group Flow (vph)	54	515	292	416	1624	532	625	757	75	261	488	8
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	3.1	45.8	69.9	20.5	61.2	73.8	24.1	35.5	35.5	12.6	24.0	24.0
Effective Green, g (s)	3.1	45.8	69.9	20.5	61.2	73.8	24.1	35.5	35.5	12.6	24.0	24.0
Actuated g/C Ratio	0.02	0.34	0.52	0.15	0.46	0.55	0.18	0.26	0.26	0.09	0.18	0.18
Clearance Time (s)	5.0	5.0	5.0	4.0	6.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	79	1205	882	523	1611	869	615	934	418	321	631	282
v/s Ratio Prot	0.02	0.15	0.06	c0.12	c0.46	0.06	c0.18	c0.21		0.08	0.14	
v/s Ratio Perm			0.13			0.28			0.05			0.00
v/c Ratio	0.68	0.43	0.33	0.80	1.01	0.61	1.02	0.81	0.18	0.81	0.77	0.03
Uniform Delay, d1	65.2	34.2	18.7	54.9	36.6	20.6	55.2	46.3	38.2	59.7	52.6	45.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.7	0.2	0.2	8.2	24.4	1.3	40.4	5.4	0.2	14.5	5.9	0.0
Delay (s)	86.9	34.4	18.9	63.1	61.0	21.9	95.6	51.7	38.4	74.2	58.5	45.6
Level of Service	F	C	B	E	E	C	F	D	D	E	E	D
Approach Delay (s)		31.8			52.7			67.6			63.0	
Approach LOS		C			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	54.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	134.4	Sum of lost time (s)	22.0
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 (vph)	390	40	250	34	160	50	307	1489	120	50	694	550
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	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1797		3433	3539	1583	1770	3304	
Flt Permitted	0.54	1.00	1.00	0.73	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1009	1863	1583	1358	1797		3433	3539	1583	1770	3304	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	424	43	272	37	174	54	334	1618	130	54	754	598
RTOR Reduction (vph)	0	0	130	0	12	0	0	0	54	0	160	0
Lane Group Flow (vph)	424	43	142	37	216	0	334	1618	76	54	1193	0
Turn Type	Perm	NA	Perm	Perm	NA		Prot	NA	Perm	Prot	NA	
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4					6			
Actuated Green, G (s)	34.0	34.0	34.0	34.0	34.0		9.0	40.8	40.8	3.2	35.0	
Effective Green, g (s)	34.0	34.0	34.0	34.0	34.0		9.0	40.8	40.8	3.2	35.0	
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38		0.10	0.45	0.45	0.04	0.39	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	381	703	598	513	678		343	1604	717	62	1284	
v/s Ratio Prot		0.02			0.12		c0.10	c0.46		0.03	0.36	
v/s Ratio Perm	c0.42		0.09	0.03					0.05			
v/c Ratio	1.11	0.06	0.24	0.07	0.32		0.97	1.01	0.11	0.87	0.93	
Uniform Delay, d1	28.0	17.8	19.1	17.9	19.8		40.4	24.6	14.1	43.2	26.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	80.3	0.0	0.2	0.1	0.3		41.3	24.6	0.3	70.2	13.0	
Delay (s)	108.3	17.9	19.3	18.0	20.1		81.6	49.2	14.4	113.4	39.3	
Level of Service	F	B	B	B	C		F	D	B	F	D	
Approach Delay (s)		70.3			19.8			52.2			42.2	
Approach LOS		E			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	50.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
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)	20	10	30	1085	10	828	30	980	627	364	1189	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	
Lane Util. Factor		1.00	1.00	0.97	1.00	0.88	1.00	0.95	1.00	0.97	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1803	1583	3433	1863	2787	1770	3539	1583	3433	3526	
Flt Permitted		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1803	1583	3433	1863	2787	1770	3539	1583	3433	3526	
Peak-hour factor, PHF	0.98	0.98	0.98	0.94	0.94	0.94	0.91	0.91	0.91	0.80	0.80	0.80
Adj. Flow (vph)	20	10	31	1154	11	881	33	1077	689	455	1486	38
RTOR Reduction (vph)	0	0	29	0	0	0	0	0	245	0	1	0
Lane Group Flow (vph)	0	30	2	1154	11	881	33	1077	444	455	1523	0
Turn Type	Split	NA	Perm	Split	NA	pt+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	4	4		8	8	8 1	5	2	8	1	6	
Permitted Phases			4						2			
Actuated Green, G (s)		6.2	6.2	36.1	36.1	55.1	3.1	40.2	76.3	13.0	50.1	
Effective Green, g (s)		6.2	6.2	36.1	36.1	55.1	3.1	40.2	76.3	13.0	50.1	
Actuated g/C Ratio		0.05	0.05	0.30	0.30	0.46	0.03	0.34	0.64	0.11	0.42	
Clearance Time (s)		6.0	6.0	6.0	6.0		5.0	6.0	6.0	5.0	6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		94	82	1045	567	1295	46	1200	1019	376	1490	
v/s Ratio Prot		c0.02		c0.34	0.01	0.32	0.02	0.30	0.13	c0.13	c0.43	
v/s Ratio Perm			0.00						0.15			
v/c Ratio		0.32	0.02	1.10	0.02	0.68	0.72	0.90	0.44	1.21	1.02	
Uniform Delay, d1		54.1	53.3	41.2	28.8	24.8	57.3	37.2	10.4	52.8	34.2	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.0	0.1	61.0	0.0	1.5	41.5	9.0	0.3	116.9	29.0	
Delay (s)		56.1	53.4	102.2	28.8	26.3	98.8	46.2	10.7	169.6	63.2	
Level of Service		E	D	F	C	C	F	D	B	F	E	
Approach Delay (s)		54.7			69.1			33.6			87.7	
Approach LOS		D			E			C			F	

Intersection Summary			
HCM 2000 Control Delay	64.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	118.5	Sum of lost time (s)	23.0
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	190	867	200	220	2294
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	207	942	217	239	2493
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			475			343
pX, platoon unblocked	0.75					
vC, conflicting volume	2776	580			1160	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2700	580			1160	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	55			60	
cM capacity (veh/h)	8	458			598	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	207	628	532	239	1247	1247
Volume Left	0	0	0	239	0	0
Volume Right	207	0	217	0	0	0
cSH	458	1700	1700	598	1700	1700
Volume to Capacity	0.45	0.37	0.31	0.40	0.73	0.73
Queue Length 95th (ft)	57	0	0	48	0	0
Control Delay (s)	19.2	0.0	0.0	15.0	0.0	0.0
Lane LOS	C			B		
Approach Delay (s)	19.2	0.0		1.3		
Approach LOS	C					

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	908	410	450	199	1038	1356
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	0.88
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	1863	3539	2787
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1770	1863	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	987	446	489	216	1128	1474
RTOR Reduction (vph)	0	12	0	0	0	0
Lane Group Flow (vph)	987	434	489	216	1128	1474
Turn Type	NA	pm+ov	Prot	NA	NA	pt+ov
Protected Phases	4	5	5	2	6	6 4
Permitted Phases		4				
Actuated Green, G (s)	33.0	65.0	32.0	75.0	37.0	76.0
Effective Green, g (s)	33.0	65.0	32.0	75.0	37.0	76.0
Actuated g/C Ratio	0.28	0.54	0.27	0.62	0.31	0.63
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	944	936	472	1164	1091	1765
v/s Ratio Prot	c0.29	0.12	c0.28	0.12	c0.32	0.53
v/s Ratio Perm		0.15				
v/c Ratio	1.05	0.46	1.04	0.19	1.03	0.84
Uniform Delay, d1	43.5	16.8	44.0	9.5	41.5	17.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	41.9	0.4	51.0	0.1	36.4	3.6
Delay (s)	85.4	17.2	95.0	9.6	77.9	20.7
Level of Service	F	B	F	A	E	C
Approach Delay (s)	64.2			68.9	45.5	
Approach LOS	E			E	D	

Intersection Summary			
HCM 2000 Control Delay	54.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay (sec/veh)	22.6
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	2	2	2	2
Conflicting Circle Lanes	2	2	2	2
Adjusted Approach Flow (vph)	1389	1426	233	306
Demand Flow Rate (pc/h)	1417	1454	237	312
Vehicles Circulating (pc/h)	407	127	1668	1342
Vehicles Exiting (pc/h)	1247	1778	155	239
Follow-Up Headway (s)	3.186	3.186	3.186	3.186
Ped Vol. Crossing Leg (#/hr)	5	5	5	5
Ped Capacity Adjustment	0.996	0.995	1.000	1.000
Approach Delay (sec/veh)	28.2	15.6	19.1	32.1
Approach LOS	D	C	C	D

Lane	Left	Right	Left	Right	Left	Right	Left	Right
Designated moves	LT	TR	LT	TR	LT	TR	LT	R
Assumed Moves	LT	TR	LT	TR	LT	R	LT	R
Right Turn Channelized								
Lane Utilization	0.470	0.530	0.470	0.530	0.350	0.650	0.965	0.035
Critical Headway (s)	4.293	4.113	4.293	4.113	4.293	4.113	4.293	4.113
Entry Flow Rate (pc/h)	666	751	683	771	83	154	301	11
Capacity, Entry Lane (pc/h)	833	850	1027	1034	323	352	413	442
Entry HV Adjustment Factor	0.981	0.981	0.981	0.980	0.983	0.981	0.982	1.000
Flow Rate, Entry (vph)	653	736	670	756	82	151	295	11
Capacity, Entry (vph)	813	830	1003	1008	318	345	405	442
Volume to Capacity Ratio	0.803	0.887	0.668	0.750	0.257	0.438	0.729	0.025
Control Delay (sec/veh)	23.8	32.1	13.8	17.2	16.5	20.5	33.0	8.5
Level of Service	C	D	B	C	C	C	D	A
95th-Percentile Queue (veh)	9	12	5	7	1	2	6	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	604	682	319	220	273	150	503	920	320	180	750	585
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	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3539	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3539	1583	3433	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.98	0.98	0.98	0.95	0.95	0.95	0.93	0.93	0.93
Adj. Flow (vph)	671	758	354	224	279	153	529	968	337	194	806	629
RTOR Reduction (vph)	0	0	135	0	0	121	0	0	217	0	0	79
Lane Group Flow (vph)	671	758	219	224	279	32	529	968	120	194	806	550
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	24.8	31.3	31.3	17.5	24.0	24.0	19.6	34.9	34.9	14.6	29.9	54.7
Effective Green, g (s)	24.8	31.3	31.3	17.5	24.0	24.0	19.6	34.9	34.9	14.6	29.9	54.7
Actuated g/C Ratio	0.22	0.27	0.27	0.15	0.21	0.21	0.17	0.31	0.31	0.13	0.26	0.48
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	745	969	433	271	743	332	589	1081	483	226	926	813
v/s Ratio Prot	c0.20	c0.21		0.13	0.08		c0.15	c0.27		0.11	0.23	0.15
v/s Ratio Perm			0.14			0.02			0.08			0.20
v/c Ratio	0.90	0.78	0.51	0.83	0.38	0.10	0.90	0.90	0.25	0.86	0.87	0.68
Uniform Delay, d1	43.6	38.4	35.0	46.9	38.7	36.4	46.4	38.0	29.8	48.8	40.3	23.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.0	4.2	0.9	18.3	0.3	0.1	16.4	9.7	0.3	26.0	9.0	2.2
Delay (s)	57.6	42.5	35.9	65.2	39.0	36.5	62.7	47.7	30.1	74.9	49.3	25.2
Level of Service	E	D	D	E	D	D	E	D	C	E	D	C
Approach Delay (s)		46.9			47.4			48.8			43.1	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	46.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	114.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.8%	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 (vph)	604	682	319	220	273	150	503	920	320	180	750	585
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	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95		0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	1770	3351		3433	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	1770	3351		3433	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.98	0.98	0.98	0.95	0.95	0.95	0.93	0.93	0.93
Adj. Flow (vph)	671	758	354	224	279	153	529	968	337	194	806	629
RTOR Reduction (vph)	0	0	135	0	64	0	0	0	217	0	0	79
Lane Group Flow (vph)	671	758	219	224	368	0	529	968	120	194	806	550
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4						2			6
Actuated Green, G (s)	24.8	31.3	31.3	17.5	24.0		19.6	34.9	34.9	14.6	29.9	54.7
Effective Green, g (s)	24.8	31.3	31.3	17.5	24.0		19.6	34.9	34.9	14.6	29.9	54.7
Actuated g/C Ratio	0.22	0.27	0.27	0.15	0.21		0.17	0.31	0.31	0.13	0.26	0.48
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	744	969	433	270	703		588	1080	483	226	925	812
v/s Ratio Prot	c0.20	c0.21		0.13	0.11		c0.15	c0.27		0.11	0.23	0.15
v/s Ratio Perm			0.14						0.08			0.20
v/c Ratio	0.90	0.78	0.51	0.83	0.52		0.90	0.90	0.25	0.86	0.87	0.68
Uniform Delay, d1	43.6	38.4	35.0	47.0	40.1		46.4	38.0	29.8	48.8	40.4	23.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.1	4.2	0.9	18.6	0.7		16.6	9.8	0.3	26.0	9.0	2.3
Delay (s)	57.7	42.5	35.9	65.6	40.8		62.9	47.8	30.1	74.9	49.4	25.3
Level of Service	E	D	D	E	D		E	D	C	E	D	C
Approach Delay (s)		46.9			49.2			48.9			43.1	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	46.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	114.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.8%	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 (vph)	20	10	749	10	10	10	236	803	10	10	1489	10
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	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.95		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97	1.00		0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1803	1583		1750		1770	3533		1770	3539	1583
Flt Permitted		0.87	1.00		0.88		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1626	1583		1558		1770	3533		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	11	814	11	11	11	257	873	11	11	1618	11
RTOR Reduction (vph)	0	0	6	0	10	0	0	0	0	0	0	6
Lane Group Flow (vph)	0	33	808	0	23	0	257	884	0	11	1618	5
Turn Type	Perm	NA	pm+ov	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)		4.9	39.1		4.9		34.2	80.9		0.7	47.4	47.4
Effective Green, g (s)		4.9	39.1		4.9		34.2	80.9		0.7	47.4	47.4
Actuated g/C Ratio		0.05	0.40		0.05		0.35	0.82		0.01	0.48	0.48
Clearance Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		80	692		77		614	2901		12	1703	761
v/s Ratio Prot			c0.40				0.15	0.25		0.01	c0.46	
v/s Ratio Perm		0.02	0.11		0.01							0.00
v/c Ratio		0.41	1.17		0.29		0.42	0.30		0.92	0.95	0.01
Uniform Delay, d1		45.4	29.7		45.1		24.6	2.1		48.9	24.4	13.3
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		3.4	90.5		2.1		0.5	0.1		212.2	12.0	0.0
Delay (s)		48.8	120.2		47.2		25.0	2.2		261.0	36.5	13.3
Level of Service		D	F		D		C	A		F	D	B
Approach Delay (s)		117.4			47.2			7.3			37.8	
Approach LOS		F			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	46.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	98.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	100.9%	ICU Level of Service	G
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)	468	10	320	10	10	10	400	1398	0	0	1129	429
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		4.0	4.0			4.0	4.0
Lane Util. Factor	0.95	0.95	1.00		1.00		1.00	0.95			0.95	1.00
Frt	1.00	1.00	0.85		0.95		1.00	1.00			1.00	0.85
Flt Protected	0.95	0.95	1.00		0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1681	1689	1583		1750		1770	3539			3539	1583
Flt Permitted	0.95	0.95	1.00		1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)	1681	1689	1583		1779		1770	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	509	11	348	11	11	11	435	1520	0	0	1227	466
RTOR Reduction (vph)	0	0	48	0	11	0	0	0	0	0	0	93
Lane Group Flow (vph)	260	260	300	0	22	0	435	1520	0	0	1227	373
Turn Type	Split	NA	pm+ov	Perm	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	4	4	5		8		5	2		1	6	4
Permitted Phases			4	8								6
Actuated Green, G (s)	19.5	19.5	43.6		2.3		24.1	62.4			34.3	53.8
Effective Green, g (s)	19.5	19.5	43.6		2.3		24.1	62.4			34.3	53.8
Actuated g/C Ratio	0.20	0.20	0.45		0.02		0.25	0.65			0.36	0.56
Clearance Time (s)	4.0	4.0	4.0		4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	340	342	717		42		443	2295			1261	951
v/s Ratio Prot	c0.15	0.15	0.10				c0.25	0.43			c0.35	0.08
v/s Ratio Perm			0.08		c0.01							0.16
v/c Ratio	0.76	0.76	0.42		0.53		0.98	0.66			0.97	0.39
Uniform Delay, d1	36.2	36.1	17.8		46.4		35.8	10.4			30.5	12.0
Progression Factor	1.00	1.00	1.00		1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	9.8	9.6	0.4		12.2		37.8	0.7			19.1	0.3
Delay (s)	46.0	45.7	18.1		58.7		73.7	11.1			49.6	12.2
Level of Service	D	D	B		E		E	B			D	B
Approach Delay (s)		34.8			58.7			25.0			39.3	
Approach LOS		C			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	32.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	96.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX E

FREEWAY HCS+ WORKSHEETS

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	lc
Agency or Company:	OTC Inc
Date Performed:	6/6/2012
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101/Northbound
From/To:	n/o LOVR
Jurisdiction:	San Luis Obispo
Analysis Year:	Existing + Project
Description:	Chevron Tank Farm

Flow Inputs and Adjustments

Volume, V	2573	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	677	v
Trucks and buses	8	%
Recreational vehicles	2	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.958	
Driver population factor, fp	1.00	
Flow rate, vp	1414	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1414	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	21.8	pc/mi/ln

HCS 2010: Basic Freeway Segments Release 6.1

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	lc
Agency or Company:	OTC Inc
Date Performed:	6/6/2012
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101/Northbound
From/To:	n/o LOVR
Jurisdiction:	San Luis Obispo
Analysis Year:	Existing + Project
Description:	Chevron Tank Farm

Flow Inputs and Adjustments

Volume, V	2084	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	548	v
Trucks and buses	8	%
Recreational vehicles	2	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.958	
Driver population factor, fp	1.00	
Flow rate, vp	1145	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1145	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	17.6	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.1

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	lc
Agency or Company:	OTC Inc
Date Performed:	6/6/2012
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101/SOUTHBOUND
From/To:	n/o LOVR
Jurisdiction:	San Luis Obispo
Analysis Year:	Existing + Project
Description:	Chevron Tank Farm

Flow Inputs and Adjustments

Volume, V	1543	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	406	v
Trucks and buses	8	%
Recreational vehicles	2	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.958	
Driver population factor, fp	1.00	
Flow rate, vp	848	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	848	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	13.0	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	lc
Agency or Company:	OTC Inc
Date Performed:	6/6/2012
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101/SOUTHBOUND
From/To:	n/o LOVR
Jurisdiction:	San Luis Obispo
Analysis Year:	Existing + Project
Description:	Chevron Tank Farm

Flow Inputs and Adjustments

Volume, V	2704	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	712	v
Trucks and buses	8	%
Recreational vehicles	2	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.958	
Driver population factor, fp	1.00	
Flow rate, vp	1486	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1486	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.9	mi/h
Number of lanes, N	2	
Density, D	22.9	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	lc
Agency or Company:	OTC Inc
Date Performed:	6/6/2012
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101/NORTHBOUND
From/To:	s/o LOVR
Jurisdiction:	San Luis Obispo
Analysis Year:	Existing + Project
Description:	Chevron Tank Farm

Flow Inputs and Adjustments

Volume, V	2929	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	771	v
Trucks and buses	8	%
Recreational vehicles	2	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.958	
Driver population factor, fp	1.00	
Flow rate, vp	1609	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1609	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.4	mi/h
Number of lanes, N	2	
Density, D	25.0	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	lc
Agency or Company:	OTC Inc
Date Performed:	6/6/2012
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101/NORTHBOUND
From/To:	s/o LOVR
Jurisdiction:	San Luis Obispo
Analysis Year:	Existing + Project
Description:	Chevron Tank Farm

Flow Inputs and Adjustments

Volume, V	2293	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	603	v
Trucks and buses	8	%
Recreational vehicles	2	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.958	
Driver population factor, fp	1.00	
Flow rate, vp	1260	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1260	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	19.4	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	lc
Agency or Company:	OTC Inc
Date Performed:	6/6/2012
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101/SOUTHBOUND
From/To:	s/o LOVR
Jurisdiction:	San Luis Obispo
Analysis Year:	Existing + Project
Description:	Chevron Tank Farm

Flow Inputs and Adjustments

Volume, V	1447	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	381	v
Trucks and buses	8	%
Recreational vehicles	2	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.958	
Driver population factor, fp	1.00	
Flow rate, vp	795	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	795	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	12.2	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.1

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	lc
Agency or Company:	OTC Inc
Date Performed:	6/6/2012
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101/SOUTHBOUND
From/To:	s/o LOVR
Jurisdiction:	San Luis Obispo
Analysis Year:	Existing + Project
Description:	Chevron Tank Farm

Flow Inputs and Adjustments

Volume, V	2882	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	758	v
Trucks and buses	8	%
Recreational vehicles	2	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.958	
Driver population factor, fp	1.00	
Flow rate, vp	1584	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1584	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	2	
Density, D	24.6	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	lc
Agency or Company:	OTC Inc
Date Performed:	6/6/2012
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101/NORTHBOUND
From/To:	n/o LOVR
Jurisdiction:	San Luis Obispo
Analysis Year:	FUTURE BUILDOUT WITH PROJECT
Description:	Chevron Tank Farm

Flow Inputs and Adjustments

Volume, V	3533	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	930	v
Trucks and buses	8	%
Recreational vehicles	2	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.958	
Driver population factor, fp	1.00	
Flow rate, vp	1941	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1941	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	60.8	mi/h
Number of lanes, N	2	
Density, D	31.9	pc/mi/ln
Level of service, LOS	D	

HCS 2010: Basic Freeway Segments Release 6.1

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	lc
Agency or Company:	OTC Inc
Date Performed:	6/6/2012
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101/NORTHBOUND
From/To:	n/o LOVR
Jurisdiction:	San Luis Obispo
Analysis Year:	FUTURE BUILDOUT WITH PROJECT
Description:	Chevron Tank Farm

Flow Inputs and Adjustments

Volume, V	2874	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	756	v
Trucks and buses	8	%
Recreational vehicles	2	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.958	
Driver population factor, fp	1.00	
Flow rate, vp	1579	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1579	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	2	
Density, D	24.5	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	lc
Agency or Company:	OTC Inc
Date Performed:	6/6/2012
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101/SOUTHBOUND
From/To:	n/o LOVR
Jurisdiction:	San Luis Obispo
Analysis Year:	FUTURE BUILDOUT WITH PROJECT
Description:	Chevron Tank Farm

Flow Inputs and Adjustments

Volume, V	2113	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	556	v
Trucks and buses	8	%
Recreational vehicles	2	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.958	
Driver population factor, fp	1.00	
Flow rate, vp	1161	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1161	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	17.9	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.1

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	lc
Agency or Company:	OTC Inc
Date Performed:	6/6/2012
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101/SOUTHBOUND
From/To:	n/o LOVR
Jurisdiction:	San Luis Obispo
Analysis Year:	FUTURE BUILDOUT WITH PROJECT
Description:	Chevron Tank Farm

Flow Inputs and Adjustments

Volume, V	3724	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	980	v
Trucks and buses	8	%
Recreational vehicles	2	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.958	
Driver population factor, fp	1.00	
Flow rate, vp	2046	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2046	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	59.1	mi/h
Number of lanes, N	2	
Density, D	34.6	pc/mi/ln
Level of service, LOS	D	

HCS 2010: Basic Freeway Segments Release 6.1

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	lc
Agency or Company:	OTC Inc
Date Performed:	6/6/2012
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101/NORTHBOUND
From/To:	s/o LOVR
Jurisdiction:	San Luis Obispo
Analysis Year:	FUTURE BUILDOUT WITH PROJECT
Description:	Chevron Tank Farm

Flow Inputs and Adjustments

Volume, V	4019	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	1058	v
Trucks and buses	8	%
Recreational vehicles	2	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.958	
Driver population factor, fp	1.00	
Flow rate, vp	2208	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2208	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	55.7	mi/h
Number of lanes, N	2	
Density, D	39.6	pc/mi/ln
Level of service, LOS	E	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	lc
Agency or Company:	OTC Inc
Date Performed:	6/6/2012
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101/NORTHBOUND
From/To:	s/o LOVR
Jurisdiction:	San Luis Obispo
Analysis Year:	FUTURE BUILDOUT WITH PROJECT
Description:	Chevron Tank Farm

Flow Inputs and Adjustments

Volume, V	3023	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	796	v
Trucks and buses	8	%
Recreational vehicles	2	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.958	
Driver population factor, fp	1.00	
Flow rate, vp	1661	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1661	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.0	mi/h
Number of lanes, N	2	
Density, D	25.9	pc/mi/ln
Level of service, LOS	C	

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	lc
Agency or Company:	OTC Inc
Date Performed:	6/6/2012
Analysis Time Period:	AM Peak Hour
Freeway/Direction:	US 101/SOUTHBOUND
From/To:	s/o LOVR
Jurisdiction:	San Luis Obispo
Analysis Year:	FUTURE BUILDOUT WITH PROJECT
Description:	Chevron Tank Farm

Flow Inputs and Adjustments

Volume, V	2037	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	536	v
Trucks and buses	8	%
Recreational vehicles	2	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.958	
Driver population factor, fp	1.00	
Flow rate, vp	1119	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1119	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	17.2	pc/mi/ln
Level of service, LOS	B	

HCS 2010: Basic Freeway Segments Release 6.1

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	lc
Agency or Company:	OTC Inc
Date Performed:	6/6/2012
Analysis Time Period:	PM Peak Hour
Freeway/Direction:	US 101/SOUTHBOUND
From/To:	s/o LOVR
Jurisdiction:	San Luis Obispo
Analysis Year:	FUTURE BUILDOUT WITH PROJECT
Description:	Chevron Tank Farm

Flow Inputs and Adjustments

Volume, V	3967	veh/h
Peak-hour factor, PHF	0.95	
Peak 15-min volume, v15	1044	v
Trucks and buses	8	%
Recreational vehicles	2	%
Terrain type:	Level	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.958	
Driver population factor, fp	1.00	
Flow rate, vp	2180	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2180	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	56.4	mi/h
Number of lanes, N	2	
Density, D	38.7	pc/mi/ln
Level of service, LOS	E	

APPENDIX F

ALTERNATIVES SUMMARY

ALTERNATIVES

1 & 2: No Action and No Project Alternatives

These alternatives would result in the same transportation conditions as presented in the Existing No Project and Cumulative No Project scenarios.

3: Excavation Alternative

This alternative would involve excavation of approximately 588,000 cubic yards of material, of which 436,000 cubic yards would be hauled off-site for disposal. Assuming an average load of 15 cubic yards per truck, this equates to 29,067 truck round trips. This is approximately 50% higher than the 18,550 truck round trips expected under the remediation phase of the project as proposed. If spread over a two-year period, excavation of the site would result in an average of 58 truck round trips per day. Employees on the site would generate an additional 90 auto round trips per day.

This level of traffic would have a potentially significant impact. The implementation of a construction traffic management plan as described in the construction traffic section would reduce construction impacts to less-than-significant levels.

4: AASP Development Alternative

This alternative consists of the remediation and development of the site in accordance with the Airport Area Specific Plan (AASP). Table 1 compares the daily trip generation of the AASP alternative to the proposed project.

Table 1: AASP Daily Trip Generation Comparison

	Western Parcels	Eastern Parcels	Total Daily Trip Generation
AASP Alternative	2,034	4,218	6,252
Proposed Project	695	7,640	8,335
Note: Calculations above do not reflect internalization or pass-by trip reductions.			

The AASP alternative would generate approximately 6,252 daily trips on weekdays, less than the 8,335 daily weekday trips generated by the project as proposed. The AASP alternative would locate more development on the western portion of the site and would require the import of approximately 360,000 cubic yards of structural fill in this area to accommodate the increased development footprint.

The AASP alternative includes the construction of the Unocal Collector Road connecting Tank Farm Road to the Prado Road extension, and suggests a roundabout at the intersection of Tank Farm Road/Unocal Collector Road.

This alternative would not result in additional transportation impacts beyond those identified for the project because it would generate fewer vehicle trips.

5: County General Plan Development Alternative

This alternative would involve site remediation and development in accordance with the County's existing General Plan zoning designations. Table 2 shows the daily trip generation for this alternative compared to the proposed project.

Table 2: County GP Daily Trip Generation Comparison			
	Western Parcels	Eastern Parcels	Total Daily Trip Generation
County GP Alternative	2,645	5,446	8,091
Proposed Project	695	7,640	8,335
Note: Calculations above do not reflect internalization or pass-by trip reductions.			

The total trip generation under this alternative is 8,091 daily weekday trips, slightly lower than the 8,335 daily trips generated by the proposed project. More of this alternative's traffic would be generated by the western parcels. This alternative includes the Unocal Collector Road, which would provide access to the western parcels and a connection between Tank Farm Road and the Prado Road extension. A roundabout or traffic signal would be required at the intersection of Tank Farm Road/Unocal Collector Road to accommodate project traffic levels.

This alternative would not result in additional transportation impacts beyond those identified for the project because it would generate fewer vehicle trips.

6: Tank Farm Road/Santa Fe Road Roundabout

This alternative consists of the installation of a multi-lane roundabout at the intersection of Tank Farm Road and Santa Fe Road instead of the traffic signal proposed by the project. The AASP calls for a roundabout at this location. The roundabout would provide acceptable LOS C or better operations under all study scenarios. It would also reduce queue lengths for approaching vehicles when compared with the proposed traffic signal.

7: Prado Road Alternative

This alternative would extend Prado Road from South Higuera Street to Broad Street as a two-lane facility, and extend Santa Fe Road as a two-lane facility from Tank Farm Road to Prado Road. These improvements would occur as a part of Phase 1 of the project.

This alternative was evaluated using Average Daily Traffic (ADT) estimates, which are compared to standard daily roadway capacities to determine the number of lanes required on a roadway segment. The Florida Department of Transportation publishes standard ADT capacities for different facilities. Using these standard capacities, the LOS D threshold for a Class I 2-lane divided arterial is 17,325 daily vehicles. The existing ADT on Tank Farm Road between South Higuera Street and Santa Fe Road is 18,400 vehicles.

The extension of Prado Road would provide drivers with an alternative route parallel to Tank Farm Road. The amount of traffic expected to shift from Tank Farm Road to the extended Prado Road was estimated using the City's Travel Demand Model. The model showed that the extension of Prado Road lowered the ADT on Tank Farm Road from 18,400 vehicles to 13,400 vehicles. The model showed a commensurate increase in volume on Prado Road, as drivers shifted to the new parallel route.

The proposed project would generate 8,193 daily vehicle trips once pass-by trips and internalization reductions are applied. Of these trips, 35% are expected to travel on Tank Farm Road west of Santa Fe Road if the Prado Road extension is in place. This corresponds to 2,868 daily project trips on this segment, which yields an ADT of 16,268 with the project (13,400+2,868). This is below the LOS D threshold for this facility, and is expected to provide acceptable operations.

The shift in traffic from Tank Farm Road to Prado Road would also affect intersection operations by adding turning traffic to the South Higuera Street/Prado Road intersection and lowering turning traffic at the South Higuera Street/Tank Farm Road intersection. The South Higuera Street/Prado Road intersection is projected to operate at LOS D or better with the Prado Road extension in place under Existing Plus Project conditions with its current lane configuration. The shift in traffic away from Tank Farm Road would also reduce queuing at the intersections of South Higuera Street and Broad Street with Tank Farm Road.

In summary, a two-lane section of Tank Farm Road west of Santa Fe Road would provide adequate capacity under Existing Plus Project conditions if the Prado Road extension is in place. Without the Prado Road extension it would be necessary to widen Tank Farm Road to four lanes between South Higuera Street and Broad Street. Under Cumulative Conditions, it would be necessary to widen Tank Farm Road to four lanes both with and without the project, even with the Prado Road extension in place.

8: Unocal Collector Road Alternative

This alternative would build the Unocal Collector Road connecting Tank Farm Road to Prado Road and would extend Hind Road to intersect with the Unocal Collector. This alternative does not include the extension of Prado Road to Broad Street.

While the Unocal Collector Road would improve access to the western parcel of the proposed project and serve as an additional connection to Prado Road, its construction would not eliminate or reduce any identified transportation impacts due to the relatively low volumes it would serve. This connection is not included in the City's 1994 Circulation Element, but is included in the Airport Area Specific Plan.

The Unocal Collector Road alignment is planned as a major underground utility corridor. The roadway could be designed as a Class I bike path, serving cyclists and pedestrians while providing service access for the underground utilities.